



ENVIRONMENTAL ASSESSMENT

**for Hotel Range Renovation at
U.S. Army Garrison
Fort Devens, Massachusetts
June 2020**



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Abstract

Designation: Environmental Assessment
Title of Proposed Action: Hotel Range Renovation
Project Location: Fort Devens
Lead Agency for the EA: Department of the Army
Affected Region: Hotel Range, South Post, Fort Devens
Action Proponent: U.S. Army Garrison Fort Devens
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Date: June 2020

U.S. Army Garrison Fort Devens has prepared this Environmental Assessment in accordance with the National Environmental Policy Act (NEPA), as implemented by the Council on Environmental Quality regulations, and the Army regulations for implementing NEPA. The Proposed Action would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would be entirely within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected. This Environmental Assessment evaluates the potential environmental impacts associated with two action alternatives and the No Action Alternative on a full range of resource areas, including a more detailed analysis of the following resources: air quality, human health and safety, biological resources, cultural resources, hazardous and toxic materials and waste, geology and soils, and water resources. Cumulative effects are also analyzed.

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Finding of No Significant Impact

Hotel Range Renovation at U.S. Army Garrison Fort Devens, Massachusetts

Pursuant to the Council on Environmental Quality regulations (40 CFR 1500–1508) for implementing the National Environmental Policy Act of 1969 (NEPA) and U.S. Army regulations (32 CFR 651), the U.S. Army has prepared an Environmental Assessment (EA) of the potential environmental and human health effects associated with the proposed renovation of Hotel Range on U.S. Army Garrison Fort Devens South Post. The EA is incorporated by reference into this Finding of No Significant Impact (FNSI).

Proposed Action

The Army proposes to renovate Hotel Range on Fort Devens South Post so that the new firing line is constructed approximately 500 feet east of the current firing line and reoriented so the surface danger zone for the range is entirely within the South Post boundaries. The range would remain a light multipurpose machine gun range, and each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army training standards. The range operations and control area (ROCA) facilities at the range would be demolished, and new facilities would be built, to include a control tower, classroom building, operations and storage building, covered bleachers, covered mess, and an ammunition breakdown building. Some forested area would need to be cleared, and site preparation would include grading and cut and fill in order to maintain line of sight for personnel using the range. The Proposed Action includes a new gravel service area to provide access to the new firing lines, as well as a gravel parking area. Operations at the range (frequency, duration, caliber) are not expected to change under the Proposed Action.

The purpose of the Proposed Action is to renovate Hotel Range so that it complies with current Army training and design standards, and to reorient the range so that its surface danger zone is entirely within the South Post property boundaries. The Proposed Action is needed to modernize the range to meet Army safety and training standards and requirements. The existing four-lane range does not have vehicle access at the firing line, which is atop a berm. Existing targets and facilities are reaching their lifecycle limits and experience malfunctions during cold weather months. As a result, the current non-standard range with limited engagement opportunities restricts Army weapons training goals. In addition, the Proposed Action is needed to alleviate the yearly waiver requirement on Hotel Range by reorienting the surface danger zone so that it remains on Fort Devens property.

Alternatives Considered

The Army considered two action alternatives that meet the purpose of, and need for, the Proposed Action, and a No Action Alternative. Alternative 1 would consist of a renovated four-lane multipurpose machine gun range with firing lanes extending out to 800 meters from the firing line. Alternative 2 would consist of a renovated five-lane multipurpose machine gun range with firing lanes extending out to 800 meters from the firing line. Alternative 1 is the Army's Preferred Alternative for the renovation of Hotel Range.

Anticipated Environmental Impacts

The EA concluded that implementation of the Preferred Alternative would not have any significant adverse impacts on the resource areas analyzed for this action. Potential long-term, minor-to-moderate, adverse impacts on biological resources, cultural resources, geology and soils, and water resources would be expected. The Preferred Alternative would result in long-term, beneficial effects on human health and safety, and long-term, negligible impacts on the remaining resource areas, as described in the EA. Under both Alternative 1 and Alternative 2, construction of a new access road would require fill within a potentially jurisdictional wetland. Any fill within jurisdictional wetlands would be permitted in accordance with Section 404 of the Clean Water Act and the Massachusetts Wetlands Protection Act and mitigated, if required. With Section 404 permitting and implementation of avoidance, minimization, or mitigation measures, if necessary, impacts under both action alternatives would remain less than significant. Alternative 1 is the environmentally-preferred alternative for implementation of the Proposed Action.

Public Review and Comment

The EA and Draft FNSI were available for review and comment for 30 days, beginning May 8, 2020, and ending June 8, 2020. Copies of the EA and Draft FNSI were available on the official Fort Devens website: <https://home.army.mil/devens>. Printed copies were also available on request. The Army received comments from U.S. Environmental Protection Agency, Massachusetts Department of Environmental Protection, and Massachusetts Division of Fisheries and Wildlife. The Army carefully read and considered all comments received. In addition, the Massachusetts Historical Commission provided concurrence to the determination of no adverse effect on cultural resources as a result of the Proposed Action. Copies of the agency comments received are included in Appendix A of the EA.

Conclusion

Based on my review and evaluation of the environmental effects as presented in the EA, I have determined that the renovation of Hotel Range on South Post of U.S. Army Garrison Fort Devens under Alternative 1 is the environmentally preferred alternative, and implementation of Alternative 1 would not significantly affect the quality of human or natural environment under NEPA with implementation of avoidance, minimization, or mitigation measures required in accordance with Section 404 permitting under the Clean Water Act and the Massachusetts Wetlands Protection Act. Therefore, I have determined that preparation of an Environmental Impact Statement for this Proposed Action is not required.

Approved by:



Lieutenant Colonel Lindsey E. Halter
Commanding
U.S. Army Garrison Fort Devens

August 4, 2020

Date

Executive Summary

Introduction

This Environmental Assessment (EA) has been prepared to analyze the environmental effects associated with Fort Devens' Proposed Action to renovate Hotel Range on Fort Devens South Post so that the new firing line is constructed east of the current firing line and reoriented so the surface danger zone for the range is entirely within the South Post boundaries. The proposed changes to Hotel Range are needed to modernize the range to meet Army safety and training standards and requirements.

The Army is the proponent of this proposal and the lead agency for the preparation of this EA. This EA has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500–1508) and Army Regulation for implementing NEPA (32 CFR 651).

Proposed Action

The Army proposes to construct the new firing line approximately 500 feet east of the current firing line and reorient so that the surface danger zone for the range is entirely within the South Post boundaries. The range would remain a light multipurpose machine gun range, and each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army training standards. The range operations and control area (ROCA) facilities at the range would be demolished, and new facilities would be built, to include a control tower, classroom building, operations and storage building, covered bleachers, covered mess, and an ammunition breakdown building. Some forested area would need to be cleared, and site preparation would include grading and cut and fill in order to maintain line of sight for personnel using the range. The Proposed Action includes a new gravel service area to provide access to the new firing lines, as well as a gravel parking area. Operations at the range (frequency, duration, or caliber) are not expected to change under the Proposed Action.

Under the Proposed Action, Hotel Range would be renovated to comply with current Army training and design standards and would be modernized to meet Army safety and training standards and requirements. The existing four-lane range does not have vehicle access at the firing line, which is atop a berm. Existing targets and facilities are reaching their lifecycle limits and experience malfunctions during cold weather months. As a result, the current non-standard range with limited engagement opportunities restricts Army weapons training goals. In addition, the Proposed Action is needed to alleviate the yearly waiver requirement on Hotel Range by reorienting the surface danger zone so that it remains on Fort Devens property.

Alternatives Considered

Alternative 1 (Preferred Alternative)

The Army identified Alternative 1 as the Preferred Alternative that best meets the screening criteria, as well as the project purpose and need. Under Alternative 1, the new firing line would be constructed east of the current firing line and would be reoriented entirely within the South Post boundaries, as described under the Proposed Action. The Hotel Range would consist of four firing lines under Alternative 1. Tree clearing would occur to provide the line of sight for the length of the range. Considerable grading (approximately 30,000 cubic yards) would occur along the eastern boundary of the proposed renovated range, the cut dirt would be used as fill

at the renovated firing line, which needs an increase in the elevation of the firing positions to maintain line of sight down the range. A sheet pile retaining wall would be installed to the north of the proposed firing line area to contain the fill dirt and minimize erosion and sedimentation impacts on wetlands to the north of the renovated firing line. The renovated range under Alternative 1 would encompass approximately 49.3 acres.

Alternative 2

Under Alternative 2, the range would be constructed in the same location and orientation as under Alternative 1 but would include a fifth firing lane; the new orientation would be reoriented entirely within the South Post boundaries. Similar to Alternative 1, the firing positions would require an increase in elevation in order to maintain line of sight down the range. This would be accomplished by constructing a berm to an elevation of approximately 250 feet above mean sea level; forested areas would need to be cleared and soil would be graded. The area of disturbance under Alternative 2 would be larger than Alternative 1 from the additional firing lane and the construction of the berm. The cubic yards of soil grading along the eastern boundary of the proposed renovated range would be the same as Alternative 1. The renovated range under Alternative 2 would encompass approximately 61.4 acres.

No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The surface danger zone would continue to extend outside the Fort Devens boundaries. The range would continue to operate with outdated facilities and targetry that do not comply with current Army training standards. The No Action Alternative would not meet the purpose of, and need for, the Proposed Action; however, the No Action Alternative is carried forward for analysis in this EA to serve as a baseline against which the effects of the action alternatives can be evaluated.

Summary of Potential Environmental Consequences of the Action Alternatives

Alternatives 1 and 2, as well as the No Action Alternative, would not have any significant adverse impacts on the resource areas analyzed in this EA. Alternative 1 is the environmentally-preferred alternative for implementation of the Proposed Action. A summary of impacts by resource area for the alternatives considered is provided in Table ES-1.

Conclusion

Under both Alternative 1 and Alternative 2, construction of a new access road would require fill within a potentially jurisdictional wetland. Any fill within jurisdictional wetlands would be permitted in accordance with Section 404 of the Clean Water Act and mitigated, if required. With Section 404 permitting and, if required, mitigation for impacts on jurisdictional wetlands, impacts under both action alternatives would remain less than significant. No significant direct, indirect, or cumulative effects on the local natural or human environment would be expected as a result of implementing Alternative 1 or Alternative 2. Therefore, preparation of an Environmental Impact Statement is not required, and issuance of a Finding of No Significant Impact is warranted.

Table ES-1. Summary of Impacts from Alternative 1 (Preferred Alternative), Alternative 2, and No Action Alternative

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Air Quality	Short-term, minor air emissions during site preparation and construction. No long-term impacts. No significant impacts.	Similar to Alternative 1, but with greater short-term impacts due to the larger area. No significant impacts.	No change in current conditions. No significant impacts.
Human Health and Safety	Short-term, minor adverse impacts from potential construction hazards. Long-term, minor benefits from shifting the range surface danger zone to within South Post boundaries. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	Long-term, minor adverse impacts from surface danger zone remaining outside South Post boundaries, and the range not meeting Army safety and training standards. No significant impacts.
Biological Resources	Short-term, negligible-to-moderate impacts from construction. Long-term, negligible-to-minor impacts from permanent loss of forested habitat and a vernal pool. No significant impacts.	Short-term, negligible-to-moderate, impacts from construction. Long-term, negligible-to-minor impacts from permanent loss of forested habitat and a vernal pool. Habitat loss would be greater than under Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.
Cultural Resources	No adverse effects on aboveground historic properties. Potential for disturbance of previously unknown archaeological resources during grading, excavation, and construction. Army would adhere to all federal regulations and consultation to reduce potential minor-to-moderate adverse effects. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.
Hazardous and Toxic Materials and Waste	Short-term, minor adverse impacts from construction activities and clearing and grading occurring over Area of Concern 27. No long-term impacts. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Geology and Soils	Short-term, adverse impacts on topography and soils from site clearing and grading. Long-term impacts from grading of two areas of the range. No significant impacts.	Similar to Alternative 1, but with greater short-term impacts due to the larger area. No significant impacts.	No change in current conditions. No significant impacts.
Water Resources	No impacts on floodplains. Short-term, minor impacts on surface water; short- and long-term, minor impacts on wetlands; short-term negligible impacts on groundwater. Long-term impacts from the loss of one potentially jurisdictional wetland, which also meets the criteria for a vernal pool. Section 404 permitting would occur to ensure minimal impacts on wetlands. No significant impacts.	No impacts on floodplains. Short-term, minor impacts on surface water; short- and long-term impacts on wetlands; short-term negligible impacts on groundwater. Long-term, direct impact from the loss of one potentially jurisdictional wetland, and a firing lane intersecting a jurisdictional wetland. Section 404 permitting would occur to ensure minimal impacts on wetlands. No significant impacts.	No change in current conditions. No significant impacts.

ENVIRONMENTAL ASSESSMENT

for Hotel Range Renovation at Fort Devens, Massachusetts

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Abbreviations and Acronyms

Acronym	Definition	Acronym	Definition
AOC	area of concern	LTM	long-term monitoring
Army	U.S. Army	MassDEP	Massachusetts Department of Environmental Protection
APE	Area of Potential Effect	MBTA	Migratory Bird Treaty Act
BGEPA	Bald and Golden Eagle Protection Act	MESA	Massachusetts Endangered Species Act
BCC	birds of conservation concern	µg/L	microgram per liter
BMP	best management practice	NAAQS	National Ambient Air Quality Standards
BRAC	Base Realignment and Closure	NEPA	National Environmental Policy Act of 1969
CEQ	Council on Environmental Quality	NLEB	northern long-eared bat
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	NPDES	National Pollutant Discharge Elimination System
CFR	Code of Federal Regulations	NRHP	National Register of Historic Places
CGP	Construction General Permit	RCRA	Resource Conservation and Recovery Act
DoD	Department of Defense	RDX	cyclotrimethylenetrinitramine
EA	Environmental Assessment	ROCA	range operations and control area
EIS	Environmental Impact Statement	ROD	Record of Decision
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986	SHPO	State Historic Preservation Office
ESA	Endangered Species Act of 1973	SPIA	South Post Impact Area
FNSI	Finding of No Significant Impact	SPM	South Post Monitoring
FY	Fiscal Year	T&E	Threatened and Endangered
ICRMP	Integrated Cultural Resource Management Plan	TC	Training Circular
ICUZ	Installation Compatible Use Zone	UFC	Unified Facilities Criteria
ILSF	Isolated Land Subject to Flooding	USACE	U.S. Army Corps of Engineers
INRMP	Integrated Natural Resource Management Plan	USAG	U.S. Army Garrison
		USEPA	U.S. Environmental Protection Agency
		USFWS	U.S. Fish and Wildlife Service
		UXO	unexploded ordnance

1 Purpose and Need for the Proposed Action

1.1 Introduction

U.S. Army Garrison Fort Devens is preparing this Environmental Assessment (EA) to analyze and document the potential environmental consequences resulting from the renovation of Hotel Range on the Fort Devens South Post. The Proposed Action is described in detail in Section 2.

The U.S. Army (Army) is the action proponent. The Army has prepared this EA in accordance with the National Environmental Policy Act (NEPA) of 1969, as implemented by the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500–1508) and Army regulations (32 CFR 651). This EA will inform decision makers of the potential consequences resulting from implementation of the Proposed Action and the No Action Alternative.

1.2 Background

Fort Devens is located in north-central Massachusetts, approximately 35 miles northwest of Boston (Figure 1-1). It is bordered by the Towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts. Fort Devens is composed of approximately 5,196 acres, which is divided into five noncontiguous parcels including the Main Post (or Cantonment), 3400 Area, Airfield, cemetery, and South Post. Most of Fort Devens' administrative buildings and structures are located within the Main Post. The 4,880-acre South Post is used for field training (U.S. Army, 2013; USAG Fort Devens, 2019). South Post is bordered by the Town of Lancaster to the north, south, and west; the Town of Harvard and the Oxbow National Wildlife Refuge to the northeast; and the Bolton Flats State Wildlife Management Area to the southeast (Figure 1-2).

Figure 1-1. Location of Fort Devens

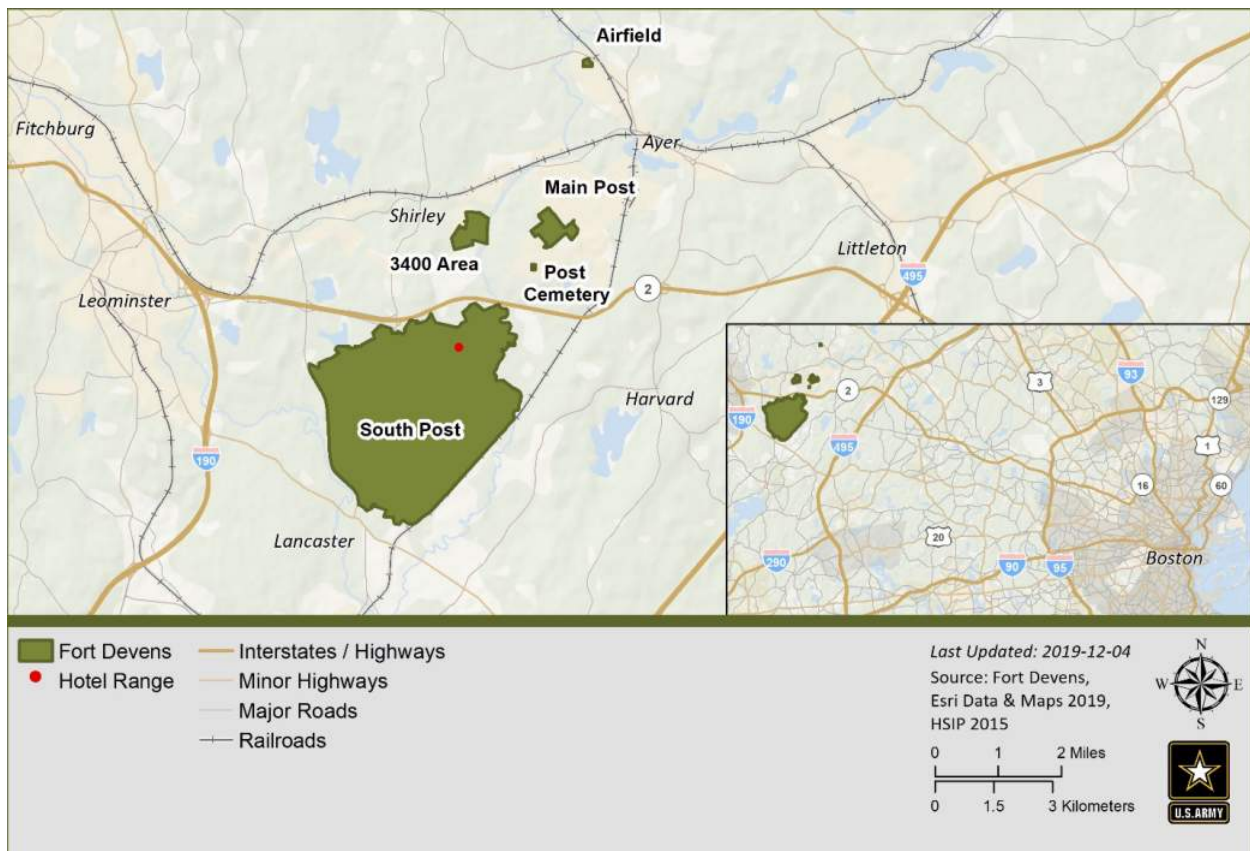
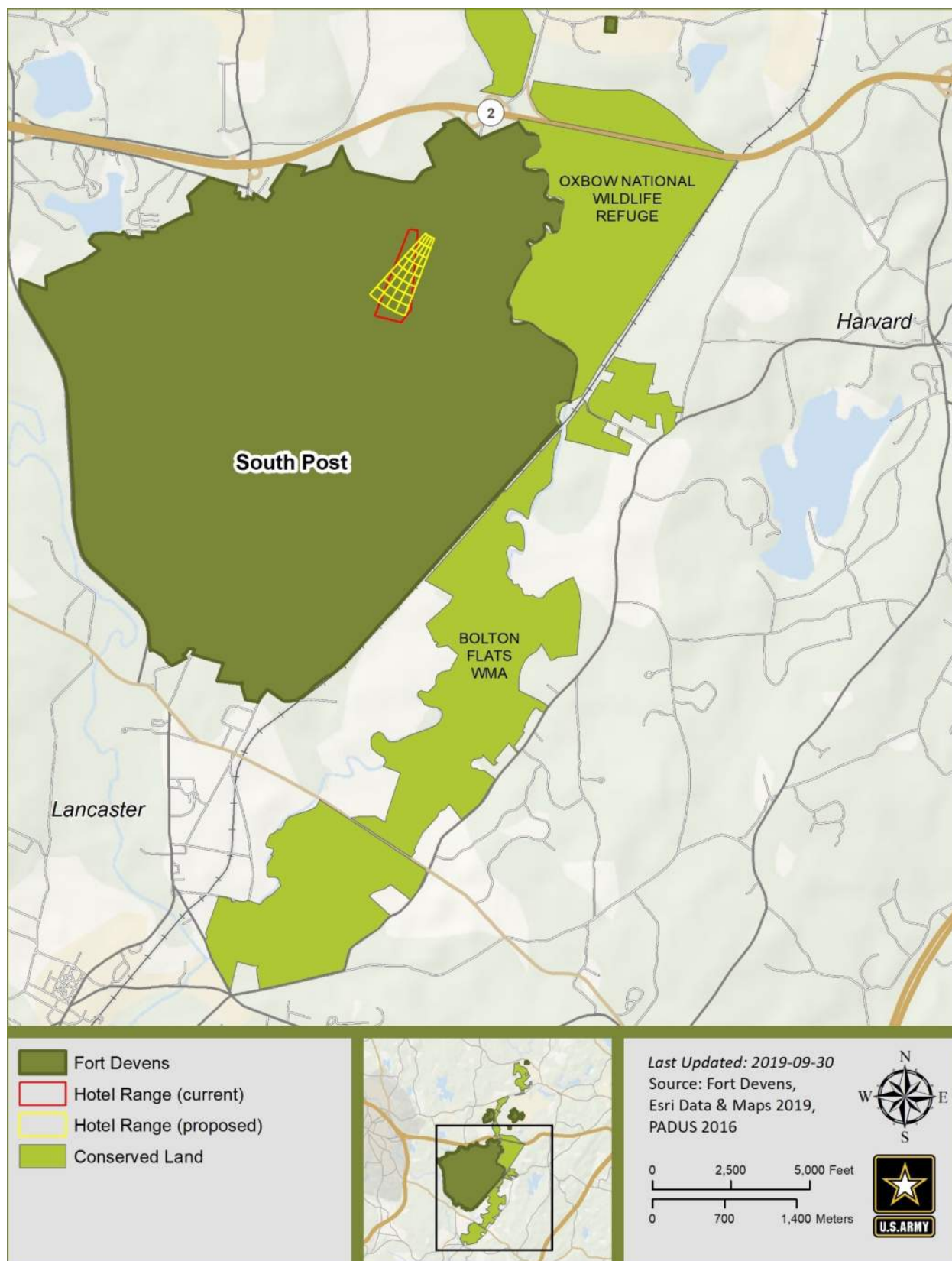


Figure 1-2. Fort Devens South Post and Surrounding Area



Fort Devens was established as Camp Devens in 1917 and used as a temporary training camp for soldiers from the New England area. The camp became a permanent installation in 1931 and was renamed Fort Devens. Throughout its history, Fort Devens has served as a training and induction center for military personnel and as a unit mobilization and demobilization area. The installation was used in this capacity, to varying degrees, during World Wars I and II, the Korean War, the Vietnam Conflict Era, operations Desert Shield and Desert Storm, Operation Enduring Freedom, and Operation Iraqi Freedom.

As part of the 1991 Base Realignment and Closure (BRAC), portions of Fort Devens were recommended for closure; South Post was identified for realignment. In 1996, Fort Devens was realigned as Devens Reserve Forces Training Area (U.S. Army Reserve, 2002a). In May 2007, Devens Reserve Forces Training Area was renamed Fort Devens.

Today the mission of Fort Devens is to provide training capabilities, standardized services, and sustainable infrastructure enabling the operational readiness of the Total Army Forces and the diverse Devens Reserve Forces Training Area community (Fort Devens, n.d.). South Post is the primary location for tactical training at Fort Devens. It has 27 training facilities, including firing and demolition ranges, ammunition supply points, drop zones, training areas, and nonfiring facilities (U.S. Army, 2013). The ranges on South Post are currently used for various types of artillery and small arms fire, grenade detonation, and ordnance demolition. Managed training land accounts for much of the remainder of the area.

Hotel Range is approximately one mile south of the main entrance to South Post. The range covers approximately 46.6 acres and is currently used exclusively for firing small-caliber automatic weapons. It has four firing lanes and structures at the range include firing structures, a control tower, an ammunition breakdown building, uncovered bleachers, and three storage outbuildings.

1.3 Purpose of the Proposed Action

The purpose of the Proposed Action is to renovate Hotel Range on Fort Devens South Post to modernize the range facilities and targetry to current Army training standards. The Proposed Action would also reorient Hotel Range so that the surface danger zone associated with the range is entirely within the Fort Devens property boundaries.

1.4 Need for the Proposed Action

The Proposed Action is needed to modernize Hotel Range to meet Army safety and training standards and requirements, as outlined in Army Training Circular (TC) 28-8. The existing Hotel Range operates a four firing lane light multipurpose machine gun range with single-man foxhole positions. There is room for assistant gunners adjacent to the foxholes but no vehicle firing points are accessible to the firing line, which is atop a berm. The existing targets and facilities at the range are approaching their lifecycle limits, and the range does not meet current Army standards. The Hotel Range firing lanes are not a standard width, reducing target acquisition opportunities and limiting engagement opportunities to soldiers. The existing target systems have old wiring and are at the end of their life cycle, resulting in malfunctions during cold weather months and longer recovery times as compared to modern target systems. As a result, personnel require longer training times, which reduces throughput on the range. In addition, the existing target systems do not meet the current Army training standard and require modernization. The current non-standard range with limited engagement opportunities restricts Army weapons training goals. In addition, the Proposed Action is needed to alleviate the yearly

waiver requirement on Hotel Range by reorienting the surface danger zone so that it remains on Fort Devens property.

1.5 Public Involvement and Agency and Tribal Coordination

The Army invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the Proposed Action, including minority, low-income, disadvantaged, and Native American groups, are urged to participate in the decision-making process.

Public participation opportunities with respect to this EA and decision making on the Proposed Action are guided by 32 CFR 651. The EA was made available to the public for 30 days, along with the draft Finding of No Significant Impact (FNSI). If no significant impacts are expected, the Army may then sign the FNSI and proceed to implement the Proposed Action. If it is determined, prior to issuance of a final FNSI, that implementation of the Proposed Action would result in significant impacts, the Army will publish a notice of intent to prepare an Environmental Impact Statement in the *Federal Register*, commit to mitigation actions sufficient to reduce impacts below significant levels, or not implement the action.

The review period began with a Notice of Availability published in the *Nashoba Valley Voice* and the *Sentinel & Enterprise* on May 8, 2020. The Army corresponded with the agencies listed in Chapter 6 to notify them of the availability of the EA and Draft FNSI for review and comment. The EA and Draft FNSI were available at the Fort Devens website, and hard copies were available upon request. No comments from the private citizens were received. Letters were received from the U.S. Environmental Protection Agency, Massachusetts Department of Environmental Protection, and Massachusetts Division of Fisheries and Wildlife. In addition, the Massachusetts Historical Commission provided concurrence that the Proposed Action would not affect any significant historic or archaeological properties, and with the recommendation that an Inadvertent Discovery Plan be implemented as included in the EA. All agency correspondence is in Appendix A. The Army carefully read and considered all comments submitted by individuals, agencies, or organizations on the Proposed Action, the EA, and the draft FNSI.

1.6 Scope of Environmental Analysis

This EA identifies and evaluates potential environmental impacts associated with two action alternatives and the No Action Alternative on a full range of resource areas. The environmental resource areas analyzed in detail in this EA include air quality, human health and safety, biological resources, cultural resources, hazardous and toxic materials and waste, geology and soils, and water resources.

CEQ and Army regulations (40 CFR 1501.7[a] and 32 CFR 651.5[d][5], respectively) encourage project proponents to identify and eliminate from detailed study the resource areas that have no potential to be affected by implementation of a proposed action. The following resource areas are not carried forward for detailed analysis in this EA: energy and infrastructure, noise, land use, socioeconomics, environmental justice, traffic and transportation, and visual resources. Section 3 of this EA includes rationale supporting the elimination of these resource areas from detailed analysis.

2 Description of the Proposed Action and Alternatives

2.1 Proposed Action

The Army proposes to renovate Hotel Range in order to (1) reorient the firing lines so that the surface danger zone associated with the range is entirely within South Post boundaries, and (2) modernize the range so that it complies with current Army training and design standards. The existing range (Figure 2-1) is an 800-meter, four-lane light multipurpose machine gun range. Range operations and control area (ROCA) facilities at the range include a control tower, ammunition breakdown building, uncovered bleacher, and three storage buildings. The range is oriented toward the south/southwest and is adjacent to Cranberry Pond. Slate Rock Pond is to the north of the range. The firing line at the range is atop a berm that provides line of sight down the range. Soldiers fire from single-man foxhole positions with room for assistant gunners adjacent to the foxholes; there are no vehicle firing points available at or accessible to the firing line. Stationary and moving targets are located 100 meters, 200 meters, and 300 meters down the range. The existing targets and ROCA facilities at the range are approaching their lifecycle limits and do not meet current Army standards. As such, there is a need for modernization. Under the current range configuration, the surface danger zone associated with Hotel Range extends partially over the Town of Lancaster and the state-owned Bolton Flats Wildlife Management Area, for which the Army has a waiver. Note that the surface danger zone is not public information and is not depicted on the maps in this EA.

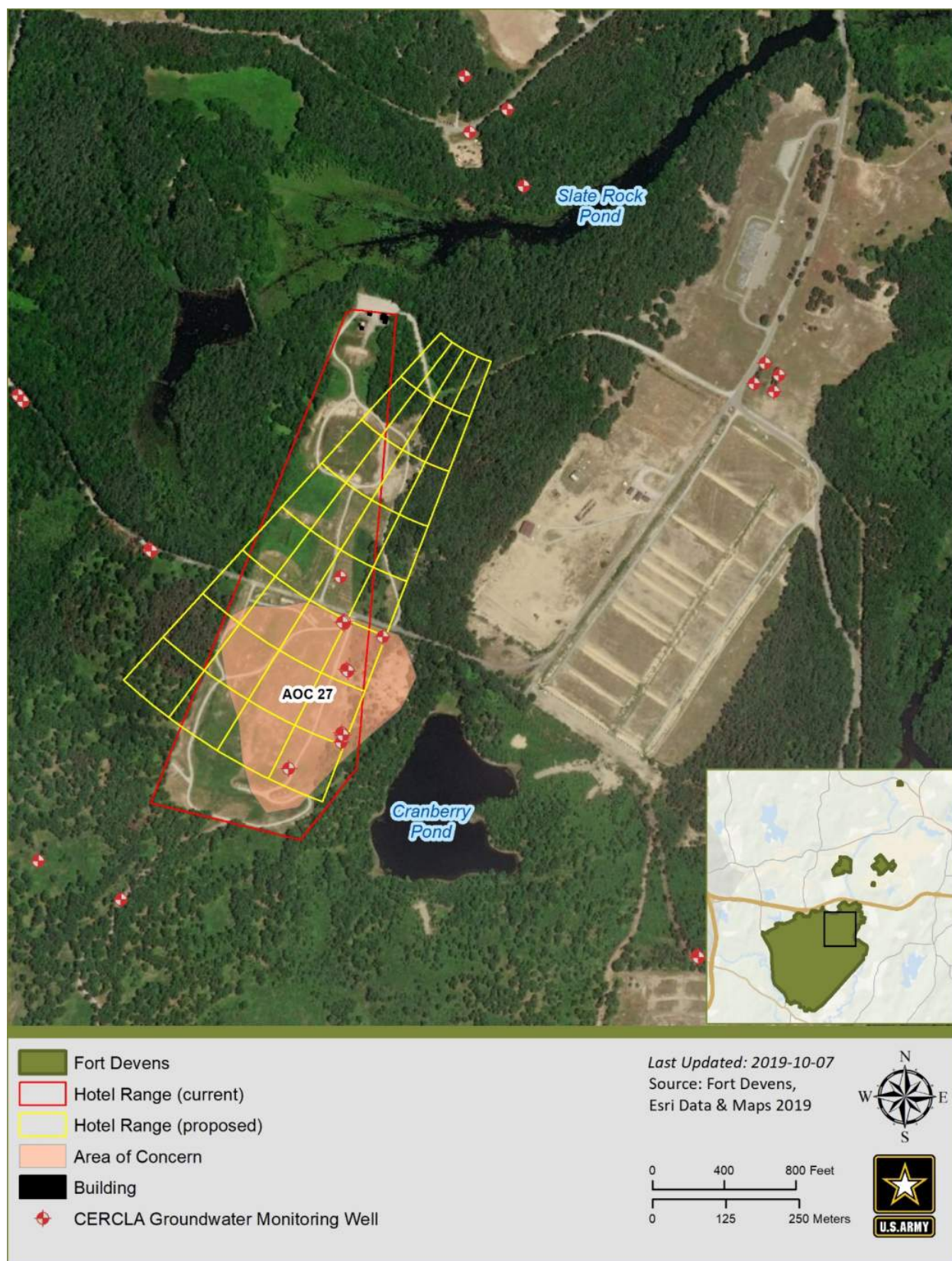
The proposed renovated range would be constructed approximately 500 feet east of the current range, with the firing lines reoriented so that the surface danger zone is entirely within Fort Devens property (Figure 2-1). The range would remain a light multipurpose machine gun range, with firing lanes extending to 800 meters and standard center lane targets located at 100 meters, 200 meters, and 300 meters. Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army TC 28-8 standards. The ROCA facilities at the current range would be demolished, and new ROCA facilities would be built at the renovated range. These facilities would include a control tower, classroom building (800 square feet), operations and storage building (800 square feet), covered bleachers, covered mess (800 square feet), and ammunition breakdown building (185 square feet). Facilities would be designed in accordance with Department of Defense's (DoD) Unified Facilities Criteria (UFC) 1-200-02.

Grading of the renovated range footprint would be needed to maintain line of sight for personnel using the range. In addition, clearing of forested area would be required for the renovated range in order to provide line of sight for the firing lanes. A new gravel service road would be added to provide access to the new firing lines, as well as a gravel parking area for 20 vehicles. The service road and parking at the existing firing line would remain in place, but the operations at the range (frequency, duration, caliber) are not expected to change under the Proposed Action.

Much of the proposed range footprint would be within the South Post Impact Area (SPIA), which is regulated as a Superfund site due to the presence of contamination in groundwater. Area of Concern (AOC) 27, which is part of the SPIA and within the boundaries of Hotel Range, is a monitored site where open burning/open detonation of small arms, smoke grenades, and pyrotechnics occurred historically and resulted in site contamination. AOC 27 and current groundwater monitoring wells in the vicinity of Hotel Range are shown in Figure 2-1.

No substantial soil removal would occur within the AOC 27 boundaries, but tree clearing would occur and would involve stump removal and regrading of the soil to remain consistent with the existing landscape of the renovated range.

Figure 2-1. Current and Proposed Hotel Range Configuration



Construction of the new access road would require fill within a potentially jurisdictional wetland. This would be unavoidable as a matter of safety, so that the roadway would not fall within the range's surface danger zone, and to avoid direct impacts on the wetland associated with Slate Rock Pond to the north of Hotel Range. For any discharge of fill within jurisdictional wetlands under the Proposed Action, the Army would obtain all permits required in accordance with Section 404 of the Clean Water Act, and would mitigate impacts, if required under this permitting.

The range would be surveyed and cleared of unexploded ordnance (UXO) that may be present from historic use of the range. This clearing is a safety requirement and must be completed prior to surveying, designs, and range renovation construction.

2.2 Criteria for Evaluating Alternatives

NEPA, CEQ, and Army implementing regulations provide guidance on the consideration of alternatives to a federally proposed action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable while meeting the project purpose and need require further evaluation. Potential alternatives that meet the purpose and need must satisfy the following screening criteria:

- The surface danger zone must be entirely within the Fort Devens perimeter.
- The range and its facilities must meet Army training requirements outlined under TC 28-8.
- The range should utilize the existing footprint and infrastructure to the extent possible to minimize potential land use conflicts and adverse impacts on wildlife.
- The grading of soils should be limited to minimize impacts to the extent possible on surface water and groundwater flow in the SPIA.
- Potential impacts on wetlands should be minimized to the extent possible.

2.3 Alternatives Carried forward for Analysis

Various alternatives were evaluated against the screening factors. Based on the screening criteria and meeting the purpose and need for the Proposed Action, two action alternatives were identified and will be analyzed within this EA.

2.3.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Under Alternative 1, the multipurpose machine gun range would be built on the footprint identified by the Army as shown and described under Section 2.1. The new orientation would move the surface danger zone associated with the range to be entirely within the boundaries of South Post. Alternative 1 would consist of a four-lane range with firing lanes extending out to 800 meters from the firing line (Figure 2-2). Stationary and moving targets would be located 100 meters, 200 meters, and 300 meters down the range. Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army TC 28-8 standards. The firing positions would require an increase in elevation in order to maintain line of sight down the range. To accomplish this, fill dirt would be used to raise the elevation to approximately 250 feet above mean sea level, and a sheet pile retaining wall would be installed to the north of the firing line to contain the soil and reduce erosion and sedimentation impacts on the wetlands to the north of the renovated firing line (Figure 2-3).

Figure 2-2. Alternative 1 Hotel Range, Full View

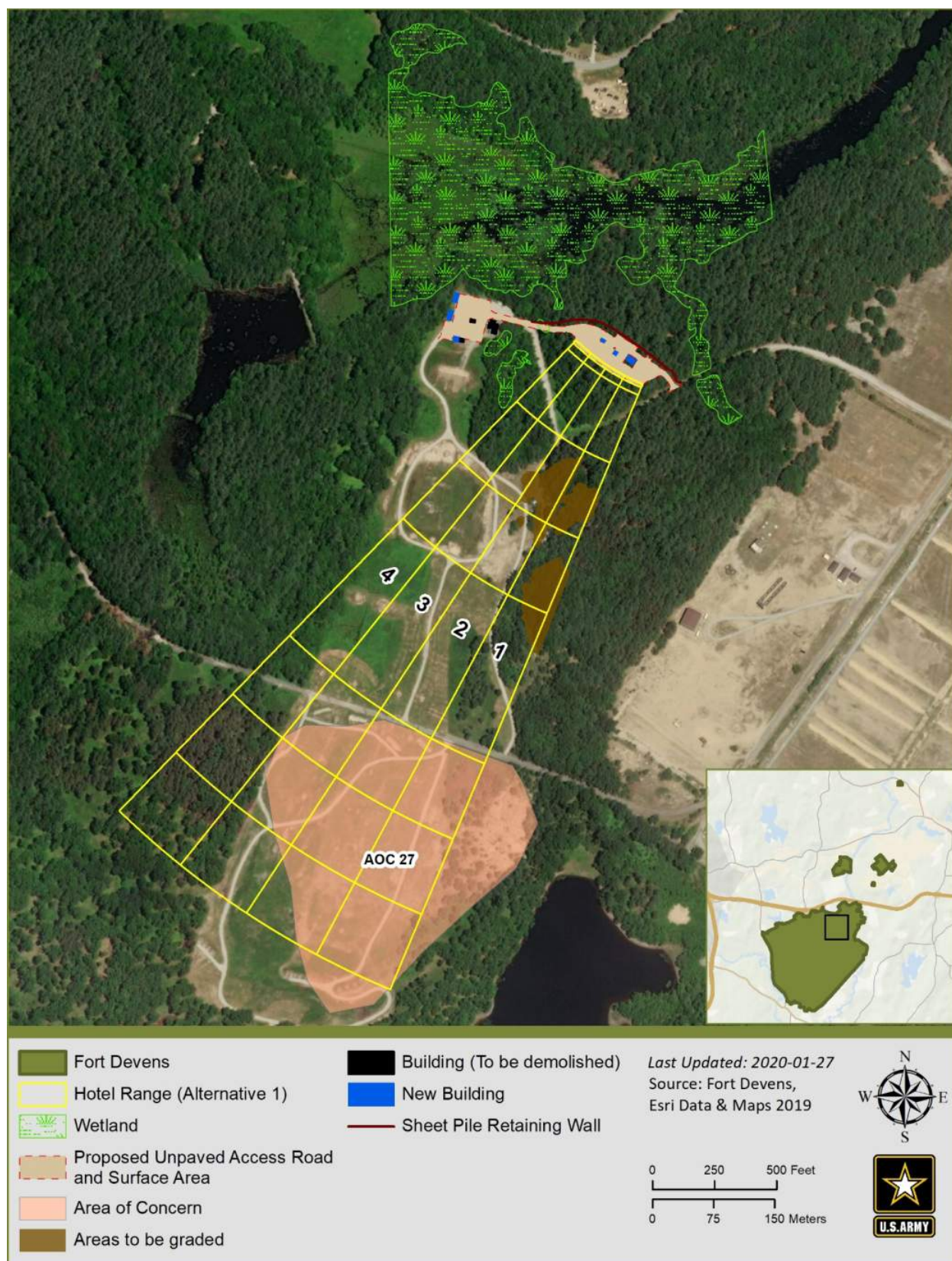


Figure 2-3. Alternative 1 Hotel Range, Firing Line View



The sheet pile retaining wall would vary in height between 6 and 8 feet, dependent on the existing topography of the site and the required elevation for line of sight. The renovated range under Alternative 1 would encompass approximately 49.3 acres.

In order to provide the line of sight for the length of the range, the forested area within the range boundaries would be cleared, and soil would be graded to a consistent height for the length of the range. All trees would be cleared within the proposed renovated range footprint, an estimated 18 acres of forested area. Considerable grading would occur along the eastern boundary of the proposed renovated range, resulting in approximately 30,000 cubic yards of soil to be cut. The excavation areas are depicted in Figure 2-2. Relative to AOC 27, the proposed grading would not affect the surface water runoff on or near the area, and stormwater would be expected to continue to run in the northeast direction toward Slate Rock Pond. There would not be any drainage ponds near AOC 27 that could increase groundwater intrusion.

None of the cut soil would be removed from the range; the excavated soil would be moved to the new firing line area in order to elevate the firing positions to the necessary line-of-sight position. A new gravel road for accessing the range would be built north of the firing positions. The ROCA facilities at the current range would be demolished, and new ROCA facilities would be built at the renovated range. These facilities would include a control tower, classroom building, operations and storage building, covered bleachers, covered mess, and ammunition breakdown building as described under Section 2.1. Facilities would be designed in accordance with DoD's UFC 1-200-02.

The Army has identified Alternative 1 as the Preferred Alternative that best meets the screening criteria, the project purpose and need, and minimizes environmental impacts.

2.3.2 Alternative 2: Five-Lane Range

Under Alternative 2, the range would be constructed in the same location and orientation as under Alternative 1 but would include a fifth firing lane (shown in Figure 2-4). The new orientation would move the surface danger zone associated with the range to be entirely within the boundaries of South Post. The multipurpose machine gun firing range would consist of five lanes extending out to 800 meters from the firing line with stationary and moving targets located 100 meters, 200 meters, and 300 meters down the range. Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army TC 28-8 standards. The firing positions would require an increase in elevation in order to maintain line of sight down the range. To accomplish this, Alternative 2 would create a berm to an elevation of approximately 250 feet above mean sea level. The renovated range under Alternative 2 would encompass approximately 61.4 acres. The area of disturbance under Alternative 2 would be larger than Alternative 1 from the additional firing lane and the construction of the berm, and there would be additional impacts on wetlands (Figure 2-5).

In order to provide the line of sight for the length of the range, the forested area within the range boundaries would need to be cleared and soil would be graded to a consistent height for the length of the range. All trees within the proposed renovated range footprint would be cleared, an estimated 28 acres of forested area. As with Alternative 1, approximately 30,000 cubic yards of soil grading would occur along the eastern boundary of the proposed renovated range. The excavation areas are depicted in Figure 2-4.

Figure 2-4. Alternative 2 Hotel Range, Full View

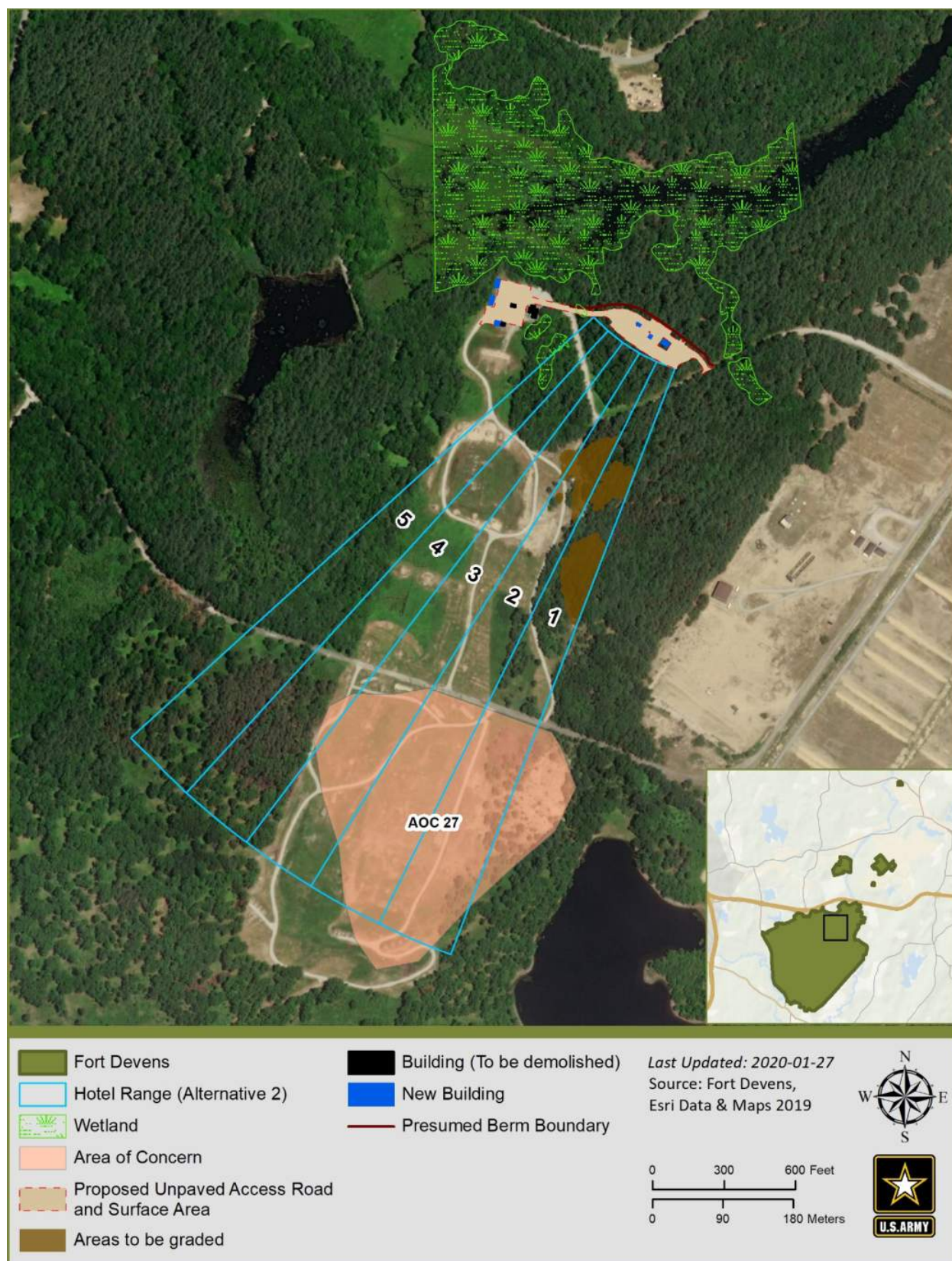
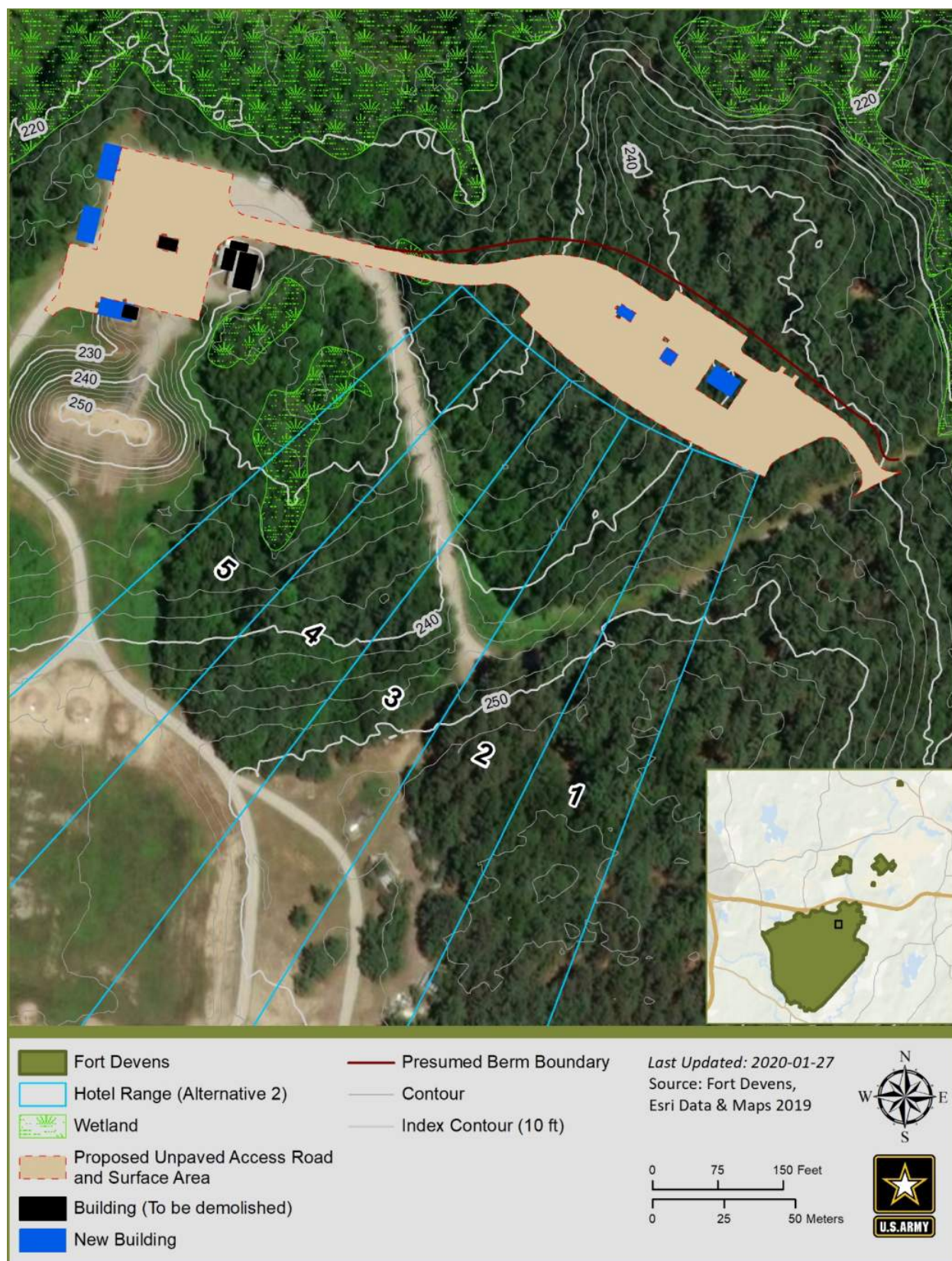


Figure 2-5. Alternative 2 Hotel Range, Firing Line View



None of the cut soil would be removed from the range; the excavated soil would be moved to the new firing line area, where it would be built into a berm to elevate the firing positions to the necessary height for line of sight. A new gravel road for accessing the renovated range would be built north of the firing positions. The ROCA facilities at the current range would be demolished, and new ROCA facilities would be constructed at the renovated range. These facilities would include a control tower, classroom building, operations and storage building, covered bleachers, covered mess, and ammunition breakdown building as described in Section 2.1. Facilities would be designed in accordance with DoD's UFC 1-200-02.

2.3.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The surface danger zone would continue to extend outside the Fort Devens boundaries. The range would continue to operate with outdated facilities and targetry that do not comply with current Army training standards. The No Action Alternative would not meet the purpose of, and need for, the Proposed Action; however, the No Action Alternative is carried forward for analysis in this EA to serve as a baseline against which the effects of the action alternatives can be evaluated.

2.4 Alternatives Considered but not Carried Forward

The following alternatives were considered, but not carried forward for detailed analysis in this EA as they did not meet the project's purpose and need, nor satisfy the reasonable alternative screening factors presented in Section 2.2. Therefore, only Alternative 1, Alternative 2, and the No Action Alternative are evaluated in this EA.

2.4.1 Renovation of Current Hotel Range Alternative

This alternative consists of renovating the existing range to modernize it and extend the life of the facilities. However, due to the current layout of the range, it cannot be renovated to provide the required width for vehicle firing positions, nor the ROCA facilities as warranted by TC 28-8. In addition, the surface danger zone of the current Hotel Range extends beyond Fort Devens property, so this would not satisfy the criteria that the surface danger zone be within Army property boundaries. For these reasons, this alternative was considered but is not carried forward for detailed analysis in this EA.

2.4.2 Renovation and New Construction Alternative

Under this alternative, the current range would be renovated to modernize it, and new construction of ROCA facilities would occur. However, due to the current layout of the range, it cannot be renovated to provide the required width for vehicle firing positions, as warranted by TC 28-8. In addition, the surface danger zone of the current Hotel Range extends beyond Fort Devens property, so this alternative would not satisfy the criteria that the surface danger zone be entirely within Army property boundaries. For these reasons, this alternative was considered but is not carried forward for detailed analysis in this EA.

2.4.3 Northern Alignment Alternative

Under this alternative, the firing line would be moved further north from the existing firing line, to the north of Slate Rock Pond and its associated wetlands. This alternative would involve firing over an existing wetland, and the 200-meter targets would need to be eliminated due to encroachment on the wetlands. This would not meet the current Army training standards

TC 28-8 and could result in ammunition directly entering the wetland. As a result, this alternative was considered but is not carried forward for detailed analysis in this EA.

2.4.4 Location Change Alternative

This alternative consists of moving the multipurpose machine gun range onto a different range location on South Post. Hotel Range currently provides range training for approximately 1,800 soldiers annually. Altering another existing range and increasing the throughput at another range would create delays in range time available to personnel and limit the training experience needed. This alternative would not satisfy the project's purpose and need. As a result, this alternative was considered but is not carried forward for detailed analysis in this EA.

2.4.5 Land Acquisition Alternative

Under this alternative, Fort Devens would maintain the current range configuration and acquire the property that is under the surface danger zone from the Town of Lancaster and the Commonwealth of Massachusetts. A small portion of the surface danger zone extends beyond the Fort Devens property over the Town of Lancaster and the state-owned Bolton Flats Wildlife Management Area. While acquiring the property would satisfy the requirements for the surface danger zone to be contained within Fort Devens boundaries, the surface danger zone would continue to cross a railway and pose potential safety concerns. In addition, the range would continue to operate without meeting the Army training standards under TC 28-8. For this reason, this alternative was considered but is not carried forward for detailed analysis in this EA.

3 Affected Environment and Environmental Consequences

This section describes environmental resources and baseline conditions that could be directly or indirectly affected by the action alternatives or No Action Alternative. The potential effects that could be expected from the implementation of each alternative are analyzed. Detailed analyses of air quality, human health and safety, biological resources, cultural resources, hazardous and toxic materials and waste, geology and soils, and water resources are included in this EA. Cumulative effects that could result from the implementation of the Proposed Action are also analyzed.

As described in Section 1.6, per CEQ and Army regulations, the remaining resource areas were not carried forward for detailed analysis in this EA. The resource areas, as discussed in the following paragraphs, were not analyzed in detail because there would be no potential for direct, indirect, or cumulative impacts from implementation of the Proposed Action, or the impacts were determined to be negligible.

Energy and Infrastructure – Construction under the Proposed Action could result in intermittent disruptions of local utilities on South Post ranges as lines are interconnected with the existing systems, which would be a negligible effect and only last while construction and/or demolition activities are occurring. Existing utility systems (i.e., electric and fiber optic communications lines) are present at Hotel Range to serve the existing ROCA facilities. Required support infrastructure under the Proposed Action would include underground electrical line and underground telecommunications lines, which would connect to existing South Post utilities. The new ROCA facilities at the renovated range would not require water, sewer, or gas infrastructure. There would be no change in personnel under the Proposed Action and no anticipated change in range usage. Consequently, there would be no anticipated increases in electrical, energy, or communications needs under the Proposed Action, nor would the Proposed Action place a strain on the existing infrastructure and capacities at Fort Devens. Therefore, infrastructure is not analyzed in further detail.

Noise – An assessment of noise includes the sources and the associated sensitive noise receptors. The Proposed Action would cause temporary increases in noise levels from construction activities. The ambient noise environment at Fort Devens includes sources such as small-caliber weapons, large-caliber weapons, and ordnance demolition, as well as aircraft overflights from helicopters, fixed-wing aircraft, and unmanned aerial system aircraft. Hotel Range is an active range. There are no sensitive receptors or land uses within South Post; therefore, considering the high levels of existing ambient noise, short-term increases from construction noise would be negligible.

The Fort Devens Installation Compatible Use Zone (ICUZ) Program promotes land use that is compatible with the military noise environment through communication, cooperation, and collaboration between Fort Devens RFTA and the surrounding community. An ICUZ study was developed for Fort Devens in 2019 that assessed the range noise associated with the South Post ranges (U.S. Army Public Health Center, 2019). The ICUZ study calculated noise zones for all small caliber ranges on South Post, of which Hotel Range is a part. Noise Zone III for the small caliber ranges, which includes noise levels that are greater than 104 decibels, extends beyond the South Post eastern boundary into the Oxbow National Wildlife Refuge (up to 150 meters) and the Bolton Flats State Wildlife Management Area (less than 200 meters). Zone III noise does not encompass any noise-sensitive areas off-post. Noise Zone II for the small caliber ranges includes noise levels that are between 87 decibels and 104 decibels, extends beyond the South Post northern boundary less than 300 meters, encompassing some residences. It

also extends beyond the eastern/southeastern boundary approximately 0.6 miles into the Oxbow National Wildlife Reserve and Bolton Flats State Wildlife Management Area. The Proposed Action would not alter the long-term noise levels at the range. The ICUZ study modeled noise predictions for the proposed renovation of Hotel Range and determined that the renovation would have a negligible effect on the current noise zones associated with the small arms ranges at South Post (U.S. Army Public Health Center, 2019). Therefore, noise is not analyzed in detail.

Land Use – South Post provides tactical training at 27 training facilities, including firing and demolition ranges, ammunition supply points, drop zones, training areas, and nonfiring facilities. Operations at the renovated Hotel Range would not substantially change existing land use at Fort Devens. There would be no change in personnel and no direct or indirect impacts on land use off the installation. Therefore, land use is not analyzed in detail.

Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety – The Proposed Action would result in short-term, minor expenditures from construction activities, which would have no long-lasting effects on the local economy. The Proposed Action would not result in increased usage of Hotel Range or result in any additional personnel employed at Fort Devens. The Proposed Action would occur entirely within the boundaries of South Post, and operation of Hotel Range would be consistent with existing operations. Therefore, the Proposed Action has no potential to disproportionately affect minorities or economically disadvantaged populations protected under Executive Order (EO) 12898, *Environmental Justice for Low Income and Minority Populations*. No children under the age of 12 are present within South Post at any time; some minors are present on South Post for Junior Reserve Officer Training Corps programs or other similar youth programs. Minors on South Post are under constant adult supervision and are not permitted in the vicinity of Hotel Range. As such, there would be no health or safety risks that disproportionately affect children protected under EO 13045 *Protection of Children from Environmental Health Risks and Safety Risks*. Therefore, socioeconomics, environmental justice, and children’s environmental health and safety are not analyzed in detail.

Traffic and Transportation – The Proposed Action would result in short-term, localized, increases in construction-related traffic accessing the range vicinity. Large construction equipment would be transported to the site and generally remain for the duration of construction. Others, such as heavy trucks for delivering construction materials or hauling cleared vegetation, would arrive more frequently, perhaps several per day, depending on the intensity of construction and vegetation removal. Construction workers would also arrive to and from South Post each day, adding to the construction-related traffic. The entrance to South Post is located off the Jackson Road exit on Massachusetts Route 2, and any heavy truck traffic increase would likely occur on the highway only and not on municipal roads. Traffic would only occur while construction activities are on-going and would be a negligible contribution to current levels of traffic on Fort Devens and in the vicinity of the installation. Use of the range would not be expected to increase in the long term, so long-term changes in traffic would not be expected. Therefore, traffic and transportation are not analyzed in detail.

Visual Resources – Under the Proposed Action, the footprint of Hotel Range would be reoriented resulting in the removal of 18 to 28 acres of trees depending on the alternative selected. South Post is heavily forested; the loss of 0.6 percent of forested habitat on the installation under Alternative 1 and 1.0 percent of forested habitat under Alternative 2 would have a negligible impact on the visual character of the area. In addition, except for some higher elevations located several miles from South Post, Hotel Range cannot be seen from outside

Fort Devens property. The clearing of one percent or less of forested area would not likely affect any viewsheds from outside Fort Devens boundaries. Therefore, visual impacts are not analyzed in detail.

3.1 Air Quality

3.1.1 Affected Environment

Under the Clean Air Act, the U.S. Environmental Protection Agency (USEPA) established National Ambient Air Quality Standards (NAAQS) for specific pollutants of concern, called criteria pollutants, which are carbon monoxide, sulfur dioxide, nitrogen dioxide, ozone, particulate matter less than or equal to 10 micrometers (PM₁₀), particulate matter less than or equal to 2.5 micrometers (PM_{2.5}), and lead. NAAQS represent the maximum levels of background pollutants that are considered safe, with an adequate margin of safety, to protect public health and welfare.

Hotel Range on South Post is within Worcester County, Massachusetts, which is within the Central Massachusetts Intrastate Air Quality Control Region (40 CFR 81.142). This area is designated as being in attainment for all criteria pollutants. Previously, it was designated as being in moderate nonattainment for the 1997 8-hour ozone standard; however, the 1997 8-hour ozone standard was revoked in 2015 (USEPA, 2019a). Therefore, the General Conformity Rule does not apply to this action because the project would not be within a nonattainment or a maintenance area.

The air quality monitoring stations closest to South Post are in Worcester (i.e., stations 25-027-0015 and 25-027-0023) approximately 20 miles away (MassDEP, 2019a). Worcester is more urban than the project area, so air quality at these stations is more heavily influenced by mobile sources such as cars and aircraft, and point sources such as dry cleaners and consumer products. Furthermore, this area of the country, which includes the New England states and extends as far south as Northern Virginia suburbs, Maryland, and the District of Columbia, is within an ozone transport region, meaning that regional urban influences from well outside Worcester County and the Central Massachusetts Intrastate Air Quality Control Region also contribute substantially to local ozone pollution. Ozone monitors show trends of some exceedances during the ozone season (March 1–September 30), but the number of exceedances has not violated the current 2015 8-hour ozone standard. Trend data between 2009 and 2018 show that sulfur dioxide, nitrogen dioxide, carbon monoxide, PM₁₀, and PM_{2.5} at the Worcester monitoring stations have been consistently below the NAAQS (MassDEP, 2019b).

Sources of air pollution at Fort Devens include facility operations from boilers and backup generators, smoke used as an obscurant in training, occasional wildfires from range use, dust from maneuver activities, prescribed burns for natural resource and land management, and vehicular operations. Fort Devens has a Final Restricted Emissions Status Approval issued by the Massachusetts Department of Environmental Protection and is in compliance with all permit requirements (USAG Fort Devens, 2019).

CEQ's NEPA regulations require evaluation of the degree to which a proposed action affects public health (40 CFR 1508.27). Children, elderly people, and people with illnesses are especially sensitive to the effects of air pollutants and considered sensitive receptors for air quality impacts. However, no schools, hospitals, convalescent homes, or residences are present within one mile of Hotel Range (USEPA, 2019b).

3.1.2 Environmental Consequences

3.1.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Alternative 1 would result in short-term, minor air emissions during forest clearing, site grading, and minor construction activities associated with range support structures, access road, and parking. Construction activities would involve a mix of equipment that would vary as the work progressed. Initial phases of construction would be expected to have the most potential for generating emissions—including tailpipe emissions and fugitive dust emissions—as the equipment needed to cut down the forested area, remove trees from the site, and then grade the site to specification for the range would operate the most intensively during these activities. Construction equipment would likely include backhoes, graders, bulldozers, forklifts, and other pieces, which would primarily stay on site until construction is complete, as well as heavy trucks regularly delivering supplies and removing trees and other construction waste. Construction workers would also access the site for the duration of active construction.

Tree removal and site work across 18 acres under Alternative 1 would generate criteria pollutant emissions. In particular, fugitive dust (i.e., PM₁₀ and PM_{2.5}) would be produced during earth disturbance, and combustion of fuel from construction equipment would generate nitrogen oxides, which are precursors of ozone. Construction best management practices (BMPs) for construction sites would be used, including site-specific measures to minimize fugitive dust. Construction emissions would be localized to the construction site and immediately surrounding areas and last only while equipment is being operated. Construction emissions would not be expected to cause or contribute to NAAQS violations, and no sensitive receptors for air quality are near the Alternative 1 site. Implementation of Alternative 1 would have a negligible effect on air quality in the area. Existing air quality in and around South Post is generally good, as evidenced by its status as an attainment area.

No changes in use of the range would be expected. Therefore, long-term, continued use of the range would not be expected to change air emissions. Minor, localized fugitive dust emissions from use of the gravel access road and parking lot, vehicle emissions from vehicles accessing the range, occasional wildfires from range use, and smoke or other pollutants from weapons firing would continue to occur at essentially the same levels as under the No Action Alternative.

3.1.2.2 Alternative 2: Five-Lane Range

Alternative 2 would result in air emissions similar to Alternative 1, but with slightly higher short-term emissions because tree removal and site grading would occur over a larger area (28 acres of tree clearing and grading under Alternative 2, compared with 18 acres under Alternative 1). However, the kinds of equipment and general construction operations would be similar. Construction BMPs for construction sites would be used, including site-specific measures to minimize fugitive dust. Construction emissions would be localized to the construction site and immediately surrounding areas and last only while equipment is being operated. Construction emissions would not be expected to cause or contribute to NAAQS violations, and no sensitive receptors for air quality are near the Alternative 2 site. Implementation of Alternative 2 would have a negligible effect on air quality in the area. Existing air quality in and around South Post is generally good, as evidenced by its status as an attainment area.

No changes in use of the range would be expected. Therefore, long-term, continued use of the range would not be expected to change air emissions. Minor, localized fugitive dust emissions from use of the gravel access road and parking lot, vehicle emissions from vehicles accessing

the range, occasional wildfires from range use, and smoke or other pollutants from weapons firing would continue to occur at essentially the same levels as under the No Action Alternative.

3.1.2.3 No Action Alternative

The No Action Alternatives would result in continuation of existing conditions in and around South Post. No grading or construction would occur to renovate Hotel Range, and range operations would continue at present levels. There would be no change in local air emissions.

3.2 Human Health and Safety

3.2.1 Affected Environment

Safety is the primary concern for training at Fort Devens. All safety requirements for ranges at Fort Devens are contained within Fort Devens Regulation 350-3, *Sustainable Range Program*, and Army guidelines (Army Regulation 365-10, Department of Army Pamphlet 385-10, Army Regulation 385-63, and Department of Army Pamphlet 385-63). All units training at South Post are required to appoint a designated officer in charge and a range safety officer, who are briefed on range operations, environmental concerns, and safety requirements prior to use of any range or training area. Civilians are not permitted onto South Post tactical training areas unless authorized by Range Control. All ammunition firing within South Post ranges are required to remain within range limit markers and within assigned range lanes (USAG Fort Devens, 2017).

The surface danger zone associated with Hotel Range currently extends beyond the boundaries of South Post over a portion of the Town of Lancaster, a portion of Bolton Flats Wildlife Management Area, and an active railroad. A surface danger zone is a mathematically predicted area extending from a firing point to a distance downrange that provides a conservative contained area for all fragments resulting from the caliber of weapons fired at a range. Surface danger zones do not account for topography or vegetation that may buffer munition trajectory (USACE, 2015). Hotel Range has a safety waiver due to the surface danger zone extending beyond South Post boundaries. There is a topographical high in the center of the South Post impact area that makes the possibility of a bullet traveling the full extent of the surface danger zone extremely unlikely. To comply with the safety waiver, range operating procedures for machine gun firing at the range are followed at all times.

Occasionally, fires occur at Hotel Range from range use. The Fort Devens Range Control Officer is the Wildland Fire Officer for the installation. Use of specific ammunition at Hotel Range, such as tracers, may be denied by Range Control according to fire conditions. Fire conditions, determined in coordination with the Massachusetts State Fire Warden, are posted at the entrance to Range Control, and protocols are in place in event of a fire at a range (USAG Fort Devens, 2017).

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

The renovation of Hotel Range under Alternative 1 would have short-term, minor, adverse impacts and long-term, minor benefits on human health and safety. In the short term, ground disturbance could pose potential hazards to workers on the range during the site preparation phase. As discussed further in Section 3.5, there are some hazardous materials present in the soils at Hotel Range, including spent lead bullets in the soil. Hazards associated with the handling of soils during construction and ground disturbance would be minimized by use of construction BMPs, including the use of appropriate personal protective equipment and site-

specific measures to control fugitive dust. Soils at AOC 27 have tested below USEPA screening thresholds, which indicates that soil contaminants do not pose increased risk to human health (USEPA, 1996).

The range would be surveyed and cleared of UXO that may be present from historic use of the range. This clearing is a safety requirement and must be completed prior to surveying, designs, and range renovation construction. Therefore, there would not be UXO present on the range during Alternative 1 construction.

Under Alternative 1, the surface danger zone for Hotel Range would be reoriented so that no part of the surface danger zone falls outside of South Post boundaries or over a railroad, improving safety. The range would be modernized to comply with current Army safety and training standards and requirements, providing an additional benefit to human health and safety through the reduction of malfunctions in targetry.

There would be no anticipated changes to the frequency of use of the range, or the caliber used at the range; the ammunition currently used at the range is the Enhanced Performance Round that consists of lead-free rounds with a steel tip and copper core. Safety protocols would continue to be followed and use of the range would continue to occur under controlled conditions. The potential for wildfires at the range would not change under Alternative 1. Therefore, implementation of Alternative 1 would not result in significant impacts on human health and safety.

3.2.2.2 Alternative 2: Five-Lane Range

Impacts on human health and safety under Alternative 2 would be similar to what is described for Alternative 1. Short-term, minor, adverse impacts from construction activity and ground disturbance would be expected stemming from the presence of spent lead bullets in the soil. BMPs such as the use of personal protective equipment and reducing fugitive dust would minimize the hazards associated with the handling of these soils during construction activities. Soils at AOC 27 have tested below USEPA screening thresholds, which indicates that soil contaminants do not pose increased risk to human health (USEPA, 1996).

Under Alternative 2, Hotel Range would have one more firing lane than what is currently present, and the surface danger zone associated with the range would be expanded commensurate with the additional firing lane. However, the surface danger zone would remain within South Post boundaries under Alternative 2 and would eliminate the potential for off-base human health and safety risk.

Operations under Alternative 2 would be similar to what is expected under Alternative 1. Consequently, the impacts on human health and safety would be similar to those described under Alternative 1. Usage of the range would continue to occur under all applicable Army and Fort Devens safety regulations. Therefore, implementation of Alternative 2 would not result in significant impacts on human health and safety.

3.2.2.3 No Action Alternative

Under the No Action Alternative, Hotel Range would continue to be used in the current range configuration. The surface danger zone would continue to extend beyond the boundaries of South Post, resulting in continued minor, adverse, impacts on human health and safety. Fort Devens would continue to pursue an annual waiver with the Town of Lancaster and Commonwealth of Massachusetts for operation of the range under this surface danger zone.

The surface danger zone would also continue to cross a railway, posing potential safety concerns.

In addition, the targetry at the range would continue to age, resulting in potential deterioration and the continuance of challenges and delays during training. Hotel Range would not meet Army safety and training standards and requirements, creating potential adverse impacts on human health and safety.

3.3 Biological Resources

3.3.1 Affected Environment

3.3.1.1 Habitat

Fort Devens lies within an ecoregion known as the Northeastern Coastal Zone. Specifically, Fort Devens is situated within the Southern New England Coastal Plains and Hills subregion of this ecoregion. The Northeastern Coastal Zone is typified by landforms such as irregular plains, plains with low to high hills, and open hills. Appalachian oak forest and northeastern oak-pine forest are the natural vegetation types present. Forest types are mainly central hardwoods (oak-hickory), with other transitional hardwoods such as maple-beech-birch, and some elm-ash-red maple and white-red pine. Soils are typically Inceptisols, which have complex and heterogeneous soil patterns (USEPA, 1994).

The majority of the area where the range would be reoriented under the Proposed Action is part of the current Hotel Range footprint. Habitat within the current range consists of a mixture of short grasses and herbaceous forbs such as goldenrod (*Solidago* spp.). Most of the site consists of loamy sand or silt loam soil types that range from excessively drained to poorly drained depending upon proximity to wetlands and other water features (Normandeau Associates, 2018). The forested areas surrounding Hotel Range are dominated by eastern white pine (*Pinus strobus*). Other tree species present include red maple (*Acer rubrum*), scrub pine (*Pinus virginiana*), shagbark hickory (*Carya ovata*), red oak (*Quercus rubra*), paper birch (*Betula papyrifera*), and sweet birch (*Betula lenta*).

A wetland survey was done in 2018 in the vicinity of Hotel Range and the Proposed Action. The survey delineated the jurisdictional boundaries of the wetlands but has not yet been reviewed by the U.S. Army Corps of Engineers (USACE) for a jurisdictional determination. In the vicinity of Hotel Range and the Proposed Action, there are four small wetlands located near the edge of the proposed firing range fan and adjacent to the proposed berm (Wetlands 1, 2, 4, and 5). Slightly further to the north of Hotel Range, there is a large wetland associated with Slate Rock Pond (Wetland 3). Detailed descriptions of the wetlands in the vicinity of Hotel Range are in Section 3.7.1. There are a number of wetlands present on South Post, and South Post itself is located just west of the Oxbow National Wildlife Refuge, which contains a large wetland complex, in addition to forested uplands, old fields, oxbow ponds, and the Nashua River (USFWS, 2017).

One of the wetlands, Wetland 4, meets the applicable criteria for designation as a vernal pool (Oxbow Associates, 2019). The pool is surrounded by tall stands of white pine to the southeast, east, and northwest. These stands block a great deal of spring sunlight from reaching the pool, which likely causes the pool to remain frozen for longer than normal, thereby rendering it unavailable for breeding by the normal or early waves of amphibians. Surveys revealed the presence of egg masses for two obligate vernal pool species: seven spotted salamander (*Ambystoma maculatum*) egg masses and 32 wood frog (*Lithobates sylvatica*) egg masses. Both of these species are fairly common, and neither has federal or state protective status

(IUCN SSC Amphibian Specialist Group, 2015a; IUCN SSC Amphibian Specialist Group, 2015b). The vernal pool is further discussed in Section 3.7.1.

3.3.1.2 Threatened and Endangered Species

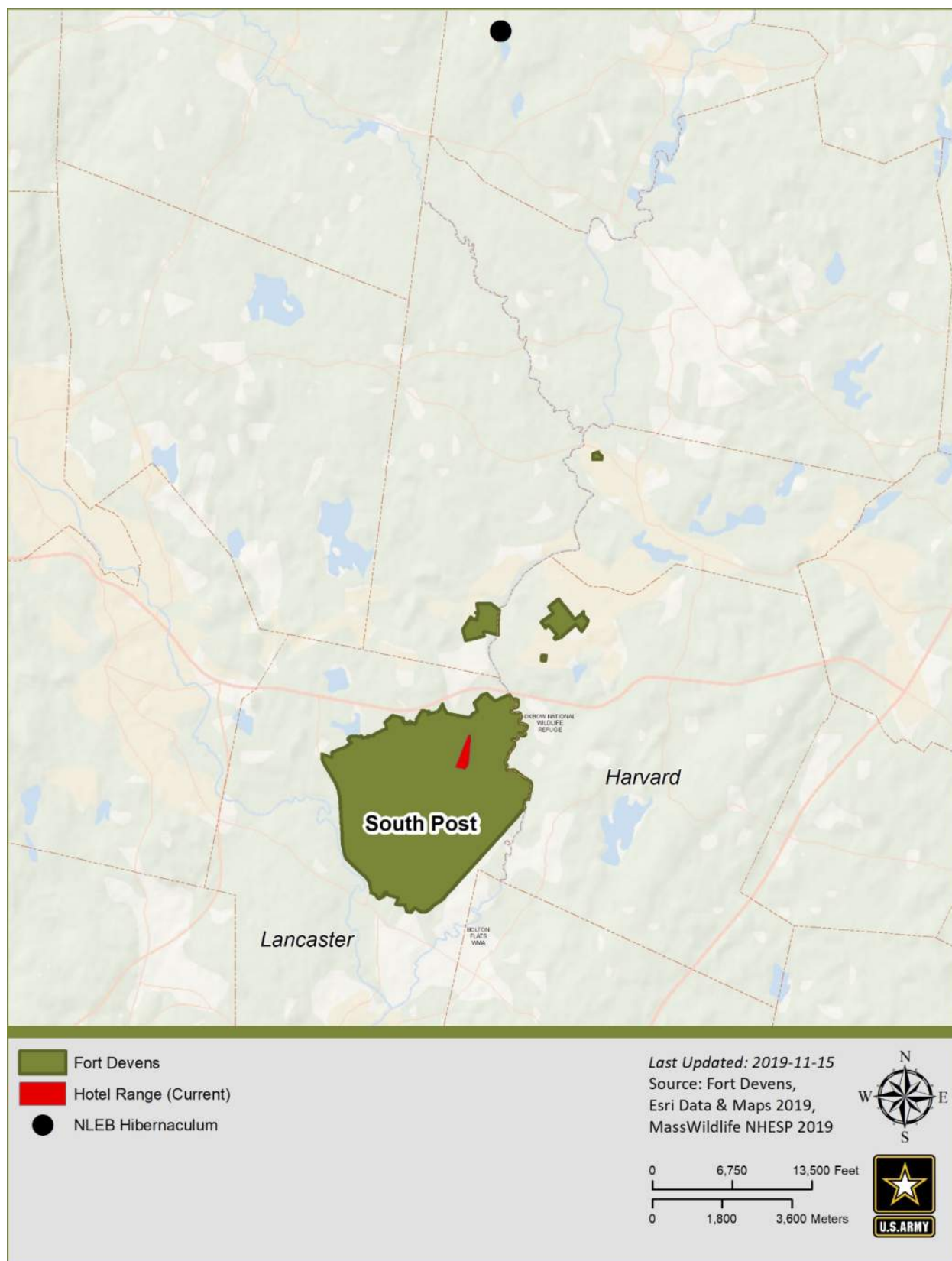
The Endangered Species Act of 1973 (ESA) provides a program for the protection and conservation of threatened and endangered (T&E) plants and animals, and their habitat. The lead agency for implementation of the Endangered Species Act is the U.S. Fish and Wildlife Service (USFWS). The ESA requires federal agencies, in consultation with the USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat. The Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife is responsible for the conservation and protection of non-game species within the state (MassWildlife, n.d. a).

A list of federally protected species potentially present within the project area was obtained from the USFWS through their IPaC tool (see Appendix A) (USFWS, 2019a). An updated list of species present on South Post listed at the state level as threatened, endangered, rare (includes multiple designation), and species proposed for listing are included in the Fort Devens Integrated Natural Resources Management Plan (INRMP) (USAG Fort Devens, 2019). Species included in both the federal and state list were combined into a table, included in Appendix B, which assesses the habitat needs and potential presence in the vicinity of Hotel Range.

The northern long-eared bat (NLEB; *Myotis septentrionalis*) is the only federally threatened species (vegetation or wildlife) that has the potential to be present within the project area. Additional species that have the potential to be present include four species under review for listing under the ESA and one federal trust species protected under the Bald and Golden Eagle Protection Act (BGEPA). At the state level, there are six state endangered and four state threatened species that are potentially present, as well as additional species that have a lower protection status. The northern long-eared bat is also listed as state endangered, in addition to having federal protection status. The state threatened Blanding's turtle is under federal review for listing under the ESA, and the three remaining state threatened species are also protected under the Migratory Bird Treaty Act (MBTA).

The northern long-eared bat is listed as a federally threatened species due to population declines in recent years caused largely by white-nose syndrome (*Pseudogymnoascus destructans*) disease (White-Nose Syndrome Response Team, n.d.). In the winter, this species hibernates in caves and mines, referred to as hibernacula. In the summer, it roosts underneath tree bark or in cavities or crevices of live and dead trees (snags) (USFWS, 2015a). A recent habitat resource assessment did not indicate the presence of winter hibernacula, but there are some snags and tree species such as shagbark hickory that may provide roosting habitat for bats during the summer season (Richardson, 2019). The nearest winter hibernaculum is just over 10 miles away (Figure 3-1), and there are no documented maternity colony roost trees within 60 miles (MassWildlife, 2019). While the species is potentially present due to the presence of suitable summer habitat and proximity to a hibernaculum, the probability of presence in any given location is relatively low due to the low population numbers for this species.

Figure 3-1. Northern Long-Eared Bat Hibernaculum Location



The spotted turtle (*Clemys guttata*), Blanding's turtle (*Emydoidea blandingii*), and wood turtle (*Glyptemys insculpta*) are all under review for listing under the ESA. Blanding's turtle is the only one of these species that is currently listed at the state level; it is listed as threatened. Each of these species has been confirmed to be present on Fort Devens in the past (USAG Fort Devens, 2019). The spotted turtle and Blanding's turtle have similar habitat preferences: they prefer vernal pools, wetlands, and pond habitat, and they nest in open areas with well-drained loamy or sandy soils (MassWildlife, 2015a; MassWildlife, 2015b). Due to these habitat preferences, these species are potentially present in the various wetlands surrounding Hotel Range, nearby Slate Rock Pond, and the project area. The wood turtle prefers slow-moving mid-sized perennial streams with sandy bottoms for overwintering, nests in sand and gravel areas near the stream edge, and spends much of the summer in forests, fields, and wetlands within a half mile of the wintering stream habitat (MassWildlife, 2015c). Stream 2 is the only perennial stream identified near the project area, and this stream potentially serves as habitat for the wood turtle. If present, this species could use the surrounding forests and a portion of the existing range habitat.

The monarch butterfly (*Danaus plexippus*) is currently under review for listing under the ESA. Ideal habitat for this species is composed of open fields supporting flowering herbaceous plants with a mix of flowers with different bloom times to provide a stable food source for this species throughout its lifecycle. In addition, the presence of native milkweed plant species is necessary to provide food for monarch caterpillars, thereby allowing reproduction (Monarch Joint Venture, n.d.). The open habitat in Hotel Range is frequently mowed and supports a limited number of wildflowers and flowering weedy species that could provide a food source for migrating monarchs. On a site visit in September 2019, no milkweed species were observed, and it is unlikely that the site would provide abundant habitat for this species due to frequent mowing.

The bald eagle (*Haliaeetus leucocephalus*) is protected under the federal BGEPA and the MBTA. It is also listed as a threatened species in Massachusetts. Bald eagles prefer coastal areas or larger inland waters that provide an adequate supply of moderate- to large-sized fish, an unimpeded view, and freedom from human disturbance (MassWildlife, 2016). Due to the relatively small size of Slate Rock Pond, there is only a small potential that the bald eagle uses this habitat for foraging or nesting, while it is more likely that the species occasionally flies over the Hotel Range area due to its proximity to known nesting locations to the northwest at Lake Shirley and to the south at Wachusett Reservoir (Barnes, 2015). It has been observed elsewhere on the installation previously (USAG Fort Devens, 2019).

3.3.1.3 Migratory Birds

The MBTA prohibits destruction or disturbance of nesting activities or nests that results in loss of eggs or young. All wild birds are protected under the MBTA, except nonnative species introduced by humans and a few families not mentioned in the underlying treaties. The USFWS implements the MBTA.

An IPaC Trust Resources Report obtained from the USFWS for the Proposed Action site notes the potential presence of a number of migratory bird species that are also considered to be birds of conservation concern (BCC), including Nelson's sparrow (*Ammodramus nelsoni*), dunlin (*Calidris alpina arctica*), semipalmated sandpiper (*Calidris pusilla*), Canada warbler (*Cardellina canadensis*), evening grosbeak (*Coccothraustes vespertinus*), black-billed cuckoo (*Coccyzus erythrophthalmus*), prairie warbler (*Dendroica discolor*), bobolink (*Dolichonyx oryzivorus*), rusty blackbird (*Euphagus carolinus*), wood thrush (*Hylocichla ustulata*), short-billed dowitcher (*Limnodromus griseus*), red-headed woodpecker (*Melanerpes erythrocephalus*), lesser yellowlegs (*Tringa flavipes*), and willet (*Tringa semipalmata*) (USFWS, 2019a). Birds with BCC

status are those that are likely to become candidates for listing under the ESA without further conservation action (USFWS, 2015b). Those species that also have state or federal threatened or endangered status in addition to being covered under the MBTA are noted in the table in Appendix B, and their potential for presence within the project area is assessed in Section 3.3.1.2. In addition, the Fort Devens INRMP notes that the snowy owl (*Bubo scandiacus*) and buff-breasted sandpiper (*Calidris subruficollis*), which are also covered under the MBTA and are BCCs, may visit the installation (USAG Fort Devens, 2019). Of these species, two have the potential to use the open range habitat: one during spring and fall migration (buff-breasted sandpiper) and one during the winter (snowy owl) (The Cornell Lab of Ornithology, 2017; The Cornell Lab of Ornithology, 2015). One species, the rusty blackbird, has the potential to use the forested area surrounding Slate Rock Pond, most likely during migration but potentially during the summer breeding season as well (MassAudubon, n.d. a). Four species have the potential to use the forested habitat surrounding the range. The evening grosbeak is a potential winter visitor, while the Canada warbler, black-billed cuckoo, and wood thrush are all potential residents during the summer breeding season (The Cornell Lab of Ornithology, 2001; Audubon; MassAudubon, n.d. b; The Cornell Lab of Ornithology, 2009; The Cornell Lab of Ornithology, 2018; MassAudubon, n.d. c; MassAudubon, n.d. d).

Bald eagles and golden eagles (*Aquila chrysaetos*) both receive additional protection under BGEPA. BGEPA prohibits the taking, possession, or commerce of these bird species. Potential foraging habitat for the bald eagle exists just outside of the project area at Slate Rock Pond. The bald eagle is addressed in the table in Appendix B. The presence of a golden eagle is highly unlikely, as it is only sporadically spotted in Massachusetts as a rare fall migrant or winter visitor (MassAudubon, n.d. e).

3.3.2 Environmental Consequences

Table 3-1 summarizes potential short- and long-term impacts resulting from each alternative.

3.3.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Alternative 1 would result in negligible-to-moderate, short-term impacts and negligible-to-minor long-term impacts on species, if present. Under Alternative 1, construction activities would include clearing 18 acres of trees, constructing new facilities and an access road, and substantial grading in two areas at the Alternative 1 site (totaling an estimated 30,000 cubic yards of soil). The removed soil would be used to elevate the new firing position to be constructed under Alternative 1. This firing position would be built up on a berm with a sheet pile wall boundary to the north.

Impacts on species that only use the existing open range habitat would be limited to minor or negligible short- and long-term impacts. Most of this open habitat would not be affected aside from short-term grading of the range during renovation construction. Species that require open habitat may benefit from this project over the long term, as additional open field habitat would be created at Hotel Range.

Impacts on species that potentially use the woodlands and vernal pool habitat surrounding the existing range would be minor to moderate over the short term and minor over the long term due to disturbance during forest clearing activities and the permanent loss of 18 acres of forested habitat, which comprises only 0.62 percent of the forested habitat on Fort Devens (2,908 acres), and the permanent loss of the 0.03-acre Wetland 4 vernal pool.

Table 3-1. Environmental Consequences Analysis for Potentially Present Species

Common Name	Scientific Name	Federal Status	State Status	Alternative 1 Short-Term Impacts	Alternative 1 Long-Term Impacts	Alternative 2 Short-Term Impacts	Alternative 2 Long-Term Impacts
Plants							
Midland sedge	<i>Carex mesochorea</i>	None	SE	Negligible	Negligible	Negligible	Negligible
Houghton's flatsedge	<i>Cyperus houghtonii</i>	None	SE	Minor	Negligible	Minor	Negligible
Early wild rye	<i>Elymus macgregorii</i>	None	Watch List	Moderate	Minor	Moderate	Minor
Bicknell's crane's bill	<i>Geranium bicknellii</i>	None	Watch List	Negligible	Negligible	Negligible	Negligible
New England blazing star	<i>Liatris scariosa</i> var. <i>novaeangliae</i>	None	SC	Negligible	Negligible	Negligible	Negligible
Wild lupine	<i>Lupinus perennis</i>	None	Watch List	Negligible	Negligible	Negligible	Negligible
Climbing fern	<i>Lygodium palmatum</i>	None	SC	Moderate	Minor	Moderate	Minor
Wild senna	<i>Senna hebecarpa</i>	None	SE	Negligible	Negligible	Negligible	Negligible
Reptiles							
Spotted turtle	<i>Clemys guttata</i>	Under Review	At Risk	Minor	Negligible	Moderate	Minor
Blanding's turtle	<i>Emydoidea blandingii</i>	Under Review	ST	Minor	Negligible	Moderate	Minor
Wood turtle	<i>Glyptemys insculpta</i>	Under Review	Watch List	Moderate	Minor	Moderate	Minor
Eastern box turtle	<i>Terrapene carolina</i>	None	SC	Moderate	Minor	Moderate	Minor
Amphibians							
Blue spotted salamander	<i>Ambystoma laterale</i>	None	SC	Moderate	Minor	Moderate	Minor
Northern leopard frog	<i>Lithobates pipiens</i>	None	SGCN	Moderate	Minor	Moderate	Minor

Common Name	Scientific Name	Federal Status	State Status	Alternative 1 Short-Term Impacts	Alternative 1 Long-Term Impacts	Alternative 2 Short-Term Impacts	Alternative 2 Long-Term Impacts
Birds							
Eastern Whippoorwill	<i>Antrostomus vociferus</i>	None	SC	Minor	Negligible	Minor	Negligible
Upland sandpiper	<i>Bartramia longicauda</i>	MBTA	SE	Minor	Negligible	Minor	Negligible
Northern harrier	<i>Circus cyaneus</i>	MBTA	ST	Negligible	Negligible	Negligible	Negligible
Blackpoll warbler	<i>Dendroica striata</i>	MBTA	SC	Minor	Negligible	Minor	Negligible
Peregrine falcon	<i>Falco peregrinus</i>	MBTA	ST	Negligible	Negligible	Negligible	Negligible
Common loon	<i>Gavia immer</i>	MBTA	SC	Minor	Negligible	Minor	Negligible
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA, MBTA	ST	Negligible	Negligible	Negligible	Negligible
Mammals							
Northern long-eared bat	<i>Myotis septentrionalis</i>	FT	SE	Minor	Negligible	Minor	Negligible
Water shrew	<i>Sorex palustris</i>	None	SC	Minor	Negligible	Moderate	Minor
Invertebrates							
Monarch butterfly	<i>Danaus plexippus</i>	Under Review	None	Minor	Negligible	Minor	Negligible
Twilight moth	<i>Lycia rachelae</i>	None	SE	Minor	Negligible	Minor	Negligible
Pink sallow moth	<i>Psetraglaea carnososa</i>	None	SC	Negligible	Negligible	Negligible	Negligible

Notes: FT = federally threatened; MBTA = Migratory Bird Treaty Act; BGEPA = Bald and Golden Eagle Protection Act; SE = state endangered; ST = state threatened; SC = Special Concern; SGCN = Species of Greatest Conservation Need

As noted in Section 3.3.1.2, there is potential summer habitat for the northern long-eared bat within the project area. The greatest potential for impacts on this species stems from the clearing of 18 acres of trees. In order to minimize potential impacts and fulfill project-specific Section 7 responsibilities under the ESA, the installation would follow voluntary conservation measures developed by the USFWS by conducting tree removal activities outside of the northern long-eared bat active season (April 1 to October 31). These voluntary conservation measures are provided by the USFWS as a part of the Optional Framework to Streamline Section 7 Consultation for the Northern Long-Eared Bat which, if followed, allows Fort Devens to rely upon the finding of the programmatic biological opinion for the final 4(d) rule to fulfill their project-specific Section 7 responsibilities (USFWS, 2019b). Following these conservation measures, along with the IPaC process, which involves completing a determination key for the northern long-eared bat, allows the installation to avoid formal Section 7 consultation. Since the species would not be present during forestry activities, anticipated short-term impacts are minor. In terms of overall availability of habitat for this species, the long-term impacts resulting from the loss of 18 acres of forest are anticipated to be negligible. The Army completed the IPaC determination key, which concluded that the action is consistent with the activities analyzed within the programmatic biological opinion for the northern long-eared bat and that the action may affect the northern long-eared bat but is not prohibited under the Section 4(d) rule. All consultation is included in Appendix A.

Several turtle species are potentially present, including the spotted turtle, Blanding's turtle, wood turtle, and the eastern box turtle. Two amphibian species are also potentially present: the blue spotted salamander and the leopard frog. The water shrew uses habitat that is similar to these reptiles and amphibians as well. All of these species also use upland habitat throughout their lifecycle. In general, those species that use upland habitat to a greater extent or that use it during the winter have the potential to be affected more greatly by the clearing of 18 acres of woodland. Impacts on these species that use the Wetland 4 vernal pool would experience short- and long-term impacts from the filling of the 0.03-acre potentially jurisdictional wetland to accommodate the new access road.

For the turtle species that may hibernate in or adjacent to the wetlands that would be affected by Alternative 1 (spotted turtle, Blanding's turtle, and eastern box turtle), it may be possible to reduce potential impacts by conducting thorough surveys during the summer when these species are active, removing them from the wetland habitat, and installing exclusionary fencing or another barrier that would prevent them from entering this area to hibernate. This technique has been used with some success for highway construction projects (MNR, Pembroke District, 2014; Wetlands Institute, 2019).

The spotted turtle spends most of its time in vernal pool, wetland, and pond habitat, and only ventures into upland habitat to use the open habitat in the existing range for nesting (MassWildlife, 2015a). Alternative 1 would have minor short- and long-term impacts due to the loss of the Wetland 4 vernal pool habitat, which could be minimized by the use of BMPs such as surveys and exclusionary fencing. Minor, short term impacts would also be expected due to potential runoff impacts or noise disturbance from construction equipment.

Blanding's turtle has a similar life history, spending most of its life cycle in vernal pools, marshes, and wetlands. Alternative 1 would have minor, short- and long-term impacts due to the loss of the Wetland 4 vernal pool habitat, which could be minimized by the use of BMPs such as surveys and exclusionary fencing. This species may also venture into the existing open range habitat in order to nest and may pass through the forested upland habitat to travel between wetland habitat. Additionally, this species sometimes uses nearby forested upland habitat during

the summer months for aestivation (MassWildlife, 2015b). Due to the voluntary conservation measures being followed to avoid impacts on the northern long-eared bat (cutting down trees only after October 31 and before April 1), it is not expected that there would be any direct impacts on this species due to forest clearing. Voluntary conservation measures for this species could include restricting the use of motorized vehicles off of established roads or maneuver trails within 300 feet of wetlands, water bodies, or vernal pools to the time period between October 15 and March 15 (Massachusetts Division of Fisheries and Wildlife, 2016).

The wood turtle spends most of its life in large streams, which makes Stream 2 the most likely potential habitat for this species within the project area. This species has been known to range throughout field and forested upland habitat within a half mile range (MassWildlife, 2015c). If present in the upland habitat during the time of construction, moderate, short-term impacts would be anticipated, as this species would be forced to evacuate the area, though it is less likely that direct impacts would occur due to the installation following voluntary conservation measures for the northern long-eared bat. The wood turtle is unlikely to be directly affected from the loss of Wetland 4 under Alternative 1. Other minor, short-term impacts could result from potential runoff or noise disturbance from construction equipment. Only minor, long-term impacts on this species are expected due to a reduction in the availability of upland habitat.

The eastern box turtle is more of a habitat generalist than the other turtle species and can regularly be found near marsh edges, bogs, swales, fens, stream banks, brushy fields, or woodlands (MassWildlife, n.d. b). Alternative 1 would have minor, short- and long-term impacts due to the loss of the Wetland 4 vernal pool habitat, which could be minimized by the use of BMPs such as surveys and exclusionary fencing. Due to potential presence in upland forest habitat, this species could experience moderate, short-term impacts due to habitat loss, but direct impacts on individuals are less likely due to timing restrictions that the installation would be following for the northern long-eared bat. Only minor, long-term impacts are anticipated due to loss of upland forest and vernal pool habitat.

The blue spotted salamander inhabits forested areas near vernal pool or swamp breeding habitat but is often found in forested habitat greater than 100 meters away from this breeding habitat. Winters are spent underground in forested upland habitat (MassWildlife, n.d. b). Due to this lifecycle, moderate, short-term impacts on the species would be possible if the species is present, including direct impacts on individuals hibernating in the upland forest habitat that would be cleared. Minor, long-term impacts would be anticipated due to a loss of upland and vernal pool habitat.

The northern leopard frog spends most of its life near swamps and streams and can equally be found in upland fields, grasslands, wet meadows, and forested areas (MassWildlife, n.d. b). Due to its potential presence in upland habitat, moderate, short-term impacts would be possible due to direct impacts on some individuals. Minor, long-term impacts would be anticipated due to a loss of upland habitat.

The water shrew is potentially present in vernal pools, swamps, or ponds, but prefers swift-moving streams with a rocky bed (MassWildlife, n.d. b; USEPA, n.d. a). As a larger perennial stream, Stream 2 may be the most suitable habitat for this species, though it has a sandy, rather than rocky, substrate. Additionally, the water shrew does not hibernate, which means it would be more likely to be able to avoid direct disturbance from the direct impacts to Wetland 4. As this species is confined largely to the stream corridor, disturbance to nearby upland habitat is expected to only have minor, short-term impacts that could result from noise and vibrations from heavy equipment. Only negligible, long-term impacts are anticipated.

The anticipated impacts on other stream and wetland habitat near the Alternative 1 project footprint are expected to be minimal and would likely only result if erosion control BMPs were to fail. Some of the potential BMPs that could be followed to reduce, minimize, or avoid potential impacts to these species include:

- Instructing contractors on how to identify these species and to be aware of signs that indicate these species inhabit the area. If these species are encountered during construction, all activities would stop, and the Fort Devens Natural Resources Specialist would be contacted immediately.
- Prior to construction activity, all on-site construction personnel could be given species-specific precautionary measures and an environmental briefing regarding BMPs.
- The project boundaries could be demarcated, and the boundaries kept to the smallest area possible.
- Solid waste could be managed so that it is not an attractant to nuisance wildlife.
- Soil erosion and sediment controls would be implemented.

The monarch butterfly potentially uses flowering plants present in the existing range and along the forest edge as a source of nectar during its migration, but it does not appear that milkweed species necessary for reproduction are present. For this reason, short-term impacts would be expected to be only minor and could result from temporary disturbance to flowering plants in the existing range. Long-term impacts would be negligible, if any, and could potentially be beneficial due to the increase in open field habitat.

The bald eagle would potentially experience negligible, short- and long-term impacts, as it may occasionally use Slate Rock Pond for foraging. It is unlikely to use trees along the edge of this pond for nesting, as it is a relatively small body of water. Short-term impacts could result from noise or dust from the construction equipment discouraging use of Slate Rock Pond for foraging, but no long-term impacts are expected.

If present, the common loon and the pink sallow moth would be largely confined to the immediate habitat surrounding Slate Rock Pond. The common loon breeds on quiet, remote freshwater lakes (MassWildlife, n.d. b). If present, it is anticipated that there would be additional short-term, minor impacts on this species resulting from noise and visual disturbance from active construction equipment. Potential long-term impacts, if any, would be negligible. Due to the relatively small size of Slate Rock Pond and the historical use of nearby Hotel Range as a firing range, it is unlikely that this species is present. The pink sallow moth can be found in fire-influenced barrens communities or in acidic bogs and swamps. This species potentially uses the wetlands associated with Slate Rock Pond and would only be likely to experience negligible, short- or long-term impacts resulting from noise or fugitive dust during construction.

The following plant species, if present, are only likely to be found in the open habitat of the existing range: midland sedge, Bicknell's cranesbill, New England blazing star, wild lupine, and wild senna. Due to the limited extent of construction activities that would take place in the existing open range habitat, the short-term and long-term impacts on these species are anticipated to be negligible. Potential short-term impacts could result from fugitive dust or failure of erosion control BMPs.

Houghton's flatsedge, if present, is most likely to be found within the existing range habitat but could also be found in open forest conditions along the forest edge. Due to the limited extent of construction activities that would take place in the existing open range habitat where this species is most likely to be found, the short-term impacts are likely to be minor and could result from potential disturbance during construction activities such as dust or siltation. Long-term impacts on this species are anticipated to be negligible.

Early wild rye and climbing fern, if present, are potentially found within the forested habitat surrounding the existing range. Due to potential presence in forested habitat that would be cleared, it is anticipated that there could be moderate short-term impacts to these species, including the potential loss of individual plants. Long-term impacts on both species are anticipated to be minor and could result from micro-climate changes if the plants are near the new range boundary (these plants would have been in an interior forest setting that would become forest edge).

The eastern whippoorwill, the blackpoll warbler, and the twilight moth are potentially present in the forested habitat surrounding the existing range. If present, these species could experience minor, short-term impacts and negligible, long-term impacts due to the removal of forest habitat surrounding the existing range. Due to voluntary conservation measures for the northern long-eared bat that would be followed, it is not likely that direct impacts would occur on these species, since forest cutting would occur outside of the nesting season. However, there may be some loss of habitat, which could cause minor, short-term and negligible, long-term impacts.

The upland sandpiper may use the open habitat within the existing range. If present, this species could experience minor, short-term impacts due to the presence of heavy equipment nearby, but it is anticipated that long-term impacts on this species would be negligible.

While there is only a small potential that these species use habitat within the project, the northern harrier and peregrine falcon both potentially use the site for foraging or during migration. If present, these species are anticipated to experience only negligible short- and long-term impacts, which could result from the presence of heavy equipment and an active forestry operation. Due to these species' highly mobile nature, it is anticipated that they would be able to easily avoid any disturbance.

3.3.2.2 Alternative 2: Five-Lane Range

Alternative 2 would result in negligible-to-moderate, short-term impacts and negligible-to-minor, long-term impacts on species, if present. Under Alternative 2, construction activities would be similar to those described in Alternative 1 with a larger area of impact to accommodate for an additional firing lane. Under Alternative 2, 28 acres of trees would be cleared (0.96 percent of the forested habitat on Fort Devens), and the same amount of grading would occur as proposed under Alternative 1 (approximately 30,000 cubic yards).

Impacts on several species that may use wetlands, seeps, or adjacent habitat (spotted turtle, Blanding's turtle, wood turtle, eastern box turtle, blue spotted salamander, northern leopard frog, and the water shrew) could experience greater short- and long-term impacts from Alternative 2 due to the addition of a fifth firing lane and a larger berm boundary. Specifically, a portion of Wetland 1 would be exposed in the open versus remaining in a forested setting (see also Section 3.7.2.2, with Figure 3-7). These changes in the forest around Wetland 1 are more likely to result in impacts on the hydrology of the wetland via reduced photo transpiration, exposure to the sun, or increased runoff entering these features. Additionally, there would be a greater

likelihood that the habitat immediately adjacent to this wetland is less valuable or no longer available for these species to use.

Specifically, species that are likely to use Wetlands 1 and 4 could be directly affected if construction activities occurred during the winter in order to avoid impacts on the northern long-eared bat, as it is more likely that turtles and other species may be hibernating in the mud in and immediately surrounding these features. Species such as the spotted turtle, Blanding's turtle, eastern box turtle, blue spotted salamander, and the northern leopard frog could be directly affected. The wood turtle is more likely to be associated with perennial streams such as Stream 2 and would not likely be directly affected. Similarly, the water shrew is more common near streams, and this species does not hibernate, which means it would be more likely to be able to avoid direct disturbance.

For the turtle species that may hibernate in or adjacent to the wetlands that would be affected by Alternative 2, it may be possible to reduce potential impacts by conducting thorough surveys during the summer when these species are active, removing them from the wetland habitat, and installing exclusionary fencing or another barrier that would prevent them from entering this area to hibernate. This technique has been used with some success for highway construction projects (MNR, Pembroke District, 2014; Wetlands Institute, 2019).

All other species would experience similar impacts under both alternatives, though a greater amount of forest habitat would be lost under Alternative 2 (28 acres versus 18 acres under Alternative 1), which would result in additional adverse effects on species that use forest habitat.

The same voluntary conservation measures developed by the USFWS for avoiding impacts on the northern long-eared bat would be followed under Alternative 2: tree removal activities would be conducted outside of the northern long-eared bat active season (April 1 to October 31). Other beneficial BMPs are described in Section 3.3.2.1.

3.3.2.3 No Action Alternative

Under the No Action Alternative, there would be no change in the existing range, and there would be no change in the current operations. Therefore, no additional impacts on wildlife or habitat would occur.

3.4 Cultural Resources

3.4.1 Affected Environment

Cultural resources include any prehistoric or historic district, site, building, structure or object significant in American history, architecture, archeology, engineering, or culture that is listed in or potentially eligible for listing in the National Register of Historic Places (NRHP). Cultural resources include artifacts, records and material remains related to undertakings on historic properties eligible for or listed on the NRHP. All buildings over 50 years old on Fort Devens have been evaluated for their potential eligibility in the NRHP.

This section draws from analysis and surveys completed and documented in the Army Reserve Integrated Cultural Resource Management Plan (ICRMP) Historic Properties Component; Final Report (U.S. Army Reserve, 2002b). Only the Post Cemetery and one hangar on the former Army Airfield are potentially eligible for listing on the NRHP.

An Area of Potential Effect (APE) for built and archaeological resources covers the entire proposed boundary for the renovation of Hotel Range. There are no known NRHP-eligible cultural resources within the affected environment. Hotel Range and the existing firing line berm were built in 1980. The buildings currently at the range were built in 1993.

Although there are no known cultural resources within the APE, there are areas of historic and prehistoric archaeological sensitivity within the APE. The archaeological sensitivity map in the ICRMP depicts one prehistoric archaeological site approximately 0.20 miles to the northwest of the proposed range renovation called Slate Rock Site. At the time of its identification, there was not enough information for an NRHP evaluation, so its eligibility remains unknown (Glover, 1993).

There are numerous historic archaeological sites that were identified during the 1993 investigation. Several sites were determined not eligible; however, ten sites are within a half-mile radius that have an unknown NRHP eligibility status based on the lack of information (see Table 3-2). These include a schoolhouse site, a pauper farm and possible burial ground location, and farmsteads from the eighteenth and nineteenth centuries.

Fort Devens consulted with the State Historic Preservation Officer (SHPO), who concurred that there are no known resources eligible for or listed on the NRHP within or near the project area. A copy of the coordination letter and concurrence are included in Appendix A.

Table 3-2. Inventory of Archaeological Sites within a Half-mile Radius of the Preferred Alternative

Site Number/Name	Period	Use	NRHP Eligibility
Prehistoric Sites			
Slate Rock	Unknown	Unknown	Unknown
Historic Sites			
#4S	18th–19th century	Dwelling	Unknown
#5S	18th–19th century	Farmstead	Unknown
#6S	18th–19th century	Farmstead	Unknown
#8S	18th–19th century	Farmstead	Not Eligible
#10S	18th–19th century	Pauper Farm	Not Eligible
#11S	18th–19th century	Farmstead	Not Eligible
#12S	18th–19th century	School	Unknown
#13S	18th–19th century	Farmstead	Unknown
#14S	18th–19th century	Farmstead	Unknown
#15S	19th century	Pauper farm and possible burial ground	Unknown
#23S	19th century	Farmstead	Unknown
#25S	19th century	Dwelling	Unknown
#28S	18th–19th century	Farmstead	Unknown

Source: (Glover, 1993)

There are no known Native American requirements for the use of Fort Devens property for religious purposes. Fort Devens consulted with federally recognized tribes who may have an interest in the project; copies of all correspondence is included in Appendix A.

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

The implementation of Alternative 1 would not affect aboveground historic properties either directly or indirectly. There are no NRHP-eligible architectural resources within or adjacent to Alternative 1. According to the ICRMP, areas constructed since 1957 should not require an architectural survey to inventory and evaluate buildings and structures (U.S. Army Reserve, 2002a; U.S. Army Reserve, 2002b). The aboveground resources at Hotel Range do not require survey and evaluation since they were constructed between 1980 and 1993.

A Fort Devens archaeological sensitivity model originally developed in 1989 and later refined in 1993 determined areas of the installation as having low, moderate to high, or high levels of archaeological sensitivity (Glover & Boire, 1993). The sensitivity model is reproduced in the 2002 ICRMP (U.S. Army Reserve, 2002a). The areas in the northern and western part of the Alternative 1 site are considered to have moderate-to-high archaeological sensitivity.

The sensitivity model in the ICRMP depicts areas on the current range as having archaeological sensitivity, which is not entirely accurate since it did not take into account the range having a high level of disturbance. The range has been disturbed from the cutting, the grading, and the resulting erosion, all from its construction. It has been further disturbed from range activities. There is one identified site, historic site #11S, within the current range that was destroyed due to the range construction and activities (Glover, 1993). The current range is considered to be of low archaeological potential. Using the sensitivity model and excluding the current range, a total of 7.48 acres of Alternative 1 are considered to have pre-historic sensitivity and 11.15 acres are of historic sensitivity (Figure 3-2).

Within the proposed range area that would require grading, potential exists for disturbance of previously unknown archaeological resources during the grading, excavation, and construction of Alternative 1. Adherence to federal regulations and consultation with the SHPO and any stakeholders would reduce potential adverse effects on previously unknown sites during excavation. The Army would require an Inadvertent Discovery Plan be included in the construction contractor plans and material. Should archaeological remains be identified during construction, the Inadvertent Discovery Plan would take effect. In addition, a professional archaeologist on-call monitor would be available as needed during construction.

There is potential for long-term, minor-to-moderate, adverse effects on cultural resources within the area; implementation of Alternative 1 would not be expected to result in significant impacts on cultural resources.

Figure 3-2. Areas of Archaeological Sensitivity



The Massachusetts Historical Commission, the office of the SHPO, was contacted by letter correspondence dated February 7, 2020 to obtain confirmation that Alternative 1, the Preferred Alternative, would not adversely affect any buildings, sites, structures, districts, and objects eligible for, or included in, the NRHP; cultural items as defined in the Native American Graves Protection and Repatriation Act of 1990; Native American sacred sites for which access is protected under the American Indian Religious Freedom Act of 1978; archaeological resources as defined by the Archaeological Resources Protection Act of 1979; and archaeological artifact collections and associated records as defined by 36 CFR 79. Several Native American tribes were contacted as well to determine if they had any concerns. The Massachusetts Historical Commission provided concurrence that the undertaking would not affect any significant historic or archaeological properties, and with the recommendation that an Inadvertent Discovery Plan be implemented. No Native American tribes have replied. Copies of both interagency correspondence letters are included in Appendix A.

3.4.2.2 Alternative 2: Five-Lane Range

The implementation of Alternative 2 would not affect aboveground historic properties either directly or indirectly. There are no NRHP-eligible architectural resources within or adjacent to Alternative 2. According to the ICRMP, areas constructed since 1957 should not require architectural survey to inventory and evaluate buildings and structures (U.S. Army Reserve, 2002a). The aboveground resources at Hotel Range do not require survey and evaluation since they were constructed between 1980 and 1993.

Similar to Alternative 1, the areas in the northern and western part of the Alternative 2 site are considered to have moderate-to-high archaeological sensitivity based the archaeological sensitivity model (Glover & Boire, 1993; U.S. Army Reserve, 2002b). Excluding the current range, 12.26 acres are considered to have pre-historic sensitivity and approximately 20 acres are of historic sensitivity (Figure 3-2). The current range, which overlaps a large portion of Alternative 1, has been disturbed from the cutting and grading from the construction of the range. The archaeological sensitivity model as represented in the ICRMP did not take into consideration the location of ranges, and the current Hotel Range footprint that would be considered to have low potential for archaeological resources due to previous soil disturbances and resulting soil erosion.

Within the proposed range renovation area that would require grading, potential exists for disturbance of previously unknown archaeological resources during the grading, excavation, and construction of Alternative 2. Adherence to federal regulations and consultation with the SHPO and any stakeholders would reduce potential adverse effects on previously unknown sites during excavation. The Army would require an Inadvertent Discovery Plan be included in the construction contractor plans and material. Should archaeological remains be identified during construction, the Inadvertent Discovery Plan would take effect. In addition, a professional archaeologist on-call monitor would be available as needed during construction.

There is potential for long-term, minor-to-moderate, adverse effects on cultural resources within the area; implementation of Alternative 2 would not be expected to result in significant impacts on cultural resources.

3.4.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur, and there would be no change in cultural resources. Therefore, no significant impacts on cultural resources would occur with implementation of the No Action Alternative.

3.5 Hazardous and Toxic Materials and Waste

3.5.1 Affected Environment

3.5.1.1 Hazardous and Toxic Materials

Routine maintenance activities and operations on South Post require the use, handling, and storage of hazardous and toxic materials such as petroleum, oils, lubricants, cleaners, paint, paint thinners, solvents, batteries, and pesticides. All hazardous materials are handled, used, and stored in accordance with Army guidelines and regulations (Army Regulation 200-1, *Environmental Protection and Enhancement*). From historic use of the range, there are likely UXOs present. Hotel Range is currently used exclusively for firing small-caliber automatic weapons, which use non-explosive ammunition. The ammunition used at Hotel Range is lead-free rounds with a steel tip and copper core. Lead and lead compounds are subject to reporting under the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA). Under EPCRA, Fort Devens submits annual Toxics Release Inventory for the lead and copper ammunition used at all ranges on South Post.

3.5.1.2 Hazardous and Toxic Wastes

Hazardous wastes are defined and regulated by the Resource Conservation and Recovery Act (RCRA). Fort Devens is registered with USEPA as a small-quantity generator (less than 1,000 kilograms generated per month) of hazardous waste under RCRA. No major or minor industrial operations are done on South Post; hazardous and toxic waste generated at Fort Devens is largely generated through routine maintenance operations, the elimination of expired materials, and spill cleanup.

3.5.1.3 Special Hazards

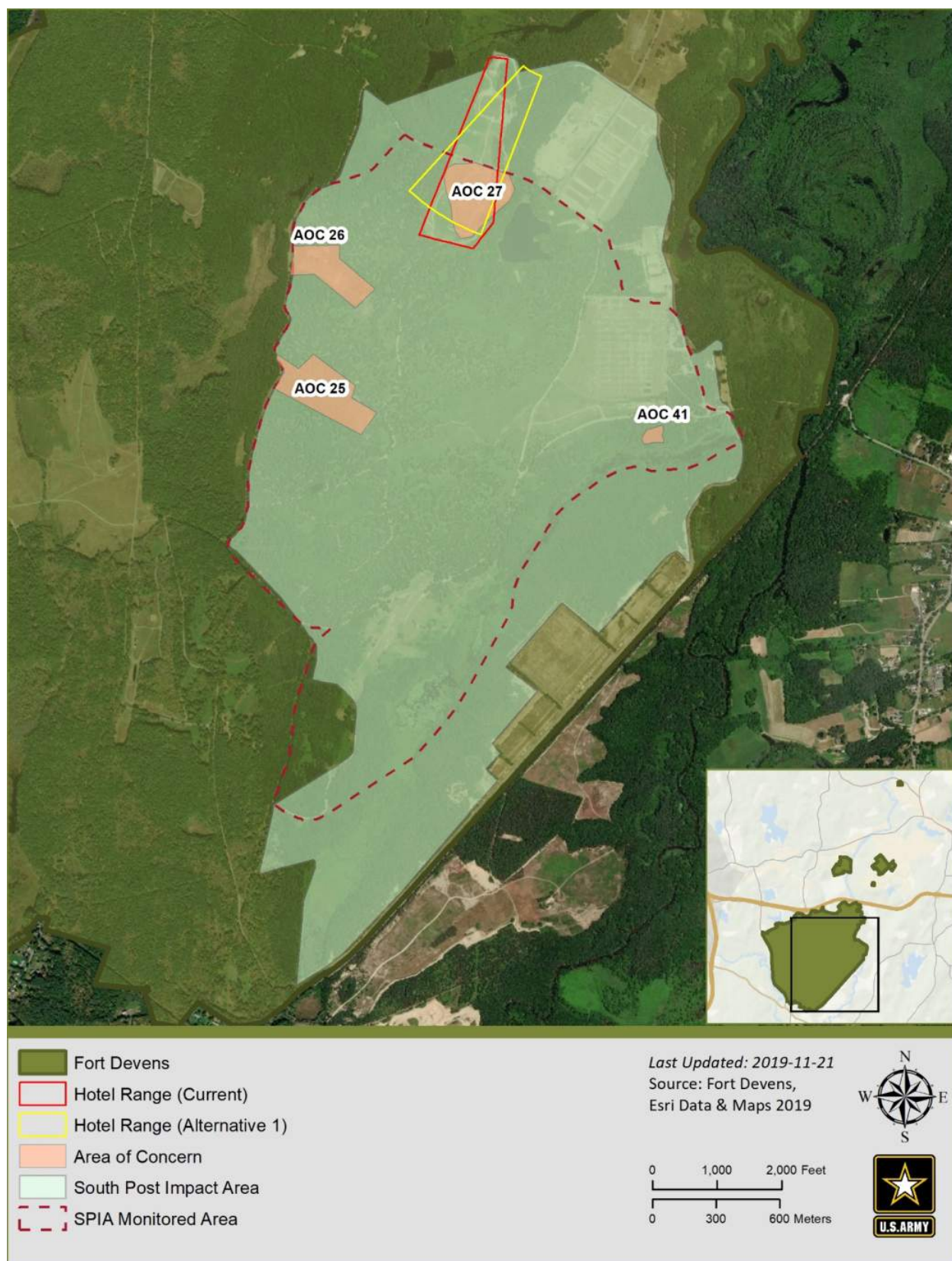
In 1989, Fort Devens was placed on the National Priorities List, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986, due to groundwater contamination. The SPIA is a monitored Superfund site for contamination in groundwater associated with historical disposal practices. The SPIA includes four AOCs: 25, 26, 27, and 41 (Figure 3-3).

The Record of Decision (ROD) issued in 1996 for these AOCs as the Superfund decision document selected a “No Action” remedy for surface water, sediment, and soils at AOCs 25, 26, and 27; AOC 41 groundwater; and SPIA monitored-area groundwater (USEPA, 1996). Under a “No Action” remedy, no formal remedial action is taken, and the site is considered to be left “as is,” with no containment, removal, treatment, or other mitigation measures. No drinking water wells are permitted developed inside the SPIA Monitored Area, under an institutional control set in the “No Action” remedy. Soil samples collected at AOC 27 for the remedial investigation determined that none of the metals analyzed at the site exceeded USEPA screening values (USEPA, 1996).

The ROD requires long-term monitoring (LTM) of groundwater at all four AOC sites as the groundwater remedy to monitor for contaminant migration out of the SPIA monitored area (USEPA, 1996). The ROD also requires an INRMP to monitor the impact of the current land uses to the ecosystems on South Post. There is no evidence to indicate that contaminants in the SPIA pose a threat of migration to drinking water wells located beyond the SPIA monitored area (Renova Environmental Services, 2019).

Sampling has been discontinued at AOC 25 and AOC 41 based on LTM which showed that none of the studied parameters exceeded federal or state maximum contaminant levels (Renova Environmental Services, 2019).

Figure 3-3. South Post Impact Area and Areas of Concern



AOC 26, which is southwest of Hotel Range on Zulu Ranges 1 and 2, is sampled on a yearly basis. AOC 27, located on Hotel Range, is sampled biennially. South Post Monitoring (SPM) wells, which are located throughout the SPIA but not associated with a specific AOC, are also monitored annually to evaluate the potential for migration of contaminants from the AOCs. AOC 26, AOC 27, and SPM wells are sampled for explosive compounds including cyclotrimethylenetrinitramine (RDX), perchlorate, arsenic, and/or metals in the groundwater. During the most recent monitoring in 2018, no monitoring wells associated with AOC 27 contained any of these contaminants at levels above groundwater standards. Monitoring wells at AOC 26 contained RDX, perchlorate, and arsenic at levels above groundwater standards, consistent with or lower than historic levels. One SPM well contained arsenic levels above groundwater standards. The 2018 monitoring indicated that groundwater concentrations at AOC 26, AOC 27, and the SPIA monitored area remain consistent with or lower than concentrations detected in past years, with no substantial increases of perchlorate or RDX in downgradient monitoring wells (Renova Environmental Services, 2019).

As discussed in Section 3.7.1, Water Resources, the groundwater from Zulu and Hotel Ranges typically flows north toward Slate Rock Brook and Slate Rock Pond. Within the SPIA, the groundwater depths range from 0 to 40 feet below ground level (Renova Environmental Services, 2019).

There are no other known special hazards (i.e., asbestos-containing materials, lead-based paint, or polychlorinated biphenyls) on Hotel Range. The existing ROCA facilities at the range were constructed in 1993 and would not be expected to contain either asbestos-containing materials or lead-based paint.

3.5.2 Environmental Consequences

3.5.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Alternative 1 would result in short-term, minor adverse impacts on hazardous and toxic materials and wastes. Alternative 1 would not be expected to have any short- or long-term impacts on groundwater contamination within AOC 27 on Hotel Range. LTM would continue at AOC 27 as required under CERCLA.

During construction activities, small quantities of hazardous or toxic materials would be used, and small quantities of hazardous waste would be generated. These materials would be handled, used, and stored in accordance with federal environmental laws and regulations and Army policy. The potential for spills would be managed by adherence to existing hazardous material management and spill prevention control and countermeasures plans, which outline measures to prevent or limit the potential for environmental contamination, and procedures to following in the event of a spill.

There would be no long-term increases in hazardous and toxic materials and wastes under Alternative 1. The mission and use of Hotel Range would remain the same; therefore, operation of the renovated range would not be expected to result in increased hazardous or toxic materials or wastes.

No impacts on the existing groundwater contamination at AOC 27 located on Hotel Range would be expected. AOC 27 is in LTM for groundwater, with no action on soils, sediments, and surface water. Tree clearing and minor grading would occur over AOC 27 under Alternative 1. The soil at AOC 27 does not exceed USEPA screening values, and no soil would be removed from the AOC 27 site; the ground would be graded in order to create the reoriented range.

During construction, the effects on groundwater at AOC 27 would be negligible to minor in the short-term given that soil contaminants are below action levels and would not be expected to pose a risk to human health or the environment.

Construction BMPs would be implemented to reduce the potential for hazardous or toxic material spills during range renovation activities. While the range renovation would include minor grading over AOC 27, the ground would not be altered enough to change the topography of the site at AOC nor the direction of stormwater runoff (presently north/northwest toward Slate Rock Creek and Slate Rock Pond). Furthermore, the ground would be contoured to prevent the ponding of stormwater over AOC 27 to reduce groundwater infiltration at this site. The majority of the current land cover at AOC 27 is maintained grassland, with proposed grading and loss of approximately 2.1 acres of forested area within AOC 27. The removal of trees in this area would result in minor increases in groundwater recharge in these areas, with a negligible effect on groundwater levels and flows in the area.

Extensive grading to reduce the elevation of the range would occur to the north of AOC 27. These changes, however, would not be expected to alter the direction of stormwater runoff across the area. Stormwater management measures would be similar to current conditions, and no stormwater infiltration basins would be placed on or near AOC 27. Furthermore, tree cover over AOC 27 within the Alternative 1 footprint is fragmented, and approximately 90.5 percent of the land cover over AOC 27 would remain consistent with current conditions and only cause a negligible increase in groundwater infiltration rates due to the minor loss of forest cover over the area. Localized minor changes in groundwater flow rates could occur during the construction period from increases in groundwater infiltration, with negligible effects on flow direction in the short term. Groundwater infiltration may be minimized by reducing the extent of exposed bare soils during construction (e.g., conducting site grading in phases and re-vegetating areas once they have been contoured). In the long term, there would be a minor increase in groundwater infiltration rates due to the removal of tree cover, with negligible effects on groundwater flow rates and direction, resulting in negligible impacts on groundwater at AOC 27 (see Section 3.7.2.1 for overall impacts on groundwater). As such, surface water flows and groundwater flows outside of AOC 27 should remain consistent with current conditions.

Therefore, implementation of Alternative 1 would not result in significant impacts on hazardous and toxic materials and wastes, or special hazards.

3.5.2.2 Alternative 2: Five-Lane Range

Alternative 2 would result in short-term, minor, adverse impacts on hazardous materials and wastes. The construction footprint under Alternative 2 is larger than under Alternative 1, so there would be subsequent increased construction activity and tree clearing. Impacts under Alternative 2 from the proposed clearing and grading over AOC 27 would be the same as what are described under Alternative 1.

Operations under Alternative 2 would also be the same as Alternative 1. Consequently, the impacts on hazardous materials and wastes would be expected to be similar to those described under Alternative 1. All hazardous and toxic materials present during construction or operation of the renovated Hotel Range would be handled, used, and stored in accordance with all Army guidelines and regulations. Therefore, implementation of Alternative 2 would not result in significant impacts on hazardous materials and wastes.

3.5.2.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not occur, and there would be no change associated with hazardous and toxic materials and wastes. Hotel Range would continue to be used at existing levels, and all hazardous and toxic materials and wastes would continue to be handled in accordance with federal environmental laws and regulations and Army policy. LTM would continue at AOC 27 as required under CERCLA. Therefore, no significant impacts would occur with implementation of the No Action Alternative.

3.6 Geology and Soils

3.6.1 Affected Environment

The geology underlying Fort Devens is a result of the retreat of continental ice sheets during the Wisconsin Glaciation, 10,000 to 20,000 years ago. The geology is mainly glacial alluvium and swamp deposits overlying metamorphic bedrock. Due to the slow recess of the ice sheets, the landscape is composed of kettles, kames, and glacial till hills called drumlins. The topography at Fort Devens includes wetlands, floodplains, hilly uplands and steep slopes (USAG Fort Devens, 2019).

The soil types on Fort Devens vary but are predominantly sandy loams, loamy fine sands, and other sands and gravel that are well drained. Management of the soil includes using appropriate vegetative cover to prevent and control erosion as well as other stabilization strategies. These strategies can be found in the Range Control Management Plan and the INRMP (USAG Fort Devens, 2019). Figure 3-4 shows the types of soil found at Hotel Range, and Table 3-3 shows the types of soils and the slope.

Table 3-3. Soil Name and Slope at Hotel Range

Unit Name	Soil Name	Slope
1	Water	—
245B	Hinckley loamy sand	3 to 8 percent
245C	Hinckley loamy sand	8 to 15 percent
245E	Hinckley loamy sand	25 to 35 percent
248B	Amostown and Belgrade soils	3 to 8 percent
254B	Merrimac fine sandy loam	3 to 8 percent
255B	Windsor loamy sand	3 to 8 percent
255C	Windsor loamy sand	8 to 15 percent
255D	Windsor loamy sand	15 to 25 percent
262B	Quonset loamy sand	3 to 8 percent
276A	Ninigret fine sandy loam	0 to 3 percent
31A	Walpole sandy loam	0 to 3 percent
651	Udorthents	smoothed
6A	Scarboro mucky fine sandy loam	0 to 3 percent
72A	Whitman loam	0 to 3 percent

[illegible]

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Under Alternative 1, construction activities would include clearing 18 acres of trees, constructing new facilities and an access road, and substantial grading within the Alternative 1 site (totaling an estimated 30,000 cubic yards of soil), and overall grading of the range soils. These actions would have a short-term, minor, adverse impacts on topography and the soils.

Under authority of the Clean Water Act, any construction activity that disturbs more than one acre of soil is required to obtain a Construction General Permit. As part of the Construction General Permit, as required under the National Pollutant Discharge Elimination System (NPDES) program, a Stormwater Pollution Prevention Plan is required (USEPA, 2019c). The development of this plan, which includes BMPs and minimization measures, would minimize short-term runoff and erosion impacts on soils during construction activities.

There would be some long-term impacts on the topography at Hotel Range from the proposed cut and fill for the renovated range. Two areas within the proposed range footprint would be graded to achieve a similar elevation as the remainder of the range, approximately 250 feet above mean sea level. During construction, there would be additional runoff and loss of soil, as described in 3.7.2, but these impacts on the soil would be minimized with the implementation of BMPs. As described in 3.5.2.1 and 3.7.2.1, there would be no likely adverse impacts on existing groundwater contamination at AOC 27 as the topography of the site would be graded in a manner that would not affect or change the surface water runoff. As a result, stormwater would continue to run to the northeast toward Slate Rock Pond and not create ponding near AOC 27.

Once construction is completed, there would be no long-term effects, and topography would be similar to that found in the adjoining areas.

The soil removed from these sites, an estimated 30,000 cubic yards, would be placed at the renovated firing line to raise the elevation at this site to approximately 250 feet above mean sea level. Installation of the sheet pile retaining wall to the north of the firing line would compact the soil but would not have adverse impacts on soil. This would, however, create a long-term change to the topography of this specific site, which may affect local stormwater runoff flow at the firing line area. The impacts would occur only at this site and would not substantially change overall stormwater flow for the range; impacts would be minor.

Therefore, implementation of Alternative 1 would not result in significant impacts on the geology and soil.

3.6.2.2 Alternative 2: Five-Lane Range

Under Alternative 2, construction activities would be similar to that as described in Alternative 1 with a larger area of impact to accommodate for an additional firing lane and would have similar impacts to geology and soils. Under Alternative 2, 28 acres of trees would be cleared rather than the 18 acres under Alternative 1, and the same amount of grading would occur as proposed under Alternative 1 (30,000 cubic yards). These actions would result in short-term, adverse impacts on the geology and soils, and long-term changes in the topography of the range. As previously discussed for Alternative 1, soil loss would be minimized through implementation of actions under the Construction General Permit and BMPs as outlined in the Stormwater Pollution Prevention Plan.

There would be some long-term impacts on the topography at Hotel Range from the proposed cut and fill for the renovated range. Similar to Alternative 1, the topography of the range would be altered in order to achieve a similar elevation as the remainder of the range (approximately 250 feet above mean sea level). The grading would occur to match that of the surrounding area, so that stormwater runoff would continue in the same pattern in which it runs currently, northeast toward Slate Rock Pond. The topography would also not be altered enough to change the stormwater runoff flow at AOC 27 or result in stormwater ponding at the site. During construction activity, the soils would be disturbed, causing additional runoff and loss of soil; however, these impacts would be minimized with the implementation of best management practices, and would be short term and minor.

Long-term impacts on the topography at the new firing line would be the same as what is described under Alternative 1, but to a greater extent due to the added firing land and increased size of the renovated range. The soil removed from grading on the range, 30,000 cubic yards, would be placed as a berm to create the renovated firing line, raising the elevation at this site to approximately 250 feet above mean sea level. This would create a long-term change to the topography of the site, which may affect localized stormwater runoff flow at the firing line area. The impacts would occur only at this site and would not substantially change stormwater flow; impacts would be minor.

For the reasons described above, implementation of Alternative 2 would not result in significant impacts to the geology and soil.

3.6.2.3 No Action Alternative

Under the No Action Alternative, there would be no change in Hotel Range, and no construction or excavation would occur. Existing training would continue but would still require modernization to meet current Army training and design standards. There would be no impacts on geology or soil under this alternative.

3.7 Water Resources

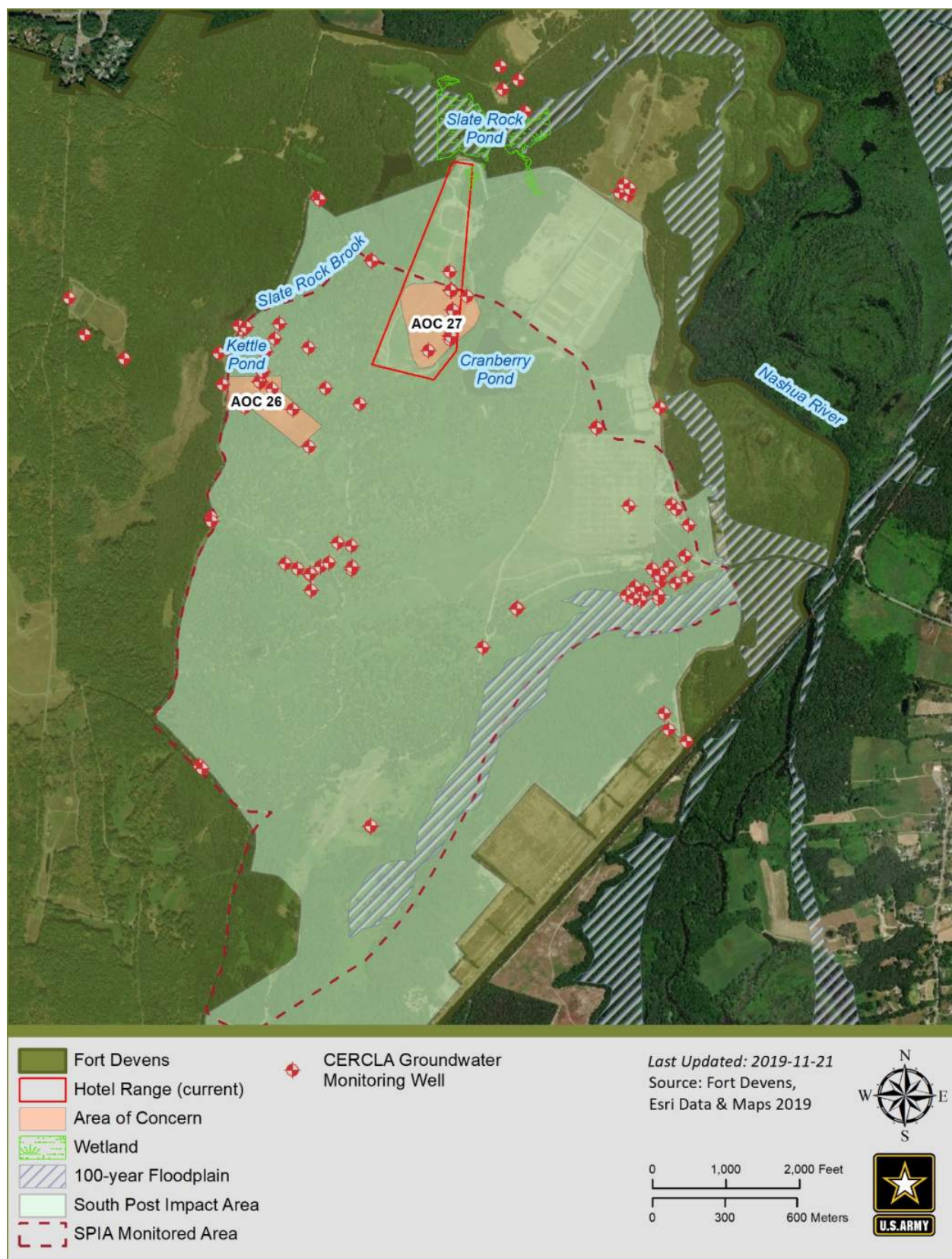
3.7.1 Affected Environment

3.7.1.1 Surface Water

Fort Devens is located within the Nashua River Watershed, which is part of the larger Merrimack River watershed. There are 71.1 acres of established ponds within South Post that include Clear Pond, Cranberry Pond, Kettle Pond, Ligett Pond, New Cranberry Pond, Oak Hill Pond, and Slate Rock Pond; 43.4 acres of ponds are unnamed. Nashua River, Ponakin Brook, Spectacle Brook, and Slate Rock Brook are the main streams/rivers within South Post, totaling 7.3 miles (USAG Fort Devens, 2019).

Slate Rock Brook is west of Hotel Range, Kettle Pond is southwest, Cranberry Pond is east, and Slate Rock Pond is north, flowing west off the Nashua River (see Figure 3-5). The Nashua River, which forms the eastern boundary of South Post, flows northeast from the Wachusett Reservoir and is considered impaired by phosphorous, *E. coli*, and invertebrate toxicity in the Massachusetts 2014 List of Impaired Water (MassDEP, 2015). Although impaired, water quality in the Nashua River has significantly recovered since the 1960s after the Clean Water Act was enacted. Sections of the Nashua River, including the stretch along the boundary of South Post, were designated by Public Law 116-9 on 12 March 2019 as components of the Wild and Scenic Rivers System under the Nashua Wild and Scenic Rivers Act of 2019.

Figure 3-5. Water Resources Near Hotel Range



Surface water monitoring is part of the Army's CERCLA compliance program at Fort Devens, and in accordance with USEPA's 1996 ROD for the SPIA, Fort Devens has an LTM program that includes surface water sampling at five locations in the SPIA: three in Kettle Pond and two in Slate Rock Brook. The five surface water sampling locations are north of AOC 26; water samples are collected semiannually and tested for RDX and perchlorate. The SPIA-monitored area encompasses the southern half of the project area.

Based on the 2018 LTM results, the highest levels of perchlorate and RDX surface water concentrations were in the southern bank of Kettle Pond (north of AOC 26) at 0.23 micrograms per liter ($\mu\text{g/L}$) and 5.7 $\mu\text{g/L}$, respectively. A groundwater well in the forested area south of Kettle Pond confirmed the higher concentrations of RDX in this area at 4.5 $\mu\text{g/L}$. RDX concentrations did not exceed Groundwater Classification 3, which is based on the potential environmental effects resulting from contaminated groundwater discharging to surface water (Renova Environmental Services, 2019). Within the other downstream sampling locations of Kettle Pond and Slate Rock Brook, no or trace concentrations were detected.

3.7.1.2 Groundwater

Groundwater exists at Fort Devens in two geologic formations: glacial drift deposits of sand and gravel, and in fractured bedrock. The primary aquifer is the glacial drift that overlies the bedrock and can supply relatively large quantities of water. This aquifer, known as the glacial outwash aquifer, consists of well-sorted sands and gravels, fine sands, silt, and clay. The glacial outwash aquifer is used by Fort Devens and nearby municipalities for water supply via wells.

Groundwater present in the fractured bedrock beneath the glacial outwash aquifer is most frequently used for single family domestic water supply private wells in the vicinity of Fort Devens. Groundwater flow mimics topography across South Post, with groundwater from AOC 26, AOC 27, and Cranberry Pond typically flowing north toward Slate Rock Brook and Slate Rock Pond. Depth to groundwater ranges from 0 to 40 feet (USAG Fort Devens, 2019).

In addition to the surface water LTM requirements, Fort Devens has an LTM program for groundwater sampling that includes 23 groundwater wells and one hydrant at two AOCs (AOC 26 [Zulu Ranges] and AOC 27 [Hotel Range]) and nine South Post Monitoring (SPM) wells. AOC 26 is southwest of the Hotel Range while AOC 27 is within the southern portion (see Figure 3-5). Groundwater at AOC 26 is sampled yearly and AOC 27 biennially; both are tested for explosives including RDX, perchlorate, arsenic, and metals. The nine SPM wells are sampled annually, are non-AOC specific, and are intended to monitor the potential migration of contaminants of concern from individual AOCs (USACE, 2019).

No historic evidence exists to show that contaminants detected within the SPIA pose a threat of migration to or impact on drinking water wells located beyond the SPIA monitored area.

3.7.1.3 Wetlands

Wetlands are jointly defined by USEPA and USACE as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Wetlands generally include "swamp marshes, bogs and similar areas" (40 CFR 230.3[t] and 33 CFR 328.3[b]).

Under Section 404 of the Clean Water Act, jointly implemented and enforced by USEPA and USACE, discharge of dredged and fill material into Waters of the United States, including wetlands, is regulated through a permitting process. USACE issues jurisdictional determinations

to determine whether a water will be regulated under Section 404. In the Commonwealth of Massachusetts, consistency of Section 404 permitted activities with state water quality standards is accomplished through Section 401 Water Quality Certifications, which is enforced by Massachusetts Department of Environmental Protection (MassDEP). Within the Town of Lancaster, an Order of Conditions is required from the Lancaster Conservation Commission (delegated by the MassDEP) for any activities involving removal, filling, dredging, construction, or other alteration to waters of the Commonwealth of Massachusetts and associated resource areas in compliance with the Lancaster Wetlands Protection Bylaw (Chapters 215 and 306). Similarly, within the Devens Regional Enterprise Zone (Towns of Ayer, Harvard, Lancaster, and Shirley), an Order of Conditions is required from the Devens Enterprise Commission under the Devens Wetlands Protection Article XII Bylaw for activities that could cause adverse impacts from construction—erosion, siltation, loss of groundwater recharge, poor water quality, and loss of wildlife habitat—for freshwater wetlands, rivers, streams, ponds, and lakes.

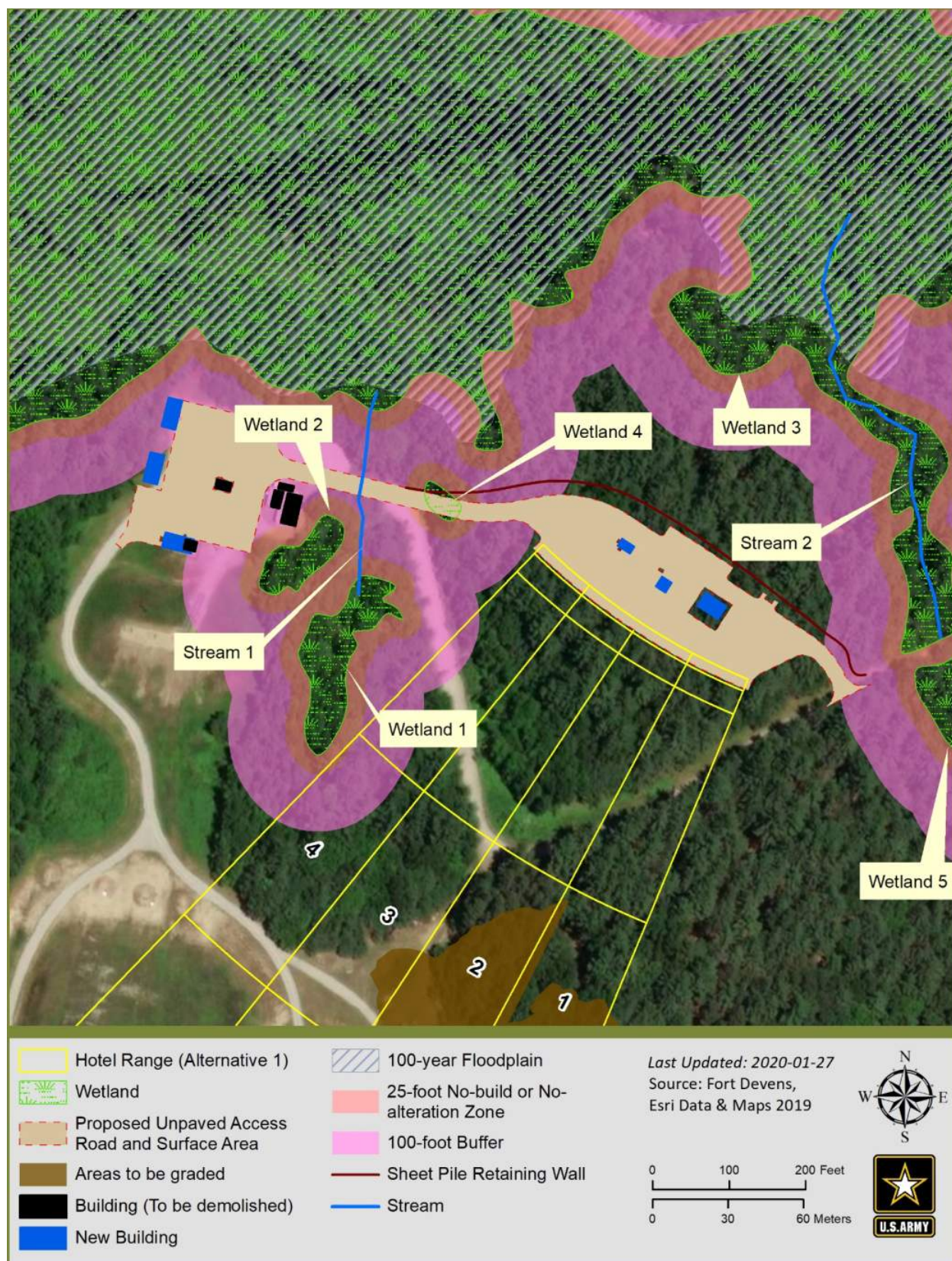
Fort Devens has extensive and regionally important wetlands occurring on or adjacent to it that have been listed as a priority for protection under both the North American Waterfowl Management Plan and the Emergency Wetlands Resources Act of 1986. Fort Devens protects its wetlands in accordance with EO 11990 and manages wetlands based on a no net loss strategy.

Several wetland studies have been conducted at Fort Devens, including a 2000 U.S. Geological Survey delineation of four wetland complexes associated with major drainages at South Post, a USFWS National Wetlands Inventory mapping using aerial photography in 2018, and a jurisdictional delineation of a wetland area east of Slate Rock Pond for the Hotel Range reconfiguration conducted by Normandeau Associates, Inc. in 2018. Over 98 percent (723.7 acres) of wetlands at Fort Devens are within South Post: 166.5 acres are freshwater emergent, 378.2 acres are freshwater forested/shrub, 150.3 acres are freshwater pond or lake, and 28.8 acres are riverine wetlands (USAG Fort Devens, 2019).

The 2018 wetland survey in the vicinity of Hotel Range and the Proposed Action delineated the jurisdictional boundaries of the wetlands; Fort Devens is coordinating with USACE for concurrence with the wetland survey findings. The wetland survey report concluded that Wetlands 1, 3, and 5 likely fall under jurisdiction of the federal Clean Water Act (which includes state/local regulatory jurisdiction); the final statuses and acreages are pending federal review and concurrence. Wetlands 2 and 4 potentially fall under federal jurisdiction and are also regulated by MassDEP and the Town of Lancaster; the final status and acreages are pending state/local review and concurrence (Normandeau Associates, 2018). The wetlands and the findings of the report are summarized below, and the wetlands are depicted in Figure 3-6.

Wetland 1 is a 0.29-acre forested bordering vegetated wetland that receives water from the bottom edge of a slope seep (3–5 percent grade). Based on the findings of the wetland report, this wetland would fall under the jurisdiction of the federal Clean Water Act due to its connection to Wetland 3 and Slate Rock Pond and the Nashua River via Stream 1 (Figure 3-6) (Normandeau Associates, 2018). There are several flat areas within the wetland where water is present for most of the year. Vegetation present is typical of forested wetlands in the region and included skunk cabbage (*Symplocarpus foetidus*), highbush blueberry (*Vaccinium corymbosum*), and red maple (Normandeau Associates, 2018).

Figure 3-6. Alternative 1 Floodplains and Wetland Buffers



Wetland 2 is a 0.12-acre isolated wetland at the edge of a man-made mound and is separated from Wetland 1 by a narrow berm. Most of this wetland is a wet meadow dominated by plants such as soft rush (*Juncus effesus*), fringed sedge (*Carex crinita*), and sensitive fern (*Onoclea sensibilis*). Due to a lack of connection to the Nashua River drainage basin via Slate Rock Pond (i.e., wetland is isolated), the wetland report concluded that this wetland likely does not fall under federal jurisdiction; however, both MassDEP and the Town of Lancaster likely have regulatory jurisdiction over this wetland (Normandeau Associates, 2018). Fort Devens will coordinate with the Lancaster Conservation Commission as required under the Wetlands Protection Act to determine whether jurisdiction applies.

Wetland 3 is a 19.3-acre wetland consisting of most of Slate Rock Pond and the surrounding forested wetland. The wetland report determined this wetland is likely under the jurisdiction of the federal Clean Water Act, MassDEP, and the Town of Lancaster. The area between the pond and upslope vegetation consists of floating and submerged aquatic plants such as water lilies (*Nuphar advena*), emergent wetland plants such as tussock sedge (*Carex stricta*), skunk cabbage, northern long sedge (*Carex folliculata*), eastern white pine, and red maple. Due to its large size, this wetland is likely valuable to waterfowl, long-legged wading birds, reptiles, amphibians, and bats (Normandeau Associates, 2018).

Wetland 4 is a small, 0.03-acre isolated wetland. The wetland is potentially jurisdictional; it only contains water for part of the year and had no water present at the time of June 2018 and September 2019 site visits. There is little vegetation cover present, with only sparse occurrences of plants such as wool grass (*Scirpus cyperinus*) and winterberry (*Ilex verticillata*). The Army will likely accept a preliminary jurisdictional determination by the USACE that it falls under the jurisdiction of the Clean Water Act. Fort Devens will coordinate with the Lancaster Conservation Commission and MassDEP in accordance with the Wetlands Protection Act to determine whether jurisdiction applies. Discussion of this wetland's status as a vernal pool is presented below.

Wetland 5 is a 0.36-acre narrow bordering vegetated wetland that is located along the fringe of an upper perennial stream (Stream 2). The wetland report determined this wetland is likely under the jurisdiction of the federal Clean Water Act, MassDEP, and the Town of Lancaster (Normandeau Associates, 2018). Wetland 5 is physically separated from Wetland 3 by Old Shirley Road to the north, although the two wetlands are hydrologically connected by Stream 2. Common vegetation in the wetland includes skunk cabbage, spotted touch-me-not (*Impatiens capensis*) and sedges (Normandeau Associates, 2018).

Proposed projects on Fort Devens that may affect wetlands require permits and/or approvals from federal, state, and/or local agencies. Coordination with USACE, MassDEP, and depending on the project location, the Towns of Lancaster, Shirley, Harvard, or Ayer is required to inform each agency of the proposed project and to obtain a determination of authority regarding jurisdiction over the resources in proximity to the project limits including wetlands, streams, vernal pools, and applicable buffer zones.

3.7.1.4 Vernal Pools

Vernal pools are temporary bodies of fresh water that provide important habitat for many vertebrate and invertebrate species. They constitute a unique and increasingly vulnerable type of wetland and are protected under the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), which protects certified vernal pools up to 100 feet beyond the pool boundary (Natural Heritage and Endangered Species Program, 2009). The Lancaster Wetlands Protection Bylaw incorporates a 100-foot buffer for vernal pools regardless of certification status.

During the 2018 wetland survey, three of the wetlands nearest to the project area were considered to be potential vernal pools (Wetlands 1, 2, and 4). A vernal pool evaluation was conducted in 2019 to determine if these features met the “certifiability” criteria per the Massachusetts Department of Fisheries and Wildlife standards and criteria. These criteria are generally accepted by USACE (New England Division) and the Town of Lancaster under its Wetlands Protection (bylaw) Regulations. The survey results indicate that only Wetland 4 meets the applicable criteria for vernal pool designation. It does not meet the criteria for Isolated Land Subject to Flooding (ILSF, 310 CMR 10.57) as defined in the Wetlands Protection Act Regulations (Oxbow Associates, 2019).

Wetland 4 is an anthropogenic feature, having likely been excavated to collect soil for use in constructing the adjacent service road when Hotel Range was constructed. This vernal pool is approximately 60 feet long and 30 feet wide; its maximum depth is 38 inches and mean depth is estimated to be greater than 2 feet. Tall stands of white pine surrounding the vernal pool block a great deal of spring sunlight from reaching the pool, which likely causes the pool to remain frozen for longer than normal, thereby rendering it unavailable for breeding by the normal or early waves of amphibians (Oxbow Associates, 2019).

3.7.1.5 Floodplains

Floodplain areas along the Nashua River and North Nashua River are core and critical habitat areas within the wetlands and riparian ecosystems of Fort Devens. The Nashua River floodplain along the eastern boundary of South Post, shared with the Oxbow National Wildlife Refuge, is one of the widest Nashua River floodplains (USAG Fort Devens, 2019). Within South Post, floodplain areas classified as having a one percent annual risk of flooding by the Federal Emergency Management Agency are along Slate Rock Pond, the Nashua River, New Cranberry Pond, Ponakin Brook, and Ligett Pond (Figure 3-5). There are no floodplains within Hotel Range or the project area.

3.7.2 Environmental Consequences

3.7.2.1 Alternative 1: Four-Lane Range (Preferred Alternative)

Surface Water

Soil grading, tree clearing, and demolition of existing structures under Alternative 1 would result in short-term, minor impacts on nearby surface waters. Approximately 18 acres of soil would temporarily be exposed from soil grading and tree clearing activities. Under the Clean Water Act, any construction activity that disturbs more than one acre of soil is required to obtain a Construction General Permit and develop a Stormwater Pollution Prevention Plan. This plan, as well as erosion and sediment control measures, can include sediment traps (e.g., sandbags, straw bale barriers), vegetative buffer strips, silt fences, erosion control blankets, and mulch, and would be used to minimize impacts to surface waters during construction. Although BMPs would reduce soil loss and stream loads, impacts would not be avoided entirely. Increased sediment loads carried by runoff over the 18 acres of exposed subsurface and streambank erosion caused by increases in runoff volume and velocity from an increase in impervious surfaces would have temporary direct impacts on Slate Rock Pond as it is located downstream of the grading/clearing sites. Because impacts on surface water from sedimentation would be temporary and controlled by preventative measures during construction, there would be negligible, long-term impacts on surface water with implementation of Alternative 1.

Groundwater

The results from the SPIA 2018 Annual Report indicate that there currently is no migration of contaminants beyond the SPIA Monitored Area. Perchlorate and RDX groundwater concentrations at AOC 26, AOC 27, and throughout the SPIA monitored area remain consistent with or lower than concentrations detected in past years with data trends suggesting no significant increases of perchlorate or RDX in downgradient monitoring wells (USACE, 2019). Within the areas that would be graded, the distance of groundwater from the surface would decrease slightly, but would not alter, disrupt, or block groundwater flow because of the shallow grading depths. During construction, tree clearing, removal of grass and other vegetation cover would temporarily increase groundwater infiltration rates of precipitation while the soils remain bare, potentially doubling the precipitation infiltration rate on average across the areas converted to bare soils (Breuer, et al., 2016). On average, monthly groundwater infiltration rates may increase by about 1 inch per month during the construction phase for areas with bare soils, with the potential for increased leaching effects. During construction, the effects on groundwater quality would be negligible to minor in the short term given that soil contaminants are below action levels in AOC 27. Furthermore, localized minor changes in groundwater flow rates could occur during this period, with negligible effects on localized flow direction in the short term. Groundwater infiltration may be minimized by reducing the extent of exposed bare soils during construction (e.g., conducting site grading in phases and re-vegetating areas once they have been contoured). Ground-disturbing activities under Alternative 1 would be short term and would not create ponding near AOC 27, which would minimize infiltration to groundwater in this area. In the long term, there would be a minor increase in groundwater infiltration rates (about 2 to 3 inches per year) due to the removal of tree cover, with negligible effects on groundwater flow rates and direction. Long-term groundwater infiltration rates could be reduced to baseline levels by reforesting open lands that are no longer within the footprint of the range and maintaining higher vegetation biomass cover across the range. Overall, implementation of Alternative 1 would result in short-term and long-term, negligible-to-minor impacts on groundwater.

Wetlands

The implementation of Alternative 1 would unavoidably result in the discharge of fill within a potentially jurisdictional, isolated wetland in order to construct the unpaved access road. There would be no other direct impacts on surrounding jurisdictional wetlands. Minor, short-term, indirect adverse impacts on wetlands would be expected from soil grading, removal of vegetation, and building construction and demolition within 100 feet of wetlands. Fort Devens would apply BMPs to reduce impacts on the wetlands near Alternative 1 and would comply with all state and local permitting requirements where needed.

There are several wetlands near the project area under Alternative 1 (Figure 3-6). The unpaved access road and the sheet pile retaining wall would require unavoidable construction through Wetland 4. Construction of the sheet pile retaining wall, tree clearing and grading activities, and construction of the unpaved access road would intersect with the 100-foot buffer zone at Wetlands 2, 3, and 5. Demolition of existing buildings and new building construction would intersect with the 100-foot buffer zone at Wetlands 2 and 3. The Army is coordinating with the USACE on the classification and boundaries of the wetlands in the vicinity of Alternative 1.

For discharge of dredged and fill material into Waters of the United States, including wetlands, Section 404 (federal) and Section 401 (state) permits are required under the Clean Water Act, where specific requirements and mitigation measures are defined based on the extent of the project. Permitting for work within jurisdictional wetlands would be done in accordance with Section 404 of the Clean Water Act, and the Army would mitigate impacts on jurisdictional

wetlands, if required. Design plans are not yet finalized, but, because the size of the Wetland 4 is less than 5,000 square feet in size, the Army can pursue coverage under the Massachusetts General Permit 8 for Institutional Development, which sets forth permitting conditions. The Army has initiated a preliminary jurisdictional determination with USACE for Wetland 4. Once range designs are finalized, the Army will obtain all required permits pursuant to Section 404 of the Clean Water Act and implement any avoidance, minimization, or mitigation measures, if necessary, to ensure impacts on wetlands from the project would be minimal.

For any construction or alteration of the land near Waters of the Commonwealth and associated resource areas, the Commonwealth of Massachusetts requires a 100-foot buffer zone in accordance with the Wetlands Protection Act, and the Town of Lancaster requires a 100-foot buffer zone and a 25-foot no-build or no-alteration zone in accordance with the Lancaster Wetlands Protection Bylaw (Chapters 215 and 306). Once range designs are finalized, the Army will coordinate with the Lancaster Conservation Commission and MassDEP as required by the Wetlands Protection Act, and will comply with all state permitting requirements for impacts on wetlands under Alternative 1, if selected. Vegetation removal, regrading, and construction within 100 feet of a wetland requires coordination before work is started. Mitigation may be required to offset impacts on wetlands, pending coordination and consultation with the Lancaster Conservation Commission, which may include incorporating appropriate and practicable design and risk avoidance measures. Such mitigation must maintain or improve the natural functioning of the buffer zone, and the Army would comply with any required mitigation.

Short-term, minor direct impacts from grading activities, removal of vegetation, and placement of fill/gravel would occur directly within the 100-foot buffer zone of Wetlands 2, 3, and 5. Minor, indirect impacts on wetlands would be expected from grading, tree clearing, and construction activities as the influx of surface water and sediments would temporarily increase. However, sedimentation into the wetlands would be minimized in the long term through the use of construction BMPs. Changes in local drainage patterns from loss of vegetation and grading would be temporary and would not be significant. Impacts would not be expected to be long term as long-term use of the range would not directly interfere or affect wetland habitat and would not directly cause poor water quality, loss of groundwater recharge, and/or significant loss of wildlife habitat.

The unpaved access road and sheet pile retaining wall would be constructed through Wetland 4 (Figure 3-6), a potentially jurisdictional wetland, and would result in short- and long-term direct impacts. Vegetation removal and placement of fill/gravel would occur directly within the wetland, resulting in complete loss of the wetland. Direct impacts would include the loss of existing wetland habitat and vegetation, loss of diverse wildlife habitat, and elimination of the periodic inundation of the wetland. Direct impacts on wetland and wildlife habitat are expected to be minor as there is little vegetation cover present within Wetland 4 (i.e., only sparse occurrences of wool grass and winterberry), and it is unavailable for breeding by the normal or early waves of amphibians because it stays frozen longer than normal; therefore, wetland and wildlife habitat loss would be minimal and would cause minor impacts on wildlife in the area. Filling Wetland 4 would also result in short-term, indirect, impacts on Wetland 3 due to an increase in surface water and groundwater flow, increasing the risk of flooding and/or dewatering. Construction of the sheet pile retaining wall would reduce potential flooding risks by slowing surface water flow to Wetland 3, preventing major flood events. In addition, because Wetland 4 only contains water for part of the year, indirect impacts on adjacent wetlands from flooding are expected to be negligible. While design plans have not been finalized and coordination with USACE is ongoing, the Army would comply with all permitting requirements so that impacts on wetlands from the project would be minimal.

With implementation of sediment- and erosion-control measures during construction and coordination with USACE, the Lancaster Conservation Commission, and MassDEP, long-term impacts on wetlands would be minor, and there would be short-term, minor, direct and indirect impacts with implementation of Alternative 1.

Vernal Pools

As discussed in Section 3.7.1.4, Wetland 4 meets the applicable criteria for vernal pool designation. As previously mentioned, the stands of white pine surrounding this anthropogenic feature likely cause the pool to remain frozen for longer than normal, rendering it unavailable for breeding by the normal or early waves of amphibians (Oxbow Associates, 2019). Under Alternative 1, the unpaved access road and sheet pile retaining wall would be constructed through this vernal pool, resulting in a permanent loss of the vernal pool. Long-term would be considered minor due to the limited breeding and the modest invertebrate diversity found at the vernal pool.

Floodplains

As shown in Figure 3-6, the area north of Hotel Range along Slate Rock Pond has a one percent annual risk of flooding as classified by the Federal Emergency Management Agency. Implementation of Alternative 1 would not occur within the floodplain and, therefore, would not adversely affect floodplains. Indirect temporary impacts on the floodplain would occur from increased sedimentation during soil grading and tree clearing activities; however, BMPs would be implemented during construction, as described above, to minimize indirect impacts. The 6- to 8-foot increase in elevation of the retaining wall area would slow down surface water flow and prevent long-term alteration of the floodplain boundary.

3.7.2.2 Alternative 2: Five-Lane Range

Surface Water

Alternative 2 would result in similar impacts on surface water bodies as those discussed in Alternative 1, but with slightly greater short-term impacts because tree removal and site grading would occur over a larger area (28 acres under Alternative 2, compared to 18 acres for Alternative 1). The larger area of clearing would temporarily increase impervious surfaces within the Alternative 2 area, thus increasing sediment and surface water volume/velocity into Slate Rock Pond. As described under Alternative 1, any construction activity that disturbs more than one acre of soil is required to obtain a Construction General Permit and develop a Stormwater Pollution Prevention Plan under the Clean Water Act. This plan and construction BMPs would be used to limit erosion and sedimentation of surface waters within the Alternative 2 area. Because impacts on surface water from sedimentation would be temporary and controlled by preventative measures during construction, there would be no long-term impacts on surface water with implementation of Alternative 2.

Groundwater

Under Alternative 2, impacts to groundwater would be similar to those described in Alternative 1, but slightly greater as tree clearing and grading would encompass a larger surface area (28 acres in Alternative 2 compared to 18 acres in Alternative 1). During construction, tree clearing, removal of grass and other vegetation cover would temporarily increase groundwater infiltration rates of precipitation while the soils remain bare, potentially doubling the precipitation infiltration rate on average across the areas converted to bare soils (based on site-specific land cover changes and groundwater infiltration rate estimates from (Breuer, et al., 2016). During construction, the effects on groundwater quality would be negligible to minor in the short term

given that soil contaminants are below action levels in AOC 27. Furthermore, localized minor changes in groundwater flow rates could occur during this period, with negligible effects on flow direction in the short term. In the long term, there would be a minor increase in groundwater infiltration rates (about 3 to 4 inches per year) and groundwater flow due to the removal of tree cover, with negligible effects on groundwater flow direction. Long-term groundwater infiltration rates could be reduced to baseline levels by reforestation of open lands that are no longer within the footprint of the range and maintaining higher vegetation biomass cover across the range. Overall, implementation of Alternative 2 would result in short-term and long-term, negligible-to-minor impacts on groundwater.

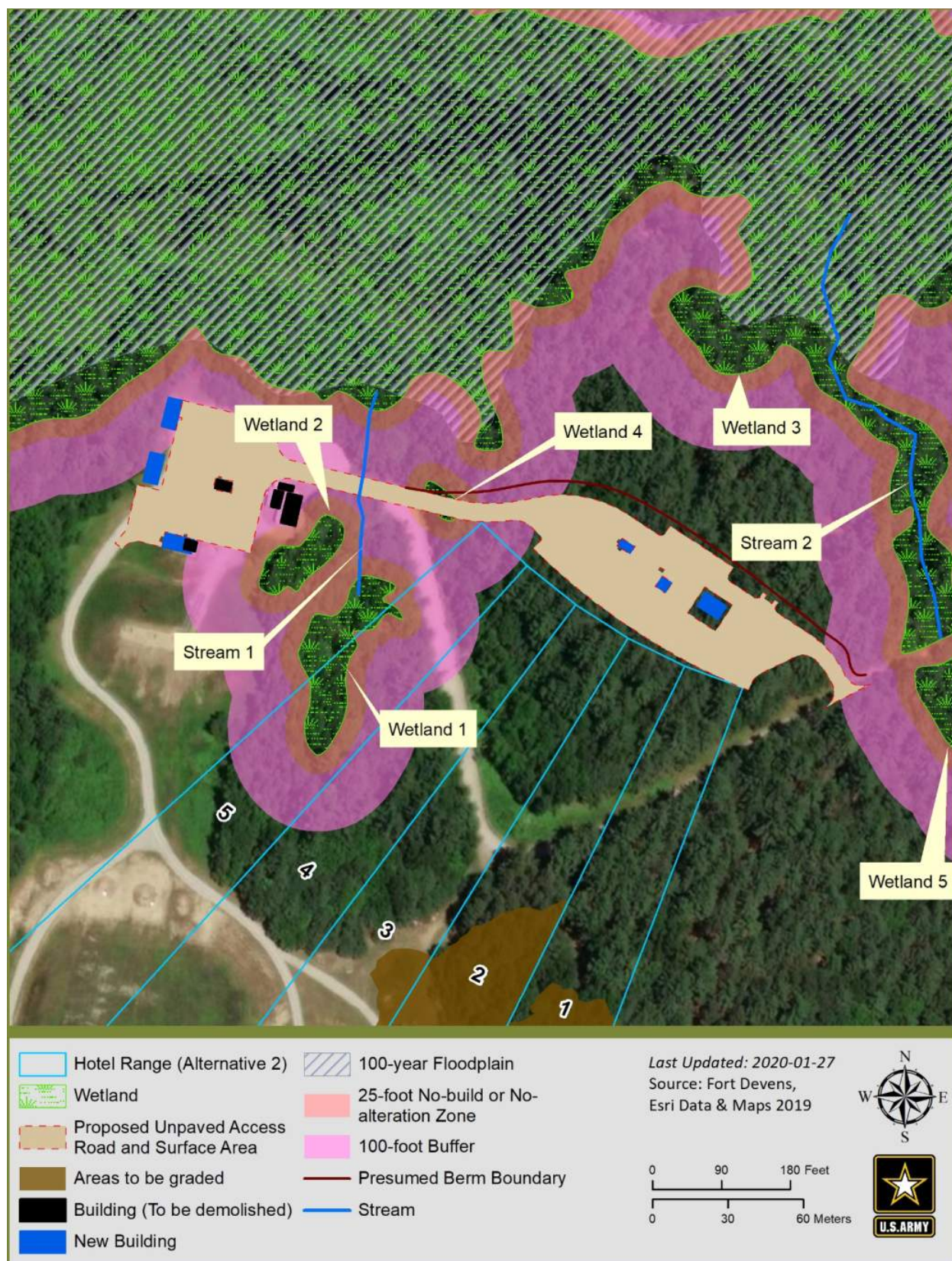
Wetlands

Under Alternative 2, impacts on Wetlands 2, 3, 4, and 5 would be the same as Alternative 1. Wetlands and associated buffer zones in the vicinity of Alternative 2 are shown in Figure 3-7. The unpaved access road and the sheet pile retaining wall would require unavoidable construction through Wetland 4. As described under Alternative 1, the Army will likely accept a preliminary jurisdictional determination from USACE for Wetland 4. While design plans have not been finalized and coordination with USACE is ongoing, the Army would likely pursue a General Permit for Institutional Development for Alternative 2, if selected, which sets forth permitting conditions and would require avoidance, minimization, or mitigation measures, if necessary, to ensure impacts to wetlands from the project are no more than minimal.

The configuration of the fifth firing line intersects directly (approximately 5,833 square feet) with Wetland 1. The first and closest stationary and moving targets would be located 100 meters down the range from the firing positions. Wetland 1 is located approximately 108 meters from the line five firing position; therefore, target placement would not have a direct impact on Wetland 1. Trees would be removed within the range boundaries near Wetland 1 in order to maintain line of sight for personnel using the range. Other than the placement of targets, there would be no other construction within the firing line that would impact wetlands. Use of the firing range would result in direct impacts on wetlands from the potential for misfires while in transit to each target or from missing the target completely; casings and munition byproducts would ultimately land directly into Wetland 1. There would be indirect impacts from munition casings and byproducts entering Wetland 1 by surface water runoff from further down the fifth line as water flows northeast on Hotel Range; however, BMPs would be implemented to offset and minimize indirect impacts. According to the most recent wetland delineation conducted within the Alternative 2 project area (Normandeau Associates, 2018), Wetland 1 is regulated under the Clean Water Act, and would require coordination with USACE and MassDEP for byproducts entering the wetland directly or via surface water. The classification, boundaries, acreage, and mitigation terms for wetlands in the vicinity of the renovated range are pending review and coordination at the federal, state, and local levels.

Under Alternative 2, impacts within the 100-foot buffer zone to Wetland 1, 2, 3, 4, and 5 would require coordination with the Lancaster Conservation Commission and a Request for Determination of Applicability to determine applicability of the Wetland Protection Act. The Army would comply with all state permitting requirements for impacts on wetlands under Alternative 2, if selected. Wetland 1 would require coordination with USACE to determine if Section 404 and 401 permits are needed, and whether mitigation would be required in order to decrease the wetland impacts to below significant levels. Overall, implementation of Alternative 2 would result in direct, short- and long-term, moderate impacts on wetlands.

Figure 3-7. Alternative 2 Floodplains and Wetland Buffers



Vernal Pools

Under Alternative 2, impacts on the Wetland 4 vernal pool would be the same as Alternative 1. Long-term, direct, minor impacts would be expected due to filling of the vernal pool from construction of the unpaved access road and sheet pile wall.

Floodplains

As shown in Figure 3-7, the area north of Hotel Range along Slate Rock Pond has a one percent annual risk of flooding as classified by the Federal Emergency Management Agency. The northern berm boundary would be constructed directly below the floodplain but would not occur within the floodplain boundary and, therefore, would not adversely affect floodplains.

3.7.2.3 No Action Alternative

The No Action Alternatives would result in continuation of existing conditions in and around South Post. No grading or construction would occur to renovate Hotel Range, and range operations would continue at present levels. There would be no change from current conditions; therefore, there would be no change in water resources.

3.8 Cumulative Effects

According to CEQ regulations, cumulative effects are defined as “the impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time” (40 CFR 1508.7).

Actions that have potential to interact with Alternative 1 (which is the Army’s Preferred Alternative) at Fort Devens are included in this cumulative effects analysis. Consideration of interactions resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future are factors of informed decision making. This approach provides decisionmakers with the most current information available to evaluate the range of environmental consequences that would result from implementation of the Preferred Alternative at Fort Devens.

In the following sections, the evaluation of cumulative effects is based on the context, intensity, and timing of the Preferred Alternative relative to other past, present, and reasonably foreseeable actions. Projects included in this cumulative effects analysis are provided in Section 3.8.1, followed by a discussion of the resource areas that have the potential for cumulative effects based on the above evaluation criteria. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Given the scope and location of the project, documents used to identify other actions include management plans, land use plans, and other planning-related studies.

3.8.1 Past, Present, and Reasonably Foreseeable Actions

This section will focus on past, present, and reasonably foreseeable future projects at, and near, the Preferred Alternative locale. There is only one construction project on South Post (i.e., a new range control facility) to be included in the past, present, or reasonably foreseeable future actions, which is described below.

Ongoing Military Mission Activities: Implementing the military mission at Fort Devens includes field training and support activities at South Post, such as training at Hotel Range. On Hotel Range, personnel trained has ranged from 959 to 1,825 personnel annually over the past five years. Annual quantities of bullets fired at Hotel Range over the past five years ranges between 32,700 and 406,700. Training at Hotel Range is expected to continue at current levels.

Fort Devens Superfund Cleanup Activities: The Fort Devens Superfund Site was listed on the National Priorities List in 1989. In 1991, the Army and USEPA signed a Federal Facility Agreement under which the Army is considered the lead agency with primary responsibility for the investigation, design, construction, and operation and maintenance of all removal and remedial actions performed at the site. The Army evaluates study areas across the site where releases of contaminants are suspected or known to have occurred and determines whether those areas pose a threat or potential threat to human health and the environment and warrant a more detailed investigation as an AOC. Of the 324 sites on Fort Devens initially identified by the Army, 54 were included in the Federal Facility Agreement as probable study areas and AOCs. Of these 54 sites, all have been evaluated and either warrant no further action, or cleanup plans have been formalized and approved by the Army, USEPA, and MassDEP. Most of the sites are in LTM. Sites where contamination remains above levels that allow for unrestricted use/unlimited exposure have land-use restrictions in place (USEPA, n.d. b).

Implementation of the Fort Devens Integrated Natural Resources Management Plan. In 2019, Fort Devens finalized an updated INRMP, which outlines management of natural resources on the installation. The INRMP focuses on climate change management, soil conservation and erosion and sedimentation control, water resource management, sensitive species management, migratory bird management, fish and wildlife management, vegetation management, integrated pest management, and wildland fire management. The INRMP includes many proposed projects, including rehabilitation, improvement, and expansion of habitat and habitat quality within Fort Devens, and surveys for rare and sensitive species and natural communities on the installation (USAG Fort Devens, 2019).

New Range Control Facility: A new range control facility is currently under construction near the main entrance to South Post, with anticipated completion in 2020. The new facility is being built on a previously disturbed site (a parking lot) so there is no net loss of habitat or increase in impervious surface associated with the project. It will replace an existing temporary trailer and will be used for administrative purposes only. A categorical exclusion was completed to satisfy NEPA requirements for this construction project.

3.8.2 Cumulative Impact Analysis

Impacts associated with the Preferred Alternative are expected to be minor, as described in Section 3. Cumulative impacts were evaluated for each resource area analyzed within this EA.

3.8.2.1 Air Quality

For present and future projects, any construction would generate short-term criteria pollutant and fugitive dust emissions while ground-disturbing activities are ongoing. All present and reasonably foreseeable future actions could collectively increase emissions of criteria air pollutants temporarily in and around projects sites on South Post, but Alternative 1 and the new range control facility would not have overlapping construction schedules. Cumulatively, emissions from all projects would be negligible or minor and would occur within an attainment area. Furthermore, construction emissions would be temporary. Therefore, cumulative impacts on air quality would not be significant.

3.8.2.2 Human Health and Safety

Cumulative impacts on human health and safety from past, present, and foreseeable future actions could result from the cumulative use of South Post ranges over time and the continued release of heavy metals in the environment from training. The use of Hotel Range is not expected to change the result of Alternative 1, but the overall use of Hotel Range and South Post to achieve the military mission may change over time. The use of the lead and copper bullets and other spent materials at South Post are monitored annually and reported to USEPA. Use of South Post for training could result in personnel being exposed to risk over time; however, the proposed renovation of Hotel Range would not alter the frequency of use nor contribute significantly to the long-term human health and safety to personnel training at South Post. Rather, elimination of the surface danger zone outside of Fort Devens property would result in long-term beneficial effects and reduced safety risks to the public and personnel. In addition, the modernization of targetry at the range would reduce long-term cumulative impacts on human health and safety. Therefore, cumulative impacts on human health and safety would not be significant.

3.8.2.3 Biological Resources

For past, present, and future projects at Fort Devens South Post, construction projects would result in the loss of a small amount of forest habitat and would also be expected to generate some noise and fugitive dust, which could directly or indirectly affect wildlife species. Individually, projects would be expected to have negligible to minor long-term impacts, dependent on the biological community where the construction occurs, and would vary with the size, intensity, and duration of construction activities. Given the ample habitat on South Post, wildlife would be able to retreat if disturbed by noise, dust, or increased human activities. Furthermore, given the current ambient noise levels on the training ranges on South Post, wildlife are likely accustomed to noise levels on South Post.

Ongoing military mission activities include personnel maneuver training and weapons training. These activities are not anticipated to increase greatly in the future, and wildlife present on South Post are likely habituated to this activity. Implementation of the INRMP results in improved conditions for biological resources as a result of projects such as repairing damaged soils, stabilizing roads, maintaining grasslands, minimizing erosion, upgrading deficient culverts, managing invasive species, managing habitat for the monarch butterfly, improving pitch-pine-scrub oak habitat, and performing species surveys. The planned range control facility will be located on a previously disturbed area: the main entrance to South Post. Due to increased human activity in this area, it is less likely to currently serve as key wildlife habitat. In addition, the construction schedule would not overlap with the proposed Hotel Range renovation, so there would be no cumulative short-term impacts.

Taking all of these past, present, and future projects into account, cumulative impacts on biological resources would not be significant.

3.8.2.4 Cultural Resources

The Army meets stewardship requirements for cultural resources under Sections 106 and 110 of the National Historic Preservation Act, and Fort Devens has an ICRMP that is a reference and planning tool for management and preserving cultural resources while maintaining mission readiness. Consultation with the SHPO and other appropriate parties would be undertaken on a project-specific basis in order to identify, avoid, minimize, and/or mitigate any potential impacts on cultural resources when implementing individual projects. Past, present, and reasonably

foreseeable future projects at Fort Devens would not affect cultural resources within Hotel Range. Therefore, no significant, cumulative impacts on cultural resources would be expected.

3.8.2.5 Hazardous and Toxic Materials and Waste

Cumulative impacts associated with hazardous and toxic materials and wastes from past, present, and future actions would be less than significant. Construction and demolition activities would be expected to use small quantities of hazardous materials and generate small quantities of hazardous wastes while these activities are occurring. Activities would adhere to existing hazardous materials, waste, and spill management plans. The new range control facility would not affect the SPIA or the current LTM for groundwater contamination. The clearing of vegetation associated with Alternative 1 would increase groundwater recharge on the site but is not expected to affect groundwater flows or otherwise affect the CERCLA sites on Fort Devens (see Section 3.5.2 and Section 3.7.2 for more discussion on anticipated groundwater impacts near AOC 27). The Army is conducting ongoing cleanup and long-term monitoring for sites within the Fort Devens Superfund site where contamination remains. Ongoing monitoring and the five-year reviews would lead to adjustments in site cleanup, if warranted, which reduces long-term cumulative impacts on hazardous and toxic materials and waste.

The continued use of Hotel Range and other training ranges on South Post will result in the release of heavy metals, including lead, in the environment from training, which would contribute to long-term cumulative hazardous and toxic materials at the range. The renovation of Hotel Range would expand the footprint of the soils with spent ammunition and metals that is associated with use the range. While lead ammunition is not used at Hotel Range, use of lead and copper used throughout South Post is monitored annually and reported to the USEPA. The Army does not typically conduct cleanup of the spent ammunition at ranges until a range is closed down permanently, but all soil remains on site to contain any metals within the range footprint. The impacts on hazardous and toxic materials and wastes associated with Alternative 1 are considered minor and would not contribute significantly to cumulative effects at South Post. Therefore, implementation of Alternative 1, combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts on hazardous and toxic materials and wastes.

3.8.2.6 Geology and Soils

Cumulative impacts on geology and soil from past, present, and foreseeable future actions would be less than significant because the impacts are location specific. The impacts from the actions described in Section 3.8.1 would not have implications and/or impacts on geology and soils on Hotel Range. Therefore, cumulative impacts would not be significant.

3.8.2.7 Water Resources

For present and future projects, any construction on or in the immediate area of Hotel Range has the potential to affect surface water, groundwater, and stormwater runoff while ground-disturbing activities are occurring. An increase in impervious surfaces from exposed soil, parking lots, buildings, and/or tree clearing would increase surface water flow into nearby water bodies, particularly during rain events. Any ground-disturbing activities could alter groundwater flow depending on the groundwater elevation at the site of disturbance. There are no other projects ongoing or planned in the vicinity of Hotel Range and the SPIA that involve vegetation clearing, resulting in no cumulative effects associated with land clearing. The clearing of vegetation associated with Alternative 1 would increase the water recharge on the site, but is not expected to affect groundwater flows or otherwise impact groundwater contaminant levels (see Section 3.5.2 and Section 3.7.2 for more discussion on anticipated groundwater impacts

near AOC 27). The ongoing LTM of surface water and groundwater contaminant levels in the SPIA provides regulators and the public with scientific data for continuing evaluation of the cumulative impacts of the military mission on Fort Devens. Therefore, implementation of the Proposed Action, combined with the past, present, and reasonably foreseeable future projects, would not result in significant impacts on water resources.

4 Conclusion

4.1 Summary of Environmental Consequences

As assessed in this EA, Alternative 1, Alternative 2, and the No Action Alternative would not have any significant adverse impacts on any of the resource areas considered. A summary of impacts by resource area for the action alternatives and No Action Alternative are provided in Table 4-1.

4.2 Unavoidable Adverse Impacts

This EA has determined that the alternatives considered would not result in any significant impacts. Adverse impacts from Alternative 1 (the Army's Preferred Alternative) on air quality, human health and safety, hazardous and toxic materials and waste, geology and soils, and water resources would be, in general, localized, of short-term duration, and minimized through BMPs. Long-term adverse impacts from implementing Alternative 1 include the loss of habitat; the filling of potentially jurisdictional Wetland 4, which meets criteria for a vernal pool; the potential for disturbance of previously unknown archaeological resources; and alteration of site topography. These impacts are considered unavoidable adverse impacts.

4.3 Conclusions

Based on the findings of this EA, Alternative 1 is the environmentally-preferred alternative, and implementation of Alternative 1 would not result in significant impacts on the natural or human environment with implementation of avoidance, minimization, or mitigation measures required in accordance with Section 404 permitting under the Clean Water Act. Therefore, the preparation of an Environmental Impact Statement is not required, and issuance of a FNSI is warranted.

Table 4-1. Summary of Impacts from the Preferred Alternative, Alternative 2, and No Action Alternative

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Air Quality	Short-term minor air emissions during site preparation and construction. No long-term impacts. No significant impacts.	Similar to Alternative 1, but with greater short-term impacts due to the larger area. No significant impacts.	No change in current conditions. No significant impacts.
Human Health and Safety	Short-term minor adverse impacts from potential construction hazards; long-term minor benefits from shifting the range surface danger zone to within South Post boundaries. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	Long-term minor adverse impacts from surface danger zone remaining outside South Post boundaries, and the range not meeting Army safety and training standards. No significant impacts.

Resource Area	Alternative 1 (Preferred Alternative)	Alternative 2	No Action Alternative
Biological Resources	Negligible-to-moderate, short-term impacts from construction, and negligible-to-minor, long-term impacts from permanent loss of forested habitat and a vernal pool. No significant impacts.	Negligible-to-moderate, short-term impacts from construction, and negligible-to-minor, long-term impacts from permanent loss of forested habitat and a vernal pool. Habitat loss would be greater than under Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.
Cultural Resources	No adverse effects on above-ground historic properties. Potential for disturbance of previously unknown archaeological resources during grading, excavation, and construction. Army would adhere to all federal regulations and consultation to reduce potential minor to moderate adverse effects. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.
Hazardous and Toxic Materials and Waste	Short-term, minor adverse impacts from construction activities and clearing and grading occurring over AOC 27; no long-term impacts. No significant impacts.	Impacts similar to Alternative 1. No significant impacts.	No change in current conditions. No significant impacts.
Geology and Soils	Short-term, adverse impacts on topography and soils from site clearing and grading. Long-term impacts from grading of two areas of the range. No significant impacts.	Similar to Alternative 1, but with greater short-term impacts due to the larger area. No significant impacts.	No change in current conditions. No significant impacts.
Water Resources	No impacts on floodplains. Short-term, minor impacts on surface water; short- and long-term minor impacts on wetlands; short-term negligible impacts on groundwater. Long-term impacts from the loss of one potentially jurisdictional wetland, which also meets the criteria for a vernal pool. Section 404 permitting would occur to ensure minimal impacts on wetlands. No significant impacts.	No impacts on floodplains. Short-term, minor impacts on surface water; short- and long-term impacts on wetlands; short-term negligible impacts on groundwater. Long-term direct impact from the loss of one potentially jurisdictional wetland, and a firing lane intersecting a jurisdictional wetland. Section 404 permitting would occur to ensure minimal impacts on wetlands. No significant impacts.	No change in current conditions. No significant impacts.

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Media

Sentinel & Enterprise

Nashoba Valley Voice

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Appendix A. Agency Consultation

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USFWS IPaC Species List, April 28, 2020



United States Department of the Interior

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In Reply Refer To:
Consultation Code: 05E1NE00-2020-SLI-0421
Event Code: 05E1NE00-2020-E-06990
Project Name: Fort Devens Hotel Range Renovation

April 28, 2020

Subject: Updated list of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

04/28/2020

Event Code: 05E1NE00-2020-E-06990

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A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

04/28/2020

Event Code: 05E1NE00-2020-E-06990

1

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

04/28/2020

Event Code: 05E1NE00-2020-E-06990

2

Project Summary

Consultation Code: 05E1NE00-2020-SLI-0421

Event Code: 05E1NE00-2020-E-06990

Project Name: Fort Devens Hotel Range Renovation

Project Type: LAND - CLEARING

Project Description: The project would be located on the South Post of Fort Devens, bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts.

The entire project area is less than 65 acres, and the majority of this area is part of the existing range. Under the Preferred Alternative, 18 acres of trees would be cleared for conversion into open field habitat. Under the larger Alternative 2, 28 acres of trees would be cleared for conversion into open field habitat. The installation plans to conduct tree removal activities outside of the northern long-eared bat active season (April 1 to October 31).

The Proposed Action would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would entirely be within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected. Due to a re-orientation of the range, there are some forested areas (18 acres) that will need to be cleared. There are additionally some smaller portions of the site that will be graded down; soil will be used elsewhere on the site, likely to build up the new firing range berm.

Ideally, construction would begin in FY 2021.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.50669818375086N71.64642352172406W>

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3



Counties: Worcester, MA

04/28/2020

Event Code: 05E1NE00-2020-E-06990

4

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS Key Determination, January 14, 2020



United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>



In Reply Refer To:
Consultation Code: 05E1NE00-2020-TA-0421
Event Code: 05E1NE00-2020-E-02777
Project Name: Fort Devens Hotel Range Renovation

January 14, 2020

Subject: Verification letter for the 'Fort Devens Hotel Range Renovation' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear John Cannon:

The U.S. Fish and Wildlife Service (Service) received on January 13, 2020 your effects determination for the 'Fort Devens Hotel Range Renovation' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take" ^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

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If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

01/14/2020

Event Code: 05E1NE00-2020-E-02777

3

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Fort Devens Hotel Range Renovation

2. Description

The following description was provided for the project 'Fort Devens Hotel Range Renovation':

The project would be located on the South Post of Fort Devens, bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts.

The entire project area is less than 65 acres, and the majority of this area is part of the existing range. Under the Preferred Alternative, 18 acres of trees would be cleared for conversion into open field habitat. Under the larger Alternative 2, 28 acres of trees would be cleared for conversion into open field habitat. The installation plans to conduct tree removal activities outside of the northern long-eared bat active season (April 1 to October 31).

The Proposed Action would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would entirely be within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected. Due to a re-orientation of the range, there are some forested areas (18 acres) that will need to be cleared. There are additionally some smaller portions of the site that will be graded down; soil will be used elsewhere on the site, likely to build up the new firing range berm.

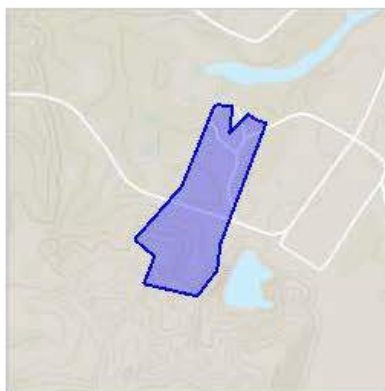
Ideally, construction would begin in FY 2021.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/42.50669818375086N71.64642352172406W>

01/14/2020

Event Code: 05E1NE00-2020-E-02777

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**Determination Key Result**

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

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Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

No

3. Will your activity purposefully **Take** northern long-eared bats?

No

4. Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered*No*

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

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7. Will the action involve Tree Removal?

Yes

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

01/14/2020

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Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

28

2. If known, estimated acres of forest conversion from April 1 to October 31

0

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

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10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0

SHPO Consultation Letter, February 10, 2020



DEPARTMENT OF THE ARMY
HEADQUARTERS, FORT DEVENS
31 QUEBEC STREET
DEVENS, MASSACHUSETTS 01434-4424

Ms. Brona Simon
Massachusetts Historic Preservation Officer
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

SUBJECT: Environmental Assessment – National Environmental Policy Act and National
Historic Preservation Act Section 106 Consultation Initiation, Proposed Renovation
of the Hotel Range at U.S. Army Garrison Fort Devens, Massachusetts

Dear Ms. Simon:

The Department of the Army is preparing an Environmental Assessment for the above-referenced Hotel Range Renovation Proposal at Fort Devens, in accordance with Department of Defense (DoD) regulations for compliance with the *National Environmental Policy Act* (NEPA) and the *National Historic Preservation Act* of 1966 as amended (NHPA), 36 CFR 800.8(c).

Fort Devens is located in north-central Massachusetts, approximately 35 miles northwest of Boston. The garrison is bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts. Fort Devens is approximately 5,196 acres, which is divided into five noncontiguous parcels including a Main Post, 3400 Area, Airfield, cemetery, and South Post. Most of the garrison's administrative buildings and structures are located within the Main Post. The proposed project will occur on the 4,880-acre South Post, which is used for field training (Attachment 1).

General Description of the Undertaking

The preferred alternative would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would entirely be within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected.

The Undertaking is needed to modernize the Hotel Range to better fulfill the training requirements at the range to meet Army safety and training standards and requirements, as outlined in Army Training Circular (TC) 28-8. The existing Hotel Range operates a four firing lane light multipurpose machine gun range with single-man foxhole positions. There is room for assistant gunners adjacent to the foxholes but no vehicle firing points are accessible to the firing line, which is atop a berm. The existing targets and facilities at the range are approaching their lifecycle limits, and the range does not meet current Army standards. The Hotel Range firing lanes are not a standard width, reducing target acquisition opportunities and limiting engagement opportunities by soldiers. The existing target systems have old wiring and are at the end of their life cycle, resulting in malfunctions during cold weather months and longer recovery times as

compared to modern target systems. As a result, personnel require longer training times, which reduces throughput on the range. In addition, the existing target systems are not the current Army training standard and need modernizing. The current non-standard range with limited engagement opportunities restricts Army weapons training goals. In addition, the Undertaking is needed to alleviate the yearly waiver requirement on Hotel Range by reorienting the surface danger zones so that they remain on Fort Devens property.

The proposed range would be constructed approximately 500 feet east of the existing range, with the firing lines reoriented so that the surface danger zone is entirely within Fort Devens property (Attachment 2). The range would remain a light multipurpose machine gun range, with firing lanes extending to 800 meters and standard center lane targets located at 100 meters, 200 meters, and 300 meters. Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army TC 28-8 standards. The Range Operations and Control Area (ROCA) facilities at the current range would be demolished. These include a control tower, an ammunition breakdown building, and three storage buildings. New ROCA facilities would be built at the new range. These facilities would include a control tower, classroom building (800 square feet), operations and storage building (800 square feet), covered bleachers, covered mess (800 square feet), and ammunition breakdown building (185 square feet). Facilities would be designed in accordance with Department of Defense's (DoD) Unified Facilities Code (UFC) 1-200-02.

Grading of the new range footprint would be needed to maintain line of sight for personnel using the range. In addition, the clearing of approximately 18 acres of forested area would be required for the renovated range in order to provide clearance for the firing lanes. A new gravel service road would be added to provide access to the new firing lines, as well as a gravel parking area for 20 vehicles. The service road and parking at the existing firing line would remain in place, but the operations at the range (frequency, duration, or caliber) are not expected to change under the Proposed Action.

Project Area of Potential Effect (APE)

Per NHPA Sections 800.4(a)(1) and 800.16(d), the Area of Potential Effect (APE) for the undertaking was determined the same for both above-ground and below-ground historic properties.

The APE for cultural resources consists of the entire proposed boundary for the project area. The APE was determined to encompass both indirect and direct effects to above- or below-ground properties, if any were located there.

Historic Resources in the Area of Potential Effect

All above-ground resources associated with Fort Devens have been evaluated and there are no NRHP-eligible or listed resources on the South Post. The resources to be demolished are a storage shed, tower, ammunition hut, and range berm all built between 1980 and 1993. According to the 2002 ICRMP, areas constructed since 1957 should not require architectural survey to inventory and evaluate buildings and structures. The above-ground resources at Hotel Range do not require survey and evaluation since they were constructed since 1980.

A predictive model for archaeological sensitivity was developed for Fort Devens in 1989 and further refined in 1993 and 1998.

- Virginia Fitch and Suzanne Glover, *Historic and Prehistoric Reconnaissance Survey, Fort Devens (Main Post, North Post, South Post, Massachusetts)*. Prepared by The Public Archaeology Lab, Inc. (1989)
- Suzanne Glover and Kerrylynne Boire, *Final Report Archaeological Inventory Survey, Fort Devens, Massachusetts, Volume 1*. Prepared by The Public Archaeology Laboratory, Inc., (1993)
- Suzanne G Cherau, Virginia H. Adams, and Stephen A. Olausen, *Integrated Cultural Resources Management Plan, Devens Reserve Forces Training Area Devens, Massachusetts*. Prepared by the Public Archaeology Laboratory, Inc., (1998)

A significant portion of Fort Devens has not been surveyed for archaeological resources. As of 1998, Fort Devens contained approximately 2,500 acres within the South Post Range areas that are assessed as having moderate to high prehistoric archaeological sensitivity. In addition, approximately 3,500 acres of South Post has been assessed as having moderate to high historic archaeological sensitivity. The area along the north end and along the west side of the project area is labeled as having moderate to high sensitivity for historic and prehistoric archaeology (Attachment 3).

A large archaeological survey across Fort Devens in 1993 documented a number of sites on South Post. Within approximately a half-mile of the proposed alternative there have been 14 documented sites, Table 1. One of these is a prehistoric site, Slate Rock, approximately .20 miles to the northwest of the proposed alternative. This site has not been evaluated for the NRHP due to the lack of information. The remaining thirteen sites are historic and date primarily from the eighteenth and nineteenth centuries. These sites are primarily historic farmsteads and dwellings, and one is a school site. Three of these sites have been determined not eligible due to the lack of integrity and information potential. Ten are unevaluated and need more information for a NRHP eligibility evaluation.

Table 1. Inventory of Archaeological Sites within a .50-mile Radius of the Preferred Alternative

Site Number/Name	Period	Use	NRHP Eligibility
Prehistoric Sites			
Slate Rock	Unknown	Unknown	Unknown
Historic Sites			
#4S	18 th -19 th century	Dwelling	Unknown
#5S	18 th -19 th century	Farmstead	Unknown
#6S	18 th -19 th century	Farmstead	Unknown
#8S	18 th -19 th century	Farmstead	Not Eligible
#10S	18 th -19 th century	Pauper Farm	Not Eligible

Site Number/Name	Period	Use	NRHP Eligibility
#11S	18 th -19 th century	Farmstead	Not Eligible
#12S	18 th -19 th century	School	Unknown
#13S	18 th -19 th century	Farmstead	Unknown
#14S	18 th -19 th century	Farmstead	Unknown
#15S	19 th century	Pauper farm and possible burial ground	Unknown
#23S	19 th century	Farmstead	Unknown
#25S	19 th century	Dwelling	Unknown
#28S	18 th -19 th century	Farmstead	Unknown

Native American Consultation

There are no known Native American requirements for the use of USAG Fort Devens lands for religious purposes. The Army will consult with Federally recognized tribes who may have an interest in the project. The Army contacted the following tribes regarding identification of historic properties within the APE: Mashpee Wampanoag Tribe, Narragansett Indian Tribe, and Wampanoag Tribe of Gay Head.

Determination of Effect

Implementation of the Undertaking will not affect above-ground historic properties either directly or indirectly. There are no NRHP-eligible architectural resources within or adjacent to Hotel Range.

The sensitivity model mentioned above depicts areas on the current range as having archaeological sensitivity, which is not entirely accurate since it did not take into account the range having a high level of disturbance. The range been disturbed from the cutting, the grading, and the resulting erosion, all from its construction. It has been further disturbed from range activities. The current range is considered to be of low archaeological potential. Taking this into account, the proposed Hotel Range has approximately 7.48 acres considered sensitive for pre-historic archaeology and nearly 11.15 acres of historic archaeological sensitivity (Attachment 4).

Potential exists for disturbance of previously unknown archaeological resources during the grading, excavation and construction of the Undertaking. There is potential for long- term, minor to moderate, adverse effects on cultural resources within the area. The Army suggests that an Inadvertent Discovery Plan be included in the construction contractor plans and material, and that a professional archaeologist on-call monitor be available as needed during construction. Should archaeological remains be identified, the Inadvertent Discovery Plan would take effect.

The Army seeks your concurrence on this determination. Please provide your comments no later than 30 days from receipt of this letter; if no response is received, the Army will presume the determination is correct and proceed.

If you have any questions or would like to visit the project area, please contact me either by email at suzanne.f.richardson2.civ@mail.mil, or by telephone at (978) 615-6086. We look forward to your response.

Sincerely,

RICHARDSON.SUZA
NNE.F.1384535808

Digitally signed by
RICHARDSON.SUZA
35808
Date: 2020.02.02 15:21:06 -0500

Suzanne Richardson
Natural Resource Specialist
USAG Fort Devens DPW

Enclosures:

- (1) Attachment 1: Location of Fort Devens
- (2) Attachment 2: Current and Proposed Location of the Hotel Range
- (3) Attachment 3: Archaeological Sensitivity Areas within the APE
- (4) Massachusetts Historical Commission Project Notification Form

Concurrence with No Adverse Effect Determination, Massachusetts Historical Commission

_____ Concur _____ Do Not Concur

Date _____

Note: Attachments 1-3 not included here, the figures correspond to Figures 1-1, 2-1, and 3-2 in the EA.

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A

MASSACHUSETTS HISTORICAL COMMISSION
220 MORRISSEY BOULEVARD
BOSTON, MASS. 02125
617-727-8470, FAX: 617-727-5128

PROJECT NOTIFICATION FORM

Project Name: Hotel Range Renovation

Location / Address: United States Army Garrison Fort Devens, 37 Quebec Street

City / Town: Devens, MA 01434

Project Proponent

Name: U.S. Army Reserves

Address: _____

City/Town/Zip/Telephone: _____

Agency license or funding for the project (list all licenses, permits, approvals, grants or other entitlements being sought from state and federal agencies).

Agency Name

Type of License or funding (specify)

Project Description (narrative):

The Proposed Action would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would entirely be within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. New structures would be built at the new firing line. No changes in the use of the range are expected.

Does the project include demolition? If so, specify nature of demolition and describe the building(s) which are proposed for demolition.

Full demolition includes firing structures, a control tower 208 sq. ft., an ammunition breakdown building 246 sq. ft., uncovered bleachers, and three storage buildings - 158, 278, and 804 sq. ft. The buildings date to 1993 and the range dates to 1980.

Does the project include rehabilitation of any existing buildings? If so, specify nature of rehabilitation and describe the building(s) which are proposed for rehabilitation.

There will be no rehabilitation of existing buildings.

Does the project include new construction? If so, describe (attach plans and elevations if necessary).

New buildings include a control tower, classroom building (800 square feet), operations and storage building (800 square feet), covered bleachers, covered mess (800 square feet), and ammunition breakdown building (185 square feet). No plans are available at this time.

5/31/96 (Effective 7/1/93) - corrected

950 CMR - 275

950 CMR: OFFICE OF THE SECRETARY OF THE COMMONWEALTH

APPENDIX A (continued)

To the best of your knowledge, are any historic or archaeological properties known to exist within the project's area of potential impact? If so, specify.

No known historic or archaeological properties exist in the APE.

What is the total acreage of the project area?

Woodland	18	acres
Wetland	0	acres
Floodplain	0.5	acres
Open space	27.96	acres
Developed	2.88	acres

Productive Resources:	
Agriculture	0 acres
Forestry	0 acres
Mining/Extraction	0 acres
Total Project Acreage	49.34 acres

What is the acreage of the proposed new construction? 18 acres will be cleared for the new range

What is the present land use of the project area?

South Post is the primary location where tactical training takes place. South Post is dedicated to individual small arms training and small unit level training with limited maneuver capability. The project area is partially wooded and most of it is the existing range.

Please attach a copy of the section of the USGS quadrangle map which clearly marks the project location.

This Project Notification Form has been submitted to the MHC in compliance with 950 CMR 71.00.

Signature of Person submitting this form: _____ Date: _____

Name: _____

Address: _____

City/Town/Zip: _____

Telephone: _____

REGULATORY AUTHORITY

950 CMR 71.00: M.G.L. c. 9, §§ 26-27C as amended by St. 1988, c. 254.

7/1/93

950 CMR - 276



SHPO Response Letter, March 13, 2020



The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

March 13, 2020

Suzanne Richardson
Natural Resources Specialist
USAG Fort Devens DPW
Department of the Army
Headquarters, Fort Devens
31 Quebec Street
Devens, MA 01434-4424

RE: Hotel Range Renovation, US Army Garrison, Fort Devens South Post, Lancaster, MA.
MHC # RC.64672.

Dear Ms. Richardson:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the information you submitted concerning the renovation of the Hotel gunnery range on the Fort Devens South Post.

The MHC concurs with your determination that the undertaking will not affect any significant historic or archaeological properties. The MHC concurs with your recommendation that an Inadvertent Discovery Plan be implemented.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), and 950 CMR 70. If you have any questions or require additional information, please contact Jonathan K. Patton at this office.

Sincerely,

A handwritten signature in cursive script that reads "Brona Simon".

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Kate Atwood, USACOE-New England District

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Native American Tribe Consultation Letter, February 10, 2020

A copy of the following letter was sent to each of the Native American Tribes listed in Section 6.



DEPARTMENT OF THE ARMY
HEADQUARTERS, FORT DEVENS
31 QUEBEC STREET
DEVENS, MASSACHUSETTS 01434-4424

The Honorable Matthew Thomas
Chief Sachem
Narragansett Indian Tribe
P.O. Box 1354
Charleston, RI 02813

SUBJECT: *National Environmental Policy Act* and *National Historic Preservation Act*
Consultation for the Proposed Hotel Range Renovation at U.S. Army Garrison Fort Devens,
Massachusetts

Dear Chief Thomas:

The Department of the Army is preparing an Environmental Assessment for the above-referenced Hotel Range Renovation Proposal at Fort Devens, in accordance with Department of Defense (DoD) regulations for compliance with the *National Environmental Policy Act* (NEPA) and the *National Historic Preservation Act* of 1966 as amended (NHPA), 36 CFR 800.8(c).

Fort Devens is located in north-central Massachusetts, approximately 35 miles northwest of Boston. The garrison is bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts. Fort Devens is approximately 5,196 acres, which is divided into five noncontiguous parcels including a Main Post, 3400 Area, Airfield, cemetery, and South Post. Most of the garrison's administrative buildings and structures are located within the Main Post. The proposed project will occur on the 4,880-acre South Post, which is used for field training (Attachment 1).

General Description of the Proposed Action

The Proposed Action would reorient Hotel Range on the Fort Devens South Post by moving the firing lanes so that the range's surface danger zone would entirely be within Army property. In addition, the range would be modernized to meet Army training standards, including adding vehicle firing positions and updating targetry at the range. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected.

The Proposed Action is needed to modernize the Hotel Range to better fulfill the training requirements at the range to meet Army safety and training standards and requirements, as outlined in Army Training Circular (TC) 28-8. The existing Hotel Range operates a four firing lane light multipurpose machine gun range with single-man foxhole positions. There is room for assistant gunners adjacent to the foxholes but no vehicle firing points are accessible to the firing line, which is atop a berm. The existing targets and facilities at the range are approaching their lifecycle limits, and the range does not meet current Army standards. The Hotel Range firing

lanes are not a standard width, reducing target acquisition opportunities and limiting engagement opportunities by soldiers. The existing target systems have old wiring and are at the end of their life cycle, resulting in malfunctions during cold weather months and longer recovery times as compared to modern target systems. As a result, personnel require longer training times, which reduces throughput on the range. In addition, the existing target systems are not the current Army training standard and need modernizing. The current non-standard range with limited engagement opportunities restricts Army weapons training goals. In addition, the Proposed Action is needed to reorient the range so that the surface danger zone remains on Fort Devens property.

The proposed range would be constructed approximately 500 feet east of the existing range, with the firing lines reoriented so that the surface danger zone is entirely within Fort Devens property (Attachment 2). The range would remain a light multipurpose machine gun range, with firing lanes extending to 800 meters and standard center lane targets located at 100 meters, 200 meters, and 300 meters. Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army TC 28-8 standards. The ROCA facilities at the current range would be demolished, and new ROCA facilities would be built at the new range. These facilities would include a control tower, classroom building (800 square feet), operations and storage building (800 square feet), covered bleachers, covered mess (800 square feet), and ammunition breakdown building (185 square feet). Facilities would be designed in accordance with Department of Defense's (DoD) Unified Facilities Code (UFC) 1-200-02.

Grading of the new range footprint would be needed to maintain line of sight for personnel using the range. In addition, the clearing of approximately 18 acres of forested area would be required for the renovated range in order to provide clearance for the firing lanes. A new gravel service road would be added to provide access to the new firing lines, as well as a gravel parking area for 20 vehicles. The service road and parking at the existing firing line would remain in place, but the operations at the range (frequency, duration, or caliber) are not expected to change under the Proposed Action.

We would appreciate any background information regarding the prehistory, history, and ethnography, sacred lands and known historic properties that you can provide about this project area. In addition, we are interested in any other Native American and/or local community concerns regarding cultural resources already known or likely to be present within the project area.

Your response to this letter in identifying any historic properties, including Traditional Cultural Properties (TCPs) that may exist within the project's Area of Potential Effects (APE), and providing any key tribal contacts, is greatly appreciated. We are also inviting comments regarding any other tribal concerns the proposed project may raise. Your timely response will assist us in incorporating your concerns into project planning.

We value your assistance and look forward to consulting further if there are historic properties of religious and cultural significance to your tribe that may be affected by this project.

If you have any questions, please contact me by telephone at (978) 615-6086 or email at suzanne.f.richardson2.civ@mail.mil.

Sincerely,

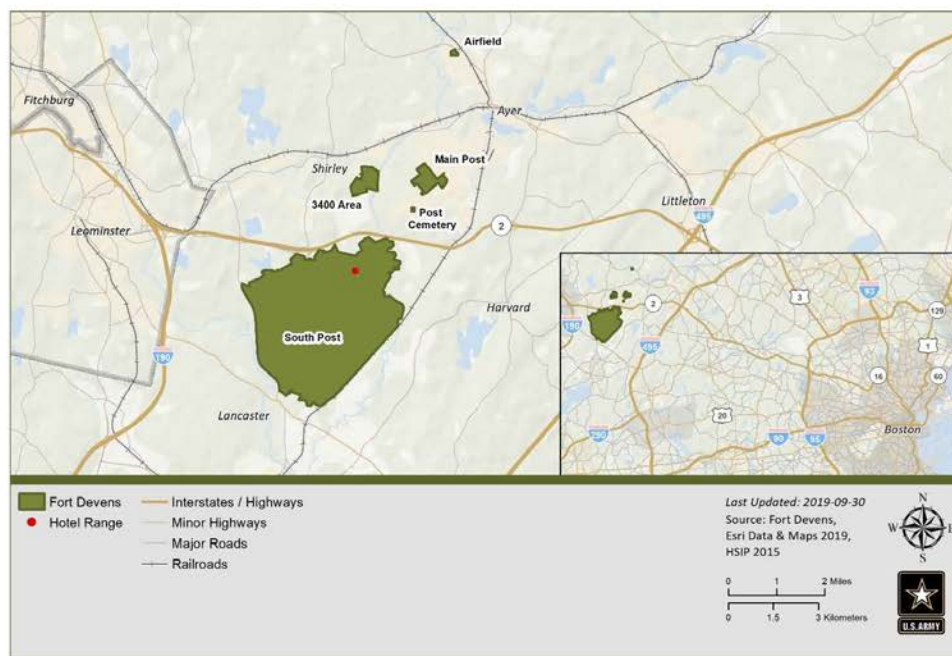
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Suzanne Richardson
Natural Resource Specialist
USAG Fort Devens DPW

cc: John Brown, THPO

Enclosures:

- (1) Attachment 1: Location of Fort Devens
- (2) Attachment 2: Current and Proposed Location of the Hotel Range



Attachment 1. Location of Fort Devens



Attachment 2. Proposed Range Configuration and Comparison

Agency Consultation Letter, April 30, 2020

A copy of the following letter was sent to the agencies listed in Section 6.



DEPARTMENT OF THE ARMY
HEADQUARTERS, FORT DEVENS
31 QUEBEC STREET
DEVENS, MASSACHUSETTS 01434-4424

April 30, 2020

Ms. Suzanne Richardson
Natural Resource Specialist
U.S. Army Garrison Fort Devens
Directorate of Public Works
30 Quebec Street, Box 10
Devens, MA 01434-4479

Mr. Tom Chapman, Supervisor
U.S. Fish and Wildlife Service
New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301

Re: Environmental Assessment for Hotel Range Renovation at U.S. Army Garrison Fort Devens, Massachusetts

Dear Mr. Chapman:

U.S. Army Garrison Fort Devens is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] 4321 et seq.), Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and Army Regulation for implementing NEPA (32 CFR 651) to evaluate the potential effects associated with renovating Hotel Range on the Fort Devens South Post.

Fort Devens is located in north-central Massachusetts, approximately 35 miles northwest of Boston. It is bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts. Fort Devens is approximately 5,196 acres, which is divided into five noncontiguous parcels including a Main Post (or Cantonment), 3400 Area, Airfield, Cemetery, and South Post. The Proposed Action would occur within South Post, which is used for field training. Hotel Range is located approximately one mile south of the main entrance to South Post. The range covers approximately 46.6 acres and is currently used exclusively for firing small-caliber automatic weapons.

The Proposed Action is to renovate Hotel Range in order to (1) reorient the firing lines so that the surface danger zone associated with the range is entirely within South Post boundaries, and (2) modernize the range so that it complies with current Army training and design standards. Demolition of the existing range support structures would occur, and new structures would be built at the new firing line. No changes in the use of the range (i.e., frequency, duration, or caliber) are expected. Grading of the renovated range footprint would be needed to maintain line of sight for personnel using the range; approximately 30,000 cubic yards of soil would be excavated with much being reused as fill at the renovated range firing line. Clearing of

forested area would also be required for the renovated range in order to provide line of sight for the firing lanes. A new gravel service road would be added to provide access to the new firing lines, as well as a gravel parking area for 20 vehicles.

The EA evaluates the potential effects associated with two action alternatives and a No Action Alternative. Alternative 1 (the Preferred Alternative) would consist of a four-lane range, with each firing lane providing standard vehicle and two-man firing positions in accordance with current Army standards. The firing positions would require an increase in elevation in order to maintain line of sight down the range. To accomplish this, fill dirt would be used to raise the elevation to approximately 250 feet above mean sea level, and a sheet pile retaining wall would be installed to the north to contain the soil and reduce impacts to the wetlands to the north of the renovated firing line (see Figure 1).

Under Alternative 2, the range would be constructed in the same location and orientation as under Alternative 1 but would include a fifth firing lane (see Figure 2). Each firing lane would provide standard vehicle and two-man firing positions in accordance with current Army standards. To maintain line of sight down the range, a berm would be built to elevate the firing positions to an elevation of approximately 250 feet above mean sea level.

The No Action Alternative is included in the EA to provide a baseline for measuring the environmental consequences of Alternatives 1 and 2.

The EA analyzes potential effects of the alternatives in detail on: air quality; human health and safety; biological resources; cultural resources; hazardous and toxic materials and waste; geology and soils; and water resources. Under both Alternative 1 and Alternative 2, construction of a new access road would require fill within a potentially jurisdictional wetland. Any fill within jurisdictional wetlands would be permitted in accordance with Section 404 of the Clean Water Act and the Massachusetts Wetlands Protection Act, and mitigated, if required. With implementation of avoidance, minimization, or mitigation measures required in accordance with Section 404 permitting under the Clean Water Act and the Massachusetts Wetland Protection Act, impacts under both action alternatives would remain less than significant. No significant direct, indirect, or cumulative effects on the local natural or human environment would be expected as a result of implementing Alternative 1 or Alternative 2. Therefore, issuance of a Finding of No Significant Impact (FNSI) is anticipated.

The Army would like to invite your organization to review the EA and Draft FNSI, which can be found online at <https://home.army.mil/devens>. Printed copies can be found at the Thayer Memorial Library in Lancaster, if reopened to the public after restrictions due to COVID-19. Printed copies of the EA and Draft FNSI can be sent through the mail as either hard copies or as printable compact discs upon request. Point of contact, Ms. Suzanne Richardson, can receive requests for mailed materials. The EA is available for a 30-day public comment period beginning May 8, 2020. Comments on the EA may be submitted via email to suzanne.f.richardson2.civ@mail.mil, or via U.S. mail, no later than June 8, 2020, to:

Ms. Suzanne Richardson
USAG Fort Devens DPW
30 Quebec Street, Box 10
Devens, MA 01434

The Army thanks you for your interest and participation in the public comment period. If you have any questions or need further information on this project, please contact Ms. Suzanne Richardson at 978-615-6086 or suzanne.f.richardson2.civ@mail.mil.

Sincerely,

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Suzanne Richardson
Natural Resource Specialist
USAG Fort Devens DPW

Enclosures:

- (1) Figure 1. Hotel Range Renovation, Alternative 1
- (2) Figure 2. Hotel Range Renovation, Alternative 2

U.S. Army Corps of Engineers Consultation Letter, April 30, 2020



DEPARTMENT OF THE ARMY
HEADQUARTERS, FORT DEVENS
31 QUEBEC STREET
DEVENS, MASSACHUSETTS 01434-4424

April 30, 2020

Ms. Suzanne Richardson
Natural Resource Specialist
U.S. Army Garrison Fort Devens
Directorate of Public Works
30 Quebec Street, Box 10
Devens, MA 01434-4479

Michael Wierbonics
U.S. Army Corps of Engineers
New England District Regulatory Division
Concord Park
696 Virginia Road
Concord, MA 01742

Re: Hotel Range Renovation at U.S. Army Garrison Fort Devens, Massachusetts

Dear Mr. Wierbonics:

U.S. Army Garrison Fort Devens is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] 4321 et seq.), Council on Environmental Quality regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508), and Army Regulation for implementing NEPA (32 CFR 651) to evaluate the potential effects associated with renovating Hotel Range on the Fort Devens South Post. This letter is intended to initiate coordination with your agency on for the draft findings of the EA on the impacts to wetlands near construction for this project.

Fort Devens is located in north-central Massachusetts, approximately 35 miles northwest of Boston. It is bordered by the towns of Ayer, Shirley, Harvard, and Lancaster, Massachusetts (see Figure 1). Fort Devens is approximately 5,196 acres, which is divided into five noncontiguous parcels including a Main Post (or Cantonment), 3400 Area, Airfield, Cemetery, and South Post. The Proposed Action would occur within South Post, which is used for field training. Hotel Range is located approximately one mile south of the main entrance to South Post. The range covers approximately 46.6 acres and is currently used exclusively for firing small-caliber automatic weapons.

The EA and Draft FNSI are available for a 30-day public review period. The documents can be viewed online at <https://home.army.mil/devens>. Printed copies can be found at the Thayer Memorial Library in Lancaster, if reopened to the public after restrictions due to COVID-19. Printed copies of the EA and Draft FNSI can be sent through the mail as either hard copies or as printable compact discs upon request. Point of contact, Ms. Suzanne Richardson, can receive requests for mailed materials.

Project Description

The Army proposes to renovate Hotel Range in order to (1) reorient the firing lanes so the surface danger zone associated with the range is entirely within South Post boundaries, and (2) modernize the range so it complies with current Army training and design standards. The Preferred Alternative for the renovated range would be constructed approximately 500 feet east of the current range, with the firing lines reoriented so that the surface danger zone is entirely within Fort Devens property (see Figure 2).

The range firing positions would require an increase in elevation in order to maintain line of sight down the range. To accomplish this, fill dirt would be used to raise the elevation to approximately 250 feet above mean sea level, and a sheet pile retaining wall would be installed to the north of the firing line to contain the soil and reduce erosion and sedimentation impacts to the wetlands to the north of the renovated firing line. The sheet pile retaining wall would vary in height between 6 to 8 feet, dependent on the existing topography of the site and the required elevation for line of sight. The proposed renovated range would encompass approximately 49.3 acres.

Construction of a new access road at the renovated range would require fill within a potentially jurisdictional wetland. This would be unavoidable as a matter of safety, so that the roadway would not fall within the range's surface danger zone, and to avoid direct impacts on the wetland associated with Slate Rock Pond to the north of Hotel Range. For any discharge of fill within jurisdictional wetlands under the Proposed Action, the Army would obtain all permits required in accordance with Section 404 of the Clean Water Act, and would mitigate impacts, if required under this permitting.

In order to provide the line of sight for the length of the range, the forested area within the range boundaries would be cleared and soil would be graded to a consistent height for the length of the range. All trees would be cleared within the proposed renovated range footprint, an estimated 18 acres of forested area. Considerable grading would occur along the eastern boundary of the proposed renovated range, resulting in approximately 30,000 cubic yards of soil to be cut. None of the cut soil would be removed from the range; the excavated soil would be moved to the new firing line area to elevate the firing positions to the necessary line of sight position. A new gravel road for accessing the range would be built north of the firing positions. The current range facilities would be demolished, and new range facilities would be built at the renovated range. These facilities would include a control tower, classroom building, operations and storage building, covered bleachers, covered mess, and ammunition breakdown building. Erosion and sediment controls and best management practices would be implemented during all site preparation and construction, including but not limited to appropriate sequencing of construction, silt fencing, sediment traps, covering soil stockpiles, and watering exposed areas.

The implementation of the Army's preferred alternative would unavoidably result in discharge of fill within Wetland 4, a potentially jurisdictional, 0.03-acre anthropogenic isolated wetland for the construction of the unpaved access road (see Figure 3). There would be no other direct impacts on surrounding jurisdictional wetlands. Tree clearing, grading activities, demolition of existing buildings, and new building construction would occur within the state-designated 100-foot wetland buffer zone at Wetlands 1, 2, 3, and 5 (see Figure 3). The wetland boundaries depicted in Figure 3 were determined during a 2018 wetland survey in the vicinity of

Hotel Range and the Proposed Action. Fort Devens is coordinating with USACE for concurrence with the wetland survey findings under a preliminary jurisdictional determination.

Permitting for work within jurisdictional wetlands would be done in accordance with Section 404 of the Clean Water Act, and the Army would mitigate impacts on jurisdictional wetlands, if required. Design plans are not yet finalized but, because the size of the Wetland 4 is less than 5,000 square feet, the Army will pursue coverage under the Massachusetts General Permit 8 for Institutional Development, which sets forth permitting conditions. Once range designs are finalized, the Army will obtain all required permits pursuant to Section 404 of the Clean Water Act and the Massachusetts Wetland Protection Act, and implement any avoidance, minimization, or mitigation measures, if necessary, to ensure impacts on wetlands from the project would be minimal.

Determination

The EA concludes that there would be direct adverse impacts to a potentially jurisdictional wetland from implementation of the Preferred Alternative, and there would be minor, indirect impacts from potential erosion and sedimentation on other jurisdictional wetlands near the project site. Indirect impacts would be minimized through use of best management practices during construction. With implementation of avoidance, minimization, or mitigation measures required in accordance with Section 404 permitting under the Clean Water Act and the and the Massachusetts Wetland Protection Act, impacts from the discharge of fill within Wetland 4 would be minimal. The Army seeks your concurrence on this determination, or any comments you may have on the proposed action.

Please provide your comments no later than 30 days from receipt of this letter; if no response is received, the Army will presume the determination is correct and proceed. Advanced notification of significant concerns would also be greatly appreciated. Please direct all written correspondence to:

Ms. Suzanne Richardson
USAG Fort Devens DPW
30 Quebec Street, Box 10
Devens, MA 01434

If you have any questions or need further information on this project, including a copy of the wetland delineation report, please contact me at suzanne.f.richardson2.civ@mail.mil or (978) 615-6086.

Sincerely,

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Suzanne Richardson
Natural Resource Specialist
USAG Fort Devens DPW

Response Letter from Massachusetts Department of Environmental Protection, May 29, 2020

From: Chaffin, David (DEP) [<mailto:david.chaffin@state.ma.us>]

Sent: Friday, May 29, 2020 9:54 AM

To: Richardson, Suzanne F (Suzy) CIV USARMY (USA)
<suzanne.f.richardson2.civ@mail.mil>

Cc: Keating, Carol <Keating.Carol@epa.gov>

Subject: [Non-DoD Source] Hotel Range Environmental Assessment

Comments on the *Environmental Assessment for Hotel Range Renovation at U. S. Army Garrison Fort Devens*, dated May 2020:

1. Section 3.3.2: As suggested in Section 3.7.2.1 (Groundwater), the loss of forested habitat (18 acres under Alternative 1 or 28 acres under Alternative 2) could be mitigated by reforesting open lands that will be abandoned following renovation (Figure 2-2 suggests approximately 9 acres of open land near the southeast corner of the future range could be reforested).

2. Section 3.5.1.3: As noted here, long-term monitoring of groundwater in accordance with a CERCLA record of decision is on-going at AOC 27. Consequently, the existing monitoring wells at AOC 27 should be protected from disturbance during renovation activities or replaced with new wells providing equivalent performance following construction.

3. Section 3.5.1.3: Contaminated soil should not be relocated outside the footprint of the existing range.

David Chaffin

Federal Sites Division

Massachusetts Department of Environmental Protection

One Winter Street, 3rd Floor

Boston, MA 02108

Response Letter from Massachusetts Division of Fisheries & Wildlife, June 5, 2020

DIVISION OF
FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
MASS.GOV/MASSWILDLIFE

June 5, 2020

Ms. Suzanne Richardson
U.S. Army Garrison Fort Devens
30 Quebec Street, Box 10
Devens, Massachusetts 01434

Project Name: Hotel Range Renovation
Proponent: Department of the Army
Location: Hotel Range, South Post, Fort Devens
Document Reviewed: Environmental Assessment
NHESP Tracking No.: 20-39370

Dear Ms. Richardson:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the Division) within the Department of Fish and Game has reviewed the *Environmental Assessment* (EA) for the proposed Hotel Range Renovation (the Project) and would like to offer the following comments regarding state-listed species and their habitats.

The Division is responsible for the protection and management of the inland fish and wildlife resources of the Commonwealth. The Division's mission also includes conserving and protecting endangered, threatened and species of special concern pursuant to the Massachusetts Endangered Species Act (MESA; M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). The purpose of MESA is to conserve and protect state-listed rare species and their habitats. Therefore, the Division reviews all projects or activities proposed within Priority Habitat of Rare Species, as published in the Massachusetts Natural Heritage Atlas.

Portions of the Project site are mapped as Priority Habitat for the following state-listed species pursuant to the 14th Edition of the Massachusetts Natural Heritage Atlas.

Scientific Name	Common Name	Taxonomic Group	MESA Status
<i>Cyperus houghtonii</i>	Houghton's Flatsedge	Plant	Endangered
<i>Emydoidea blandingii</i>	Blanding's Turtle	Reptile	Threatened
<i>Zanclognatha martha</i>	Pine Barrens Zanclognatha	Moth	Special Concern

Fact sheets for state-listed species can be found at www.mass.gov/nhesp. These species are protected in accordance with the MESA, and have all been documented on or in the immediate vicinity of the Project site.

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The Sikes Act, the Integrated Natural Resources Management Plan (INRMP) and AR 200-3 require management of natural resources for the conservation and enhancement of state-listed species at Fort Devens. The INRMP requires management of natural resources in accordance with state environmental laws and regulations and, in particular, to “protect and manage threatened and endangered species and habitat in accordance with... the Massachusetts Endangered Species Act” (2019 INRMP, Page 3).

Overall, the Division appreciates the EA’s evaluation of potential impacts to state-listed species and its assessment of alternative designs to reduce these impacts. The Division agrees that the Preferred Alternative (Alternative 1) will significantly reduce impacts to state-listed species and their habitats relative to Alternative 2. However, the Division does not agree that the Preferred Alternative would have no significant adverse impacts to state-listed species or their habitats. Therefore, the Division is providing comments to provide additional information regarding the presence of and potential impacts to state-listed species and their habitats associated with the Preferred Alternative. In addition, the Division is providing preliminary recommendations to avoid, minimize and mitigate for any impacts to state-listed species that may result from the Project. The Division looks forward to consulting with and providing assistance to the Army to ensure adequate protection of state-listed species and their habitats associated with the Project.

Houghton’s Flatsedge (Endangered)

This plant species inhabits dry, sandy, open early-successional habitats and has been documented to occur within existing range habitats of the Project site. Therefore, proposed construction activities within existing range habitats have the potential to result in significant short-term impacts to this species through the direct loss of individual plants and plant populations. Although we have do not have records indicating the presence of other state-listed plant species in the immediate vicinity of the Project site, the EA indicates that other state-listed plants (Midland Sedge, New England Blazing Star and Wild Senna) may also be present in existing range habitats. Therefore, we request that the Army work with a qualified, Division-approved botanist to conduct pre-construction surveys for state-listed plants within existing range habitats in the proposed limits of work. In state-listed plants are observed, we request that the Army work with the Division to develop a plan for transplantation of state-listed plants and plant populations from within to suitable habitats outside of the proposed limits of work. Finally, the Division requests that the transplantation plan include monitoring of transplants and collection of seed for later dispersal on-site if transplantation efforts are unsuccessful. We look forward to assisting the Army in the development of this plan.

Provided that the Army implements a plan to avoid and minimize short-term impacts, the Division anticipates that the Project may provide a long-term net benefit for this species by creating and maintaining additional, suitable habitat for state-listed plant species. Therefore, the Division requests that the Army work with the Division to ensure future ongoing management of early-successional range habitats protects and enhances state-listed plant populations.

Blanding’s Turtle (Threatened)

This species, which is also under federal review for listing under the U.S. Endangered Species Act, inhabits a variety of wetland and terrestrial habitat types. It travels overland to nest in sandy, early-successional habitats and forages, breeds and overwinters in suitable wetland habitats, from vernal pools and deep marshes. Fort Devens encompasses a substantial portion of New England’s most significant population of Blanding’s Turtles, and has been observed in the immediate vicinity of the Project site. This species can be expected to occur in any shrub or emergent wetland in the vicinity of

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the Project site, and can also be expected to nest in existing early-successional range habitats on the Project site itself. The EA also confirms that the Spotted Turtle (*Clemmys guttata*) may also be present in the vicinity of the Project site.

The Division agrees that mortality of both Blanding's and Spotted Turtles can likely be avoided through the implementation of appropriate measures to protect turtles during construction. For example, the EA proposes to conduct all tree clearing activities during the turtle inactive season (after October 31 and before April 1), which would protect turtles during tree clearing activities. However, additional measures may be needed to protect turtles during any additional construction activities (e.g., stumping, grubbing, grading, etc.) proposed to occur during the turtle active season, especially given that both Blanding's and Spotted Turtles are often drawn to recently cleared forests to nest. Surrounding the proposed limits of work with temporary turtle barriers during the inactive season would keep turtles out of work areas, and prevent turtles from nesting in newly created habitats, during the following active season. The Division requests that the Army work with the Division to refine and implement a suitable turtle protection plan to avoid inadvertent harm to rare turtles during construction. Similarly, we request that the Army work with the Division to ensure that future, ongoing management of early-successional range habitats is compatible with state-listed turtle species. We look forward to assisting in the development and implementation of this plan.

The Division also agrees that the proposed Project is likely to have short- and long-term impacts to Blanding's and Spotted Turtles through the proposed filling (and the clearing of supporting upland forest buffer habitats in the vicinity of) a certifiable vernal pool (Wetland 4). Based on the information provided in the EA, this vernal pool appears to provide suitable foraging, breeding and overwintering habitat for both species. In addition, if Wetlands 1 and 2 provide suitable foraging, breeding and or overwintering habitat, the proposed Project is likely to have short- and long-term impacts to both species by restricting access from other suitable habitats and clearing supporting upland forest buffers in the vicinity of these habitats.

Therefore, the Division requests that the Army work with a qualified, Division-approved wildlife biologist to evaluate potential habitat for rare turtles in Wetlands 1, 2 and 4. Alternatively, the Division would be willing to assist with this evaluation. The Division also requests that the Army further evaluate alternative road configurations and designs to avoid and minimize impacts to Wetland 4 and, if suitable, Wetlands 1 and 2. For example, shifting the proposed roadway fifty (50) feet to the south would avoid direct impacts to and enable continued access to and from this vernal pool from other suitable habitats in the vicinity. In addition, integrating wildlife passage structures into road design would enable continued access to and from Wetlands 1 and 2 while also reducing inadvertent mortality associated with future, ongoing use of the proposed road. The Division looks forward to further consultation with the Army regarding these recommendations, and to assisting with identification of alternative road configurations and designs that have been effective in similar circumstances.

Pine Barrens Zanclognatha (Special Concern)

This invertebrate species inhabits pitch pine – scrub oak barrens habitats, with larvae specifically feeding on Pitch Pine (*Pinus rigida*). The EA states that forested habitats to be impacted by the proposed Project are dominated by White Pine (*Pinus strobus*), Scrub Pine (*Pinus virginiana*), Red Maple and other mixed hardwood species. Provided that Pitch Pine is not found within the proposed limits of work, the Division would agree that Pine Barrens Zanclognatha is unlikely to be impacted by the proposed Project.

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The Division appreciates the opportunity to comment on this project. If you have any questions about this letter, please contact Jesse Leddick, Chief of Regulatory Review, at jesse.lednick@mass.gov or (508) 389-6386.

Sincerely,



Everose Schlüter, Ph.D.
Assistant Director

Cc: Edward Reiner, U.S. Environmental Protection Agency

MASSWILDLIFE

Response Letter from U.S. Environmental Protection Agency, June 8, 2020



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA 02109-3912OFFICE OF THE
REGIONAL ADMINISTRATOR

June 8, 2020

Ms. Suzanne Richardson
USAG Fort Devens DPW
30 Quebec Street, Box 10
Devens, MA 01434

RE: Environmental Assessment and Draft Finding of No Significant Impact for the United States Army Garrison Fort Devens Hotel Range Renovation

Dear Ms. Richardson:

We are writing in response to your letter dated April 30, 2020 requesting review of an Environmental Assessment (EA) for the proposed Hotel Range Renovation by the U.S. Army Garrison at Fort Devens in Devens, Massachusetts. We submit the following response to the EA in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

The U.S. Army proposes to reorient the Hotel Range on the Fort Devens South Post so the range's surface danger zone falls solely on Army property. The range would also be modernized to meet current Army standards. The EA specifically notes that no "changes in the use of the range (i.e., frequency, duration, or caliber) are expected." While we do not object to the proposal to renovate the Hotel Range our comments identify concerns to be addressed for the project based on our past work in the project area pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund). As described in the EA, the selected remedies in EPA's July 1996 CERCLA Record of Decision (ROD) address Area of Concern (AOC) 41 (Groundwater), AOCs 25 (Explosive Ordnance Disposal (EOD) Range), 26 (Zulu Ranges), and 27 (Hotel Range), as well as a subset of groundwater within the South Post Impact Area (SPIA) known as the "SPIA monitored-area".

Our comments on the EA focus on aspects of the Hotel Range proposal related to potential wetland impacts and ongoing CERCLA-required activities at AOC 27 and those portions of the Hotel Range within the SPIA monitored-area. In particular our comments below address impacts to groundwater, adoption of portions of the Integrated Natural Resources Management Plan in the EA and how the project will address unexploded ordnance and munitions and explosives of concern.

The EA concludes that there will be a minor increase in groundwater infiltration rates with negligible effects on groundwater flow rates and direction. EPA is concerned that tree clearing and grading activities described in Alternatives 1 and 2 may result in more significant changes to groundwater flow in the SPIA and the SPIA monitored-area. We recommend further assessment of possible project impacts related to these changes. This assessment may include more detailed

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information regarding: topographic contours; areas where tree removal will occur; excavation areas including AOC 27; proposed depth of excavation and/or post-grading topography; areas to be filled or built up, including post-fill topography; groundwater level contours, groundwater elevation contours, or depth contours; and groundwater flow directions, especially beneath the areas to be excavated and filled.

Given the number of CERCLA-required groundwater monitoring wells with aboveground/stick-up casings within or near areas described in these alternatives, EPA also suggests that the EA describe contingency plans to be implemented by the Army to re-develop, repair, or replace monitoring wells that may be damaged during tree removal, excavation, or other activities.

EPA also recommends more discussion regarding aspects of the project covered by the Integrated Natural Resources Management Plan (INRMP) for the project area, such as specific plans for minimizing erosion, planting or re-planting, and related actions to be taken during tree clearing and grading activities, especially if these activities will occur in the steep-slope (>15%) soil unit located in the southern portion of the Alternative 1 footprint. EPA also recommends the EA include a discussion of how the alternatives align with the objectives of the INRMP. The INRMP at page 19 includes a chart summarizing soil conservation and erosion and sedimentation control action items, with the fourth bullet identifying the goal of minimizing new construction in undisturbed areas. This goal favors Alternative 1 as it avoids significant tree clearing in the western, down-range portion of the Alternative 2 footprint.

The EA states that unexploded ordnance (UXO) is likely present, and under Alternatives 1 and 2, the range would be surveyed and cleared of UXO prior to surveying, design, and range renovation construction. We support these measures and also recommend that any soil to be excavated and moved to any location first be sampled for laboratory analysis of cyclotrimethylenetrinitramine (RDX), perchlorate, and metals. We recommend that an appropriate soil sampling and analysis plan be developed and presented for review, as well as a plan for disposal or movement of any contaminated soil. Please contact us at your convenience to discuss the development of a sampling plan further. If contaminated soil is to be shipped off-site for disposal, EPA strongly recommends advance approval to document that appropriate facilities are available for the receipt of waste as outlined in EPA's Off-Site Rule (CERCLA Section 121(d)(3)).

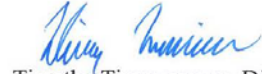
Portions of the existing Hotel Range lie outside the footprint of the proposed alternatives. After the new range is constructed and any existing facilities demolished, parts of the existing Hotel Range, including small portions of AOC 27, will no longer be in use. EPA recommends that the EA explain how UXO and other MEC will be addressed and include a soil sampling, analysis and disposal plan for portions of the former range that will no longer be in use to identify/mitigate potential UXO/MEC safety concerns and characterize the presence and extent of any contamination.

The EA in section 3.5.1.3 states that during the most recent monitoring in 2018, no monitoring wells associated with AOC 27 contained explosives, perchlorate, or metals at levels above groundwater standards. We note however, that well SPM-97-23X, north of AOC 47 and located within the current and proposed Hotel Range, exceeded the GW-3 standard for zinc in November 2018. We recommend that the EA be revised accordingly.

According to the EA the proposed project includes roadway work that would fill wetland 4, an area determined under the Massachusetts Wetland Protection Act to be a certifiable vernal pool based on the presence of breeding wood frogs and spotted salamanders. The existing pool is approximately 30 by 60 feet in size and is deep enough that it may also support overwintering Blanding's turtles, a candidate species for protection under the Endangered Species Act. Based on this information we recommend that additional information be provided to explain whether the proposed roadway can be shifted to entirely avoid or minimize impacts to this vernal pool and adjacent critical supporting habitat. We recommend an on-site interagency meeting as a useful means to help state and federal regulatory agencies more fully understand existing environmental conditions and the project design as they relate to this potential impact. Please let us know how we can best participate in additional discussions related to this issue.

EPA appreciates the opportunity to review the EA for the proposed Hotel Range project at Fort Devens. Please contact me with any questions regarding our comments.

Sincerely,



Timothy Timmermann, Director
Office of Environmental Review

Appendix B. Federal- and State-Listed Species with Potential to Occur near Hotel Range

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Plants					
Cat-tail sedge	<i>Carex typhina</i>	None	ST	Riparian habitat.	Unlikely – This species is potentially present in nearby wetland features but is unlikely to be present within the proposed range.
Midland sedge	<i>Carex mesochorea</i>	None	SE	Dry, open grassland habitat that is regularly disturbed by mowing or fire.	Potentially Present – This species is potentially present within the existing range.
Houghton's flatsedge	<i>Cyperus houghtonii</i>	None	SE	Dry soil conditions such as those found in a sloping sandplain or the exposed fine sand of an esker; associates with trees such as jack pine (<i>Pinus banksiana</i>), red pine (<i>Pinus resinosa</i>), sweet birch (<i>Betula lenta</i>), and scrub oak (<i>Quercus ilicifolia</i>) and herbaceous species such as little bluestem (<i>Schizachyrium scoparium</i>) and wild lupine (<i>Lupinus perennis</i>).	Potentially Present – This species is potentially present in both the existing range and the surrounding woodlands.
Ovate spike-sedge	<i>Eleocharis ovata</i>	None	SE	Sandy freshwater margins of large and mid-size rivers, lakes, and ponds.	Unlikely – This species is potentially present in nearby wetland features but is unlikely to be present within the proposed range.
Early wild rye	<i>Elymus macgregorii</i>	None	Watch List	Moist, deep, alluvial, residual, calcareous, or other base-rich soils in woods and thickets.	Potentially Present – This species is potentially present in the forested areas surrounding the existing range.
Bicknell's cranesbill	<i>Geranium bicknellii</i>	None	Watch List	Open woods, fields, lake shores, roadsides. Prefers open sites, disturbed soils, and recently burned areas.	Potentially Present – This species is potentially present in the open area of the existing range.
Small whorled pogonia	<i>Isotria medeoloides</i>	FT	SE	Older hardwood stands of beech, birch, maple, oak, and hickory. Slopes near small streams and areas with small canopy gaps that allow light to reach the forest floor. Grows best in areas with acidic soils with a thick layer of dead leaves and sparse to moderate ground cover.	Unlikely – While the forested areas surrounding the existing range exhibit some suitable habitat characteristics, this species has not been found before on the installation, and the USFWS IPaC report prepared for this project did not indicate its potential presence.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
New England blazing star	<i>Liatris scariosa</i> var. <i>novaeangliae</i>	None	SC	Dry, sandy grasslands, clearing, and barrens.	Potentially Present – This species is potentially present in the existing range, but it is less likely to be present due to mowing the range throughout the growing season.
Wild lupine	<i>Lupinus perennis</i>	None	Watch List	Dry, sandy, open fields and woodlands.	Potentially Present – This species is potentially present in the existing range.
Climbing fern	<i>Lygodium palmatum</i>	None	SC	Forested swamps, shrub swamps, and transitional hardwoods, especially moist pine-oak-maple woods with an open understory. Prefers acidic soils that are sandy and rich in humus, but nutrient-poor.	Potentially Present – Habitat for this species is potentially present in the woodlands surrounding the existing range.
Three-leaved Solomon's seal	<i>Maianthemum trifolium</i>	None	Watch List	Bogs, fens, in cool areas of wet woods.	Unlikely – This species is potentially present in nearby wetland features but is unlikely to be present within the proposed range.
Philadelphia panic grass	<i>Panicum philadelphicum</i> sp.	None	SC	Open, full sun along sandy shores of lakes, streams, and wetlands.	Unlikely – This species is potentially present in nearby wetland features but is unlikely to be present within the proposed range.
Wild senna	<i>Senna hebecarpa</i>	None	SE	Areas with a history of disturbance: roadsides, fields, agricultural lands, rights-of-way, and the scour zone along stream edges. Wetlands and moist uplands, especially those with rich alluvial soil. Not typically found in areas with a forest canopy.	Potentially Present – This species is potentially present within the existing range.
Small bur-reed	<i>Sparganium natans</i>	None	SE	Lakes and ponds.	Unlikely – This species is potentially present in nearby Slate Rock Pond but is unlikely to be present within the proposed range.
Fish					
Bridle shiner	<i>Notropis bifrenatus</i>	None	SC	Lakes, ponds, medium to large-sized rivers, small streams.	Unlikely – This species is potentially present in nearby Slate Rock Pond but is unlikely to be present within the proposed range.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Reptiles					
Spotted turtle	<i>Clemys guttata</i>	Under Review	At Risk	Vernal pools, shrub swamps, forested swamps. Uplands adjacent to water features are occasionally used, and nesting occurs in sunny, well-drained soil in open meadows, fields, or along roadsides.	Potentially Present – This species is potentially present in nearby vernal pool, wetland, and pond habitat and may use open habitat in the existing range for nesting. It has been observed elsewhere on the installation.
Blanding's turtle	<i>Emydoidea blandingii</i>	Under Review	ST	Vernal pools, marshes, scrub-shrub wetlands, open wetlands. Overwinters in wetlands. Estivates during the summer in upland forest or along forest/field edges. Nesting occurs in open areas with well-drained loamy or sandy soils.	Potentially Present – This species is potentially present in nearby vernal pool, wetland, and pond habitat and may use open habitat in the existing range for nesting. Upland forests may also be used by this species during the summer months. It has been observed elsewhere on the installation.
Wood turtle	<i>Glyptemys insculpta</i>	Under Review	Watch List	Rivers and large streams, riparian wetlands, riparian forests, hayfields.	Potentially Present – This species is potentially present in a perennial stream just east of the existing range, in which case the surrounding woodlands within a half mile could potentially be used by this species. It has been observed elsewhere on the installation.
Eastern box turtle	<i>Terrapene carolina</i>	None	SC	Dry and moist woodlands, brushy fields, thickets, marsh edges, bogs, swales, fens, stream banks, and well-drained bottomland.	Potentially Present – This species is potentially present and may use habitat throughout the range and surrounding area. It has been observed elsewhere on the installation.
Amphibians					
Blue spotted salamander	<i>Ambystoma laterale</i>	None	SC	Deciduous and coniferous forests (northern hardwoods, spruce-fir upland) with sandy to loamy soils. Vernal pools, shrub swamps, wooded swamps, floodplain swamps, and marshes.	Potentially Present – This species is potentially present and may use nearby vernal pool habitat and upland habitat in the woodlands surrounding the existing range. It has been observed elsewhere on the installation.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Northern leopard frog	<i>Lithobates pipiens</i>	None	SGCN	Along shrubby or marshy margins of water sources, large shrub swamps near streams for overwintering and breeding. Upland fields, grasslands, wet meadows, and forested areas during late spring through early fall.	Potentially Present – This species is potentially present and may use wetland habitat surrounding Slate Rock Pond for overwintering and breeding. The existing range and surrounding woodland could potentially serve as habitat through the rest of the year. It has been observed elsewhere on the installation.
Birds					
Grasshopper sparrow	<i>Ammodramus savannarum</i>	MBTA	ST	Grasslands, pastures, hayfields, airfields, sandplains within pine barrens, habitat with relatively low stem densities and limited ground litter.	Unlikely – While this species is present elsewhere on the installation at Turner Drop Zone, it is unlikely to be present at Hotel Range due to a lack of vegetative structure: there are only short grasses, with no bunch grasses present.
Eastern Whippoorwill	<i>Antrostomus vociferus</i>	None	SC	Young forests and shrublands, pitch pine/scrub oak upland forests near to open areas.	Potentially Present – This species is potentially present in the woodlands surrounding the existing range. It has been observed elsewhere on the installation.
Upland sandpiper	<i>Bartramia longicauda</i>	MBTA	SE	Open grassy fields, wet meadows, pastures, including mown grassy strips adjacent to airport runways.	Potentially Present – This species is potentially present in open habitat on the existing range. It has been observed elsewhere on the installation.
American bittern	<i>Botaurus lentiginosus</i>	MBTA	SE	Marshes and wet meadows; peatlands.	Unlikely – This species potentially uses wetland habitat surrounding Slate Rock Pond but is unlikely to be present within the proposed range. It has been observed elsewhere on the installation.
Northern harrier	<i>Circus cyaneus</i>	MBTA	ST	Wet meadows, grasslands, abandoned fields, and marshes.	Potentially Present – This species potentially uses the existing range habitat, but data show that this species is an uncommon summer resident that prefers open field habitat near the coast. Winter range is located further to the south. It has been observed elsewhere on the installation.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Blackpoll warbler	<i>Dendroica striata</i>	MBTA	SC	Breed in young stands of evergreens and alder or willow thickets. Migrates through evergreen and deciduous forests.	Potentially Present – This species potentially utilizes woodland habitat during migration but is highly unlikely to use nearby habitat for breeding: in recent years prior to 2019, the only breeding population has occurred at high elevation on Mount Greylock in western Massachusetts. It has been observed elsewhere on the installation.
Peregrine falcon	<i>Falco peregrinus</i>	MBTA	ST	Prefer wide-open spaces. Commonly nest on cliffs or tall man-made structures.	Potentially Present – This species potentially uses habitat on site during migration or during longer foraging excursions. It is highly unlikely that this species nests nearby due to the lack of suitable cliff habitat. It has been observed elsewhere on the installation.
Common loon	<i>Gavia immer</i>	MBTA	SC	Breed on quiet, remote freshwater lakes.	Potentially Present – This species is potentially present at nearby Slate Rock Pond but prefers larger lakes. It has been observed elsewhere on the installation.
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA MBTA	ST	Nests in forested areas near large bodies of water. Often perches on tall, mature deciduous or coniferous trees that allow for an expansive view of the surroundings.	Potentially Present – This species potentially flies over the site and may use Slate Rock Pond for foraging. There are known nesting locations to the northwest at Lake Shirley and to the south at Wachusett Reservoir. It has been observed elsewhere on the installation.
Pied-billed grebe	<i>Podilymbus podiceps</i>	MBTA	SE	Marshes, lakes, large pond. Wetlands with an abundant supply of vegetation to provide cover and nesting materials.	Unlikely – This species potentially uses habitat in nearby Slate Rock Pond but is unlikely to be present within the proposed range. It has been observed elsewhere on the installation.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Vesper sparrow	<i>Pooecetes gramineus</i>	MBTA	ST	Tall woody vegetation interspersed within grassland is preferred over completely open habitat.	Unlikely – This species is unlikely to be present within the woodlands or the open short grassland habitat of the existing range. It has been observed elsewhere on the installation.
Eastern meadowlark	<i>Sturnella magna</i>	None	PSC	Breeds in grasslands, meadows, and weedy pastures. Prefers moderately tall grasslands with abundant litter cover and a high proportion of grass.	Unlikely – This species is unlikely to be present within the woodlands or the open short grassland habitat of the existing range. It has been observed elsewhere on the installation.
Mammals					
Northern long-eared bat	<i>Myotis septentrionalis</i>	FT	SE	Summer roost tree and maternity colony habitat includes hollow trees or trees with loose, decaying bark. Winter hibernacula habitat includes features such as caves and mines.	Historical Presence/ Potentially Present – A site visit did not indicate the presence of hibernacula, but there are some snags and tree species such as shagbark hickory that may provide roosting habitat for bats during the summer season. The nearest winter hibernaculum is just over 10 miles away and there are no known, documented, maternity colony roost trees within 60 miles.
Water shrew	<i>Sorex palustris</i>	None	SC	Vernal pools, lakes, ponds, and forested swamps. Most commonly found near swift-moving streams with a rocky bed, usually near a heavily wooded conifer or mixed forest. May be more numerous in areas where beaver are present.	Potentially Present – This species is potentially present in water features near the project area. None of the nearby streams meet the preferred habitat description; however, they are sandy or mud bottomed. It has been observed elsewhere on the installation.
Invertebrates					
Monarch butterfly	<i>Danaus plexippus</i>	Under Review	None	Open fields and meadows. Requires milkweed plants for reproduction.	Potentially Present – Although the existing range is mostly composed of short grasses, there are some wildflowers and other weeds present that could provide food to migrating butterflies. Although none were observed during a site visit in September 2019, it is possible that milkweed plants are present that could serve as host plants.

Common Name	Scientific Name	Federal Status	State Status	Habitat	Potential for Occurrence near Hotel Range
Rusty patched bumblebee	<i>Bombus affinis</i>	FE	None	Grasslands with abundant flowering plants.	Unlikely – This species is unlikely to be present due to a lack of suitable grassland habitat.
Sandplain euchlaena	<i>Euchlaena madusaria</i>	None	SC	Fire-influenced barrens communities (with scrub oak and blueberry understories). Host plant: polyphagous, often lowbush blueberries (<i>Vaccinium spp.</i>).	Unlikely – This species is unlikely to be present due to a lack of suitable vegetation on the existing range. The short grasses present do not provide habitat for this species.
Twilight moth	<i>Lycia rachelae</i>	None	SE	Fire-influenced barrens communities (with scrub oak and blueberry understories). Host plant: polyphagous, preference for species in the <i>Populus</i> and <i>Salix</i> genera.	Potentially Present – This species potentially utilizes woodland habitat surrounding the range, although its preferred pitch pine-scrub oak barrens habitat is not present in the project area.
Pink swallow moth	<i>Psetraglaea carnosa</i>	None	SC	Fire-influenced barrens communities (with scrub oak and blueberry understories), acidic bogs and swamps, and occasionally logged areas, old fields, or rights-of-way. Host plant: lowbush blueberry (<i>Vaccinium spp.</i>).	Potentially Present – This species potentially utilizes wetlands associated with nearby Slate rock Pond but is less likely to be found in the existing range or surrounding woodlands.
Pine barrens speranza	<i>Speranza exonerata</i>	None	SC	Fire-influenced barrens communities (with scrub oak and blueberry understories). Host plant: scrub oak (<i>Quercus ilicifolia</i>).	Unlikely – this species is unlikely to be present due to a lack of suitable habitat.
Pine barrens zanclognatha	<i>Zanclognatha martha</i>	None	SC	Fire-influenced barrens communities (with scrub oak and blueberry understories). Host plant: pitch pine (<i>Pinus rigida</i>).	Unlikely – this species is unlikely to be present due to a lack of suitable habitat.
Ringed boghaunter	<i>Willamsonia lintneri</i>	None	ST	Acidic sedge fens and sphagnum bogs with wet pools or troughs, surrounded by woodlands.	Unlikely – this species is unlikely to be present due to a lack of suitable habitat.

Notes: FT = federally threatened; FE = federally endangered; BCC = federal bird of conservation concern; MBTA = Migratory Bird Treaty Act; BGEPA = Bald and Golden Eagle Protection Act; PSC = Proposed Special Concern; SE = state endangered; ST = state threatened; SC = Special Concern; SGCN = Species of Greatest Conservation Need
 Sources: (MassWildlife, n.d. b; Richardson, 2019; Normandeau Associates, 2018; Native Plant Trust; NatureServe, 2019; The Cornell Lab of Ornithology; MassAudubon, n.d. f; USFWS, 2015a; MassWildlife, 2019; USAG Fort Devens, 2019) (USEPA, n.d. a; USFWS, 2019c)

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