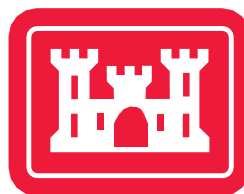


FINAL  
ENVIRONMENTAL IMPACT STATEMENT  
October 2020



# Fort Benning Heavy Off-Road Mounted Maneuver Training Area



United States Army Corps of Engineers – Savannah District  
100 West Oglethorpe Avenue, Savannah, Georgia 31401

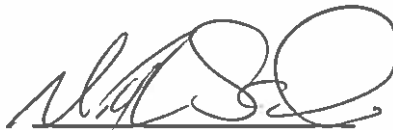
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**Final Environmental Impact Statement**  
**for the**  
**Proposed Heavy Off-Road Mounted Maneuver Training Area**  
**Fort Benning, Georgia**

**Prepared by:**  
US Army Garrison Fort Benning

**Approved by:**

A handwritten signature in black ink, appearing to read 'M. Scalia', written over a horizontal line.

**Matthew Scalia**  
**Colonel, US Army**  
**Garrison Commander**

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## **ES Executive Summary**

### **ES.1 Introduction**

The United States (US) Army has prepared this Environmental Impact Statement (EIS) to analyze the proposed construction, operation, and maintenance of a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) within the current boundaries of Fort Benning (Proposed Action) in accordance with the National Environmental Policy Act of 1969, as amended (NEPA; 42 US Code [USC] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) NEPA Regulation (40 Code of Federal Regulations [CFR] 1500-1508); and applicable Army requirements, including the Army NEPA Regulation (32 CFR 651, *Environmental Analysis of Army Actions*).

This EIS informs Army decision-makers, regulatory agencies, and the public of the potential environmental and socioeconomic impacts of the Proposed Action and its Alternatives prior to the Army deciding whether to implement this Federal Proposed Action. This EIS also recommends mitigation measures to reduce identified potential adverse effects of the Proposed Action, where feasible. The Army will document its decision in a Record of Decision (ROD), including selection of an Alternative and identification of mitigation measures the Army will implement, after the Final EIS (FEIS) is published.

### **ES.2 Proposed Action Background**

Pursuant to a decision by the Base Realignment and Closure Commission in 2005, the Department of Defense (DoD) relocated the Armor School from Fort Knox, Kentucky, to Fort Benning where it was co-located with the Infantry School. This move consolidated the Army's two maneuver schools and resulted in the creation of the Maneuver Center of Excellence (MCoE) that now trains over 67,000 Soldiers and leaders each year. The MCoE trains approximately 8,000 Soldiers annually in off-road mounted maneuver. This training enables these Soldiers to operate effectively within their current and/or future units.

Off-road mounted maneuver is a required training element that prepares Soldiers and leaders to operate successfully on the battlefield; this training is required for 79 classes in nine distinct courses at Fort Benning annually. Currently, the only training area on the Installation suitable for heavy off-road mounted maneuver training is the Good Hope Maneuver Training Area (GHMTA).

The Army constructed the GHMTA at Fort Benning to support the Armor Basic Officer Leader Course beginning in Fiscal Year 2006.

Since the initial development of the GHMTA, the Army's training strategy has changed to "cross-domain movement and maneuver" that requires additional contiguous area that is suitable for heavy off-road maneuver to conduct appropriate training to prepare Soldiers for potential threats. In an attempt to accommodate this requirement, the Army continued to improve the off-road maneuver area within the GHMTA. Despite these upgrades, the existing GHMTA landscape contains slopes, streams, wetlands, and other limitations that cannot support the increasing maneuver training requirements for the MCoE and Fort Benning's tenant units. As such, Fort Benning proposes to construct a new HOMMTA with sufficient contiguous area to enable all units and courses to complete required cross-domain movement and maneuver training.

### **ES.3 Purpose and Need**

The *purpose* of the Proposed Action, therefore, is to provide Fort Benning with a HOMMTA consistent with the current training requirements of the MCoE and Fort Benning's tenant units. Fort Benning has determined that with training mitigations, the MCoE can meet training requirements and accomplish heavy armor vehicle (tracked and wheeled) off-road maneuver training using a minimum of 2,400 additional contiguous acres, although more area would provide better training opportunities.

Heavy off-road maneuver training requires as much maneuverable space as possible to prepare Soldiers for combat, as more maneuverable space enables greater and more diverse training opportunities. The HOMMTA must contain at least 2,400 contiguous acres to satisfy minimum cross-domain movement and maneuver requirements, such as multiple avenues of approach (i.e., open, off-road areas in which armor vehicles can maneuver towards an adversary) that are each at least 3 kilometers long and several hundred meters wide. The 2,400 acres may contain landscape features (e.g., slopes, wetlands, and streams) that restrict maneuver so long as these features do not create non-contiguous areas or choke points.

The Proposed Action is *needed* to address the lack of sufficient contiguous off-road mounted maneuver area to meet training requirements for heavy armor vehicle off-road maneuver training at Fort Benning. This lack of maneuver space has recently become more problematic since the

Army's training strategy has changed, requiring a more dispersed approach to movement and maneuver. The GHMTA does not provide the available contiguous area and unconstrained landscape to support the required MCoE courses.

#### **ES.4 Agency Roles/Responsibilities and Decisions to be Made**

The Army is the Lead Agency concerning this Proposed Action in accordance with the Army NEPA Regulation; the Army Installation Management Command is the decision-maker. The Army is also working closely with a number of other Federal, State, and local agencies throughout this NEPA process, although the Army has identified no Cooperating Agencies.

This EIS also facilitates the Army's consultation with the State Historic Preservation Office (i.e., Georgia Historic Preservation Division) in compliance with Section 106 of the National Historic Preservation Act (NHPA; 16 USC 470); the US Fish and Wildlife Service in compliance with Section 7 of the Endangered Species Act (ESA); the US Army Corps of Engineers in compliance with Section 404 of the Federal Clean Water Act (CWA), and federally recognized Native American Tribes.

Within this NEPA process, the Army is responsible for deciding which Action Alternatives to consider for full analysis within this EIS, and which Action Alternative, if any, may be used to implement the Proposed Action. As part of deciding whether to implement the Proposed Action, the Army will decide which Alternative is the Environmentally Preferable Alternative, which Alternative may be implemented (i.e., the Selected Alternative), and which mitigation measures to implement. These decisions will be made based on the Army's thorough analysis completed in this EIS and will be documented in the ROD. Once the ROD is signed, the Army intends to request Congressional funding to implement the Selected Alternative and mitigation commitments identified in the ROD. As required by the CEQ NEPA Regulation, the No Action Alternative is evaluated in this EIS (40 CFR 1502.14(d)).

#### **ES.5 Proposed Action and Alternatives**

##### **ES.5.1 Overview of Proposed Action**

The Army proposes to construct, operate, and maintain a HOMMTA of at least 2,400 contiguous acres at Fort Benning to support off-road mounted maneuver. The training area would support the



MCoE in its mission to train the maneuver forces of the Army and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing Fort Benning a contiguous HOMMTA large enough to conduct realistic training in accordance with current Army training requirements.

In support of the EIS, the Army is preparing other studies, analyses, and permit applications to meet Federal requirements, such as Section 7 of the ESA, Sections 401 and 404 of the CWA, and Section 106 of the NHPA. Data from these analyses, and descriptions of concurrent regulatory processes, are incorporated into this EIS.

Mitigation through avoidance and environmentally sensitive design, such as establishment of buffers, would be used to avoid impacts to sensitive resources to the maximum extent practicable. The Army would include environmental protection measures (EPMs) and regulatory compliance measures (RCMs) in the Proposed Action to minimize potential adverse environmental impacts through “mitigation by design.”

#### **ES.5.1.1 Environmental Impact Reduction**

The Proposed Action would comply with all applicable Federal, State, and local laws and regulations, as well as Installation policies, procedures, plans, and guidance.

To this end, during the formal design and permitting phases of the Proposed Action, the Army would complete consultation with pertinent regulatory agencies regarding required RCMs. Specifically, formal consultation and/or permitting would be performed to comply with the CWA, ESA, and NHPA. These efforts would include obtaining a permit for anticipated impacts to jurisdictional Waters of the US; preparing an Erosion, Sedimentation, and Pollution Control Plan; preparing a Biological Assessment for Federal-listed species; and mitigating adverse impacts on cultural resources listed on, or eligible for listing on, the National Register of Historic Places, as well as avoiding cemeteries.

In addition to RCMs, the Army would include, as part of the Proposed Action, EPMs to reduce potential adverse impacts from construction, operation, and maintenance of the Proposed Action. These EPMs primarily include common environmentally sensitive construction practices and implementation of existing Installation resource management plans.

The primary EPMs for all Action Alternatives include: up to 100-foot buffers from construction, operation, and maintenance activities around cemeteries; up to 50-foot buffers from the same activities around NRHP-eligible archaeological sites, unless otherwise mitigated; up to 100-foot buffers from heavy off-road mounted maneuver training around streams and wetlands; and the use of the Integrated Training Area Management (ITAM) program or other resources to address soil erosion and/or other environmental impacts of HOMMTA operation and training. Please see Section 2.1.1 of the EIS for more information.

#### **ES.5.1.2 HOMMTA Construction**

The Army would begin constructing the HOMMTA following implementation of required RCMs, EPMs, and mitigation measures identified in the ROD. HOMMTA construction would be funding-dependent, take between 2 and 3 years, and be conducted in two primary stages.

The first stage of HOMMTA construction would be vegetation removal. Based on the final HOMMTA design, the Army would sell (i.e., to a contractor) merchantable timber to remove trees (e.g., timber harvest) from the specific portions of the HOMMTA where heavy maneuver would occur. Once the vegetation removal stage is complete, the Army or its contractors would grade some slopes; install erosion control measures; upgrade roads to have a minimum 10-inch concrete surface to support armor vehicle traffic; harden or bury utilities within their existing rights of way; clearly mark areas that are off-limits to heavy maneuver (e.g., buffers around streams, wetlands, archaeological sites, and cemeteries); and construct water crossings, gravel tank trails, and other necessary infrastructure.

The Proposed Action would also include temporary and permanent measures to minimize soil erosion and sediment loss during construction, operation, and maintenance of the HOMMTA. These measures could include reseeding according to established Fort Benning seeding specifications; sediment-filtering; and water feature sediment traps, filter dams, and other elements as agreed upon with the Georgia Department of Natural Resources (GADNR) – Environmental Protection Division.

The HOMMTA would be designed and built for a minimum lifespan of 40 years in accordance with the DoD's Unified Facilities Criteria (UFC 1-200-02).

### **ES.5.1.3 HOMMTA Training**

During operation, the HOMMTA would be used to support multiple types of maneuver training. Most notably, the HOMMTA would support force-on-force heavy off-road maneuver training for up to approximately 24 vehicles at one time, as well as support vehicles that would be generally limited to the assembly areas.

During these force-on-force exercises, up to three platoons comprised of four armor vehicles each would assemble at each end of the HOMMTA in the platoon assembly area. Each set would either use the avenues of approach to approach and target each other, or one side would approach while the other would defend a portion of the HOMMTA. No live-fire training (i.e., no use of bullets, projectiles, or exploding ordnance) would occur, although the Army would use pyrotechnics, simulators, and blanks commonly used in maneuver training activities to simulate live fire.

The HOMMTA's size and layout would enable Soldiers to train to the Army's new cross-domain movement and maneuver strategy requirements, which require that Soldiers be able to maneuver in more dispersed patterns over a larger space than is currently possible in the GHMTA. When not being used for force-on-force training, the HOMMTA would be used by other units/courses, including Armor Basic, Scout Basic, Armor Basic Officer Leader Course, Bradley Leader, Stryker Leader, and Scout Leader Course<sup>1</sup> students, to learn their vehicles' capabilities better. The HOMMTA would also be used for dismounted (i.e., foot Soldier) training, both in concert with, and separate from, maneuver training.

### **ES.5.1.4 HOMMTA Maintenance**

Maintenance would be conducted through Fort Benning's ITAM program when funding is available, or through other mechanisms. Due to the nature of heavy off-road maneuver training, maintenance activities would be largely focused on preventing and addressing soil disturbance and the consequent potential for erosion and sedimentation. The Army anticipates implementing standard soil stabilization methods, such as vegetative controls and replanting, re-graveling, and regrading/filling ruts, rills, and gullies.

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<sup>1</sup> The Scout Leader Course was called the Army Reconnaissance Course in the Draft EIS. The name of this course recently changed and has been updated in the Final EIS accordingly.

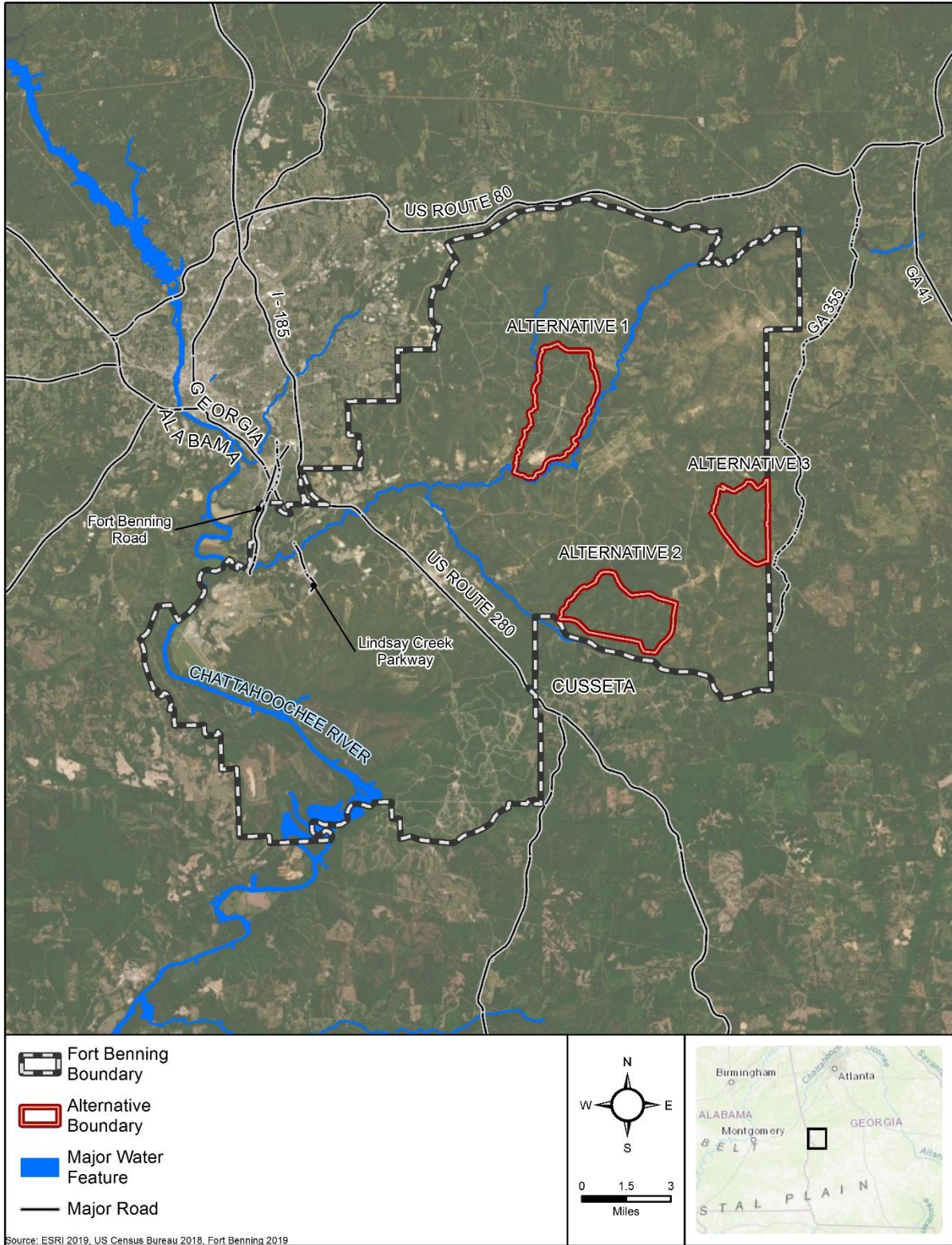
The Army would also install and maintain erosion control features, such as stone check and rock filter dams, water bars, sediment traps, turnouts, and similar measures. Water crossings would be monitored regularly to ensure they remain in working condition, and that culverts continue to convey surface water flow as designed. These and other maintenance actions would ensure both that the HOMMTA remains useable as a quality training area and that any potential adverse environmental impacts that may develop over time due to operations (e.g., erosion) are minimized.

### **ES.5.2 Alternatives Analyzed**

As described in this EIS, the Army established a list of requirements, or Alternatives screening criteria, to conduct a thorough evaluation of potential Action Alternatives to address the shortfall in heavy off-road mounted maneuver training area at Fort Benning. Based on this evaluation, the Army eliminated five potential Action Alternatives from detailed consideration, but identified three locations (i.e., Action Alternatives) within the Installation that met the screening criteria, and therefore would satisfy the purpose of and need for the Proposed Action. These three Action Alternatives are depicted in Figure ES-1 and summarized in Table ES-1. The Army carried forward these three Action Alternatives, as well as the No Action Alternative, for detailed analysis within this EIS.

#### **ES.5.2.1 No Action Alternative**

Under this Alternative, the Army would not construct and operate a new HOMMTA at Fort Benning and would continue to operate under current conditions. The MCoE and Fort Benning tenant units would continue to conduct required training at the GHMTA to the extent possible. The Army would continue to lack a contiguous, sufficiently sized training area at its MCoE to use for realistic heavy off-road mounted maneuver training, particularly due to the recent change in strategy favoring cross-domain movement and maneuver. This lack of realistic training opportunities would continue to hinder Soldiers from fulfilling all training requirements, thereby inhibiting their ability to deploy, fight, and win our nation's wars.



**Figure ES-1: Location of the HOMMTA Action Alternatives within Fort Benning**



**Table ES-1: Comparative Analysis of the Features of Each Action Alternative**

<b>Feature</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
<b>Total Area (acres)</b>	<b>4,724</b>	<b>3,744</b>	<b>2,405</b>
<b>Contiguous Area Potentially Available for Heavy Maneuver Requiring Vegetation Removal (acres)*</b>	<b>~3,200</b>	<b>~2,700</b>	<b>~1,500</b>
<b>Number of Water Crossings Proposed</b>	27	19	25
<b>Length of New Trails/Roads Proposed (feet)</b>	1 mile of paved armor vehicle trails	13 miles unpaved armor vehicle trails	10 miles unpaved armor vehicle trails
<b>Length of Existing Trails/Roads Proposed for Improvement</b>	2 miles of Buena Vista Road	9 miles of improved roads	8 miles of improved roads
<b>Support Facilities Proposed</b>	Two training area bridges	Construction of 2 Heavy Equipment Transport (HET) drop-off pads	Construction of 2 HET drop-off pads
<b>Utilities Requirements</b>	4 miles of aerial three-phase power lines to be buried underground; hardening of existing fiber-optic cable at 15 tank crossing points on 2 <sup>nd</sup> Armored Division Road and Lorraine Road	None	2 miles of overhead powerlines to be buried underground

\* = Areas not constrained by slopes 20 percent or greater, wetlands/surface waters, or existing uses that cannot be relocated.

While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, this Alternative was retained to provide a comparative baseline against which to analyze the effects of the Action Alternatives, as required under the CEQ NEPA Regulation (40 CFR 1502.14(d)). The No Action Alternative reflects the *status quo* and serves as a benchmark against which the effects of the Proposed Action can be evaluated. The Army analyzed impacts associated with use of the GHMTA in the Enhanced Training Environmental Assessment and associated Finding of No Significant Impact (Fort Benning, 2015b), which is incorporated herein by reference.

### **ES.5.2.2 Alternative 1 (Preferred Alternative): Northern Mounted Maneuver Training Area Alternative**

Alternative 1 includes 4,724 acres located west of the Digital Multi-Purpose Range Complex. This Alternative's footprint, which is primarily forested, includes Lee Field (drop zone, previously an anti-armor tracking range), Geronimo Military Operations on Urban Terrain Site (19K/D Armor/Cavalry training and 11B One Station Unit Training), Terry Demolitions Range (light general demolition training), land used for the 19K/D courses (Armor/Calvary Basic Training; land navigation, tank, and Bradley driver training), and Tactical Training Base Falcon. Under Alternative 1, current training in these areas could generally continue with scheduling considerations or be relocated elsewhere on the Installation.

Of the 4,724 contiguous acres in Alternative 1, approximately 3,200 acres would be made available for heavy mounted maneuver training. The remaining 1,500 acres within Alternative 1 consist of restricted areas, such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resource sites, cemeteries, and associated buffers that would be avoided by mounted forces during training operations. Based on its size and configuration, Alternative 1 would best enable the Army to conduct high-quality heavy off-road mounted maneuver training compared to the other Action Alternatives. As such, this is the Army's Preferred Alternative. A summary of construction activities required to establish Alternative 1 is provided in Table ES-1.

### **ES.5.2.3 Alternative 2: Red Diamond Alternative**

Alternative 2 includes 3,744 acres located south of the Southern Maneuver Training Area (SMTA) near the Installation's southern boundary. This area does not contain any existing ranges, but is used as the primary land navigation test course; this test course could be relocated into the SMTA at no cost or loss of training ability.

Of the 3,744 contiguous acres included in Alternative 2, approximately 2,700 acres would be made available for heavy mounted maneuver training. The remaining 1,000 acres within Alternative 2 consist of restricted areas such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resources sites, cemeteries, and associated buffers that would be avoided by mounted forces during training operations. A summary of construction activities required to establish Alternative 2 is provided in Table ES-1.

#### **ES.5.2.4 Alternative 3: Eastern Boundary Alternative**

Alternative 3 includes 2,405 acres located between the northern duded impact area and the Installation's eastern boundary. This area does not contain any existing ranges or designated training areas for any specific training activities.

Of the 2,405 contiguous acres included in Alternative 3, approximately 1,500 acres would be made available for heavy mounted maneuver training. The remaining 900 acres within Alternative 3 consist of restricted areas such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resources sites, and associated buffers that would be avoided by mounted forces during training operations. A summary of construction activities required to establish Alternative 3 is provided in Table ES-1.

### **ES.6 Major Conclusions of the Impact Analysis**

The Army identified 10 Valued Environmental Components (VECs) that could be impacted by the Proposed Action: Land Use (Recreation); Air Quality; Noise; Soils and Topography; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; and Hazardous and Toxic Materials and Waste (HTMW).

For each of these VECs, the Army prepared within this EIS a detailed description of the affected environment, as well as a thorough analysis of potential short- and long-term; direct, indirect, and cumulative; adverse and beneficial impacts that could result from construction, operation, and maintenance of the proposed HOMMTA. The impact analysis also defined the Region of Influence for each of the 10 analyzed VECs.

Through this impact analysis, the Army determined that potential impacts resulting from the Action Alternatives would generally be similar in nature, although they would vary in magnitude primarily based on site-specific conditions (e.g., soil erodibility, slopes, water features), the amount of construction work required, and the location of the Alternatives within the Installation. Table ES-2 compares the magnitude of specific anticipated potential impacts to each VEC under each Alternative.

**Table ES-2: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation)</b>	Long-term, <u>minor adverse</u> impacts on recreation from continued training at the GHMTA.	Direct: Long-term, <u>moderate adverse</u> impacts on recreational use from reduced availability of up to 14 training compartments (13,277 acres) during construction, operation, and maintenance.	<i>Direct: Long-term, <u>minor adverse impacts on recreational use from reduced availability of up to three training compartments (4,870 acres) during construction, operation, and maintenance.</u></i>	Direct: Long-term, minor adverse impacts on recreational use from reduced availability of up to three training compartments (3,726 acres), which currently experience the highest recreational use, during construction and training.
		Direct: Long-term, <u>negligible adverse</u> effect on hunting quality from changes in species composition in training compartments.		
		Direct: Long-term, <u>negligible to minor adverse</u> impact on hunting suitability, including fishing, from habitat conversion.		
		Direct: Long-term, <u>negligible beneficial</u> impact on recreational site access from new infrastructure and trails.	<b>Direct: Long-term, <u>minor beneficial impact on recreational site access from construction of 13 miles of new infrastructure and trails.</u></b>	Direct: Long-term, <u>minor beneficial</u> impact on recreational site access from construction of <u>10 miles</u> of new infrastructure and trails.
		Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>14 training compartments.</u>	Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>3 training compartments.</u>	Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>3 training compartments.</u>

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation) (cont.)</b>	(see above)	<b>Indirect: Long-term, <u>minor adverse impacts on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.</u></b>	Indirect: Long-term, <u>minor adverse impacts</u> on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.	<i>Indirect: Long-term, <u>minor adverse impacts on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.</u></i>
<b>Air Quality</b>	Long-term, <u>negligible to minor adverse impacts</u> on air quality from existing conditions in the Action Alternatives and the GHMTA.	Direct: Short-term, <u>minor adverse impacts</u> on emissions from use of construction equipment and vehicles.	<i>Direct: Short-term, <u>minor adverse impacts on emissions from use of construction equipment and vehicles.</u></i>	Direct: Short-term, <u>moderate adverse impacts</u> on emissions from use of construction equipment and vehicles and the proximity of down-wind sensitive receptors.
		Direct: Long-term, <u>minor adverse impacts</u> on emissions from heavy off-road maneuver training on <u>3,200 acres of maneuver land and 25 miles of unpaved roads.</u>	<i>Direct: Long-term, <u>minor adverse impacts on emissions from heavy off-road maneuver training on 2,700 acres of open maneuver land and 21 miles of unpaved roads.</u></i>	Direct: Long-term, <u>moderate adverse impacts</u> on emissions from heavy off-road maneuver training on <u>1,500 acres of open maneuver land and 10 miles of unpaved roads,</u> and the proximity of down-wind sensitive receptors.
		<i>Direct: Long-term, <u>minor adverse impacts on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.</u></i>	Direct: Long-term, <u>minor adverse impacts</u> on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.	<b>Direct: Long-term, <u>minor adverse impacts on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.</u></b>



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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Air Quality (cont.)</b>	(see above)	Indirect: Short- and long-term, <u>minor adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action.	<b>Indirect: Short- and long-term, <u>minor adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action.</b>	Indirect: Short- and long-term, <u>moderate adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action due to the proximity of down-wind, off-Post receptors.
<b>Noise</b>	Long-term, <u>minor to moderate adverse</u> impacts on noise in areas within 1,400 feet of the GHMTA from continued heavy maneuver training.	Direct: Short-term, <u>negligible adverse</u> impacts due to construction noise experienced on site from use of cranes, concrete trucks, diesel generators, and heavy construction vehicles.		Direct: Short-term, <u>minor adverse</u> impacts due to construction noise experienced by sensitive noise receptors within 1,400 feet of construction equipment and vehicles.
	Long-term, <u>negligible to minor adverse</u> impacts on noise at the Installation from current activities.	Direct: Long-term, <u>negligible adverse</u> impacts from intermittent noise generated by military vehicle use during training activities.		Direct: Long-term, <u>minor to moderate adverse</u> impacts on sensitive noise receptors within 1,400 feet of intermittent noise generated by military vehicle use during training.
		Direct: Long-term, <u>negligible adverse</u> impacts from intermittent noise generated by maintenance activities.		Direct: Long-term, <u>minor adverse</u> impacts on sensitive noise receptors within 1,400 feet from intermittent noise generated by maintenance activities.

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Noise (cont.)	(see above)	Indirect: Long-term <u>reduction to minor adverse levels</u> of noise impacts within 1,400 feet of the GHMTA from reduced training activity.		
Soils and Topography	Long-term, <u>minor adverse</u> impacts on soils from continued disturbance and use of the GHMTA.	Direct: Short-term, <u>minor to moderate adverse</u> impacts on soils from construction disturbance of <u>1,056 acres of moderately erodible soils and 1 acre of highly erodible soils</u> .	<b>Direct: Short-term, minor to moderate adverse impacts on soils from construction disturbance of <u>1,530 acres of moderately erodible soils and 63 acres of highly erodible soils</u>.</b>	Direct: Short-term, <u>minor adverse</u> impacts on soils from construction disturbance of <u>215 acres of moderately erodible soils and 1 acre of highly erodible soils</u> .
		<b>Direct: Short-term, negligible to minor adverse impacts on soils from soil compaction during construction.</b>	Direct: Short-term, <u>negligible to minor adverse</u> impacts on soils from soil compaction during construction.	<i>Direct: Short-term, negligible to minor adverse impacts on soils from soil compaction during construction.</i>
		<i>Direct: Long-term, minor to moderate adverse impacts on soils from disturbance and compaction during heavy maneuver training.</i>	Direct: Long-term, <u>moderate adverse</u> impacts on soils from disturbance and compaction during heavy maneuver training.	<b>Direct: Long-term, moderate adverse impacts on soils from disturbance and compaction during heavy maneuver training.</b>
		<i>Direct: Long-term, negligible adverse impacts on erosion and runoff from new impervious surface.</i>	<b>Direct: Long-term, negligible adverse impacts on erosion and runoff from new impervious surface.</b>	Direct: Long-term, <u>negligible adverse</u> impacts on erosion and runoff from new impervious surface.
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts on soils in the GHMTA from a reduced training load.		

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Soils and Topography (cont.)</b>	(see above)	<i>Indirect: Short- and long-term, minor adverse impacts on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.</i>	Indirect: Short- and long-term, <u>minor adverse impacts</u> on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.	<b>Indirect: Short- and long-term, <u>minor adverse impacts</u> on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.</b>
<b>Water Resources</b>	Long-term, <u>minor adverse impacts</u> on water resources in the GHMTA from continued off-road heavy maneuver training.	<b>Direct: Short-term, <u>minor adverse impacts on 3.4 acres of wetlands, 1,500 linear feet (LF) of streams, and 2.1 acres of regulated stream buffer during construction.</u></b>	Direct: Short-term, <u>minor adverse impacts on 4.1 acres of wetlands, 1,600 LF of streams, and 5 acres of regulated stream buffer during construction.</u>	<i>Direct: Short-term, minor adverse impacts on <u>12.5 acres of wetlands, 1,350 LF of streams, and 3.3 acres of regulated stream buffer during construction.</u></i>
		<b>Direct: Long-term, <u>minor adverse impacts on 5.9 acres of wetlands, 3,200 LF of streams, and 4.2 acres of regulated stream buffer from construction.</u></b>	Direct: Long-term, <u>minor adverse impacts on 2.0 acres of wetlands, 1,600 LF of streams, and 2.6 acres of regulated stream buffer from construction.</u>	<i>Direct: Long-term, minor adverse impacts on <u>6.3 acres of wetlands, 1,350 LF of streams, and 1.7 acres of regulated stream buffer from construction.</u></i>
		<i>Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u></i>	Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u>	<b>Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u></b>

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**Key:**

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	
<b>Water Resources (cont.)</b>	Long-term, <u>negligible adverse</u> impacts on water resources from continuation of current activities in the Action Alternative locations.	Direct: Short-term, <u>minor adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.	<i>Direct: Short-term, <u>negligible adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.</i>	<b>Direct: Short-term, <u>minor adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.</b>	
		Direct: Short- and long-term, <u>negligible adverse</u> impacts on floodplains from vegetation removal and training in <u>44 acres of 100-year floodplains</u> .	<i>Direct: Short- and long-term, <u>negligible adverse</u> impacts on floodplains from vegetation removal and training in <u>17 acres of 100-year floodplains</u>.</i>	No impacts on floodplains.	
		Indirect: Short- and long-term, <u>negligible adverse</u> impacts on downstream water resources from sedimentation during construction, operation, and maintenance activities.			
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts on water resources at the GHMTA from a reduced training load.			
<b>Biological Resources</b>	Long-term, <u>minor adverse</u> impacts on existing vegetation, non-special status fish and wildlife, and bald eagles from continued operation at the GHMTA.	<b>Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~3,200 acres of vegetation</u>.</b>	Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~2,700 acres of vegetation</u> .	<i>Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~1,500 acres of vegetation</u>.</i>	
		<i>Direct: Long-term, <u>significant adverse</u> impact on Unique Ecological Areas (UEAs) from direct disturbance and permanent degradation of approximately <u>101 acres</u>.</i>	Direct: Long-term, <u>significant adverse</u> impact on UEAs from direct disturbance and permanent degradation of approximately <u>184 acres</u> .	<b>Direct: Long-term, <u>significant adverse</u> impact on UEAs from direct disturbance and permanent degradation of approximately <u>438 acres</u>.</b>	

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	(see above)	<b>Direct: Short- and long-term, <u>minor adverse impacts on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.</u></b>	Direct: Short- and long-term, <u>minor adverse impacts on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.</u>	<i>Direct: Short- and long-term, <u>minor adverse impacts on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.</u></i>
		<i>Direct: Long-term, <u>moderate adverse impact on wildlife from change in species composition following construction.</u></i>	Direct: Long-term, <u>moderate adverse impact on wildlife from change in species composition following construction.</u>	<b>Direct: Long-term, <u>moderate adverse impact on wildlife from change in species composition following construction.</u></b>
		<b>Direct: Short- and long-term, <u>minor adverse impact on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.</u></b>	<i>Direct: Short- and long-term, <u>minor adverse impact on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.</u></i>	Direct: Short- and long-term, <u>minor adverse impact on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.</u>
		Direct: Long-term, <u>moderate adverse impacts on Federal-listed and candidate species from take of <u>11 active red-cockaded woodpeckers (RCW) clusters and disturbance of less than 328 active gopher tortoise burrows.</u></u>	<i>Direct: Long-term, <u>moderate adverse impacts on Federal-listed and Candidate species from take of <u>2 RCW clusters and disturbance of 85 active gopher tortoise burrows.</u></u></i>	<b>Direct: Long-term, <u>moderate adverse impacts on Federal-listed and Candidate species from take of <u>12 RCW clusters and disturbance of 174 active gopher tortoise burrows.</u></u></b>



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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	(see above)	<b>Direct: Short- and long-term, moderate adverse impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.</b>	Direct: Short- and long-term, moderate adverse impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.	<i>Direct: Short- and long-term, moderate adverse impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.</i>
		<b>Direct: Short- and long-term, minor adverse effects on migratory birds from construction disturbance.</b>	Direct: Short- and long-term, minor adverse effects on migratory birds from construction disturbance.	<i>Direct: Short- and long-term, minor adverse effects on migratory birds from construction disturbance.</i>
		Direct: Short- and long-term, <u>minor adverse</u> effects on bald eagles from construction disturbance.	<i>Direct: Short- and long-term, minor adverse effects on bald eagles from construction disturbance.</i>	No impacts on bald eagles.
		<b>Indirect: Short- and long-term, negligible to minor adverse effect on offsite vegetation from construction, operation, and maintenance disturbance.</b>	Indirect: Short- and long-term, negligible to minor adverse effect on offsite vegetation from construction, operation, and maintenance disturbance.	<i>Indirect: Short- and long-term, negligible to minor adverse effect on offsite vegetation from construction, operation, and maintenance disturbance.</i>
		<b>Indirect: Long-term, negligible adverse impact on vegetation from potential changes in the fire regime.</b>	Indirect: Long-term, negligible adverse impact on vegetation from potential changes in the fire regime.	<i>Indirect: Long-term, negligible adverse impact on vegetation from potential changes in the fire regime.</i>

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Biological Resources (cont.)	(see above)	<b>Indirect: Long-term, <u>minor adverse</u> impacts on vegetation from spread of invasive species.</b>	Indirect: Long-term, <u>minor adverse</u> impacts on vegetation from spread of invasive species.	<i>Indirect: Long-term, <u>minor adverse</u> impacts on vegetation from spread of invasive species.</i>
		<b>Indirect: Short- and long-term, <u>negligible adverse</u> effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.</b>	Indirect: Short- and long-term, <u>negligible adverse</u> effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.	<i>Indirect: Short- and long-term, <u>negligible adverse</u> effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.</i>
		<b>Indirect: Short- and long-term, <u>minor adverse</u> effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.</b>	Indirect: Short- and long-term, <u>minor adverse</u> effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.	<i>Indirect: Short- and long-term, <u>minor adverse</u> effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.</i>
Cultural Resources	No impacts.	Direct: Long-term, <u>minor adverse</u> impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.	<i>Direct: Long-term, <u>minor adverse</u> impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.</i>	<b>Direct: Long-term, <u>minor adverse</u> impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.</b>
		<b>Direct: Long-term, <u>negligible adverse</u> impacts on <u>four cemeteries</u> from noise during construction, operation, and maintenance activities.</b>	Direct: Long-term, <u>negligible adverse</u> impacts on <u>two cemeteries</u> from noise during construction, operation, and maintenance activities.	No impacts on cemeteries.

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	
<b>Cultural Resources (cont.)</b>	(see above)	Direct: Long-term, <u>negligible adverse</u> impacts on potential existing populations of a plant important to Tribes.			
		Direct: Short- and long-term, <u>minor to moderate adverse</u> impacts on up to 1 Property of Traditional Religious and Cultural Importance (PTRCI) from nearby disturbance during construction, operation, and maintenance.			
		Direct: Long-term, <u>minor adverse</u> impacts on inadvertent cultural discoveries.			
<b>Socioeconomics</b>	Long-term, <u>minor beneficial</u> impacts from continued expenditures and jobs associated with the GHMTA.	<i>Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 245 direct job-years and projected combined direct earnings of over \$15.7 million during construction.</i>	<b>Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 276 direct job-years and project combined earnings of \$17.7 million during construction.</b>	Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 253 direct job-years and projected combined direct earnings of \$16.2 million during construction.	
		Direct: Long-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 31 job-years and \$2.4 million projected earnings during the first year of maintenance, and 27 job-years and \$2.1 million in earnings during subsequent years of maintenance.			
		<i>Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (211 job-years) and projected combined indirect earnings of over \$8.9 million during construction.</i>	<b>Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (238 job-years) and projected combined indirect earnings of \$10.1 million during construction.</b>	Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (219 job-years) and projected combined indirect earnings of over \$9.2 million during construction.	
		Indirect: Long-term, <u>minor beneficial</u> impact on the economy from the creation of 21 job-years in the first year of maintenance and 17 job-years annually thereafter.			

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Socioeconomics (cont.)</b>	(see above)	No impacts on Environmental Justice (EJ).	Indirect: Short- and long-term, <u>negligible adverse impacts</u> on EJ from spread of airborne fugitive dust to low-income residences located over 0.5 mile from the Installation boundary during construction, operation, and maintenance.	Indirect: Short- and long-term, <u>minor to moderate adverse impacts</u> on EJ from increased noise levels and spread of airborne fugitive dust to 11 off-Post residences near the Installation boundary during construction, operation, and maintenance.
<b>Infrastructure</b>	Long-term, <u>negligible adverse impacts</u> on traffic and transportation near the GHMTA from continued heavy maneuver training activities.	Direct: Short-term, <u>minor adverse impacts</u> on utilities from electric service disruption during connection transfer.	No impacts on utilities.	Direct: Short-term, <u>minor adverse impacts</u> on utilities from electric service disruption during connection transfer.
		Direct: Long-term, <u>minor beneficial impacts</u> to electrical system integrity from burying utility lines.	No impacts on utilities.	Direct: Long-term, <u>minor beneficial impacts</u> to electrical system integrity from burying utility lines
		Direct: Short-term, <u>minor adverse impacts</u> on roadways from road closures and traffic disruption during construction.	<i>Direct: Short-term, <u>minor adverse impacts</u> on roadways from road closures and traffic disruption during construction in a low-trafficked Region of Influence (ROI).</i>	Direct: Short-term, <u>minor adverse impacts</u> on roadways from road closures and traffic disruption during construction.
		<i>Direct: Long-term, <u>minor beneficial impacts</u> from 2 miles of improved roads and 15 new tank crossing locations.</i>	<b>Long-term, <u>minor beneficial impacts</u> from 9 miles of improved roads and 13 miles of new trails.</b>	Long-term, <u>minor beneficial impacts</u> from 8 miles of improved roads and 10 miles of new trails.

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Infrastructure (cont.)</b>	(see above)	Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.	<i>Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.</i>	Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.
		Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.	<i>Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.</i>	Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.
		Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.	<i>Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.</i>	Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.
<b>Hazardous and Toxic Materials and Waste (HTMW)</b>	Long-term, <u>minor adverse</u> impacts on HTMW use, potential release, and disposal at the GHMTA.	Direct: Short- and long-term, <u>minor adverse</u> impacts from use, storage, disposal, and transport of HTMW, including potential spills, during construction, operation, and maintenance activities.		
		Direct: Short- and long-term, <u>minor adverse</u> impacts from inadvertent discovery of existing contamination during construction, operation, and maintenance activities.		

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Hazardous and Toxic Materials and Waste (cont.)</b>	(see above)	Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction activities, operation, and maintenance.	<b>Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction, operation, and maintenance activities due to drainage to off-Post lands.</b>	Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction, operation, and maintenance activities.
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts from reduced use of hazardous materials at the GHMTA.		

## **ES.8 Summary of Mitigation Measures**

The Proposed Action includes the EPMs and RCMs set forth in Section 2.1.1 of the EIS. These measures are incorporated into the Proposed Action to reduce environmental effects through “mitigation by design.” These measures are *not* considered mitigation measures in this EIS as they are proactive measures that would reduce effects by incorporation under any Action Alternative.

For VECs that could still be adversely impacted even with implementation of the EPMs and RCMs, the Army identified additional mitigation measures that could be implemented to further reduce these impacts, where feasible.

Mitigation was identified in accordance with the CEQ NEPA Regulation (40 CFR 1508.20) and the Army NEPA Regulation to either: (1) Avoid the impact altogether by not taking a certain action or parts of an action; (2) Minimize the impacts by limiting the degree or magnitude of the action and its implementation; (3) Rectify the impact by repairing, rehabilitating, or restoring the affected environment; (4) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and/or (5) Compensate for the impact by replacing or providing substitute resources or environments.

Table ES-3 summarizes identified mitigation measures by Action Alternative. These are specific measures that could be implemented in addition to the EPMs and RCMs discussed in Section ES.5.1.1. The specific mitigation measures that would be implemented will be identified, as appropriate, in the ROD.

## **ES.8 Areas of Controversy**

Based on comments received during the public scoping period, the primary areas of controversy regarding the Proposed Action were Water Resources and Cultural Resources. Stakeholders were particularly interested in how each of these resources could be impacted, and what actions the Army would take to avoid, minimize, and mitigate these impacts. Other topics of interest included public involvement, EIS scope, biological resources, air quality, and noise. The Army considered and addressed all public scoping comments from interested agencies, organizations, and persons in the Draft EIS (DEIS).

**Table ES-3: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation)</b>	<ul style="list-style-type: none"> <li>Re-delineate the boundaries of training compartments that are partially included within the proposed HOMMTA to align more closely with the boundary of the HOMMTA.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Air Quality</b>	None.	None.	None.	None.
<b>Noise</b>	None.	None.	None.	<ul style="list-style-type: none"> <li>Maintain a vegetated buffer along the eastern boundary of Alternative 3 such that there is a distance of at least 800 feet between the noise-sensitive receptors and the nearest likely construction, operation, and maintenance activities associated with the Proposed Action.</li> <li>Through the Joint Land Use Study (JLUS) or Army Compatible Use Buffer (ACUB) programs, reduce further incompatible development within approximately 1,400 feet of the eastern Fort Benning boundary within the noise ROI.</li> </ul>



**Table ES-3: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Soils</b>	<ul style="list-style-type: none"> <li>Plan construction activities to occur in a manner that reduces the potential for erosion, such as by minimizing the amount of time that soil is exposed (i.e., through revegetation measures), minimizing disturbance of moderately or highly erodible soils, lightly wetting disturbed areas to reduce dust, and/or conducting vegetation removal and land disturbance activities during times of the year with generally lower amounts of precipitation to reduce the risk of erosion.</li> <li>Implement stormwater/water quality mitigation measures described in Section 3.6.3 to help maintain indirect effects to offsite areas at negligible to minor levels.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>Maintain surface water buffers from heavy maneuver training activities that exceed the 25- to 100-foot widths anticipated as part of the Proposed Action, depending on site-specific resources and conditions.</li> <li>Implement proactive, long-term erosion control measures in areas where sedimentation is most likely (in addition to the ITAM program).</li> <li>Plan “rest and rehabilitation” periods, when feasible, and utilize “smart” scheduling to minimize impacts from multiple, sequential training events.</li> <li>Avoid conducting off-road heavy maneuver training, except when necessary, during or immediately following inclement weather when potential sedimentation impacts are most likely.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 1 when feasible.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 2 when feasible.</li> </ul>	See “Applicable to All Action Alternatives” column.

**Table ES-3: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>• Re-vegetate disturbed soils with plant species on Fort Benning’s approved plant list, to the extent feasible, in order to reduce the adverse impacts of vegetation removal.</li> <li>• Where practical, use erosion control materials that are biodegradable and/or mobile to reduce their longevity in the environment. Remove erosion control measures following construction when not needed for long-term soil stabilization.</li> <li>• Implement the mitigation measures identified for Soils and Topography in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on vegetation.</li> <li>• Implement the mitigation measures identified for Soils and Topography identified in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on aquatic habitats.</li> <li>• Implement the mitigation measures identified for Water Resources in Section 3.6.3 to minimize impacts to aquatic habitats and the species that inhabit these areas.</li> <li>• Avoid construction within 200 feet of clusters during RCW (Federal-listed endangered species) nesting season (April through July).</li> <li>• If gopher tortoises are located during construction or maintenance of the proposed HOMMTA, avoid them to the extent feasible; if avoidance is not feasible, then relocate them in accordance with the Management Guidelines for the Gopher Tortoise on Army Installations and Fort Benning’s INRMP.</li> <li>• If State-listed wildlife or plant species are located during the construction or maintenance of the proposed HOMMTA, avoid or relocate these species to the extent feasible.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 5.9 acres of the Upatoi Bluffs UEA and 94.9 acres of the Depression Ponds UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. <u>This mitigation measure would reduce potential significant impacts on UEAs to negligible or minor levels.</u></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 184.0 acres of the Prosperity Church Oak-Hickory Forest UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. <u>This mitigation measure would reduce potential significant impacts on UEAs to negligible or minor levels.</u></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 0.6 acre of the Arkansas Oak Rock Hills UEA and 34.1 acres of Pine Knot Creek Blackwater UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. This mitigation measure would reduce potential significant impacts on these two UEAs to negligible or minor levels; potential avoidance of the Slopes of Northern Affinities UEA (652.8 acres) would likely not be possible, and the UEA would still be significantly and adversely impacted by the Proposed Action given the size and location of this UEA relative to the proposed off-road maneuver areas.</li> </ul>

**Table ES-3: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	<ul style="list-style-type: none"> <li>Avoid construction within the nesting season of migratory birds (generally April to August, including spring and summer), if feasible.</li> </ul>	(see above)	(see above)	(see above)
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>Establish a 50-foot buffer from all vehicle, digging, or other disturbance around NRHP-eligible archaeological site footprints (including as applicable, the PTRCI) in the field prior to HOMMTA construction by installing Seibert Stake reflectors, along with “Sensitive Area” signage, at 45-foot intervals. Existing vegetation would be retained within these buffers as barriers to vehicle traffic, and boulders would be emplaced at 6-foot intervals, where needed, to supplement vegetative barriers.</li> <li>Monitor NRHP-eligible archaeological sites and, as applicable, the PTRCI routinely throughout the HOMMTA’s lifecycle.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Socioeconomics</b>	None.	None.	None.	<ul style="list-style-type: none"> <li>Implement the mitigation measures identified for Noise to further reduce anticipated noise impacts to off-Post EJ communities adjacent to Alternative 3.</li> </ul>
<b>Infrastructure</b>	None.	None.	None.	None.
<b>Hazardous and Toxic Materials and Waste</b>	None.	None.	None.	None.

\* This table only includes mitigation measures that the Army may implement to further reduce identified adverse impacts; EPMs and RCMs included as part of the Proposed Action are discussed separately in Section 2.1.1 and Table 2.1-1.

During the DEIS public comment period (see Section ES.9), the Army received comments primarily concerned with water resources, biological resources, and cultural resources; more specifically, these comments generally reflected guidance provided by State agencies regarding how to minimize potential adverse impacts to these resources. Notably, the Army received no comments from private citizens or non-governmental organizations expressing concern over the areas of controversy identified during the public scoping period. All public comments on the DEIS, as well as the Army's responses, are included in Appendix K of the FEIS.

### **ES.9 Public Participation**

The Army made the DEIS available for public review and comment. Per 40 CFR 1506.10, the public comment period initiated with the US Environmental Protection Agency's publication of the Notice of Availability (NOA) of the DEIS in the *Federal Register* on May 29, 2020, and concluded after 45 days on July 13, 2020.

Simultaneously, the Army published the DEIS NOA in local media, including the *Ledger Enquirer* and *The Journal*. The MCoE Public Affairs Office also issued a press release and the Army sent the NOA to each entity on the EIS Distribution List. These notifications included information on where the public could obtain or review a copy of the DEIS, provided information concerning the DEIS Virtual Public Meeting, and encouraged submission of comments.

During this time, the Army made the DEIS available to the public in multiple ways. The DEIS was posted on the HOMMTA EIS webpage at <https://www.benning.army.mil>, and was available online for the DEIS Virtual Public Meeting at <https://fortbenning.consultation.ai/>. The live, call-in portion of the DEIS Virtual Public Meeting was held on June 30, 2020; the meeting materials (e.g., posters, fact sheets, and DEIS) were available on the aforementioned websites for the duration of the public comment period. Finally, the public was able to contact Mr. John Brown, Fort Benning NEPA Program Manager, at [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil) or (706) 545-7549 from 9 a.m. to 4 p.m. to request a hard copy or CD of the DEIS.

Comments on the DEIS were accepted via any of the following ways: 1) either orally or in writing at the DEIS Virtual Public Meeting; 2) emailed to Mr. John Brown, Fort Benning NEPA Program Manager, at [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil); or 3) mailed to Fort Benning Environmental Management Division.

Comments must have been received or postmarked by July 13, 2020 to ensure they would be considered during preparation of the FEIS. In total, the Army received 15 distinct comments from five commenters. These comments have been addressed within this FEIS, as appropriate.

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## Appendices

**Appendix A:** Agency, Organization, and Public Correspondence

**Appendix B:** Public Scoping Report

**Appendix C:** Record of Non-Applicability (RONA) For Clean Air Act Conformity

**Appendix D:** USAPHC Memoranda For Record: Proposed Fort Benning Heavy Off-Road Mounted Maneuver Training Area

**Appendix E:** Finding of No Practicable Alternative (FONPA) for Construction in Wetlands and 100-Year Floodplains

**Appendix F:** Fort Benning Heavy Off-Road Mounted Maneuver Training Area Final Biological Assessment and US Fish and Wildlife Service Biological Opinion

**Appendix G:** Army Memorandum for Record: Vibration Analysis of Heavy Maneuver Vehicle Effects on Cultural Resources

**Appendix H:** Economic Multiplier Analysis Results

**Appendix I:** Fort Benning Heavy Off-Road Mounted Maneuver Training Area On-site Traffic Count Results Memorandum

**Appendix J:** Draft Mitigation and Monitoring Plan

**Appendix K:** Draft EIS Public Comments and Responses

**Appendix L:** Tribal Consultation Comments

## 1.0 Purpose, Need, and Scope

### 1.1 Introduction

This Environmental Impact Statement (EIS) analyzes the United States (US) Army’s proposal to construct, operate, and maintain a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) of at least 2,400 contiguous acres within the current boundaries of Fort Benning to support off-road armor vehicle maneuver. The Proposed Action would provide a training area to meet existing training needs; it would not result in additional Soldiers, traffic, or any training off of the Installation. The proposed training area would support the Maneuver Center of Excellence (MCoE) in its mission to train the maneuver forces of the Army, and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing Fort Benning a contiguous HOMMTA large enough to conduct realistic training.

In accordance with the National Environmental Policy Act of 1969, as amended (NEPA; 42 US Code [USC] § 4321 *et seq.*); the Council on Environmental Quality (CEQ) NEPA Regulation (40 Code of Federal Regulations [CFR] 1500-1508); and applicable Army requirements, including the Army NEPA Regulation (32 CFR 651, *Environmental Analysis of Army Actions*), this EIS has been prepared to inform Army decision-makers, regulatory agencies, and the public of the potential environmental and socioeconomic impacts of the Proposed Action and Alternatives, prior to making a decision on this Federal proposal. This EIS also addresses requirements associated with relevant Federal, State, and local regulations, such as Section 106 of the National Historic Preservation Act (NHPA), Section 7 of the Federal Endangered Species Act (ESA), and Sections 401 and 404 of the Federal Clean Water Act (CWA).

Fort Benning is an approximately 182,000-acre Installation located in west-central Georgia and east-central Alabama. Approximately 169,260 acres of Fort Benning are located in Muscogee and Chattahoochee Counties, Georgia, and approximately 12,740 acres are located in Russell County, Alabama. Fort Benning is an integral part of the Columbus, Georgia, Metropolitan Statistical Area (MSA), which also includes Phenix City, Alabama. The Columbus MSA had a population of almost 306,000 people in 2017 estimates by the US Census Bureau (USCB) (USCB, 2017a). The Fort Benning “Main Post” cantonment area, located in the southwestern portion of the Installation, is just south of Columbus. Figure 1.1-1 displays the general location of Fort Benning.

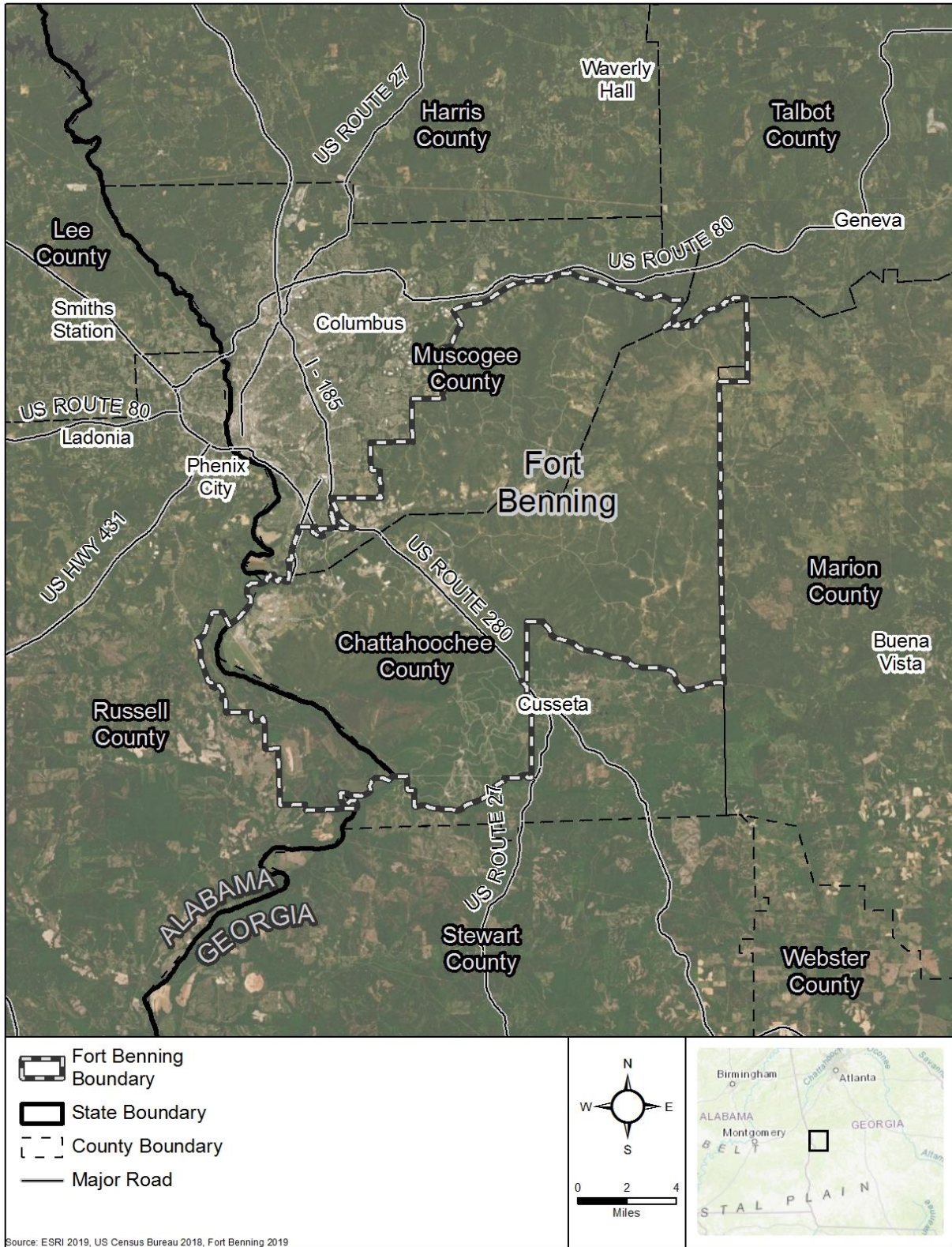


Figure 1.1-1: General Location Map of Fort Benning



## 1.2 Overview of Proposed Action




### 1.2.1 Background

The Army’s mission is “To deploy, fight and win our nation’s wars by providing ready, prompt and sustained land dominance by Army forces across the full spectrum of conflict as part of the joint force” (US Army, 2019). The Army’s mission has increasingly included a broad range of operations to include high-intensity conflict; persistent low-level conflict; anti-terrorism operations; and peace-keeping, stability, and support operations. Rapidly delivering highly trained, adaptive, and professional forces is critical to achieving the Army’s mission and supporting the nation’s strategic and national defense mission and objectives.

Fort Benning plays a pivotal role in supporting the Army’s overarching mission. As the Army’s MCoE, the home of the Army’s Armor and Infantry Schools, Fort Benning must support the institutional training of Infantry and Armor Soldiers and leaders. The institutional training conducted at Fort Benning provides Army leaders with the opportunity to respond to a wide variety of situations that they can expect to encounter on the modern battlefield. Fort Benning must be able to train and develop highly skilled and cohesive units capable of conducting operations across the full spectrum of potential conflicts. Inherent in and vital to training Infantry and Armor Soldiers and leaders properly is the requirement to provide sufficient heavy off-road mounted maneuver training area.

Fort Benning is also home to several deployable units that conduct off-road mounted maneuver training, including the 1st Security Force Assistance Brigade, Task Force 1-28 Infantry, and elements of the 75th Ranger Regiment. Table 1.2-1 lists Fort Benning’s tenant units that require off-road maneuver training land; the 75<sup>th</sup> Ranger Regiment is the only tenant unit that conducts heavy off-road mounted maneuver.

**Table 1.2-1: Fort Benning’s Tenant Units Requiring Off-Road Maneuver Training Land**

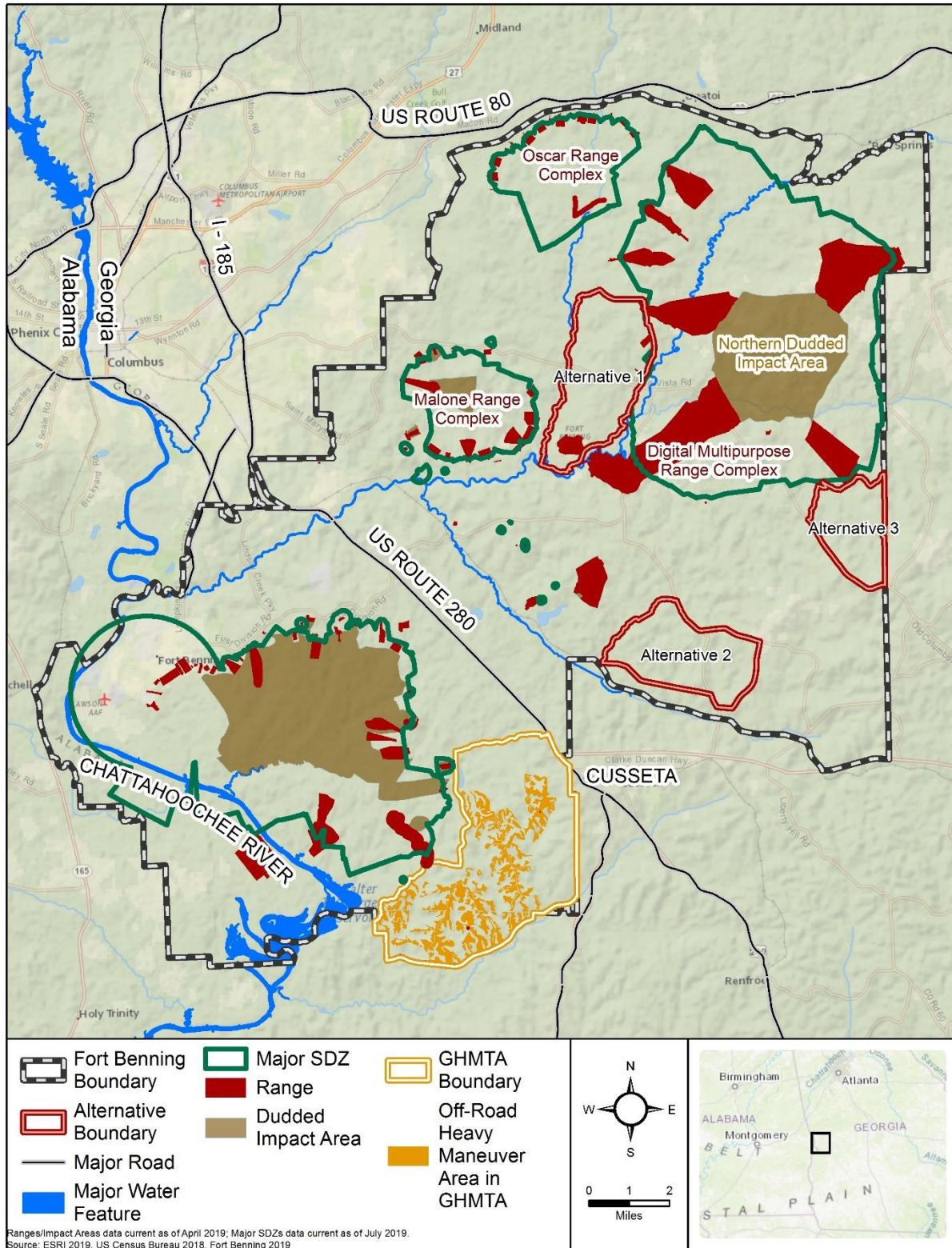
Tenant Unit	Description
<p><b>1st Security Force Assistance Brigade</b></p> 	<p>This unit is comprised solely of Officers and non-commissioned officers tasked to train, advise, and assist the armed forces of other countries. The unit is specially trained in languages and interpreter support. It is equipped with the latest equipment including communications, weapons, and unmanned aircraft systems to support coalition partners. The unit is broken into teams with specialties including combat arms, baseline medical care, intelligence support, logistics, maintenance, and air support.</p>
<p><b>Task Force 1-28 Infantry</b></p> 	<p>About the size of a battalion and a half (approximately 1,200 Soldiers), this unit was formed from elements of the 3<sup>rd</sup> Brigade, 3<sup>rd</sup> Infantry Division. In addition to a core of Infantry Soldiers, this unit includes its own Engineer Company, Artillery Battery, Cavalry Scouts, and support personnel. It is organized and trained to operate independently as a cohesive team in various scenarios.</p>
<p><b>75th Ranger Regiment</b></p> 	<p>A light infantry, airborne, special operations force with specialized skills that enable performance of a variety of missions, this unit’s primary training is in direct raids, but they are also fully proficient in airfield seizure, special reconnaissance, personnel recovery, clandestine insertion, and site exploitation. The unit is capable of full deployment within 18 hours of notification. It is the only tenant unit at Fort Benning that conducts heavy off-road mounted maneuver, which it does while training on their Stryker platforms.</p>

**1.2.2 The Evolution of Mounted Maneuver at Fort Benning**

Pursuant to a decision by the Base Realignment and Closure (BRAC) Commission in 2005, the Department of Defense (DoD) relocated the Armor School from Fort Knox, Kentucky, to Fort Benning where it was co-located with the Infantry School. This move consolidated the Army's two maneuver schools and resulted in the creation of the MCoE, which now trains over 67,000 Soldiers and leaders each year.

Each year, the MCoE trains approximately 8,000 Soldiers in off-road mounted maneuver. This training enables these Soldiers to operate effectively within their current and/or future units. MCoE courses that require off-road mounted maneuver training, and the number of Soldiers trained in each course, are identified in Table 1.2-2. Currently, the only training area at Fort Benning suitable for heavy off-road mounted maneuver training is the Good Hope Maneuver Training Area (GHMTA). The GHMTA is shown in Figure 1.2-1.





**Figure 1.2-1: Existing Ranges at Fort Benning**

Fort Benning originally constructed the GHMTA to support the Armor Basic Officer Leader Course (ABOLC) beginning in Fiscal Year (FY) 2006. At that time, the GHMTA was required to provide a heavy off-road maneuver training area large enough to support two ABOLC classes training simultaneously in force-on-force (i.e., where two groups target each other) tank company/platoon heavy off-road mounted maneuver (Fort Benning, 2015b). The Army analyzed impacts associated with use of the GHMTA for off-road heavy maneuver training in the Enhanced Training Environmental Assessment (ETEA) and associated Finding of No Significant Impact, which is incorporated herein by reference (Fort Benning, 2015b).

**Table 1.2-2: MCoE Courses that Require Off-Road Maneuver Training Land**

<b>MCoE Course</b>	<b>Courses per Year</b>	<b>Students per Course*</b>	<b>Total Students*</b>
<b>Infantry Basic Officer Leader Course</b>	9	~160	1,440
<b>Armor Basic Officer Leader Course</b>	8	~70	560
<b>Bradley Leaders Course</b>	5	~40	200
<b>Stryker Leader Course</b>	7	~40	280
<b>Scout Leader Course<sup>1</sup></b>	10	~50	500
<b>Armor Crewman Advanced Leader Course</b>	4	~50	200
<b>Cavalry Scout Advanced Leader Course</b>	5	~70	350
<b>Armor Crewman Course</b>	12	~120	1,440
<b>Cavalry Scout Course</b>	19	~160	3,040
<b>Total</b>	<b>79</b>	<b>N/A</b>	<b>8,010</b>

\* Numbers represent approximations typical year to year.

1. The Scout Leader Course was called the Army Reconnaissance Course in the Draft EIS. The name of this course recently changed and has been updated in the Final EIS accordingly.

Since the initial development of the GHMTA, the Army training strategy has changed to “cross-domain movement and maneuver;” as it relates to armor vehicles, ‘movement’ means traveling between locations predominantly on roads and trails, while ‘maneuver’ means tactical movement and operation of armor vehicles. This updated training strategy requires additional land to conduct appropriate training to prepare Soldiers for potential threats. Specifically, the steady increase of lethality, range, and rate of fire of modern weapons enables enemies to inflict mass destruction on closely clustered targets, requiring Army forces to operate in a dispersed manner and adjust tactics accordingly. These tactics are critical to ensure future Army forces can avoid enemy strengths and

evade enemy attacks while retaining the freedom of movement to concentrate combat power rapidly across domains to fight, survive, and win.

Army forces must also be able to employ concealment capabilities during training. To achieve depth and preserve freedom of movement and action, commanders at all levels also must integrate reconnaissance and security operations, and resource, organize, and synchronize area security efforts between multiple maneuver formations and joint, inter-organizational, and multi-national partners to develop situational understanding, prevent surprise, preclude enemy action, and protect the force (Army Training and Doctrine Command [TRADOC] Pamphlet 525-3-6, 2017). To meet these requirements, the MCoE submitted, and the Department of the Army Headquarters subsequently approved (effective October 1, 2018), revised training plans for several courses to integrate the cross-domain movement and maneuver training requirements.

The training necessary to satisfy cross-domain movement and maneuver strategies requires more contiguous area that is suitable for heavy off-road maneuver than was provided by the original GHMTA. In an attempt to accommodate this requirement, Fort Benning continued to improve the off-road maneuver area within the GHMTA. Despite these upgrades, the existing GHMTA landscape contains slopes, streams, wetlands, and other limitations that cannot support the increasing maneuver training requirements for the MCoE and Fort Benning's tenant units (Cianciolo, 2018).

Current heavy off-road GHMTA maneuver areas, as shown in Figure 1.2-1, do not provide enough contiguous off-road maneuver space. Of the available 11,154 acres of the GHMTA, only 1,952 non-contiguous acres, with no more than 371 acres (i.e., approximately 1.5 square kilometers) of open and maneuverable terrain in any section, can be used for heavy off-road mounted maneuver. The effective range of the M-1 Abrams tank, the Army's main battle tank, is greater than 2 kilometers (km). Therefore, the size of the GHMTA maneuver areas essentially allows tanks to target the entire battlespace without moving. This fails to achieve the purpose of maneuver training because if the contiguous training areas are smaller than the range of the weapon system, Soldiers cannot employ maneuver tactics to evade simulated enemy attacks. In addition to the lack of contiguous maneuver space, the available areas do not support all required off-road mounted training as they contain choke points and other maneuver restrictions.

Heavy off-road maneuver training requires as much maneuverable space as possible to prepare Soldiers for combat, and more maneuverable space enables greater and more diverse training opportunities. The proposed HOMMTA must contain at least 2,400 contiguous acres to satisfy minimum cross-domain movement and maneuver requirements, such as multiple avenues of approach (i.e., open, off-road areas in which armor vehicles can maneuver towards an adversary) that are each at least 3 km long and several hundred meters wide. The 2,400 acres may contain landscape features (e.g., slopes, wetlands, and streams) that restrict maneuver as long as these features do not create non-contiguous areas or choke points. Fully developed, the GHMTA would provide up to 4,000 acres of non-contiguous off-road maneuver land; however, the landscape and non-contiguous nature of the training area would still not support required changes in training strategy.

The MCoE has been tasked to lead Army Doctrine, Organization, Training, Material, Leadership & Education, Personnel, and Facilities efforts to improve heavy off-road mounted maneuver and gunnery competencies and develop solutions for adapting to training cross-domain movement and maneuver. The required contiguous heavy off-road mounted maneuver spaces are expected to serve as the primary training area to enable the full range of maneuver training and force-on-force skill development to prepare Soldiers and leaders for the requirements of the operational force. As such, Fort Benning proposes to construct a new HOMMTA with sufficient contiguous area to enable all units and courses to complete required cross-domain movement and maneuver training.

### **1.3 Purpose and Need**

The *purpose* of the Proposed Action, therefore, is to provide Fort Benning with a HOMMTA consistent with the current training requirements of the MCoE and Fort Benning's tenant units. Fort Benning has determined that with training mitigations, the MCoE can meet training requirements and accomplish heavy armor vehicle (tracked and wheeled) off-road maneuver training using a minimum of 2,400 additional contiguous acres, although more area would provide better training opportunities (Brown, 2018).

The Proposed Action is *needed* to address the lack of sufficient contiguous off-road mounted maneuver area to meet training requirements for heavy armor vehicle off-road maneuver training at Fort Benning. This lack of maneuver space has recently become more problematic since the

Army’s training strategy has changed, requiring a more dispersed approach to movement and maneuver. The GHMTA does not provide the available contiguous area and unconstrained landscape to support the required MCoE courses.

#### **1.4 National Environmental Policy Act Process**

Because a Federal agency is funding and conducting the Proposed Action, it must comply with NEPA. Because the Proposed Action is a major Federal action that may “significantly affect the quality of the human environment,” an EIS must be prepared (42 USC § 4332(C)).

An EIS identifies the potential environmental impacts of a proposed Federal action, prior to that agency making any decision to implement the action. The EIS takes an interdisciplinary approach to project evaluation; documents objective consideration of all reasonable Alternatives; identifies mitigation measures to avoid or reduce adverse environmental impacts; and provides an avenue for public and agency participation in the decision-making process (40 CFR 1502.1).

Following the publication of the Notice of Intent (NOI) to prepare an EIS in the *Federal Register* (FR) and local media outlets, the proposing Federal agency conducts a 30-day public scoping period (see Section 1.9.2). The Draft EIS (DEIS) is then prepared, based, in part, on input provided through the scoping period. The DEIS is the first formal step that documents the environmental analysis of the Proposed Action, and is made available for a 45-day public comment period, including a public meeting. Following this DEIS comment period, the Federal agency considers substantive comments and prepares the Final EIS (FEIS). The Federal agency then observes a 30-day waiting period after publishing the FEIS.

Following the FEIS waiting period, the Federal agency publishes a Record of Decision (ROD). The ROD summarizes the agency’s decision, identifies the Environmentally Preferable Alternative, selects the Alternative that may be implemented (i.e., the Selected Alternative), and identifies the potential environmental impacts of that Alternative, as well as the mitigation measures that the agency will implement.

The stakeholder list for this NEPA process, developed based on prior recent NEPA processes at Fort Benning and interested parties identified at the public scoping meeting, is presented in Section

8.0. This stakeholder “Distribution List” includes all parties that will receive mailings alerting them of public comment opportunities, and will be updated throughout the NEPA process.

### **1.5 Scope of Environmental Impact Statement**

As described in Section 1.1, the geographic scope of this analysis generally includes Fort Benning with an emphasis on the three Action Alternative locations being considered for the HOMMTA and the GHMTA (i.e., No Action Alternative); all Action Alternatives and the GHMTA are located within the existing boundaries of Fort Benning. Fort Benning is located in Muscogee and Chattahoochee Counties, Georgia, and Russell County, Alabama, as shown in Figure 1.1-1. The Region of Influence (ROI) for each Valued Environmental Component (VEC) is identified in Section 3.0. In accordance with NEPA and the CEQ NEPA Regulation, this EIS focuses on resource areas, or VECs, that could potentially be significantly affected by the Proposed Action.

Based on the results of internal and external scoping conducted as part of this NEPA process, and as further detailed in the Final Public Scoping Report (see Appendix B), the following 10 VECs are evaluated in this EIS: land use (recreation), air quality, noise, soils and topography, water resources, biological resources, cultural resources, socioeconomics, infrastructure, and hazardous and toxic materials and waste (HTMW). VECs eliminated from further consideration, as well as the rationale for eliminating those VECs, are presented in Section 3.1.2.

The Army eliminated specific, non-relevant VECs in accordance with the CEQ NEPA Regulation at 40 CFR 1500.1(b) and § 1500.4(b): “...NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail....prepare analytic rather than encyclopedic analyses.”

Further, this EIS addresses the potential direct, indirect, and cumulative effects of the Proposed Action and its Alternatives on each of these VECs. Section 3.0 of the EIS presents information on the existing condition of each VEC within its respective and appropriate ROI, as well as the environmental impact analysis and mitigation measures. Cumulative effects are described in Section 4.0.

## 1.6 Agency Roles and Responsibilities

The Army is the Lead Agency concerning this Proposed Action in accordance with the Army NEPA Regulation; the Army Installation Management Command is the decision-maker.

The Army is also working closely with a number of other Federal, State, and local agencies throughout this NEPA process. These entities are identified in Section 8.0. Based on recent NEPA processes conducted at Fort Benning and a lack of expression of interest by other agencies, no agency with jurisdiction by law or special expertise (42 USC § 4331(a) and 42 USC § 4332(2)) has been identified as a Cooperating Agency (40 CFR 1501.6). Similarly, no other entity has been identified as a Cooperating Agency for this EIS.

This EIS also serves as documentation of Fort Benning's compliance with Section 106 of the NHPA, 16 USC 470 (NHPA Section 106). NHPA Section 106 requires that Federal agencies take into account the potential effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. Fort Benning complies with all applicable cultural resources laws and regulations and the Installation's Integrated Cultural Resources Management Plan (ICRMP) (Fort Benning, 2015a).

The ICRMP addresses compliance with not only NHPA Section 106, but also the Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological Resources Protection Act (ARPA), NHPA Section 110, and other cultural resources management (CRM) mandates.

To improve further efficiency in its CRM Program, Fort Benning has adopted the Army Alternate Procedures (AAP) for implementing NHPA Section 106. The Historic Properties Component (HPC) of the ICRMP provides Fort Benning's Standard Operating Procedures (SOPs) that replace the NHPA Section 106 procedures to assess proposed actions and their potential effects on historic properties. The purpose of the AAP is to expedite the review of actions that might affect historic properties and leverage the NEPA process for coordination and consultation.

Consultation with the appropriate State Historic Preservation Office (SHPO, or Georgia Historic Preservation Division [HPD]) and federally recognized Native American Tribes (see Section 1.8) affiliated with the Fort Benning area is primarily conducted through the NEPA process.

Memoranda of Agreement between Fort Benning and other stakeholders are no longer used to document consultation and mitigation concerning historic properties; rather, NEPA documentation and the HPC steps are used to streamline the NHPA Section 106 process. Therefore, this EIS and related NEPA documents are used to comply with the NHPA.

In addition, concurrent with this NEPA process, the Army is conducting site-specific studies to ensure compliance with Sections 401 and 404 of the CWA and Section 7 of the ESA. These studies include planning level surveys of all “waters of the US” (WOUS) within each proposed Action Alternative, as well as surveys for Federal-listed species and specific WOUS jurisdictional delineations in areas anticipated to be affected by the Preferred Action Alternative. Information from these analyses and associated review, permitting, and approval processes is presented in this EIS.

### **1.7 Decisions to be Made**

The Army has determined that a larger, contiguous HOMMTA is needed at Fort Benning to support heavy off-road mounted maneuver training, including the updated training strategy (i.e., cross-domain movement and maneuver) that requires more space for effective warfare operation (see Section 1.3).

During this NEPA process, the Army is responsible for deciding which Action Alternatives to consider for full analysis within this EIS, and which Action Alternative, if any, may be used to implement the Proposed Action. As part of deciding whether to implement the Proposed Action, the Army will decide which Alternative is the Environmentally Preferable Alternative, which Alternative may be implemented (i.e., the Selected Alternative), and which mitigation measures to implement. These decisions will be made based on the Army’s thorough analysis completed in this EIS, and will be documented in the ROD. Once the ROD is signed, the Army intends to request Congressional funding to implement the Selected Alternative and mitigation commitments identified in the ROD.

### **1.8 Consultation with Native American Tribes**

The Army is consulting with federally recognized Native American Tribes that have ancestral ties to the Installation (hereafter, Tribes) pursuant to the CEQ NEPA Regulation (40 CFR 1501.7(a)(1)); Department of Defense Instruction (DoDI) 4710.02 (*DoD Interactions with*



*Federally Recognized Tribes*), which implements the Annotated DoD American Indian and Alaska Native Policy (dated October 27, 1999); Army Regulation (AR) 200-1 (*Environmental Protection and Enhancement* (2007)); NEPA; NHPA; NAGPRA; and the Fort Benning ICRMP. Tribes were invited to participate in the NEPA and NHPA Section 106 processes as Sovereign Nations per Executive Order (EO) 13175 (*Consultation and Coordination with Indian Tribal Governments*). The Army is consulting with the following Tribes:

- Alabama-Coushatta Tribe of Texas
- Alabama-Quassarte Tribal Town
- Cherokee Nation
- The Chickasaw Nation
- Eastern Band of Cherokee Indians
- Kialegee Tribal Town
- Mississippi Band of Choctaw Indians
- The Muscogee (Creek) Nation
- Poarch Band of Creek Indians
- The Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- Thlopthlocco Tribal Town
- United Keetoowah Band of Cherokee Indians

The Army initially discussed the need for a new maneuver area at Fort Benning with the Tribes during a bi-annual consultation meeting on November 28-29, 2018. More details of the Proposed Action, including cultural resources within each Action Alternative, were presented during another bi-annual consultation meeting on May 7-8, 2019, and again at a bi-annual consultation meeting on November 19-21, 2019. Additionally, the Army sent consultation letters to each Tribe during the scoping process and DEIS comment period.

To date, the Cherokee Nation and The Chickasaw Nation both identified the Proposed Action as outside their area of interest during the scoping and comment periods. The Seminole Tribe of Florida requested to be included in the mitigation and avoidance planning process during the comment period. Through continuing consultation with the Tribes, both through bi-annual consultation meetings and ongoing communications, the Army identified several important topics for consideration related to the Proposed Action. A summary of Tribal comments received throughout the comment periods and topics identified during ongoing consultation with Native American Tribes is included in Section 3.8.1.3, and a record of related written communication and

consultation topics is provided in Appendix L. Fort Benning will continue to consult with all Tribes throughout the NEPA and NHPA Section 106 processes.

## **1.9 Public Involvement**

### **1.9.1 General Public Involvement Process**

The Army invites public participation in the NEPA process. Consideration of the views and information of all interested persons promotes open communication, provides additional information and public concerns to decision-makers, and enables better decision making. All agencies, organizations, and members of the public that have a potential interest in the Proposed Action are urged to participate in the decision-making process.

Throughout this process, the public may obtain information on the status and progress of the Proposed Action and EIS. Fort Benning has established a webpage that contains information updates and background for the HOMMTA EIS at <https://www.benning.army.mil>. Additionally, the public may contact the Fort Benning Environmental Management Division (EMD) with attention to Mr. John Brown. Mr. Brown may be contacted by phone at (706) 545-7549 from 9 a.m. to 4 p.m. Written comments may be mailed to Fort Benning Environmental Management Division, Attn.: NEPA Program Manager, 6650 Meloy Drive, Building 6, Room 309, Fort Benning, Georgia 31905-5122, or emailed to [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

### **1.9.2 Notice of Intent Publication and Public Scoping Process**

Public participation opportunities with respect to this EIS and decision making on the Proposed Action are guided by the Army NEPA Regulation.

The NEPA process for this Proposed Action officially began on February 11, 2019, with the publication of the NOI to prepare an EIS in the FR and local media, including the *Ledger Enquirer* and *The Journal*. A press release was issued by the MCoE Public Affairs Office (PAO) and the NOI was sent to each entity on the Distribution List (see Section 8.0). In addition, the NOI was posted on the Fort Benning website at <https://www.benning.army.mil>.

The NOI provided basic information about the Proposed Action and asked the public for input. Announcement of the public scoping meeting associated with preparation of a DEIS was included in the NOI. Publication of the NOI in the FR and local newspapers commenced the official 30-day

public scoping period, which included an opportunity for the public and interested stakeholders to identify issues to be addressed in the EIS.

The public scoping period for this EIS occurred between February 11 and March 12, 2019. Fort Benning held two scoping meetings on February 26, 2019; the first meeting included regulatory agency representatives, and the second included members of the public. The meetings were announced in the NOI. The meetings were held at the Columbus Consolidated Government Annex from 2:00 to 4:00 p.m., and 6:00 to 8:00 p.m., respectively.

At these meetings, the Army described the Proposed Action and its purpose and need, and used five information stations around the room to provide further information on the following topics: the NEPA process; the MCoE; cultural resources at Fort Benning; natural resources at Fort Benning; and other environmental resources at Fort Benning. A court reporter was also present at the public scoping meeting to record the meeting, including oral comments provided by attendees.

Comments received during the public scoping period reflected two primary topics of interest: cultural resources and water resources. Commenters were particularly interested in how each of these resources could be impacted, and what actions the Army would take to avoid, minimize, and otherwise mitigate these potential impacts. Other topics included public outreach, the scope of the EIS, biological resources, air quality, and noise. All comments from interested agencies, organizations, and persons are considered in this EIS. Please refer to Appendix B for a detailed description of the public scoping period for the proposed HOMMTA.

### **1.9.3 DEIS Public Comment Period**

The Army made the DEIS available for public review and comment. Per 40 CFR 1506.10, the public comment period initiated with the US Environmental Protection Agency's (USEPA's) publication of the Notice of Availability (NOA) of the DEIS in the *Federal Register* on May 29, 2020, and concluded after 45 days on July 13, 2020.

Simultaneously, the Army published the DEIS NOA in local media, including the *Ledger Enquirer* and *The Journal*. The MCoE Public Affairs Office also issued a press release and the Army sent the NOA to each entity on the EIS Distribution List. These notifications included information on

where the public could obtain or review a copy of the DEIS, provided information concerning the DEIS Virtual Public Meeting, and encouraged submission of comments.

During this time, the Army made the DEIS available to the public in multiple ways. The DEIS was posted on the HOMMTA EIS webpage at <https://www.benning.army.mil>, and was available online for the DEIS Virtual Public Meeting at <https://fortbenning.consultation.ai/>. The live, call-in portion of the DEIS Virtual Public Meeting was held on June 30, 2020; the meeting materials (e.g., posters, fact sheets, and DEIS) were available on the aforementioned websites for the duration of the public comment period. Finally, the public was able to contact Mr. John Brown, Fort Benning NEPA Program Manager, at [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil) or (706) 545-7549 from 9 a.m. to 4 p.m. to request a hard copy or CD of the DEIS.

Comments on the DEIS were accepted via any of the following ways: 1) either orally or in writing at the DEIS Virtual Public Meeting; 2) emailed to Mr. John Brown, Fort Benning NEPA Program Manager, at [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil); or 3) mailed to Fort Benning Environmental Management Division.

Comments must have been received or postmarked by July 13, 2020 to ensure they would be considered during preparation of the FEIS. In total, the Army received 15 distinct comments from five commenters. Overall, public comments on the DEIS were primarily concerned about water resources, biological resources, and cultural resources; more specifically, these comments generally reflected guidance provided by State agencies regarding how to minimize potential adverse impacts to these resources.

All public comments received on the DEIS, as well as the Army's responses, are included in Appendix K, and the original correspondence from each commenter is included in Appendix A. The Army's response to each public comment in Appendix K also indicates how the Army revised this FEIS, as appropriate, to address each comment.

## **2.0 Description of Proposed Action and Alternatives**

This section describes the Proposed Action, Alternatives, and screening criteria the Army used to determine which Alternatives are reasonable (see Appendix E of the Army NEPA Regulation). The No Action Alternative, as required by the CEQ NEPA Regulation (40 CFR 1502.14[d]), is also described. This section also describes why the Army considered some Alternatives but did not carry them forward for detailed analysis.

### **2.1 Description of Proposed Action**

The Army proposes to construct, operate, and maintain a HOMMTA of at least 2,400 contiguous acres at Fort Benning to support off-road mounted maneuver. The training area would support the MCoE in its mission to train the maneuver forces of the Army and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing Fort Benning a contiguous HOMMTA large enough to conduct realistic training in accordance with current Army training requirements (see Section 1.3).

The HOMMTA would include contiguous training area suitable for force-on-force training for up to approximately 24 vehicles at one time, with support vehicles in the area, allowing for training consistent with the Army's cross-domain movement and maneuver training strategy as described in Section 1.2.2. This strategy requires dispersed operation of maneuver units over a larger contiguous training space than Fort Benning currently provides. A 2,400-acre training area allows for lanes in excess of 3 km to support maneuver for simulated direct fire of at least 2 km. Training land development would primarily include vegetation removal and the construction of tank trails, culverted water crossings, and road upgrades, as well as burying existing overhead utilities.

In support of the EIS, the Army is preparing other studies, analyses, and permit applications to meet Federal requirements, such as Section 7 of the ESA, Sections 401 and 404 of the CWA, and NHPA Section 106. Data from these analyses, and descriptions of concurrent regulatory processes, are incorporated into Section 3.0 of this EIS, where appropriate.

Mitigation through avoidance and environmentally sensitive design, such as establishment of buffers, would be used to avoid impacts to sensitive resources to the maximum extent practicable. The Army would implement EPMs and regulatory compliance measures (RCMs; see Table 2.1-1)

incorporated into the Proposed Action to minimize potential adverse environmental impacts through “mitigation by design.”

## **2.1.1 Environmental Impact Reduction**

### **2.1.1.1 Regulatory Compliance Measures**

The Proposed Action would comply with all applicable Federal, State, and local laws and regulations, as well as Installation policies, procedures, plans, and guidance.

To this end, during the formal design and permitting phases of the Proposed Action, the Army would complete consultation with pertinent regulatory agencies regarding required RCMs. Specifically, formal consultation and/or permitting would be performed to comply with the CWA, ESA, and NHPA. These laws are further described in Sections 3.6 (Water Resources), 3.7 (Biological Resources), and 3.8 (Cultural Resources); an overview is provided below of anticipated required RCMs that the Army would implement prior to constructing the proposed HOMMTA:

- 1. CWA:** Section 404 of the CWA requires the Army to obtain a permit that includes appropriate mitigation requirements from the US Army Corps of Engineers (USACE) Savannah District for potential impacts to WOUS, including streams (surface waters) and jurisdictional wetlands. As part of this process, in accordance with Section 401 of the CWA, the Army must also receive a Water Quality Certification from the Georgia Department of Natural Resources (GADNR) Environmental Protection Division (EPD), or GADNR-EPD.

Mitigation of WOUS impacts may include impact avoidance measures, impact minimization measures, compensatory mitigation (i.e., purchase of mitigation bank credits or In-Lieu Fee program credits), creation of an on- or offsite wetland mitigation bank, and/or other measures as agreed upon by the Army with the USACE. Mitigation requirements would be calculated according to the USACE Savannah District Regulatory 2018 Mitigation Standard Operating Procedure (SOP; or current version).

Also in compliance with the CWA, through the Federal National Pollutant Discharge Elimination System (NPDES) program, the Army would prepare an Erosion,

Sedimentation, and Pollution Control Plan (ESPCP), approved by the State, that identifies how the Army and its contractors would limit erosion and sedimentation from the site during construction. Among other components, the ESPCP would identify specific measures (Best Management Practices, or BMPs), such as silt fences, that would be required to be implemented as part of construction of the Proposed Action.

- 2. ESA:** Section 7 of the ESA requires the Army to consult with the US Fish and Wildlife Service (USFWS) regarding the Proposed Action to minimize the potential to jeopardize Federal-listed threatened and endangered (T&E) species or their designated critical habitat.

The Army prepared, concurrent with this EIS, a Biological Assessment (BA) to evaluate potential impacts on Federal-listed T&E species and propose potential mitigation measures. The USFWS reviewed the BA and issued a Biological Opinion (BO) (see Appendix F) to inform the Army regarding potential impacts and appropriate mitigation measures.

As part of the Proposed Action, the Army would conduct T&E species mitigation in accordance with the results of consultation between the Army and the USFWS. Mitigation measures could include translocation of species (e.g., red-cockaded woodpeckers [RCWs]) outside of the proposed HOMMTA footprint, marking of no-go areas to buffer existing habitats (e.g., RCW cavity trees) from maneuver training, and/or other measures. All such measures would be conducted in compliance with Army- and Installation-specific management plans, as well as applicable Federal and State laws and regulations, as noted above.

- 3. NHPA:** The NHPA requires the Army to analyze and mitigate potential adverse impacts to cultural resources listed on, or eligible for listing on, the National Register of Historic Places (NRHP). These mitigation measures could include Phase III archaeological data recovery, establishment of site buffers to protect sites from heavy maneuver training, public education and outreach, and/or alternative mitigation strategies. These mitigation measures are identified in site-specific mitigation plans prepared for each site potentially subject to adverse impacts in consultation with the HPD and other consulting parties.

Further, as discussed in Section 3.8.1.4, Alternatives 1 and 2 both contain existing historic cemeteries. As part of the Proposed Action, the Army would establish a buffer of up to 100

feet (i.e., depending on the proximity of existing active roads and trails) around each cemetery, regardless of NRHP status, to avoid disturbance caused by maneuver training. These buffers would be established using existing vegetation, Seibert stake reflectors at 45-foot intervals, signage where appropriate, and boulders at 6-foot intervals when needed to supplement vegetative barriers. Minimum 6-foot-high chain link fencing, with pedestrian access gates for visitors, would be installed 15 feet from cemetery footprints.

#### **2.1.1.2 Environmental Protection Measures (EPMs)**

In addition to RCMs, the Army would include, as part of the Proposed Action, EPMs to reduce potential adverse impacts from construction, operation, and maintenance of the Proposed Action. These EPMs primarily include common environmentally sensitive construction practices and implementation of existing Installation resource management plans.

The primary EPMs for all Action Alternatives include: up to 100-foot buffers from construction, operation, and maintenance activities around cemeteries; up to 50-foot buffers from the same activities around NRHP-eligible archaeological sites, unless otherwise mitigated; up to 100-foot buffers from heavy off-road mounted maneuver training around streams and wetlands; and use of the Integrated Training Area Management (ITAM) program or other resources to address soil erosion and/or other environmental impacts of HOMMTA operation and training. EPMs proposed for this Proposed Action are listed for each VEC in Table 2.1-1.



**Table 2.1-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<b>Land Use (Recreation)</b>	None	None
<b>Air Quality</b>	<ul style="list-style-type: none"> <li>• Cover truck beds while in transit to limit fugitive dust emissions.</li> <li>• Spray water on any unpaved roads, soil stockpiles, or construction-related bare soil areas to limit fugitive dust emissions.</li> <li>• Use ultra-low sulfur diesel as a fuel source in onsite construction vehicles, where appropriate and feasible, to minimize sulfur dioxide (SO<sub>2</sub>) emissions.</li> <li>• When feasible, electric-powered equipment could be used instead of diesel-powered equipment.</li> <li>• Implement control measures on onsite construction vehicles, such as minimizing operating and idling time, to limit criteria pollutant emissions.</li> <li>• Follow applicable State requirements and plans for any future prescribed burns on the site (see Table 3.3-1).</li> <li>• Adhere to applicable requirements in Fort Benning’s Title V permit.</li> <li>• Implement applicable fugitive dust controls in Georgia’s Fugitive Dust Rule.</li> </ul>	<ul style="list-style-type: none"> <li>• Use ultra-low sulfur diesel as a fuel source in all onsite maintenance vehicles, where appropriate and possible, to minimize SO<sub>2</sub> emissions.</li> <li>• When feasible, electric-powered equipment could be used instead of diesel-powered equipment.</li> <li>• Implement control measures on onsite maintenance vehicles, such as minimizing operating and idling time, to limit criteria pollutant emissions.</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Adhere to applicable noise guidance, including AR 200-1 and the Noise Control Act of 1972.</li> <li>• Ensure construction personnel, and particularly equipment operators, wear adequate personal hearing protection to limit exposure and ensure compliance with Federal health and safety regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Adhere to applicable noise guidance, including AR 200-1 and the Noise Control Act of 1972.</li> <li>• Ensure construction personnel, and particularly equipment operators, wear adequate personal hearing protection to limit exposure and ensure compliance with Federal health and safety regulations.</li> </ul>

**Table 2.1-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<b>Soils and Topography</b>	<ul style="list-style-type: none"> <li>• Continue to control soils through management plans and programs such as the ITAM program, Integrated Natural Resources Management Plan (INRMP), and Soil Conservation Program (SCP).</li> <li>• Implement NPDES BMPs and comply with Federal and State regulations (e.g., preparation of a project-specific ESPCP) and implement BMPs in accordance with the Manual for Erosion and Sediment Control in Georgia (GSWCC, 2016) to meet or exceed Georgia State minimum requirements.</li> <li>• Restore compacted soils (e.g., via regrading) and revegetate disturbed areas with grasses following construction, to the extent feasible.</li> <li>• Implement an environmentally sensitive conceptual design process (see Section 2.1).</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with management plans and programs such as NPDES, ESPCP, ITAM program, INRMP, and SCP to minimize soil erosion.</li> <li>• Reduce potential erosion impacts through compliance with Federal and State regulations (e.g., preparation of a project-specific ESPCP), and implementation of BMPs in accordance with the Manual for Erosion and Sediment Control in Georgia (GSWCC, 2016) to meet or exceed Georgia State minimum requirements.</li> </ul>
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>• Complete permitting and mitigation procedures required under the CWA with the USACE.</li> <li>• Adhere to applicable Installation management plans such as the Spill, Prevention, Control, and Countermeasures (SPCC) Plan, Installation Spill Contingency Plan (ISCP), Hazardous Waste Management Plan (HWMP), and ESPCP.</li> <li>• Implement an environmentally sensitive conceptual design process (see Section 2.1).</li> <li>• Implement Soils and Topography EPMs to minimize potential for water quality degradation through soil erosion and consequent sedimentation.</li> <li>• Implement HTMW EPMs to minimize the potential of an accidental release and consequent contaminated runoff entering nearby surface waters.</li> </ul>	<ul style="list-style-type: none"> <li>• Adhere to applicable Installation management plans such as the SPCC Plan, ISCP, HWMP, and ESPCP.</li> <li>• Implement Soils and Topography EPMs to minimize potential for water quality degradation through soil erosion and consequent sedimentation.</li> <li>• Implement HTMW EPMs to minimize the potential of an accidental release and consequent contaminated runoff entering nearby surface waters.</li> </ul>

**Table 2.1-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>• Complete formal consultation required under Section 7 of the ESA with the USFWS.</li> <li>• Continue to manage biological resources on Fort Benning in accordance with the Fort Benning INRMP, Pest Management Program, and species management plans.</li> <li>• Continue to coordinate with the USFWS and GADNR, as appropriate, regarding management of special status species.</li> <li>• Prior to construction, translocate gopher tortoises from the proposed HOMMTA to other suitable habitat in accordance with the Army Gopher Tortoise Management Guidelines and Fort Benning INRMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to manage biological resources on Fort Benning in accordance with the Fort Benning INRMP, Pest Management Program, and species management plans.</li> <li>• Continue to coordinate with the USFWS and GADNR, as appropriate, regarding management of special status species.</li> <li>• To the extent feasible, maintenance activities would avoid a 50-foot buffer around known gopher tortoise burrows (MCoE Regulation 350-19).</li> </ul>
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>• Complete required mitigation requirements in compliance with the NHPA.</li> <li>• Establish buffers of up to 100 feet (depending on the proximity of existing active roads and trails) around all cemeteries, regardless of NRHP status, throughout project lifecycle.</li> <li>• Mark cemeteries on all construction documents and in the field both prior to construction and during operation.</li> <li>• Fort Benning CRM professionals would monitor cemeteries routinely throughout the project lifecycle.</li> <li>• Inadvertent discoveries of cultural resources would be addressed through the inadvertent discovery process specified in the Fort Benning ICRMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish buffers of up to 100 feet (i.e., depending on the proximity of existing active roads and trails) around all cemeteries; mark cemeteries during operation; monitor cemeteries routinely throughout the project lifecycle.</li> <li>• Adhere to inadvertent discovery process specified in the Fort Benning ICRMP.</li> </ul>
<b>Socioeconomics</b>	None	None
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Comply with the DoD Traffic Safety Program and AR 385-10.</li> <li>• Coordinate construction activities such that temporary utility/transportation network interruptions do not adversely affect the Installation mission.</li> <li>• Bury electrical infrastructure at sufficient depth and with sufficient protection to avoid future inadvertent damage by maneuvering vehicles. This may include placing a setback buffer along buried utilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with the DoD Traffic Safety Program and AR 385-10.</li> <li>• Coordinate training activities such that temporary utility/transportation network interruptions do not adversely affect the Installation mission.</li> </ul>

**Table 2.1-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<p><b>Infrastructure (cont.)</b></p>	<ul style="list-style-type: none"> <li>• Clearly mark all electrical and telecommunications infrastructure on design drawings and in the field prior to onsite construction activities with sufficient buffer to ensure avoidance.</li> <li>• Conduct utility work prior to large-scale construction work to avoid inadvertent collisions and unnecessary interruptions to power.</li> <li>• Work with construction contractors to implement a Traffic Control Plan that coordinates access around construction areas to minimize adverse impacts to training, including along roads and trails.</li> <li>• Implement a Traffic Control Plan during construction that identifies necessary road closures and appropriate detours. Detours identified in the Traffic Control Plan would be developed to accommodate the military needs of the Installation, convenience of roadway users, and the needs of emergency vehicles. During road closures, implement traffic controls, such as signage, barricades, and access guards, to direct traffic safely through or around the area.</li> <li>• Implement appropriate traffic control measures during construction to minimize the disruption of traffic flow, which may include posted detours, timing construction to avoid peak traffic volume times, and flaggers.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement a Traffic Control Plan during training that identifies appropriate detours and traffic control measures. Detours identified in the Traffic Control Plan would be developed to accommodate the military needs of the Installation, convenience of roadway users, and the needs of emergency vehicles. Traffic control measures may include posted detours, timing construction to avoid peak traffic volume times, and flaggers.</li> </ul>
<p><b>Hazardous and Toxic Materials and Waste</b></p>	<ul style="list-style-type: none"> <li>• Use, manage, and dispose of hazardous waste in accordance with applicable Federal and State regulations, as well as the Installation’s existing management plans and procedures, such as the SPCC Plan, ISCP, HWMP, and Integrated Solid Waste Management Plan (ISWMP), including as they apply to contractors, to minimize the potential for release.</li> </ul>	<ul style="list-style-type: none"> <li>• Use, manage, and dispose of hazardous waste in accordance with applicable Federal and State regulations, as well as the Installation’s existing management plans and procedures, such as the SPCC Plan, ISCP, HWMP, and ISWMP, including as they apply to contractors, to minimize the potential for release.</li> <li>• Implement 100-foot buffer from surface waters during refueling activities and maintain spill kits in the proximity.</li> </ul>

### 2.1.2 HOMMTA Construction

The Army would begin constructing the HOMMTA following implementation of required RCMs, EPMs, and mitigation measures identified in the ROD. HOMMTA construction would be funding-dependent, take between 2 and 3 years, and be conducted in two primary stages.

The first stage of HOMMTA construction would be vegetation removal. Based on the final HOMMTA design, the Army would sell (i.e., to a contractor) merchantable timber to remove trees (e.g., timber harvest) from the specific portions of the HOMMTA where heavy maneuver would occur. The contractor would also grub stumps and remove slash and other remaining vegetation in accordance with acceptable procedures; slash burning may occur in accordance with applicable laws and regulations. Throughout the vegetation removal process, the contractor would minimize environmental impacts by implementing NPDES BMPs in accordance with *Georgia's Best Management Practices for Forestry* (Georgia Forestry Commission, 2009) and relevant permitting requirements and EPMs (see Table 2.1-1).

Once the vegetation removal stage is complete, the Army or its contractors would grade some slopes; install erosion control measures; upgrade roads to have a minimum 10-inch concrete surface to support armor vehicle traffic; harden or bury utilities within their existing rights of way (ROWs) (except where they cross streams, wetlands, or regulated stream buffers; in these locations, utilities would remain unmodified or be directionally bored beneath these resources); clearly mark areas that are off-limits to heavy maneuver (e.g., buffers around streams, wetlands, archaeological sites, and cemeteries); and construct water crossings, gravel tank trails, and other necessary infrastructure.

The Proposed Action would also include temporary and permanent measures to minimize soil erosion and sediment loss during construction, operation, and maintenance of the HOMMTA. These measures could include reseeded according to established Fort Benning seeding specifications; sediment-filtering; and water feature sediment traps, filter dams, and other elements as agreed upon with the GADNR-EPD. Stone check and rock filter dams would further protect natural drainage swales, and sediment traps and treatment trains (including water bars, turnouts, and level spreaders) would protect wetlands and/or streams at water crossings. Construction of

erosion control measures would be in accordance with the *Manual for Erosion and Sediment Control in Georgia* (GSWCC, 2016) to meet or exceed Georgia State minimum requirements.

The HOMMTA would be designed and built for a minimum lifespan of 40 years in accordance with DoD's Unified Facilities Criteria (UFC 1-200-02).

### **2.1.3 HOMMTA Training**

The HOMMTA would support nine different MCoE courses that collectively teach approximately 8,000 students in 79 classes annually, as well as provide training for three Fort Benning tenant units (see Section 1.2).

The HOMMTA would be used to support multiple types of maneuver training. Most notably, the HOMMTA would support force-on-force heavy off-road maneuver training for up to approximately 24 vehicles at one time, as well as support vehicles that would be generally limited to the assembly areas.

During these force-on-force exercises, up to three platoons comprised of four armor vehicles each would assemble at each end of the HOMMTA in the platoon assembly areas, which are approximately 20-acre areas where vehicles marshal and prepare to enter the course. Each set would either maneuver towards and target the other, or one side would approach while the other would defend a portion of the HOMMTA. No live-fire training (i.e., no use of bullets, projectiles, or exploding ordnance) would occur, although the Army would use pyrotechnics, simulators, and blanks commonly used in maneuver training activities to simulate live fire.

The HOMMTA's size and layout would enable Soldiers to train to the Army's new cross-domain movement and maneuver strategy requirements; this is not currently possible at the GHMTA. This strategy requires Soldiers to be able to maneuver in more dispersed patterns over a larger space. To meet requirements, each avenue of approach in the HOMMTA (i.e., open, off-road areas in which armor vehicles can maneuver towards an adversary; see Alternative concepts in Section 2.4) would be several hundred meters wide, and each avenue would allow open maneuver of one or two armor vehicles with supporting dismounted elements (i.e., Soldiers on foot who are training with the mounted elements). Dismounted training activities already occur throughout all Action

Alternatives; the Proposed Action would not change these activities. As such, they are not analyzed further in this EIS.

When not being used for force-on-force training, other units/courses, including Armor Basic, Scout Basic, and ABOLC students, would use the HOMMTA to learn their vehicles' capabilities better. Additionally, Bradley Leader, Stryker Leader, and Scout Leader Course students, as well as other units conducting light maneuver<sup>2</sup> training, would use the HOMMTA. The HOMMTA's characteristics would allow students to maneuver in formations and conduct more realistic mounted navigation training that is not dependent on roads and trails, providing increased training value and benefits.

#### **2.1.4 HOMMTA Maintenance**

Maintenance would be conducted through Fort Benning's ITAM program when funding is available, or through other mechanisms. Fort Benning's ITAM program seeks to optimize sustained use of lands for realistic training by integrating mission requirements with environmental requirements and sound land management practices. To this end, it implements an adaptive management program through ongoing monitoring of land condition in training areas. When land condition concerns are identified, the ITAM program plans and implements both preventative and corrective rehabilitation and maintenance projects, as appropriate. These projects are specifically designed to maintain quality military training lands, minimize long-term costs associated with land rehabilitation or additional land purchase, and ensure compliance with environmental laws and regulations.

Due to the nature of heavy off-road maneuver training, maintenance activities would be largely focused on preventing and addressing soil disturbance and the consequent potential for erosion and sedimentation. The Army anticipates implementing standard soil stabilization methods, such as vegetative controls and replanting, regrading, and regrading/filling ruts, rills, and gullies.

The Army would also install and maintain erosion control features, such as stone check and rock filter dams, water bars, sediment traps, turnouts, and similar measures. Water crossings would be

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<sup>2</sup> Heavy maneuver training areas can be used for light maneuver training, but light maneuver training areas cannot be used for heavy maneuver training.

monitored regularly to ensure they remain in working condition, and that culverts continue to convey surface water flow as designed. These and other maintenance actions would ensure both that the HOMMTA remains useable as a quality training area and that any potential adverse environmental impacts that may develop over time due to operations (e.g., erosion) are minimized.

## **2.2 Alternatives Screening Criteria and Process**

The NEPA, CEQ NEPA Regulation, and Army NEPA Regulations require all reasonable Action Alternatives to be explored and evaluated objectively. Action Alternatives eliminated from detailed study are also identified, and a brief summary of the reasons for their dismissal is provided. For purposes of this analysis, an Action Alternative was considered “reasonable” only if it would enable the MCoE and Fort Benning’s tenant units to meet training requirements at Fort Benning, in accordance with the purpose of and need for the Proposed Action. “Not reasonable” Action Alternatives would not enable the Army to meet the purpose of and need for the Proposed Action.

The Army initially identified several potential solutions to address the shortfall in heavy off-road mounted maneuver training area at Fort Benning. To further narrow and refine the options, the Army developed a list of requirements, or Alternatives screening criteria, which the proposed training area would need to satisfy to meet the purpose of and need for the Proposed Action; any potential Action Alternatives that do not satisfy these criteria would be incapable of supporting Fort Benning’s requirements.

Table 2.2-1 depicts the analysis of each initially considered Action Alternative against these screening criteria. The screening criteria used to identify reasonable Action Alternatives to be carried forward for further analysis within this EIS are as follows:

- 1. Training Compatibility** – The Action Alternative must be compatible with the military missions and existing and anticipated training at Fort Benning. Implementation of the Proposed Action shall not adversely impact other training activities, unless these training activities can be relocated within Fort Benning at a reasonable cost and with no loss in training capability. The Action Alternative must satisfy cross-domain movement and maneuver training requirements. The Action Alternative must also not be substantially constrained by Surface Danger Zones (SDZs) from live-fire ranges. SDZs, which often extend outside range footprints, are those areas in which all projectile fragments are contained, and are restricted from access during live-fire activities.



**Table 2.2-1: Evaluation of Initial Action Alternatives Against Screening Criteria**

	Use DMPRC	Enlarge GHMTA	Acquisition of Training Land	Off-Post Training	Simulations	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Training Compatibility</b>	N	Y	Y	Y	N	N	Y	Y	Y
<b>Size</b>	Y	N	Y	Y	N/A	N	Y	Y	Y
<b>Maneuverability</b>	N	N	Y	Y	N/A	N	Y	Y	Y
<b>Cost</b>	Y	Y	N	N	N/A	N/A	Y	Y	Y
<b>Impact on Training Schedule and Related Facilities</b>	N	Y	N	N	N/A	N	Y	Y	Y
<b>Additional Personnel Authorization</b>	Y	Y	Y	N	N/A	N/A	Y	Y	Y
<b>Reasonable?</b>	N	N	N	N	N	N	Y	Y	Y

**Key:**

These criteria are required to meet the project purpose and need; otherwise, the Action Alternative is considered not reasonable.

Y = Yes (meets criterion or is reasonable).

N = No (does not meet criterion or is not reasonable).

N/A = Not Applicable (the criterion is not relevant).

2. **Size** – The Action Alternative must provide at least 2,400 acres of contiguous land suitable for heavy off-road mounted maneuver. The Army has determined that this is the minimum area capable of supporting required training. Suitable terrain would consist of open areas offering direct line-of-sight for at least 2 km, which is the maximum effective direct fire range for the M-1 Abrams tank. A 2,400-acre maneuver area allows for lanes in excess of 3 km to support maneuver for direct fire, with longer lanes preferred. Obstacles, choke points, off-limits areas, and other limitations within this area are acceptable, as long as the overall layout of the training space can support maneuver requirements.
3. **Maneuverability** – The Action Alternative must result in minimal limitations that prevent maneuverability throughout the training area. Typical maneuver limitations within Fort Benning include steep slopes, wetlands and waterways, protected species, cultural resources, and infrastructure. Slopes of less than 20 percent are required to support maneuver operations.
4. **Cost** – The Action Alternative must be located within the boundaries of Fort Benning to obviate the need for costly, time-consuming offsite travel to other installations or training sites. Within Fort Benning, the Action Alternative must have reasonable anticipated Military Construction (MILCON) costs without excessive costs for mitigation or training area preparation (e.g., road/trail construction or improvements, water crossing construction, utility relocation/hardening, site grading requirements).
5. **Impact on Training Schedule and other Training Facilities** – The Action Alternative must maximize the use of available training time for productive tasks. Tasks (e.g., driving to the training area) required to complete training operations, but which do not themselves build skills for course completion, should be minimized.

Due to the size of Fort Benning, the Action Alternative should be located in close proximity to related training areas and facilities, such as the Digital Multi-Purpose Range Complex (DMPRC), and preferably in a central location within the Installation. This would reduce unit travel time between ranges utilizing similar equipment or developing similar skill sets, as well as create a logical training layout across the Installation.

For example, location of the HOMMTA near the DMPRC would allow training units to move directly from force-on-force maneuver training in the HOMMTA to live-fire training

in the DMPRC. This training strategy is commonly used at other Installations to create more robust and complex training scenarios that better prepare Soldiers for the rigors of combat. Central location of the HOMMTA would also reduce operational impacts (e.g., dust generation) from occurring closer to civilian areas proximate to the Installation boundary.

6. **Requirement for Authorization of Additional Personnel** – The Action Alternative must not require authorization of additional Direct Support to Training Event (DSTE) personnel to conduct all MCoE training missions. Allocation or authorization of such additional personnel is not a reasonable expectation, and would conflict with Fort Benning’s mission.

### 2.3 Alternatives Considered, But Not Studied In Detail

Using the screening criteria presented in Section 2.2, the Army eliminated five initially considered Action Alternatives per 40 CFR 1502.13(a), as follows:

- **Use of the DMPRC:** This Action Alternative would use the DMPRC (see Figure 1.2-1) for heavy off-road mounted maneuver training operations. The DMPRC includes approximately 2,700 acres located on the southeast portion of the Installation. The DMPRC is not currently designed for use as a HOMMTA, but could be altered by creating battle positions facing to the southwest to support two-way maneuver activities. Heavy maneuver, however, would be restricted to roadways in order to protect existing fiber-optic target infrastructure; off-road maneuver would be limited or restricted entirely, negating the purpose of the Proposed Action.

Additionally, the DMPRC is the only fully digital armor live-fire range at Fort Benning, and all training currently conducted on the DMPRC could not be conducted concurrently with heavy off-road mounted maneuver training. Therefore, a new DMPRC would need to be constructed to continue existing training. As such, the Army eliminated this Action Alternative from further consideration.

- **Enlargement of the GHMTA:** This Action Alternative would increase the size of the GHMTA (see Figure 1.2-1) by approximately 1,500 acres by adding land adjacent to its northern boundary. The proposed northern land is currently coded for Light Maneuver, and is used to support land navigation training that could be relocated. Under this Action

Alternative, the proposed land would need to be recoded for Heavy Maneuver, which is feasible.

This area, however, contains substantial safety and environmental limitations (i.e., SDZs, roads, steep slopes, streams, and wetlands) similar to those that currently impede heavy maneuver training in the GHMTA. Further, even if all 1,500 additional acres provided suitable maneuver area, this area would not be contiguous with a sufficiently large portion of the GHMTA to provide the 2,400 acres of contiguous maneuver space necessary. Therefore, this Action Alternative was eliminated from further consideration.

- **Acquisition of Additional Training Land:** This Action Alternative would include acquiring new training lands (i.e., enlarging Fort Benning) on which to construct a HOMMTA for heavy maneuver training.

This was previously studied in the Training Land Expansion Program (TLEP) DEIS published in May 2011, and determined to be not feasible. The Army held public meetings and received numerous comments on that DEIS, many of which expressed opposition. The Army is no longer pursuing the TLEP, as indicated by the Army's formal withdrawal notice that was published in the FR on June 7, 2016. Acquiring additional land for heavy off-road mounted maneuver remains unfeasible for Fort Benning. Additionally, acquiring new training lands would be cost-prohibitive and fail to enable efficient movement of Soldiers and equipment between related training areas and facilities on the Installation. Therefore, the Army eliminated this Action Alternative from further consideration.

- **Export Training Off-Post:** This Action Alternative would involve transporting all equipment and personnel needed to conduct heavy off-road mounted maneuver training to another Installation that has existing training areas or open, maneuverable land that would support construction of a HOMMTA, such as Fort Knox, Kentucky; Fort Bliss, Texas; or Fort Hood, Texas. This would eliminate the need to create a new HOMMTA at Fort Benning.

A cost analysis determined that each of the proposed installations would require between \$121 million (Fort Knox and Fort Hood) and \$124 million (Fort Bliss) in MILCON and DSTE (salary) funds, as well as over \$21.5 million for annual maintenance costs to support the exported training. Further, the transportation of personnel and equipment to other

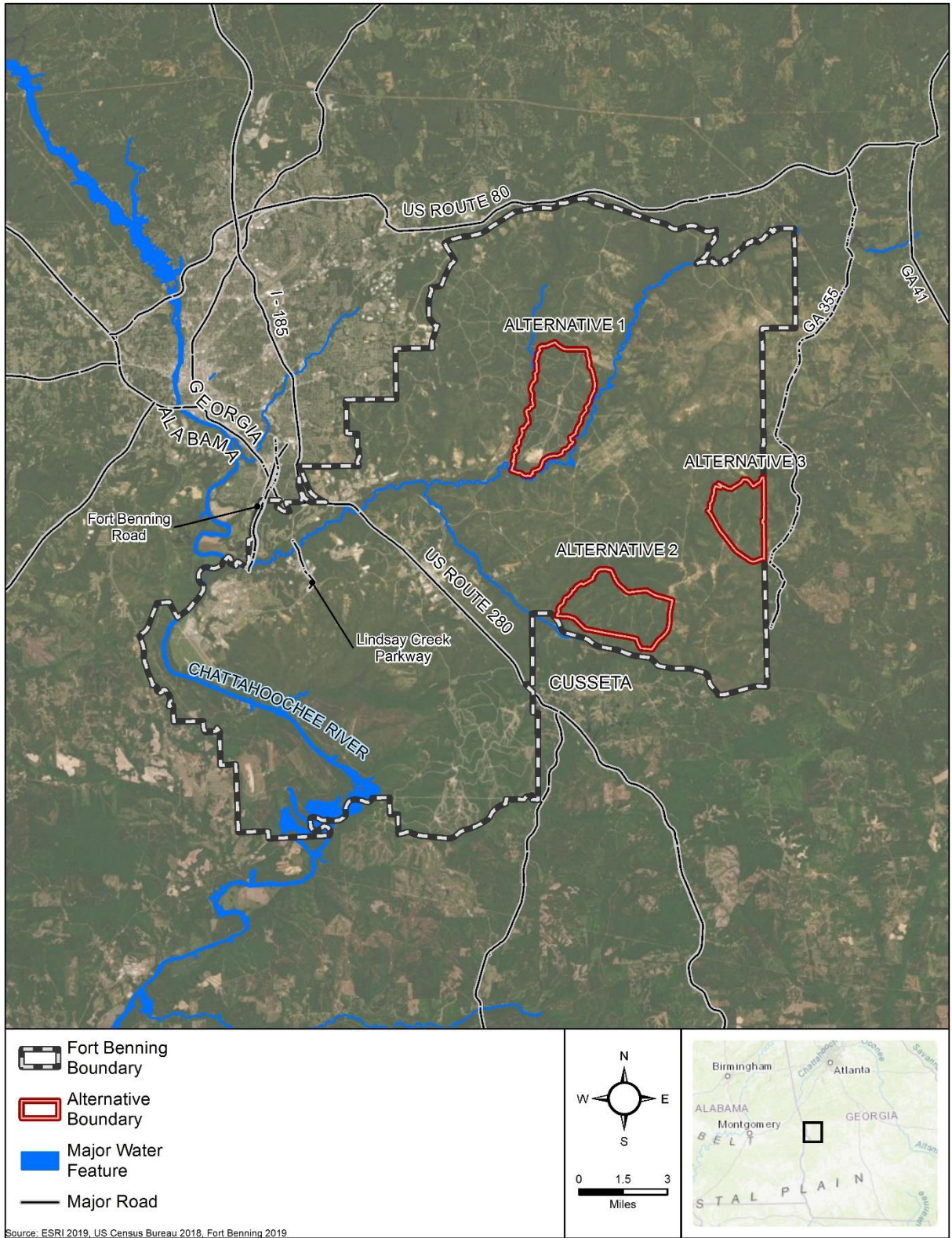
installations would likely take between 2 and 4 days, which would negatively impact the training schedule and reduce Fort Benning units' ability to complete other priority training. Finally, there is added value to combined arms training with infantry and armor units, which currently occurs at Fort Benning. Thus, the Army eliminated this Action Alternative from further consideration.

- **Use of Simulations:** This Action Alternative would transition live heavy off-road mounted maneuver training to virtual training via simulations. Virtual and constructive training are increasingly being used in the military to instill valuable lessons and teach tactics, techniques, and procedures. Further, this Action Alternative would eliminate the need for additional physical training area. Virtual training, however, cannot fully supplant live training in terms of experience gained; live field training remains the cornerstone of the Army's training doctrine as there are no systems within the Army's current inventory of virtual, constructive, or gaming systems that can effectively replicate or replace it. Using only simulations would not support training requirements, and was therefore eliminated from further consideration.

## 2.4 Alternatives Carried Forward for Full Analysis

Based on the screening criteria, the Army examined available Fort Benning training space for its ability to support the Proposed Action. This analysis identified three locations that met the screening criteria, and therefore would satisfy the purpose of and need for the Proposed Action. These three Action Alternatives, as well as the No Action Alternative, are carried forward for detailed analysis within this EIS. The three Action Alternatives are displayed in Figure 2.4-1 through Figure 2.4-4; a comparison of features of each Action Alternative is presented in Table 2.4-1.

Development, operation, and maintenance of the HOMMTA under each Action Alternative would occur as described in Sections 2.1.1 through 2.1.4. Elements unique to each Action Alternative are described below. Please note that the following descriptions of each Action Alternative are conceptual in nature, and would be further refined during the formal design phase. Slight modifications to the design would not be expected to change the impact analysis (see Section 3.0) appreciably.



**Figure 2.4-1: Location of the HOMMTA Action Alternatives within Fort Benning**

**Table 2.4-1: Comparative Analysis of the Features of Each Action Alternative**

<b>Feature</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
<b>Total Area (acres)</b>	<b>4,724</b>	<b>3,744</b>	<b>2,405</b>
<b>Contiguous Area Potentially Available for Heavy Maneuver Requiring Vegetation Removal (acres)*</b>	<b>~3,200</b>	<b>~2,700</b>	<b>~1,500</b>
<b>Number of Culverted Water Crossings Proposed</b>	27	19	25
<b>Length of New Trails/Roads Proposed (feet)</b>	1 mile of paved armor vehicle trails	13 miles unpaved armor vehicle trails	10 miles unpaved armor vehicle trails
<b>Length of Existing Trails/Roads Proposed for Improvement</b>	2 miles of Buena Vista Road	9 miles of improved roads	8 miles of improved roads
<b>Support Facilities Proposed</b>	Two training area bridges	Construction of 2 Heavy Equipment Transport (HET) drop-off pads**	Construction of 2 HET drop-off pads
<b>Utilities Requirements</b>	4 miles of aerial three-phase power lines to be buried underground; hardening of existing fiber-optic cable at 15 tank crossing points on 2 <sup>nd</sup> Armored Division Road and Lorraine Road	None	2 miles of overhead powerlines to be buried underground

\* = Areas not constrained by slopes 20 percent or greater, wetlands/surface waters, or existing uses that cannot be relocated.

\*\* HET pads are 1-acre in size and are composed of 12-inch-thick concrete. They are used for loading and unloading heavy equipment onto transport vehicles.

### **2.4.1 No Action Alternative**

Under this Alternative, the Army would not construct and operate a new HOMMTA at Fort Benning, and would continue to operate under current conditions. The MCoE and Fort Benning tenant units would continue to conduct required training at the GHMTA to the extent possible. The Army would continue to lack a contiguous, sufficiently sized training area at its MCoE to use for realistic heavy off-road mounted maneuver training, particularly due to the recent change in strategy favoring cross-domain movement and maneuver. This lack of realistic training opportunities would continue to hinder Soldiers from fulfilling all training requirements, thereby inhibiting their ability to deploy, fight, and win our nation's wars.



While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, this Alternative was retained to provide a comparative baseline against which to analyze the effects of the Action Alternatives, as required under the CEQ NEPA Regulation (40 CFR 1502.14(d)). The No Action Alternative reflects the *status quo* and serves as a benchmark against which the effects of the Proposed Action can be evaluated.

#### **2.4.2 Alternative 1 (Preferred Alternative): Northern Mounted Maneuver Training Area (NMMTA) Alternative**

The NMMTA Alternative, or Alternative 1, includes approximately 4,724 acres, and would provide approximately 6.5 km between platoon assembly areas. This distance would ensure that a platoon cannot target the full HOMMTA from its assembly area, as is currently the case in the GHMTA. Maneuver would occur in a north-south direction.

Of the Action Alternatives, Alternative 1 would provide the most preferable size and configuration to enable high-quality heavy off-road mounted maneuver training. Accordingly, the Army has identified Alternative 1 as the Preferred Alternative to implement the Proposed Action per 40 CFR 1502(e). A preliminary conceptual design of Alternative 1 is presented in Figure 2.4-2; Alternative 1 could be constructed for approximately \$44 million.

Alternative 1 is located adjacent to and east of the current Northern Maneuver Training Area and west of and in close proximity to the DMPRC. This Alternative's footprint, which is primarily forested, includes Lee Field (drop zone, previously an anti-armor tracking range), Geronimo Military Operations on Urban Terrain (MOUT) Site (19K/D Armor/Cavalry training and 11B One Station Unit Training [OSUT]), Terry Demolitions Range (light general demolition training), land used for the 19K/D courses (Armor/Calvary Basic Training; land navigation, tank and Bradley driver training), Tactical Training Base (TTB) Falcon (19K/D staging area – a battalion staging area on approximately 32 acres north of Buena Vista Road that includes numerous concrete pads with electric power lines and fiber-optic cable, several mess buildings, and pump-out toilets), four cemeteries, and a military-owned cell tower.

Under Alternative 1, current training in these areas could continue with scheduling considerations, or be relocated to the GHMTA. The Advanced Situational Awareness Training Area would likely be relocated elsewhere on the Installation; this training area consists of several specially outfitted



containers that can be relocated easily with negligible environmental impacts. In addition, the Carmouche Automated Multipurpose Training Range is located on the northeast corner of Alternative 1, and its SDZ includes a small portion of Alternative 1. Use of this area of overlap would be deconflicted through scheduling. Existing training areas (e.g., TTB Falcon) would be used for Heavy Equipment Transport (HET) drop-off points to support the HOMMTA.

Of the approximately 4,700 contiguous acres included in Alternative 1, approximately 3,200 acres would be suitable for heavy mounted maneuver training. The remaining 1,500 acres within Alternative 1 consist of restricted areas, such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resource sites, cemeteries, and associated buffers that would be avoided by mounted forces during training operations. Where adverse impacts would not be sufficiently reduced through the EPMs and RCMs identified in Section 2.1.1, the Army would consider implementing the mitigation measures identified in Section 3.0 for each VEC.

Various construction activities would be required to establish Alternative 1. The approximately 3,200 acres suitable for mounted maneuver would be converted from primarily overstory forest to primarily disturbed understory and herbaceous vegetation as discussed in Section 2.1.2.

Site improvements also would include construction of approximately 27 new culverted water (stream) crossings and replacement of two fording/stream crossing sites with bridges. Each water crossing would have an approximately 100-foot wide permanent limit of disturbance (LOD), with an additional 50-foot wide temporary LOD used during construction. Approximately 1 mile of paved armor vehicle trail would be installed (see Figure 3.10-4). Paved roads would be upgraded to a minimum of 10 inches of concrete surface along a 2-mile stretch of Buena Vista Road, as well as at approximately 15 tank-crossing locations along 2<sup>nd</sup> Armored Division Road and Lorraine Road to ensure they can serve as tank crossing points. Finally, approximately 4 miles of aerial three-phase electric lines would be buried underground and existing fiber-optic cable lines would be hardened at the 15 tank-crossing points. The existing military-owned cell tower and cemeteries would be avoided (see Section 2.1.1).

### **2.4.3 Alternative 2: Red Diamond Alternative**

The Red Diamond Alternative, or Alternative 2, includes approximately 3,744 acres, and would provide approximately 5.0 km between platoon assembly areas. This space would also be sufficient

to prevent a platoon from targeting the entire HOMMTA, but would be inferior to Alternative 1 due to its smaller size and more prevalent landscape limitations (e.g., steep slopes). Maneuver would occur in an east-west orientation. A preliminary conceptual design of Alternative 2 is presented at Figure 2.4-3; Alternative 2 could be constructed for approximately \$49 million.

Alternative 2 is located south of the Southern Maneuver Training Area (SMTA) near the Installation's southern boundary. This area does not contain any ranges, but is used as the primary land navigation test course (i.e., a graduation requirement in 16 courses). This training could be relocated into the SMTA or the Alabama side of the Installation at no cost or loss of training ability. Two cemeteries and a military-owned cell tower are present within or immediately adjacent to Alternative 2; these areas would be avoided (see Section 2.1.1).

Of the approximately 3,700 contiguous acres included in Alternative 2, approximately 2,700 acres would be available for heavy mounted maneuver training. The remaining 1,000 acres within Alternative 2 consist of restricted areas such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resources sites, cemeteries, and associated buffers that would be avoided by mounted forces during training operations. Where adverse impacts would not be sufficiently reduced through the EPMs and RCMs identified in Section 2.1.1, the Army would consider implementing the mitigation measures identified in Section 3.0 for each VEC.

Alternative 2 would require conversion of the approximately 2,700 acres suitable for heavy mounted maneuver from primarily overstory forest to primarily disturbed understory and herbaceous vegetation, as discussed in Section 2.1.2.

Site improvements would also include construction of approximately 19 new culverted water crossings. Each water crossing would have an approximately 100-foot wide permanent LOD, with an additional 50-foot wide temporary LOD used during construction. Approximately 13 miles of unpaved armor vehicle trails would be constructed and 9 miles of existing roads would be improved (see Figure 3.10-6). Two, 1-acre concrete HET drop-off pads would be constructed to support the transportation of tanks to the site. The existing cemeteries and onsite cell tower would be avoided; no other utilities would be affected.

#### **2.4.4 Alternative 3: Eastern Boundary Alternative**

The Eastern Boundary Alternative, or Alternative 3, includes approximately 2,405 acres, and would provide approximately 3.5 km between platoon assembly areas. While this space would be sufficient to prevent a platoon from targeting the entire HOMMTA, it would be inferior to Alternatives 1 and 2 due to its smaller size and more prevalent landscape limitations (e.g., steep slopes and wetlands). Maneuver would occur in a north-south orientation. A preliminary conceptual design of Alternative 3 is presented at Figure 2.4-4; it could be constructed for approximately \$45 million.

Alternative 3 is located between the northern duded impact area and the Installation's eastern boundary. This area does not contain any ranges or designated areas for any specific training activities, cemeteries, or cell towers.

Of the approximately 2,400 contiguous acres included in Alternative 3, approximately 1,500 acres would be available for heavy mounted maneuver training. The remaining 900 acres within Alternative 3 consist of restricted areas such as steep slopes, wetlands/surface waters, protected species and habitat, cultural resources sites, and associated buffers that would be avoided by mounted forces during training operations. Where adverse impacts would not be sufficiently reduced through the EPMs and RCMs identified in Section 2.1.1, the Army would consider implementing the mitigation measures identified in Section 3.0 for each VEC.

Alternative 3 would require conversion of the approximately 1,500 acres suitable for heavy mounted maneuver from primarily overstory forest to primarily disturbed understory and herbaceous vegetation, as discussed in Section 2.1.2.

Site improvements would also include construction of approximately 25 new culverted water crossings and burying underground approximately 2 miles of electric lines. Each water crossing would have an approximately 100-foot wide permanent LOD, with an additional 50-foot wide temporary LOD used during construction. Two, 1-acre concrete HET drop-off pads would be constructed to support the transportation of tanks to the site. Approximately 10 miles of unpaved armor vehicle trails would be installed and approximately 8 miles of existing road would be improved (see Figure 3.10-7).

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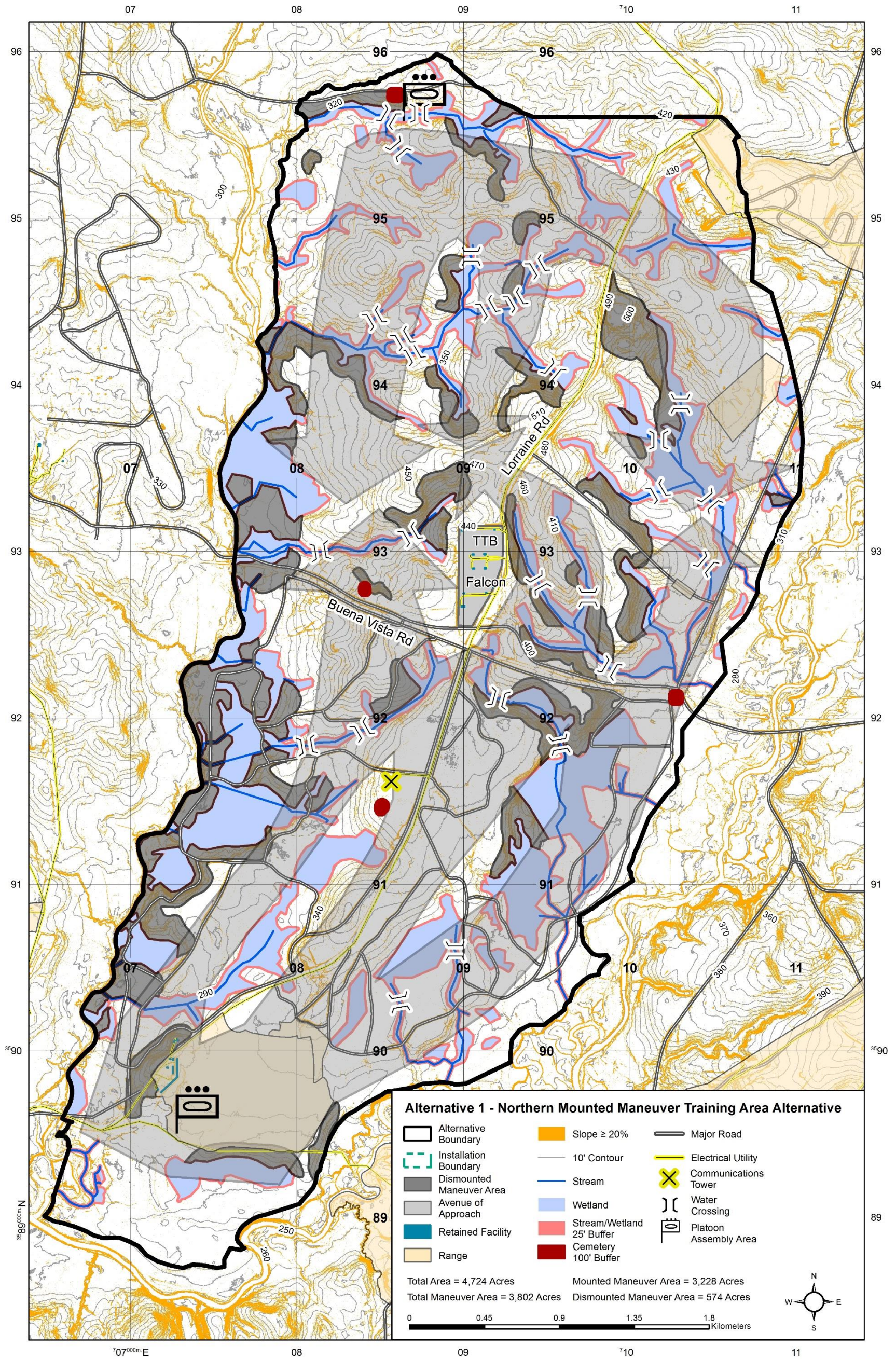


Figure 2.4-2: Conceptual Design of Alternative 1 (Preferred Alternative)



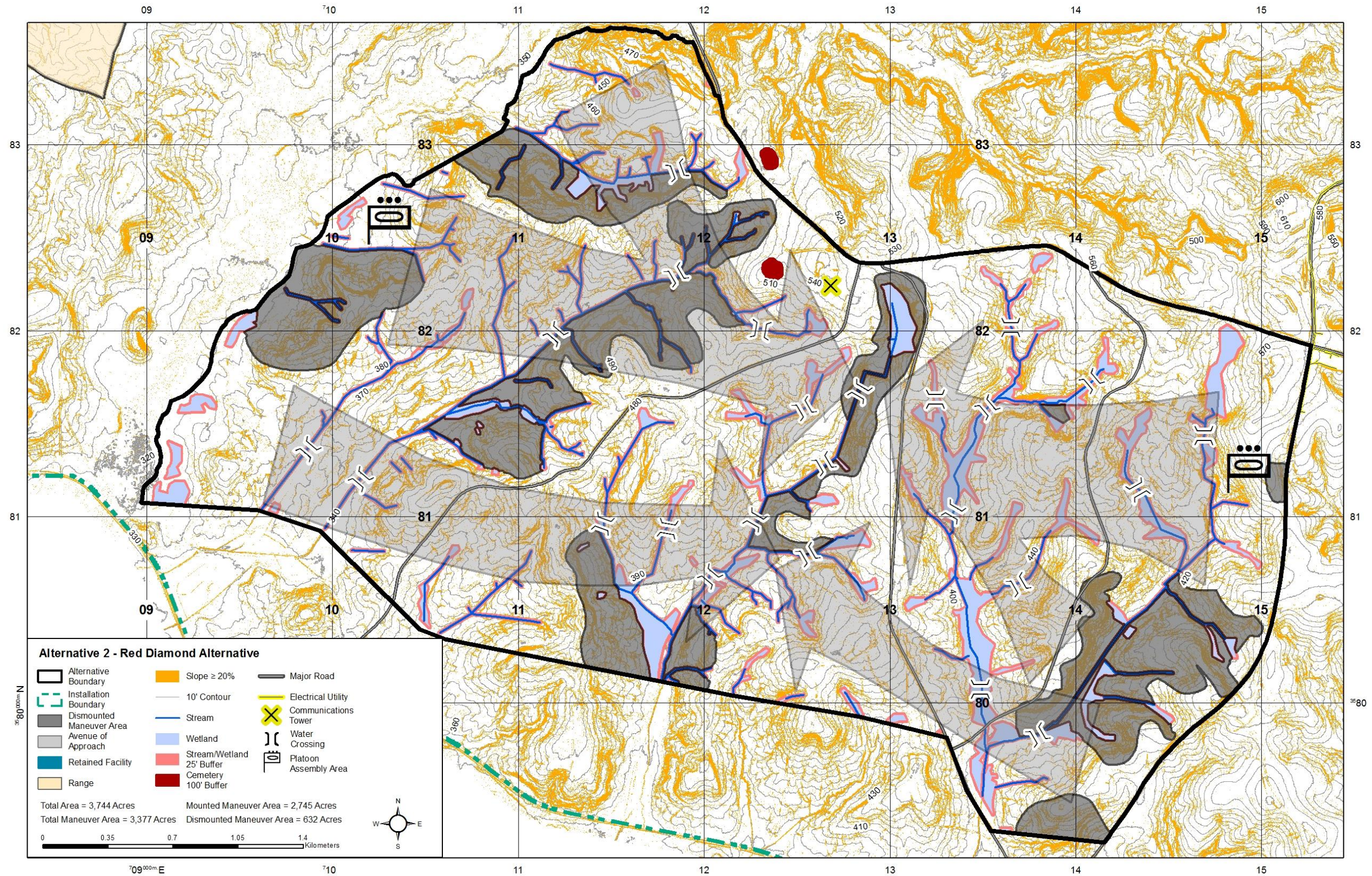


Figure 2.4-3: Conceptual Design of Alternative 2



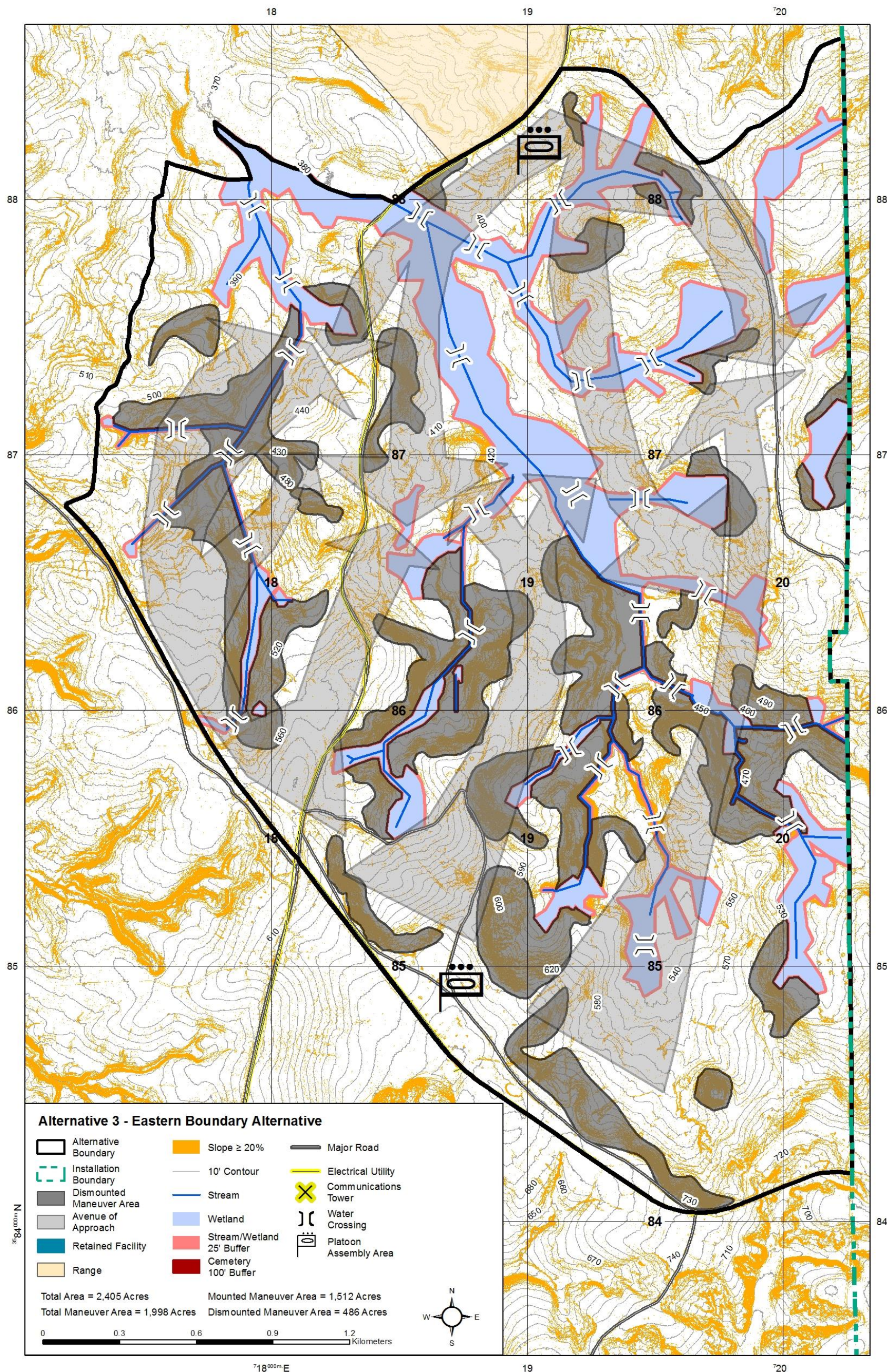


Figure 2.4-4: Conceptual Design of Alternative 3



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## **3.0 Affected Environment and Potential Impacts**

### **3.1 Introduction**

This section describes the affected environment of each relevant VEC analyzed in this EIS, and presents the potential environmental impacts of each of the three Action Alternatives and the No Action Alternative (see Section 2.4). Analyses include quantification of potential impacts whenever possible.

In accordance with the CEQ NEPA Regulation, the Army used internal and external scoping, including coordination with pertinent regulatory agencies, to “identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (40 CFR 1506.3), narrowing the discussion of these issues in the statement [EIS] to a brief presentation of why they will not have a significant effect on the human environment or providing a reference to their coverage elsewhere” (40 CFR 1501.7(a)(3)).

For each VEC, the Army determined an ROI based on the type and extent of potential impacts to the VEC, in terms of context and intensity (40 CFR 1508.27). The ROI may be limited to the specific location of an Action Alternative, the Action Alternative and surrounding area, or a larger area such as an entire watershed or airshed. Each VEC description addresses its current condition within the ROI for the Proposed Action. For the purposes of cumulative effects analysis (see Section 4.0), the affected environment section captures the effects of all past and present actions within each ROI of this analysis.

The Army has determined the affected environment and potential environmental impacts following the Army’s NEPA Regulation (32 CFR 651) and Army guidance. Sections 3.2 through 3.11 discuss specific VECs; Section 5.3 contains a summary of potential environmental effects resulting from the Action Alternatives and the No Action Alternative; Section 5.4 presents a summary of potential significant and unavoidable adverse environmental effects; and Section 5.5 presents proposed mitigation for potential adverse environmental impacts.

#### **3.1.1 Presentation of Valued Environmental Components**

VECs are the human and natural environment resources of concern that could be affected by the Action Alternatives and the No Action Alternative. Based on information available prior to

preparation of the DEIS, the Army reviewed the standard list of Army VECs and ranked them based on their potential to be affected. Based on this ranking, the Army grouped VECs into one of four categories:

- **Primary VEC** (high potential for impact)
- **Secondary VEC** (moderate potential for impact)
- **Low VEC** (low potential for impact)
- **VEC Not Studied in Detail** (no or very low potential for impact)

Table 3.1-1 identifies the category to which the Army assigned each VEC, as well as the relevant EIS section.

**Table 3.1-1: Characterization of Valued Environmental Components (with implementation of RCMs and EPMs)**

VEC	Relevant Section
<b>Primary VECs (High Potential for Impact)</b>	
Biological Resources	3.7
Soils and Topography	3.5
Water Resources	3.6
Socioeconomics (Environmental Justice [EJ])	3.9
<b>Secondary VECs (Moderate Potential for Impact)</b>	
Cultural Resources	3.8
Infrastructure	3.10
<b>Low VECs (Low Potential for Impact)</b>	
Air Quality	3.3
Hazardous and Toxic Materials and Waste	3.11
Land Use (Recreation)	3.2
Noise	3.4
Socioeconomics (except EJ)	3.9
<b>VECs Not Studied In Detail (No or Negligible Potential Impact)</b>	
Land Use (except Recreation)	N/A
Geology	N/A
Protection of Children	N/A
Airspace	N/A

### 3.1.2 Valued Environmental Components Dismissed from Further Analysis

In accordance with the CEQ NEPA Regulation (40 CFR 1501.7(a)(3)), the Army determined that neither the Action Alternatives nor the No Action Alternative would be expected to result in meaningful potential impacts to the following VECs:

- **Land Use:** All activities would occur within the boundaries of Fort Benning on lands designated for military training use. No direct or indirect effects that would alter off-Post land uses would occur, as the Proposed Action would not alter the training load at Fort Benning, but would accommodate existing training.

The Proposed Action does have the potential to affect on-Post recreational activities on military lands; as such, Recreation is retained for analysis in Section 3.2 of this EIS.

- **Geology:** No activities are proposed that would affect geology, such as deep excavation, drilling of wells, or major grading and moving of surface soils over a substantial area. Similarly, no effects on groundwater would be anticipated.
- **Topography:** No activities that would significantly alter topography, such as deep cuts and fills or activities that would result in slumping, are proposed. Topography is briefly described in the Soils and Topography section as existing topography (i.e., slopes greater than 20 percent) limits mounted maneuver.
- **Protection of Children (EO 13045):** All activities would occur within the boundaries of Fort Benning on lands designated for military training use. Access is controlled in all construction sites and training areas to prevent unauthorized access, including of children; if unauthorized personnel are identified onsite, activities would cease until the situation was resolved. Potential offsite impacts that could result from the Proposed Action would generally be minor and controlled through the EPMs and RCMs identified for each VEC. No effects to off-Post or on-Post (cantonment area) children would be anticipated.
- **Airspace:** The Proposed Action does not involve aviation assets and would not construct or operate any elements that would affect airspace. Further, there would be no change to existing airspace restrictions.

### 3.1.3 Description of Baseline Data and Sources

The Army characterized the affected environment of each VEC using a combination of the following types of resources:

- Aerial imagery
- Site-specific field surveys for protected species, surface waters/wetlands, cultural resources, and traffic
- Regional studies and maps: Natural Resources Conservation Service (NRCS) Soil Surveys, US Geological Survey (USGS) watershed studies, the National Wetlands Inventory, Federal Emergency Management Agency (FEMA) floodplain mapping, USFWS T&E Species Maps, vegetation maps, and similar
- Databases and archive records: SHPO historic properties, US Census Bureau data, and similar
- Fort Benning resource data and management plans
- Agency and public coordination: including written comments regarding location of, potential impacts to, and concerns related to resources within the ROI.

The Army also used previous Final NEPA documents and an extensive active inventory of on-Post resources for Fort Benning to supplement discussions of the affected environment. The Army supplemented information from previous Final NEPA documents' affected environment discussions and Fort Benning management plans with field-verified data and conditions (i.e., resource-specific studies within the Action Alternatives).

The No Action Alternative analyzed for this EIS is for the Army to continue to conduct off-road heavy maneuver training in the GHMTA (see Section 2.4.1). As such, the GHMTA is included in the ROI for each VEC.

In 2015, the Army prepared the ETEA to analyze the affected environment and environmental consequences associated with moving the off-road heavy maneuver training component of the Scout Leader Course (formerly, the Army Reconnaissance Course) to the GHMTA, and enhancing portions of the GHMTA to provide additional off-road heavy maneuver capability in that training

area (Fort Benning, 2015b). The affected environment data presented in that Final EA remains current and relevant to the No Action Alternative analyzed in this EIS.

Therefore, the affected environment of the GHMTA is incorporated by reference into this EIS for analysis of the No Action Alternative per 40 CFR 1502.21. In accordance with this requirement, a copy of the ETEA is made available to the public for review in association with this EIS at: <https://www.benning.army.mil/garrison/dpw/EMD/Content/PDF/3%20--%20Final%20ETEA.pdf>.

### 3.1.4 Framework for Impact Analysis

This section describes the approach to the impact analysis and the determination of potential environmental effects of the No Action Alternative and each Action Alternative. As appropriate, the analysis of impacts is based on the construction (see Section 2.1.1), operation (i.e., military training use) (see Section 2.1.3), and maintenance (see Section 2.1.4) of the HOMMTA to support sustainable military training.

This analysis presumes that the EPMs and RCMs identified in Section 2.1.1 would be implemented should the Army ultimately select an Action Alternative for implementation. If mitigation measures “not already included in the proposed action or alternatives” are appropriate to reduce a potential adverse effect, they are identified in this section and summarized in Section 5.0 per 40 CFR 1502.14(f).

#### 3.1.4.1 Context and Intensity

The Army considered context and intensity in determining the significance of potential impacts per the CEQ NEPA Regulation (40 CFR 1508.27).

- **Context** is the location of the Proposed Action and the areal extent of potential meaningful impacts (i.e., the area in which potential effects would manifest, or would be “felt”). This corresponds to each VEC-specific ROI.
- **Intensity** of a potential impact refers to its severity and takes into account: beneficial and adverse impacts; public health and safety effects; unique geographical characteristics; the level of controversy associated with impacts on the human environment; whether the action establishes a precedent for further actions with significant effects; the level of uncertainty

about anticipated impacts; whether the action is related to other actions that are individually insignificant but cumulatively significant; effects upon scientific, cultural, or historical resources, or sites or objects listed in the NRHP; effects upon any species listed under the ESA; and the extent to which the action could violate Federal, State, or local environmental protection laws or constrain future activities. Intensities that are classified as “none” to “moderate” are considered less than significant in this analysis. Significant impacts are those categorized as “severe.” Potential beneficial impacts are discussed separately from potential adverse impacts.

Considering both context and intensity, the Army consistently used the following categories to classify impacts to VECs:

- **None:** No measurable impacts would be expected.
- **Negligible:** Barely perceptible impacts would be expected.
- **Minor:** Measurable or tangible impacts would be expected to a VEC, but these impacts would be slight and may not be perceptible to an observer.
- **Moderate:** Impacts that would not reach the threshold of significance (e.g., violation of Federal or State law), but would have a noticeable effect on a VEC, perceptible to an observer.
- **Significant:** Impacts would be obvious, either short-term or long-term, and would have serious consequences on a VEC that would be readily noticed by an observer. These impacts would include those that substantially exceed a regulatory or policy standard. In the case of adverse impacts, they could include impacts that could be mitigated to a less-than-significant (i.e., none, negligible, minor, or moderate) adverse level, as well as those that cannot.

#### 3.1.4.2 Presentation of Analysis

For each VEC impact analysis, VEC-specific significance thresholds are presented, followed by a discussion of the potential direct and indirect, short- and long-term impacts of the Action Alternatives and No Action Alternative.

**Direct impacts** are those that are caused by the Proposed Action and would occur at the same time and place as the action (e.g., direct tree removal). **Indirect impacts** are those related to the Proposed Action that would occur later in time or would be further removed in distance (e.g., downstream sedimentation or dust emissions that travel off-Post, away from the area of action). **Short-term impacts** are those that would be of finite duration, such as during construction. These impacts would no longer be manifest following the completion of the activity (e.g., air emissions from construction activities). **Long-term impacts** are those that would be permanent and would not recover to pre-activity conditions following the cessation of the activity (e.g., changes in topography). Long-term impacts can also result from repeated, albeit non-continuous, activities over an extended period of time, such as ongoing, periodic training activities.

In addition, the reader should note that, as referenced in each section, standard EPMs and RCMs included in the Proposed Action (see Section 2.1.1) are identified. In many cases, these integral measures would serve to “proactively” lessen or avoid impacts.

Where compliance with applicable laws or regulations would be insufficient to avoid, minimize, rectify, reduce, or compensate adverse impacts (40 CFR 1508.20), practical mitigation measures are identified to further achieve this purpose when feasible; the ROD will identify which mitigation measures the Army chooses to implement with the Selected Alternative. The level of analysis for each VEC is commensurate with the potential for significant impacts, with primary VECs (see Table 3.1-1) receiving the greatest level of analysis per 40 CFR 1500.1(b). Section 5.0 provides a summary of impacts and identified mitigation measures.

### **3.1.5 Cumulative Effects Analysis**

Cumulative effects are those impacts associated with the Action Alternatives in the context of potential interactions with other past, present, and reasonably foreseeable actions in the ROI, affecting VECs in the same time and space, in accordance with the CEQ NEPA Regulation (40 CFR 1508.7). The cumulative effects analysis considers the incremental effects of the Proposed Action in conjunction with the collective effects of past, present, and reasonably foreseeable future projects on VECs within the ROI. As identified previously, the affected environment section captures the effects of all past and present actions within the ROI of this analysis. As such, the cumulative effects analysis focuses on the contribution of the Proposed Action overlaid with the

impacts of reasonably foreseeable future actions on the affected environment. A detailed cumulative effects analysis for all considered VECs is presented in Section 4.0.

## **3.2 Land Use (Recreation)**

Land use is a broad description of the types of facilities and activities that occur in a given area. Fort Benning is entirely comprised of military land; Fort Benning permits limited (but controlled) access for recreational activities, such as hunting, fishing, geocaching, photography, and birdwatching. Fort Benning allows members of the public to purchase temporary permits to hunt and fish on the Installation as a guest. Guest hunters must be sponsored and supervised by an authorized participant as required in Fort Benning Regulation 200-1 (e.g., by an active or retired military individual or full-time Fort Benning Federal employee).

This section provides an overview of existing recreational opportunities at the Installation (i.e., the ROI, as defined below), as well as potential impacts to recreation.

### **3.2.1 Affected Environment**

#### **3.2.1.1 Region of Influence**

The Proposed Action does not have the potential to impact land use outside or within the Installation. It does, however, have the potential to affect recreational use within the Installation. The ROI for recreation encompasses all of Fort Benning except for duded impact areas (see Figure 1.2-1), as these areas are not available for hunting, fishing, or other outdoor activities and would not be directly or indirectly impacted by the Proposed Action.

#### **3.2.1.2 Applicable Guidance**

Table 3.2-1 identifies and describes laws, regulations, EOs, policies, and other guidance (Federal, State, local, and Installation-specific) that govern land use and recreation on Fort Benning.



**Table 3.2-1: Land Use (Recreation) Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
The Sikes Act, 16 USC 670a, and amendments	This Act authorizes the Secretary of Defense to carry out a program to provide for the conservation and rehabilitation of natural resources on military installations, the sustainable multi-purpose use of the resources, which shall include hunting, fishing, trapping, and non-consumptive uses. The Act also requires public access to military installations be permitted to the extent that such use is compatible with the military mission and the protection of fish and wildlife resources.
Fort Benning INRMP	This guidance document includes information regarding management (including hunting and fishing) of Fort Benning’s natural resources and recreational resources.
AR 200–1 (Environmental Protection and Enhancement), December 13, 2007	This regulation requires that management of flora and fauna be consistent with accepted scientific principles for conservation of indigenous species and provide access for hunting, fishing and trapping consistent with security requirements and safety concerns.
AR 215–1 (Military, Morale, Welfare, and Recreation Programs and Non-appropriated Fund Instrumentalities), September 24, 2010	This regulation requires that outdoor recreation programs offer diverse, healthful, vigorous, and comprehensive outdoor recreation activities while conserving and protecting wildlife, forests, wetlands, and other natural resources.
Fort Benning Regulation 200-1 (Hunting, Fishing and Recreation), April 1, 2019	This Fort Benning regulation covers topics such as responsibilities of individuals and directorates, safety information, personnel authorized to hunt and fish, legal firearms and ammunition, specific hunting and fishing regulations, permits and fee structure, and penalties for hunting and fishing violations.
MCoE Regulation 190-11 (Physical Security of Privately Owned Arms, Ammunition, and Explosives), August 11, 2014	This MCoE regulation establishes policies and procedures for the registration, storage, and temporary securing of weapons in vehicles, and the transportation and discharging of weapons at Fort Benning.

**3.2.1.3 Existing Conditions**

**Regional Overview**

Fort Benning includes approximately 182,000 acres of river valley and rolling terrain. The Installation is located primarily (i.e., 93 percent) in Muscogee and Chattahoochee Counties in western Georgia, but also encompasses a portion of Russell County in eastern Alabama. The Chattahoochee River divides Fort Benning between Georgia and Alabama, and is navigable up to the Installation from the Gulf of Mexico (The Valley Partnership, 2008).

Subject to Fort Benning’s training schedule and Installation regulations (see Table 3.2-1), the Army offers recreational opportunities to authorized personnel and their guests who purchase the necessary temporary permits. Fishing occurs throughout the Installation within the Chattahoochee River and several major streams (including Upatoi, Ochillee, Oswichee, Randall, Big Pine Knot, and Uchee Creeks; see Figure 3.6-4); numerous oxbows off the Chattahoochee, Upatoi, and Uchee Creeks; beaver ponds; and nine man-made fishing ponds (Fort Benning, 2016). Four of these ponds are managed for fishing recreation, although no man-made ponds are located within the Action Alternatives. Geocaching, photography, and birdwatching are also conducted throughout the Installation; however, Fort Benning does not maintain any data regarding these activities. Hunting is the only primary recreational activity conducted at Fort Benning for which the Installation maintains data, and is thus a main focus in this section.

Fort Benning provides abundant hunting opportunities due to its size and variety of habitats (i.e., hardwood bottomlands, open pine uplands, pine reforestation areas, oak-hickory uplands, and wetlands). Hunting is permitted in most military training compartments, which comprise the majority of the Installation (i.e., approximately 142,000 acres or 78 percent of Fort Benning). Some areas, however, are available for recreational activity only on infrequent occasions.

During intensive training periods, only a limited amount of land may be available, whereas during holiday periods, approximately 100,000 acres may be available. The availability of these compartments for recreational use varies substantially, and depends on whether they are being used for training, prescribed burns, range maintenance requirements, natural resource management activities, or other uses (Fort Benning, 2016). Existing training use for each of the Action Alternatives is described in Section 2.4. Training compartments also vary in their suitability for hunting and fishing based on habitats (e.g., forests, streams, grasslands) present and the existing development/human presence in each compartment; please refer to Sections 3.6 and 3.7 for habitat and species data related to the Action Alternatives.

Military training compartments are divided into three general categories for hunting purposes: archery-only areas, shotgun areas, and rifle areas. Areas are designated as archery-only or shotgun areas primarily due to safety considerations, while rifle areas comprise the vast majority of available hunting areas, including all three Action Alternatives. Rifle areas are the least restrictive

with regard to allowed weapons, as these areas also allow archery, muzzleloader, shotgun, and handgun hunting. Updated Hunting and Fishing Maps are available to the public online that depict all training compartments, their weapons designations, and exclusion areas (Fort Benning, 2019a). Fort Benning also maintains an online application displaying the availability of each compartment for hunting during the next three days (Fort Benning, 2019b).

Regulations regarding bag limits, hunting seasons, and the like at Fort Benning vary by State, but generally there are 14 distinct species that may be hunted, not including waterfowl. Of these species, white-tailed deer (*Odocoileus virginianus*) and wild turkey (*Meleagris gallopavo*) are the two most desired game species, which are hunted in fall/winter and spring, respectively (Fort Benning, 2016). Fort Benning also permits year-round hunting in Georgia for feral swine (*Sus scrofa*) and coyotes (*Canis latrans*), which are non-game species. Feral swine is the second most hunted species at the Installation, followed by white-tailed deer.

Fort Benning maintains hunter use data by training compartment, which can be used to compare the use of each of the Action Alternatives for hunting. The training compartments, however, were revised in April 2019, so annual use data can only be determined based on the Installation's previous training compartments. Current and former training compartments that comprise each Action Alternative are identified below, as well as hunting records for each Action Alternative based on Fort Benning's compartment data.

#### **No Action Alternative (ongoing use of the GHMTA)**

Hunting use of the GHMTA (No Action Alternative) was described in the ETEA (Fort Benning, 2015b).

#### **Alternative 1 Location**

Alternative 1 comprises 4,724 acres in all or portions of compartments C12, C20, C22, C26, C27, C28, C29, N15, N16, N17, N18, N19, N23, and N24. Alternative 1 is bounded on the west by Randall Creek and on the south and east by Upatoi Creek.

According to the previous training compartment designations, Alternative 1 overlapped all or portions of compartments K04, L01, L02, L03, L04, L05, L06, L07, L08, M04, O01, O02, O07, O08, and O10. Between April 2018 and March 2019, Fort Benning logged 2,410 hunter check-ins

within these compartments, which is 4.3 percent of the total Fort Benning 55,683 hunter check-ins during this timeframe. Adjusted for size using the total acreage of these compartments, this equates to approximately 0.40 hunter check-ins per acre during that year. Therefore, Alternative 1 experienced more hunter use than Alternative 2, but less hunter use than Alternative 3, as shown below.

### **Alternative 2 Location**

Alternative 2 comprises 3,744 acres in all or portions of compartments C34, C35, and C36; is bordered in the southwestern corner by Halloca Creek; and is relatively undeveloped. Under the previous training compartment designations, Alternative 2 overlapped all or portions of compartments E10, E11, E12, E13, I01, I02, I03, I04, I05, I06, and I07. Between April 2018 and March 2019, Fort Benning logged 1,176 hunter check-ins within these training compartments. This represents approximately 2.1 percent of total hunting effort at the Installation during that year. Adjusted for size, using the total acreage of these compartments, this equates to approximately 0.24 hunter check-ins per acre during that year. Of the three Action Alternatives, Alternative 2 experienced the least hunter use in this period.

### **Alternative 3 Location**

Alternative 3 comprises 2,405 acres in all or portions of compartments N35, N37, and N38; includes Little Pine Knot Creek; and is relatively undeveloped. Under the previous training compartment designations, Alternative 3 overlapped all or portions of compartments K30, K31, K32, K33, and K34. Between April 2018 and March 2019, Fort Benning logged 1,493 hunter check-ins within these training compartments. This represents approximately 2.7 percent of total hunting effort at the Installation during that year. Adjusted for size, using the total acreage of these compartments, this equates to approximately 0.62 hunter check-ins per acre during that year. This represents the most hunter use of the three Action Alternatives relative to size. During that year, Alternative 3 hosted over 50 percent more hunter use than Alternative 1 and over 150 percent more hunter use than Alternative 2, relative to size.

## **3.2.2 Environmental Effects**

This section identifies the potential impacts to recreation on Fort Benning that could result from each of the Action Alternatives and the No Action Alternative. The Proposed Action would have

no effect on recreation off-Post, nor would it affect general Installation land use (see Section 3.2.1.3).

**3.2.2.1 Approach to the Analysis**

The Army evaluated potential impacts to Installation recreation with regard to changes in the availability and suitability of training compartments for hunting, fishing, and other recreational activities. Significant adverse impact thresholds are described in Table 3.2-2.

**Table 3.2-2: Significant Adverse Impact Thresholds for Land Use (Recreation)**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Would permanently close more than 35,500 acres (i.e., 25 percent) of existing training land, including training compartments within the Alternative footprint, to recreational activities. Would reduce the suitability of more than 35,500 acres (i.e., 25 percent) of training land, including training compartments within the Alternative footprint, for recreational activities by substantially removing or degrading existing habitat.
	Indirect Impacts	Would permanently close more than 35,500 acres (i.e., 25 percent) of existing training land, including training compartments outside of the Alternative footprint, to recreational activities. Would reduce the suitability of more than 35,500 acres (i.e., 25 percent) of training land, including training compartments outside the Alternative footprint, for recreational activities by substantially removing or degrading existing habitat.

**3.2.2.2 No Action Alternative**

Under the No Action Alternative, the Army would not develop or operate a HOMMTA at Fort Benning and would continue to operate under current conditions, using the GHMTA for heavy maneuver training. There would be no effects on the availability or suitability of training compartments for recreation (e.g., hunting and fishing) within the Action Alternatives. Heavy maneuver training would continue to be conducted in the GHMTA, thereby restricting those training compartments from recreational use. As identified in the ETEA (Fort Benning, 2015b), this would result in continued **minor, long-term adverse impacts** to recreation.

### 3.2.2.3 Alternative 1

Alternative 1 would have **moderate adverse and negligible beneficial impacts** on recreation in the ROI. Adverse impacts on recreation would be *greater* than Alternative 2, but *less* than Alternative 3.

#### **Direct Impacts**

Alternative 1 would result in the temporary closure of up to 14 training compartments to recreational activities, encompassing up to 13,277 acres (i.e., the total acreage of the training compartments that overlap Alternative 1), which supported 4.3 percent of total Fort Benning hunter check-ins last year. This represents approximately 0.40 hunter check-ins per acre per year, which is midway between Alternatives 2 and 3.

During the construction phase (i.e., as compared to the operation and maintenance phase), these training compartments would likely be closed for longer periods at a time (i.e., potentially one or multiple full hunting seasons, depending on species) while construction occurs. During operation and maintenance, these compartments would be closed for shorter periods encompassing only the time necessary to complete training and maintenance activities.

Under current conditions, Alternative 1 is actively used for numerous other training activities, so the decrease in availability may be smaller than would occur under Alternatives 2 or 3, as discussed below. Due to the amount of acreage in the training compartments that comprise Alternative 1, the reduced availability for recreation in these training compartments would represent a **moderate, long-term, direct adverse impact** to recreation on Fort Benning.

Alternative 1 would also result in changes in suitability for hunting of different species within the associated training compartments. Under this Alternative, approximately 3,200 acres of primarily overstory forest habitat would be removed and replaced with disturbed understory and herbaceous vegetation; this change would alter the composition of game species, dependent upon each species' habitat requirements. For example, white-tailed deer and wild turkey may find the increased habitat edges along retained riparian corridors, along with increased herbaceous areas, to provide better foraging habitat than the current forested areas; this could result in better hunting conditions when Alternative 1 is available for hunting, and also improve hunting quality by providing further lines

of sight. Generally, this would be a **negligible to neutral effect** to hunting quality within Alternative 1.

Of the Action Alternatives, Alternative 1 contains the most existing development, including training facilities, roads, and trails, which already fragments the habitat present. The suitability for hunting in Alternative 1, however, would still be changed during the construction, operation, and maintenance phases due to substantial habitat conversion (see Section 3.7). This would be a **minor, long-term, direct adverse impact** to recreation. There would likely only be **negligible to minor, long-term, direct adverse impacts** to fishing and other recreational activities under Alternative 1. Most water resources (including associated vegetated buffers) would be preserved within the proposed HOMMTA, and other recreational activities are generally less popular and less dependent on specific habitats than hunting.

Finally, Alternative 1 would improve access to and between the training compartments through the construction of new infrastructure. This would enable recreational site users to access adjacent portions of the HOMMTA more easily. Because the Alternative 1 location already contains numerous roads and trails, this would likely only be a **negligible, long-term, direct beneficial impact**.

### **Indirect Impacts**

Alternative 1 would result in **minor, long-term, indirect adverse impacts** to recreation outside the proposed HOMMTA. Because the training compartments that comprise Alternative 1 would be closed during construction and training events, recreational site users would only be allowed to conduct these activities in other training compartments on Fort Benning, which could potentially increase the hunting stress on biological resources in those areas, increase the human disturbances in those areas, and reduce the enjoyment of other recreational site users. Given the majority of the training compartments are currently unavailable due to training, prescribed burns, or other activities during at least portions of the year, it is likely that any actual increased concentration of recreational site users in other training compartments would be perceptible but minor.

Additionally, Alternative 1 could reduce the suitability of training compartments adjacent to, but outside, the HOMMTA for hunting. During the construction, operation, and maintenance phases, activities within the proposed HOMMTA could disturb (i.e., through noise, human presence, dust,

and similar impacts) wildlife in adjacent training compartments and cause them to relocate. This would make those adjacent training compartments less valuable to hunters during these periods. These effects, however, would be expected to be temporary during HOMMTA use, and species would return to the habitats in adjacent training compartments following completion of activities in the proposed HOMMTA. Therefore, Alternative 1 would have **minor, long-term, indirect adverse impacts** on adjacent training compartments by temporarily reducing their suitability for hunting during HOMMTA activities. Please refer to Section 3.7 for more information on species disturbance. Proposed Action activities would have **no effect** on the suitability of adjacent training compartments for other recreational activities.

#### 3.2.2.4 Alternative 2

Alternative 2 would have **negligible to minor adverse and beneficial impacts** on recreation in the ROI. Impacts would be similar to those described for Alternative 1; differences are discussed below. Overall, adverse impacts on recreation would be *less* than Alternatives 1 and 3.

##### **Direct Impacts**

**Minor, long-term, direct adverse impacts** would occur to the availability of up to three training compartments encompassing up to 4,870 acres, which supported 2.4 percent of total Fort Benning hunter check-ins last year. This represents approximately 0.21 hunter check-ins per acre per year, which is the lowest use among the three Action Alternatives. These training compartments also include substantially less acreage than the compartments that would be temporarily closed under Alternative 1. Therefore, the decrease in availability of these compartments would be a less adverse impact than would occur under Alternative 1.

**Negligible, long-term, direct adverse impacts** (for hunting) and **negligible to minor, long-term, direct adverse impacts** (for fishing and other recreational activities) would occur to the suitability of Alternative 2 training compartments for recreation. Similar to Alternative 1, the effects to hunting would likely be negligible to neutral due to proposed habitat changes.

**Minor, long-term, direct beneficial impacts** to the accessibility of the Alternative 2 training compartments for recreational activity would occur due to the construction of 13 miles of new trails within the proposed HOMMTA.



### **Indirect Impacts**

**Minor, long-term, indirect adverse impacts** to the availability of other training compartments at Fort Benning for recreational activities would occur during HOMMTA use, as recreational site users would be restricted from accessing these three training compartments and would need to use other compartments.

**Minor, long-term, indirect adverse impacts** to the suitability of adjacent training compartments for hunting would occur due to periodic disturbance from proposed HOMMTA use. Alternative 2, however, is smaller than Alternative 1, and the training compartments that overlap it are located along the Installation boundary instead of the Installation interior, so less adjacent hunting area would be impacted. Similar to Alternative 1, Proposed Action activities would have no effect on the suitability of adjacent training compartments for other recreational activities.

#### **3.2.2.5 Alternative 3**

Alternative 3 would have **negligible to minor adverse and beneficial impacts** on recreation in the ROI. Impacts would be similar to those described for Alternatives 1 and 2, and are differentiated below. Overall, adverse impacts on recreation would be *greater than* Alternatives 1 and 2; due to having the highest hunter use per acre of all three Action Alternatives, the changes in recreation quality would be noticed by more hunters under Alternative 3.

### **Direct Impacts**

**Minor, long-term, direct adverse impacts** would occur to the availability of up to three training compartments encompassing up to 3,726 acres, which supported 2.7 percent of total Fort Benning hunter check-ins last year. This represents approximately 0.62 hunter check-ins per acre per year, which is the highest use among the three Action Alternatives. Despite reducing availability of the lowest overall acreage under Alternative 3, these training compartments currently experience more recreational use, relative to size, than those for both Alternatives 1 and 2. Therefore, the decrease in availability of training compartments for recreation under Alternative 3 would be a greater adverse impact than under Alternative 2, but less than under Alternative 1.

**Negligible, long-term, direct adverse impacts** (for hunting) and **negligible to minor, long-term, direct adverse impacts** (for fishing and other recreational activities) would occur to the suitability

of Alternative 3 training compartments for recreation. Similar to Alternatives 1 and 2, the effects to hunting would likely be negligible to neutral due to proposed habitat changes.

**Minor, long-term, direct beneficial impacts** to the accessibility of the Alternative 3 training compartments for recreational activity would occur due to the construction of 10 miles of new trails within the proposed HOMMTA.

### **Indirect Impacts**

**Minor, long-term, indirect adverse impacts** to the availability of other training compartments at Fort Benning for recreational activities would occur during HOMMTA use, as recreational site users would be restricted from accessing these three training compartments and would need to use other compartments.

**Minor, long-term, indirect adverse impacts** to the suitability of adjacent training compartments for hunting would occur due to periodic disturbance from proposed HOMMTA use. Alternative 3, however, is the smallest Action Alternative, and the training compartments that overlap it are also located along the Installation boundary instead of the Installation interior, so less adjacent hunting area would be impacted. Similar to Alternatives 1 and 2, Proposed Action activities would have no effect on the suitability of adjacent training compartments for other recreational activities.

### **3.2.3 Mitigation**

The Army would consider the following mitigation measure to further reduce potential minor to moderate adverse impacts on recreation:

#### *Alternatives 1, 2, and 3*

- Redelineate the boundaries of training compartments that are partially included within the proposed HOMMTA to align more closely with the boundary of the HOMMTA.

Because entire training compartments are typically closed while being used for construction, operation, and maintenance activities, the Proposed Action may close substantially more acreage for recreation than just the Action Alternative footprint (i.e., areas in training compartments that extend outside the HOMMTA). Implementation of this mitigation measure would potentially enable areas outside the HOMMTA to remain open for recreational activities while the HOMMTA is in use.

### 3.3 Air Quality

This section presents an overview of air quality and potential air quality emissions from the Proposed Action under each of the three Action Alternatives and the No Action Alternative.

The Clean Air Act (CAA) requires the USEPA to establish National Ambient Air Quality Standards (NAAQS) for ambient air pollutants considered harmful to public health and the environment, known as “criteria pollutants.” The USEPA has established NAAQS for the following criteria pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), lead (Pb), and two types of particulate matter – particulate matter that has an aerodynamic diameter less than or equal to 10 micrometers (PM<sub>10</sub>) and particulate matter that has an aerodynamic diameter less than or equal to 2.5 micrometers (PM<sub>2.5</sub>). Ground-level O<sub>3</sub> is a strong photochemical oxidant that results from a chemical reaction of volatile organic compounds (VOCs; air toxics), nitrogen oxides (NO<sub>x</sub>), and oxygen in the presence of sunlight (USEPA, 2018a). O<sub>3</sub> is considered a secondary pollutant because it is not directly emitted from pollution sources but is formed in the ambient air.

The CAA established two types of NAAQS: primary standards to protect public health (i.e., physical effects to sensitive individuals including asthmatics, children, and the elderly) and secondary standards to protect public welfare (i.e., non-physical effects, such as visibility impairment and damage to food sources) (40 CFR 50). The NAAQS are expressed as a concentration in air and duration of exposure, often both short-term (i.e., 1-hour, 8-hour, 24-hour) and long-term (i.e., annual averages) exposure.

In addition to NAAQS, the USEPA also regulates toxic and hazardous air pollutants (HAPs). HAPs are air pollutants, such as benzene, asbestos, naphthalene, toluene, and xylenes, that may cause or contribute to a serious illness (e.g., cancer) or cause adverse environmental effects when they are deposited in soil or water. HAPs are usually present in minimal quantities in the ambient air; however, their high toxicity may pose a threat to public health even at low concentrations (USEPA, 2018b).

Greenhouse gases (GHGs) are another environmental concern. Increases in global temperatures impact weather patterns, snow and ice melts, plant and animal ranges and/or migration patterns, crop yields, and other environmental features (IPCC, 2014). GHG-emitting human activities have

been identified as changing the chemical composition of the Earth’s atmosphere; there is concern that GHG emissions are causing shifts in the global climate. GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), nitrous oxide, methane, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Water vapor occurs naturally in higher concentrations than the other GHGs, and is not appreciably affected by human activities, while the concentrations of the remaining GHGs may be affected by human activities. In addition to natural sources, these GHGs are emitted from fuel-burning stationary sources (e.g., boilers, generators, plants, factories), fuel-burning mobile sources (e.g., cars, buses, airplanes, trains, construction equipment), and certain manufacturing industries and activities (USEPA, 2018c).

### **3.3.1 Affected Environment**

#### **3.3.1.1 Region of Influence**

The USEPA uses regional, contiguous areas to determine an area’s NAAQS compliance. These areas may be a county or a group of neighboring counties, a city or a group of regionally connected cities, an MSA, or other neighboring or regionally connected areas. Fort Benning is located in the Columbus, Georgia-Alabama MSA (OMB Bulletin No. 18-04). The ROI for this analysis, therefore, is the Columbus, Georgia-Alabama MSA.

This MSA consists of 7 counties in Alabama and Georgia, all of which are in attainment with criteria pollutants, except for parts of Muscogee County, Georgia, which are maintenance areas for lead (USEPA, 2019a). The Proposed Action’s Alternatives are located entirely within the State of Georgia in Chattahoochee and Muscogee Counties. As identified by the USEPA, the part of Muscogee County that is in maintenance for lead includes: “That portion of the county which includes a circle with a radius of 2.3 km with the GNB, Inc., lead smelting and battery production facility in the center” (USEPA, 2019b) (64 FR 17551). GNB, Inc., now Exide Technologies, is located at 3639 Joy Road, Columbus, Georgia. This facility is approximately 5 km from Fort Benning’s borders. Therefore, Fort Benning is not included in this designated lead maintenance area.

This section reviews air quality concerning criteria pollutants and HAPs based on Federal, State, and local (i.e., county) requirements in the ROI. Because Fort Benning is in attainment areas for all criteria pollutants, a General Conformity Analysis is not necessary. Therefore, air emissions

have not been calculated and are reviewed and evaluated based on proposed construction and operation activities, conditions, and emission sources associated with the Proposed Action.

Since GHGs are relatively stable in the atmosphere and are essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of GHG emissions does not depend on source location; any impacts from GHGs would contribute to global impacts. Therefore, air quality with regard to GHG emissions is reviewed on a broader scale at the Federal and State levels.

**3.3.1.2 Applicable Guidance**

Table 3.3-1 identifies Federal and State guidance and regulations that are relevant and applicable to the Proposed Action’s air quality analysis. As described in Section 2.1.1, the Army would comply with all Federal, State, and local laws, regulations, and Installation policies and management plans in implementing the Proposed Action as related to air quality.

**Table 3.3-1: Air Quality Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
General Conformity Rule (40 CFR 51 and 93)	Requires Federal actions or federally funded actions planned to occur in a non-attainment or maintenance area to be reviewed prior to their implementation to ensure that the actions would not interfere with State’s plans to meet or maintain the NAAQS. Considers the total direct and indirect emissions of a proposed action under a General Conformity Analysis. Requires a General Conformity Determination if the total air emissions are not exempt or below <i>de minimis</i> levels (i.e., minimum thresholds for criteria pollutants in non-attainment and maintenance areas) specified in 40 CFR 93.153.
Record of Non-Applicability (RONA)	Prepared for Federal actions for which the General Conformity Rule is not applicable because the action occurs in an attainment area for all criteria pollutants, is in an exemption category under 40 CFR 93.153(c), or has emissions that are discernibly <i>de minimis</i> .
List of HAPs (42 USC § 7412)	List of 187 HAPs regulated by the USEPA (USEPA, 2018b). Authorized under Section 112 of the CAA.
New Source Performance Standards (40 CFR 60)	Establishes standards to minimize emissions of criteria pollutants and HAPs from specific types of man-made, stationary emission sources (USEPA, 2018d). Applies to sources that are new, reconstructed, or modified. Authorized under Section 111 of the CAA.
National Emission Standards for Hazardous Air Pollutants (40 CFR 61)	Establishes standards for various HAPs and standard source categories according to Maximum Achievable Control Technology or Generally Available Control Technology requirements (USEPA, 2018e). Authorized under Section 112 of the CAA.

Requirements	Description/Applicability to Proposed Action
Prevention of Significant Deterioration (40 CFR 51.166 and 52.21)	Establishes requirements for new major sources in attainment areas, such as installing Best Available Control Technology. Aims to protect public health and welfare, air quality in areas of special value, and economic growth that is consistent with existing air quality preservation (USEPA, 2019c). Includes regulations on GHGs.
Visibility Protection for Federal Class I Areas (42 USC § 7491)	Provides special protection to certain areas (see Section 3.3.1.3) regarding air quality and visibility. Authorized under Section 169A of the CAA. 40 CFR 51.307 applies to new major stationary sources or modifications that may affect visibility in these areas.
Title V Permit Program (40 CFR 71)	Requires major sources (i.e., stationary sources, or groups of stationary sources, with a potential to emit more than major source thresholds) to obtain a Federal Title V operating permit (as specified in Title V of the CAA and in GADNR-EPD's Title V Facility Permit regulations at 391-3-1) (USEPA, 2018f). Includes regulations on GHGs. Area sources are from a broader area than a stack or discrete output (e.g., prescribed burns). Authorized under Section 112 of the CAA and enforced under Section 502 of the CAA.
State Implementation Plan (SIP) (40 CFR 51 and 52)	Requires each State to submit a SIP that supports the implementation, maintenance, and enforcement of air quality standards. Authorized under Section 110 of the CAA.
GADNR-EPD SIP Permitting	Procedures and instructions for initial and modified air quality permits for various sources and source categories in Georgia. Mobile sources are exempt from SIP permitting (GADNR-EPD, 2019a).
GADNR-EPD Stationary Source Compliance/Permitting Program	Responsible for evaluating stationary sources in Georgia for compliance with State and Federal environmental rules/regulations and compliance with Air Quality Permit conditions (GADNR-EPD, 2019b).
GADNR-EPD Mobile and Area Sources Program	Evaluates and controls emissions from mobile sources and area sources in Georgia. Implements enhanced vehicle emissions inspection and maintenance programs through "Georgia's Clean Air Force" (GADNR-EPD, 2019c).
GADNR-EPD Open Burning Rules (391-3-1-.02)	Provides rules for open burning. Includes legal types of burns and summer burn bans in some counties. Smoke from prescribed fires is managed in a Smoke Management Plan (SMP) (GADNR-EPD, 2019d).
GADNR-EPD Fugitive Dust (391-3-1-.02)	Provides rules and guidance regarding airborne particulate matter and its prevention (GADNR-EPD, 2019e).

### 3.3.1.3 Existing Conditions

#### **Federal Attainment Status and Standards**

While states have the authority to adopt stricter air quality standards, Georgia has chosen to use the Federal standards. Chattahoochee County is in attainment for all criteria pollutants, while part of Muscogee County is a maintenance area for lead (USEPA, 2019a). As described in Section 3.3.1.1, Fort Benning is not located in the portion of Muscogee County that is in maintenance for lead. Therefore, Fort Benning is in attainment areas for all criteria pollutants and in compliance with applicable ambient air quality Federal standards.

#### **Regional Overview**

##### *Regional GHG Concentrations*

The US Energy Information Administration (EIA) analyzes CO<sub>2</sub> emissions by State from various industries and uses, which include fuel use (i.e., coal, petroleum, and natural gas) in the residential, commercial, transportation, industrial, and electricity generation sectors. CO<sub>2</sub> is used as the basis for analyzing a State's GHG contribution because CO<sub>2</sub> constitutes a large proportion of human-caused GHG emissions. Based on the most recent information available from EIA, there were approximately 136,200,000 metric tons of CO<sub>2</sub> emissions in Georgia in 2016. The main contributor to GHG emissions in Georgia is from the electric power sector, which includes the burning of fossil fuels, such as coal and petroleum, for the purpose of electricity generation (EIA, 2019).

##### *Federal Class I Areas*

As outlined in Section 169A of the CAA and 40 CFR 51.307, Federal "Class I areas" are provided special protections with regard to air quality and visibility. Class I areas include National Parks greater than 6,000 acres in size and national wilderness areas and memorial parks greater than 5,000 acres in size. There are three Class I areas in Georgia that are approximately 170 miles or more from Fort Benning (USEPA, 2017). Because it would be unlikely that Class I areas at this distance would be impacted by emissions generated at Fort Benning, these areas are not considered further in the Proposed Action's air quality analysis.

##### *State Air Quality*

The GADNR-EPD maintains air quality monitoring stations for Ambient Air Quality Monitoring Programs. The GADNR-EPD does not maintain any stations in Chattahoochee County; however,

five air monitoring stations occur in Muscogee County in the city of Columbus. A review of the 2017 data from these stations identified one exceedance of NAAQS: the Columbus – Allied station, located approximately 4 miles from Fort Benning, recorded an exceedance of the 3-month rolling average for lead at 0.36 micrograms per cubic meter of air ( $\mu\text{g}/\text{m}^3$ ), compared to the standard of  $0.15 \mu\text{g}/\text{m}^3$  (GADNR-EPD, 2018).

The GADNR-EPD also maintains air toxics (i.e., HAPs and VOCs) monitoring stations. The closest air toxics station to Fort Benning is the Macon-Forestry station in Bibb County, approximately 85 miles away. HAPs and VOCs sampled at these stations are generally measured at significantly low to moderate concentrations. Besides HAP and VOC measurements, the GADNR-EPD also uses the data collected at these stations for human health risk assessments. In 2017, of the 71 HAPs and 42 VOCs assessed for human health risk, 10 were found to have annual average readings above the screening levels, sometimes at more than one station.

#### *Fort Benning Emissions*

Fort Benning is considered a major source and maintains a Title V operating permit issued by the GADNR-EPD (Number 9711-215-0021-V-04-0, effective October 17, 2019). Fort Benning's Title V permit contains requirements for emission monitoring and testing, emission limits, record-keeping, reporting, and an annual inventory of significant stationary emission sources at the Installation.

Fort Benning's criteria pollutant and HAP stationary emission sources include generators, boilers, paint booths, wood chippers, rock crushers, engine test cells, abrasive cleaner units, cold cleaners, and fuel storage tanks. Specific Installation practices to control emissions from stationary sources include, but are not limited to: emission caps and operating limits on some emission units; restrictions on types of fuels and chemicals used; VOC content limits in paints, primers, adhesives, and the like; use of ultra-low sulfur diesel; and a limit on emission opacity (i.e., the degree of visibility through emission plumes, expressed as a percent (USEPA, 1993)).

Besides stationary source emissions, Fort Benning generates emissions from open, prescribed burning activities. This burning is conducted as part of a beneficial ecosystem management program (see Section 3.7). As an ongoing, non-training activity that enhances the ecosystem while



simultaneously supporting the training mission, prescribed burning is considered a “maintenance” activity at Fort Benning.

Prescribed burning is the largest sole-source generator of criteria pollutants at Fort Benning. As identified by the GADNR-EPD in 2003, open burning at Fort Benning is not a stationary source and is not subject to Georgia’s Fugitive Dust Rule (391-3-1-.02(2)(n)) that applies to stationary sources (GADNR-EPD, 2003). Therefore, Fort Benning’s Title V permit lists open burning as an insignificant activity. As specified in Georgia Rule 391-3-1-.03, insignificant activities are those that should be listed in a Title V permit, but do not need to be described in detail.

Fort Benning’s prescribed burning activities are conducted in full compliance with applicable State laws and regulations and county plans and restrictions, such as the GADNR-EPD’s Open Burning Rules and Smoke Management Plan (SMP) and county seasonal burn bans. GADNR-EPD’s SMP details the guidelines and requirements for the management of prescribed fire smoke in the State (GADNR-EPD, 2008). The GADNR-EPD and the Georgia Forestry Commission developed the SMP in accordance with the USEPA’s *Interim Air Quality Policy on Wildland and Prescribed Fires* and *Draft Elements of a Smoke Management Program* and in cooperation with Federal military installations in Georgia, including Fort Benning. Fort Benning adheres to the guidelines and requirements in GADNR-EPD’s SMP when conducting prescribed fires. Chattahoochee and Muscogee Counties do not have summer burn restrictions (GADNR-EPD, 2011).

Fort Benning’s Title V permit also includes reasonable precautions the Army could take to prevent airborne fugitive dust, such as the covering of, or application of water on, materials with a potential to generate dust (e.g., unpaved roadways and construction sites). These precautions are based on Georgia’s Fugitive Dust Rule (391-3-1-.02(2)(n)) that sets a fugitive dust opacity limit of less than 20 percent (see Section 3.3.1.2).

As determined by the GADNR-EPD, this opacity standard interferes with the military’s need to simulate real-world conditions during training and, therefore, does not apply to military training. The GADNR-EPD also determined that, while application of water or other suitable suppressors on unpaved roads should be utilized to suppress fugitive dust from construction and transport vehicles, it is not applicable to unpaved military training areas in an effort to simulate real-world conditions (GADNR-EPD, 2003).

The air quality specific to the GHMTA and the Alternative 1, 2, and 3 locations is not widely varied or different from the Fort Benning, county, and State discussions above. As described in Section 3.3.1.1, air quality is not analyzed in this EIS on a localized basis or as specific, singular sources. Location-specific differences related to air quality emissions are described by Alternative below.

### **No Action Alternative (ongoing use of the GHMTA)**

The existing air quality environment of the GHMTA is described in the ETEA (Fort Benning, 2015b).

### **Alternative 1**

Alternative 1 is primarily forested and stationary sources are minimal. Some insignificant stationary sources are present in the small, training-related buildings within the footprint. For example, there are insignificant heating sources in the mess buildings associated with TTB Falcon. Military vehicles, regularly used within Alternative 1, provide a source of existing mobile emissions. Fugitive dust from vehicle use on unpaved roads and training areas in Alternative 1 is minimal. Small prescribed burns (approximately 200 to 300 acres each) are conducted in upland areas of Alternative 1 on a 2- to 3-year return interval for ecosystem maintenance and wildfire control.

### **Alternative 2**

Alternative 2 is primarily forested and there are no stationary sources. Military vehicles are occasionally used in Alternative 2; most of the training exercises conducted in Alternative 2 are on foot (e.g., land navigation). Therefore, existing mobile emissions sources are minimal. Fugitive dust from vehicle use on unpaved roads and land navigation areas in Alternative 2 is minimal. Small prescribed burns (approximately 200 to 300 acres each) are conducted in upland areas of Alternative 2 on a 2- to 3-year return interval for ecosystem maintenance and wildfire control.

### **Alternative 3**

Alternative 3 is primarily forested and there are no stationary sources. Military vehicles are occasionally used in Alternative 3 for training. Existing mobile emission sources are, therefore, negligible to minimal in Alternative 3, including fugitive dust. Small prescribed burns (approximately 200 to 300 acres each) are conducted in upland areas of Alternative 3 on a 2- to 3-year return interval for ecosystem maintenance and wildfire control.

### 3.3.2 Environmental Effects

This section discusses the potential short- and long-term, direct and indirect air quality impacts that would occur with implementation of the Action Alternatives and the No Action Alternative.

For the purposes of this air quality effects analysis, direct impacts would occur within the Action Alternative footprint and would be directly caused by Proposed Action activities (e.g., onsite emissions from diesel construction equipment). Indirect air quality impacts would occur outside of this footprint and impact offsite areas (e.g., offsite visibility impacts from fugitive dust). This includes potential short-term (i.e., construction) and long-term (i.e., operation and maintenance) impacts.

#### 3.3.2.1 Approach to the Analysis

Based on the attainment status designation for Chattahoochee and Muscogee Counties (see Section 3.3.1.1 and Section 3.3.1.3), the Proposed Action is exempt from the General Conformity Rule and a calculation of quantitative results is not included in this analysis. A Record of Non-Applicability (RONA) documenting this exemption and describing the discernibly *de minimis* emissions from the Proposed Action is included in Appendix C.

Within the following impact analysis, potential Proposed Action sources and emissions are compared to the existing conditions, NAAQS, Georgia standards, the *de minimis* threshold or the major source threshold, and Fort Benning's annual emissions, as applicable. For the purposes of comparison, this determines the Proposed Action's level of contribution to regional air pollutant concentrations.

The Army used the impact threshold definitions presented in Table 3.3-2 to evaluate the intensity of the potential adverse impacts under each Alternative, and to benchmark when an adverse impact would be considered significant.

As shown in the analysis below, short- and long-term emissions from any Alternative would not violate any Federal, State, local, or Fort Benning regulations. Each Alternative would contribute noticeably, but not significantly, to existing onsite and Fort Benning emissions, but would not contribute noticeably or significantly to State or other regional air pollutant concentrations.

**Table 3.3-2: Significant Adverse Impact Thresholds for Air Quality**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	<ul style="list-style-type: none"> <li>• NAAQS criteria pollutant emission levels would exceed <i>de minimis</i> levels or change attainment status.</li> <li>• HAP emissions would exceed major source thresholds.</li> <li>• A violation of Title V permit conditions would occur.</li> <li>• Fugitive dust emissions would cause substantial long-term visibility issues.</li> <li>• Site-generated GHG concentrations would be noticeable on a regional or global level.</li> </ul>
	Indirect Impacts	<ul style="list-style-type: none"> <li>• Would induce emissions offsite that would exceed NAAQS, <i>de minimis</i> levels, or major source thresholds, or change the attainment status.</li> </ul>

**3.3.2.2 No Action Alternative**

Under the No Action Alternative, there would be no short-term construction or long-term operational or maintenance emissions associated with the Proposed Action. Existing minimal emissions from stationary and mobile sources, as well as prescribed burns, within the Action Alternatives would continue to have **negligible to minor, long-term adverse impacts** on air quality in the ROI. Additionally, existing heavy maneuver training activities would continue to occur in the GHMTA.

As evaluated in the ETEA, impacts from the existing mobile air emission sources in the GHMTA are **minor** and GHMTA impacts to regional air quality are **negligible** (Fort Benning, 2015b). Therefore, while there would be no change in direct or indirect emissions of criteria pollutants, fugitive dust, HAPs, or GHGs at Fort Benning under the No Action Alternative, these **minor and negligible, long-term adverse impacts** on air quality from existing training within the Action Alternatives and off-road maneuver training in the GHMTA would continue.

**3.3.2.3 Alternative 1**

Alternative 1 would have **minor adverse effects** on air quality. Air quality impacts under Alternative 1 would be *similar to or slightly greater* than Alternative 2, but *less* than Alternative 3.

## **Direct Impacts**

### *Construction*

Proposed construction activities that would generate emissions include, but are not limited to:

- Handling, storage, and transport of excavated and removed materials (e.g., soil, trees, rocks), as well as potential slash burning
- Operation of heavy-duty, diesel-powered trucks and construction equipment operating on the Installation and traveling to and from the site
- Operation of construction workers' commute vehicles
- Use of unpaved areas/roads
- Final construction activities (e.g., grading, creation of gravel tank trails, planting)

Emissions from construction activities would be temporary and spread over the 2- to 3-year construction period (see Section 2.1.1.2). Emissions during construction would primarily be from fugitive dust sources (i.e., excavation and removal of materials and unpaved road use) and mobile sources (i.e., mobile construction equipment and commuter vehicles).

During construction, the Army would implement the EPMs and RCMs identified in Section 2.1.1 and incorporated into the Proposed Action to control and minimize adverse air quality effects. The Army would follow the requirements of Fort Benning's Title V permit and Georgia's Fugitive Dust Rule (391-3-1-.02(2)(n)) that reduce or prevent airborne fugitive dust during construction.

During construction of Alternative 1, the primary source of fugitive dust would be from the vegetation removal process. Following the timber harvest, the construction contractor would be required to remove slash from the site; slash burning (i.e., an area source) may be conducted in accordance with applicable laws and regulations. Diesel-powered trucks and equipment would be used during land conversion, as well as during the construction of trails, approximately 27 new water crossings, 2 bridges, and burial of utilities. Emissions from worker commute vehicles traveling to and from Alternative 1 would be temporary and expected to be negligible when compared to Fort Benning's existing daily commuter traffic (see Section 3.10.1.3). Overall, construction impacts on air quality would be anticipated to be **minor, short-term, and adverse**.

### *Operation*

Long-term operational activities that would generate emissions include training with up to approximately 24 armor vehicles (and support vehicles in the vicinity) per training event throughout the proposed HOMMTA on unpaved roads/trails and off-road maneuver areas.

Emissions during operations would primarily be from fugitive dust sources (i.e., maneuver on unpaved roads/trails and off-road maneuver areas) and mobile sources (i.e., armor and support vehicle operation). Under Alternative 1, approximately 3,200 acres of open maneuver land and 25 miles of unpaved roads/trails would be available for maneuver activities that could generate fugitive dust. Due to the need to conduct realistic training, EPMs would generally not be implemented during these training events. Based on experience conducting heavy off-road mounted maneuver training at the GHMTA (Fort Benning, 2015b), however, potential **long-term direct impacts** would be anticipated to remain at **minor, adverse** levels.

### *Maintenance*

Maintenance activities would generally be similar to construction activities, and similar types of heavy equipment would be used. As such, maintenance activities would produce similar levels of fugitive dust and emissions from mobile sources; however, maintenance activities would be conducted intermittently throughout the life of the proposed HOMMTA on smaller portions of the HOMMTA at a time, based on maintenance needs. Fort Benning would adhere to EPMs, Fort Benning's Title V permit, and Georgia's Fugitive Dust Rule (391-3-1-.02(2)(n)) that reduce or prevent airborne fugitive dust during maintenance and non-training activities (see Section 2.1.1).

Under Alternative 1, there may still be opportunities for onsite prescribed burning, although the opportunities and need would be lessened, as approximately 3,200 acres of forest would be converted to disturbed understory and herbaceous vegetation. As such, long-term air emissions related to prescribed burning would be reduced, although burn intervals could decrease to 18-month intervals to maintain the changed vegetation environment. Fort Benning would implement EPMs identified in Section 2.1.1. Maintenance and prescribed burning impacts on air quality under Alternative 1, therefore, would be anticipated to be **minor, long-term, direct, and adverse**.

Overall, emissions from Alternative 1 would not threaten the attainment status of the region, have a noticeable GHG impact, or violate any Federal, State, or local air regulations. It is unlikely that

short- and long-term emissions under Alternative 1 would exceed NAAQS, *de minimis*, or major source thresholds. Alternative 1 emissions would contribute noticeably, but not significantly, to existing onsite and Fort Benning emissions, but would not contribute noticeably or significantly to State or other regional air pollutant concentrations. The conditions and emission limits in the Title V permit are primarily relevant to stationary sources at the Installation; therefore, no limit exceedances or non-compliance with Fort Benning's Title V permit would occur.

### **Indirect Impacts**

#### *Construction, Operation, and Maintenance*

Emissions and fugitive dust, once airborne, may travel offsite during construction, operation, and maintenance activities. The location of Alternative 1 in the central portion of Fort Benning would limit the potential for air emissions to leave the Installation and affect off-Post areas. Because the direct impacts of onsite emissions would be minor, it is presumed that any **indirect impacts** would also be **minor, short- and long-term, and adverse**.

#### **3.3.2.4 Alternative 2**

Overall, Alternative 2, despite its location near Fort Benning's southern boundary, would result in **minor adverse impacts** to air quality. These effects would likely be *slightly less* than Alternative 1 due to the smaller size of Alternative 2. Although Alternative 2 is located near the southern Installation boundary, which increases the potential for air emissions to travel off-Post, there are no sensitive receptors located in this vicinity.

### **Direct Impacts**

#### *Construction*

**Minor, short-term, direct adverse** effects on air quality would occur under Alternative 2 from construction. Proposed construction activities and emission sources under Alternative 2 would be the same as Alternative 1; however, emissions would be less than Alternative 1 because Alternative 2 is smaller with fewer components to be constructed. Approximately 2,700 acres of forest would be converted to disturbed understory and herbaceous vegetation (with corresponding slash removed from site or burned), compared to 3,200 acres under Alternative 1. Diesel-powered trucks and equipment would be used during land conversion, as well as during the construction of trails and roads, approximately 19 new water crossings, and 2 HET pads. This is less than Alternative

1's estimated 27 new water crossings, 2 bridges, and utility burial. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels.

### *Operation*

Proposed operational impact sources under Alternative 2 would be the same as under Alternative 1, and impacts would be anticipated to remain **minor, long-term, direct, and adverse**. During operations, there would be approximately 2,700 acres of off-road maneuver land and 21 miles of unpaved roads with the potential to emit fugitive dust. This is less than Alternative 1's proposed 3,200 acres of open maneuver land and 25 miles of unpaved roads; therefore, Alternative 2 would be expected to have slightly lower fugitive dust emissions in the long-term compared to Alternative 1. Due to the need to conduct realistic training, EPMs would generally not be implemented during these training events.

### *Maintenance*

Under Alternative 2, maintenance activities and equipment would be the same as under Alternative 1. Due to the smaller amount of maneuver area and fewer components associated with Alternative 2, there would be less training area to maintain; however, since the same amount of training activities would be conducted under each Alternative, the same level of training stress would be focused on a smaller training area, potentially leading to more frequent maintenance needs. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels.

As with Alternative 1, there would be a reduction in prescribed burning impacts compared to existing conditions, but the reduction in prescribed burning impacts would be slightly less since approximately 500 fewer acres of forest would be removed (i.e., 2,700 acres under Alternative 2 compared to 3,200 acres under Alternative 1); the potential for an increased frequency of prescribed burns would remain. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels. Overall, maintenance and prescribed burning impacts under Alternative 2 would be **minor, long-term, and adverse**.



## **Indirect Impacts**

### *Construction, Operation, and Maintenance*

Emissions and fugitive dust, once airborne, may travel offsite during construction, operation, and maintenance activities. The location of Alternative 2 near the southern boundary of Fort Benning would increase the potential for air emissions to leave the Installation and affect off-Post areas as compared to Alternative 1; however, no sensitive receptors are located near Alternative 2. Because the direct impacts of onsite emissions would be minor, it is presumed that any indirect impacts would also be **minor, short- and long-term, and adverse**.

### **3.3.2.5 Alternative 3**

Overall, Alternative 3, located on Fort Benning's eastern boundary near 12 sensitive off-Post receptors and smaller in size than Alternatives 1 or 2 (resulting in more focused emissions), would result in **moderate adverse effects** on air quality. This is specifically due to the potential for fugitive dust emissions to travel off-Post and affect these areas, including EJ communities (see Section 3.9). Air quality impacts under Alternative 3 would be *greater* than Alternatives 1 or 2.

## **Direct Impacts**

### *Construction*

Proposed construction activities and emission sources under Alternative 3 would be the same as under Alternatives 1 and 2, but would result in **moderate, short-term adverse** impacts due to the proximity of 12 down-wind sensitive off-Post receptors and the focused, smaller area of emissions.

During Alternative 3 construction, approximately 1,500 acres of forest would be converted (with corresponding slash removed from site or burned), compared to 3,200 acres under Alternative 1 and 2,700 acres under Alternative 2. Diesel-powered trucks and equipment would be used during land conversion, as well as during the construction of roads and trails, approximately 25 new water crossings, and burial of utilities. This would be expected to require less diesel-powered equipment when compared to Alternative 1 and approximately the same when compared to Alternative 2. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels.

### *Operation*

Proposed operational activities under Alternative 3 would be the same as under Alternatives 1 and 2, although off-road maneuver would be focused on a smaller land area and in closer proximity to sensitive off-Post receptors. This would result in a potential **moderate, long-term adverse** effect to these off-Post areas, primarily due to fugitive dust emissions. Due to the need to conduct realistic training, EPMs would generally not be implemented during these training events.

### *Maintenance*

Under Alternative 3, maintenance activities and equipment would be the same as under Alternatives 1 and 2. Due to the smaller amount of maneuver area and fewer components associated with Alternative 3 compared to Alternatives 1 and 2, there would be less training area to maintain; however, since the same amount of training activities would be conducted under each Alternative, the same level of training stress would be focused on a smaller training area, potentially leading to more frequent maintenance needs. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels.

As with Alternatives 1 and 2, there would be a reduction in prescribed burning impacts, but the reduction in prescribed burning impacts would be less since approximately 1,700 or 1,200 fewer acres of forest (compared to Alternatives 1 and 2, respectively) would be removed; the potential for an increased frequency of prescribed burns would remain. Implementation of the EPMs described in Section 2.1.1 would ensure these impacts are maintained at acceptable levels. Maintenance and prescribed burning impacts under Alternative 3 would be **long-term, minor, and adverse**.

## **Indirect Impacts**

### *Construction, Operation, and Maintenance*

Direct onsite emissions under Alternative 3 would have a moderate impact on air quality for off-Post receptors due to the proximity of proposed HOMMTA training to these off-Post areas, as well as the concentration of training activities on a smaller land area within Alternative 3. Fugitive dust emissions from training could adversely impact down-wind, off-Post receptors to the east. Because the direct impacts of onsite emissions would be moderate, it is presumed that any indirect impacts would also be **moderate, short- and long-term, and adverse**.

### **3.3.3 Mitigation**

Implementation of EPMs and RCMs identified in Section 2.1.1 would maintain potential adverse impacts at minor to moderate levels. No additional mitigation measures are proposed to further reduce these impacts.

## **3.4 Noise**

This section presents an overview of noise, how it is measured, and the existing acoustic environment in and around the Action Alternatives. This section also identifies potential changes to the noise environment that could result from implementation of each Action Alternative and the No Action Alternative, as well as mitigation measures to reduce any anticipated adverse effects.

### **3.4.1 Affected Environment**

Sound is a physical phenomenon consisting of vibrations that travel through a medium, such as air, and are sensed by the human ear. Noise is defined as any sound that is undesirable to the receptor because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive.

While sound is defined as an auditory effect, noise is considered a disturbance. Human and wildlife responses to noise vary according to the type of sound, characteristics of the sound source, distance and obstructions between the source and receptor, receptor sensitivity, and time of day. An organism's response to a sound source determines whether the sound is judged as pleasing or annoying. Noise can also be detrimental if it disturbs an organism's normal behavior (USEPA, 1981). Noise is often generated by activities essential to a community's economy and quality of life, such as construction and vehicular traffic.

#### **3.4.1.1 Noise Metrics**

Sound varies by both intensity and frequency. Sound intensity is quantified through the sound pressure level, described in decibels (dB). The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. Sound frequency is measured in Hertz (Hz).

The A-weighted decibel (dBA) is used to characterize sound levels that can be sensed by the human ear. "A-weighted" denotes the adjustment of the frequency range to what the average human ear can sense when experiencing an audible event. The lower threshold of audibility is generally within

the range of 10 to 25 dBA for normal hearing. The threshold of pain occurs at the upper boundary of audibility, which is normally in the region of 135 dBA. To the human ear, each 10-dBA increase seems twice as loud (USEPA, 1981).

Table 3.4-1 presents sounds encountered in daily life, their dBA levels, and how they affect hearing. For example, a whisper is usually 30 dBA and is considered to be very quiet, the sound of a refrigerator at 55 dBA is considered to be at the level of ambient sound, and an air conditioning unit 20 feet away (60 dBA) is considered to be an intrusive noise. Noise levels can become annoying at 80 dBA and very annoying at 90 dBA (USEPA, 1981).

**Table 3.4-1: Common Sound Levels and Human Response**

Outdoor	Sound Level (dBA)	Indoor	Effect
Rustling leaves	30	Soft whisper (15 feet)	Very quiet
Quiet residential area	40	Library	Quiet
Rainfall or light auto traffic (100 feet)	55	Refrigerator	Ambient
Normal conversation	60	Air conditioning unit (20 feet)	Intrusive
Freeway traffic	70	Noisy restaurant or TV audio	Telephone use difficult
Downtown (large city)	80	Alarm clock (2 feet) or ringing telephone	Annoying
Heavy truck	90	Garbage disposal	Very annoying; hearing damage (8 hours)
Garbage truck, motorcycle	100	Subway train	Very annoying
Pile drivers	110	Power saw at 3 feet	Strained vocal effort
Jet takeoff (200 feet) or automobile horn (3 feet)	120	Rock concert	Maximum vocal effort
Carrier deck jet operation	140	--	Painfully loud

Source: (USEPA, 1981) (CHC, 2019)

dBA = A-weighted decibel

C-weighting, described as C-weighted decibels (dBC), is similar to A-weighting, except it incorporates more low-frequency noise. C-weighting is predominately used to describe noise that

has a component of rumble or the potential for noise-induced vibrations. It has been used traditionally to describe extreme impulse-type sounds, such as the sounds from large-caliber weaponry and military explosives (FICUN, 1980).

### 3.4.1.2 Military Noise Environment

The military noise environment consists primarily of three types of noise: transportation noise from aircraft and vehicles, noise from firing at small arms ranges, and noise from large-caliber weapons firing and military explosives. AR 200-1, *Environmental Protection and Enhancement*, defines recommended noise limits from Army activities. The following noise zones are defined in AR 200-1:

- **Land Use Planning Zone (LUPZ):** Acceptable for housing, schools, medical facilities, and other noise-sensitive land uses. This zone is used to predict noise impacts better when levels of operation at airfields or large-caliber weapons ranges are above average, and to provide the community with additional information regarding land use decisions.
- **Zone I:** Relatively quiet noise environment. Acceptable for housing, schools, medical facilities, or other noise-sensitive land uses.
- **Zone II:** Moderately loud noise environment. Normally not recommended for housing, schools, medical facilities, or other noise-sensitive land uses.
- **Zone III:** Loud noise environment. Not recommended for housing, schools, medical facilities, or other noise-sensitive land uses.

These zones are established for specific Army activities based on the loudest noise levels anticipated from each activity and can vary based on time of day or weather conditions. Unfavorable weather conditions, which can lead to greater noise impacts, include temperature inversion or a steady wind blowing in the direction of the receiver from the sound source.

The metric used to define noise zones for small arms ranges is peak level (dBP). As defined in AR 200-1, peak level is the maximum instantaneous sound level that occurs during an acoustic event. In the case of small arms, it is the maximum instantaneous sound level made by a given weapon at a given distance. Peak level for small arms weapons is strongly correlated with community annoyance (Luz, 1983).

Per AR 200-1, other metrics used by the Army to quantify the noise environment at Army installations are the C-weighted and A-weighted day-night average sound levels (CDNL and ADNL). Day-night Sound Level (DNL) is defined as the average sound energy in a 24-hour period with a 10-dB penalty added to the nighttime levels (10:00 p.m. to 7:00 a.m.). It is a useful descriptor for noise because it averages ongoing yet intermittent noise and it measures total sound energy over a 24-hour period. Table 3.4-2 outlines recommended noise limits and zones for land use planning for small arms firing, aircraft, and large-caliber weapons firing and military explosives operations.

**Table 3.4-2: Noise Zones for Military Operations**

Noise Zone	General Level of Noise	Small Arms	Aircraft (ADNL)	Large-Caliber Weapons and Military Explosives (CDNL)	Recommended Uses
<b>LUPZ</b>	Low	N/A	60-65 dBA	57-62 dBC	<i>Noise-sensitive land uses acceptable</i>
<b>I</b>	Low	< 87 dBP	< 65 dBA	< 62 dBC	
<b>II</b>	Moderate	87-104 dBP	65-75 dBA	62-70 dBC	<i>Noise-sensitive land uses normally not recommended</i>
<b>III</b>	High	> 104 dBP	> 75 dBA	> 70 dBC	<i>Noise-sensitive land uses not recommended</i>

Source: AR 200-1

**3.4.1.3 Region of Influence**

For this noise analysis, the ROI includes areas that would be affected by the Action Alternatives or No Action Alternative (i.e., ongoing heavy maneuver use of the GHMTA). This ROI includes, therefore, areas within the Action Alternative footprints and the GHMTA, as well as areas within 1,400 feet of these footprints. The Army included areas within 1,400 feet because any noise generated under the Action Alternatives (or No Action Alternative) would attenuate down to background levels at this distance (see Appendix D).

**3.4.1.4 Applicable Guidance**

Under the Noise Control Act of 1972 (42 USC 4901), US Occupational Safety and Health Administration (OSHA) established workplace standards for noise. The minimum requirement states that constant noise exposure must not exceed 90 dBA over an 8-hour period. The highest allowable sound level to which workers can be constantly exposed is 115 dBA; exposure to this

level must not exceed 15 minutes within an 8-hour period. The standards limit instantaneous exposure, such as impact noise, to 140 dBP. If noise levels exceed these standards, employers are required to provide hearing protection equipment that reduces sound levels to acceptable limits.

The Noise Control Act of 1972 also directs Federal agencies to comply with applicable Federal, State, interstate, and local noise control regulations. Noise from military weapons or equipment are not covered under that the Noise Control Act. In 1974, the USEPA released guidance suggesting that continuous and long-term noise levels in excess of DNL 65 dBA are normally unacceptable for noise-sensitive land uses such as residences, schools, churches, and hospitals. In 1982, the USEPA transferred the primary responsibility of regulating noise to State and local governments.

The State of Georgia and Chattahoochee County do not have any ordinances restricting the generation of noise from construction activities. A regulation listed in the Cusseta-Chattahoochee County Consolidated Government Code (Chapter 20, Article II, Section 20-28-Noise) limits noise generation in public parks to 85 dBA. The Proposed Action would not take place in or around a public park, so this regulation would not apply to the Proposed Action.

#### **3.4.1.5 Existing Conditions**

Primary sources of noise in the ROI come from training activities such as use of military vehicles on roads/trails, small arms, large-caliber weapons and military explosives, and aircraft. As part of the Army's goal to limit training noise impacts, the US Army Public Health Center (USAPHC) prepared a Fort Benning-specific Installation Compatible Use Zone (ICUZ) study that quantified the noise impacts from military training activities on the Installation and nearby areas (USAPHC, 2019).

Using this data, each primary noise source is described below generally and specific to each Action Alternative, while Figure 3.4-1 through Figure 3.4-3 show the existing operational noise contours from Fort Benning's training activities. These figures do not depict Zone I due to its lack of a lower decibel limit; the LUPZ is depicted in place of Zone I, as it encompasses the area subject to noise levels in the upper 5 dB of Zone I for each noise source. The noise generated by military aircraft and weapons extends to areas outside the Installation boundary. The noise from industrial-type

operations and the movement of heavy military vehicles does not have a considerable effect on the surrounding civilian communities or military housing areas (Fort Benning, 2019c).

The ROI also experiences standard road and non-road noise (e.g., civilian vehicles, timber trucks, and seasonal hunting); however, these sources of noise are negligible in the context of an active military Installation and are not discussed further.

### **Military Vehicles**

The ROI is currently used by a range of military vehicles, including tanks, for various training activities, such as heavy movement and light maneuver training. This training occurs during both day and night, and at varying frequencies throughout the Action Alternatives. Table 3.4-3 summarizes the noise produced by military vehicles typically used in the ROI. Noise zones are not established for military vehicle use; however, the Army estimates<sup>3</sup> that noise from vehicle operation attenuates to 70 to 78 dBA at 400 feet, 66 dBA at 800 feet, and below 60 dBA at 1,400 feet (see Appendix D).

**Table 3.4-3: Noise Levels for Tactical Vehicles**

<b>Equipment</b>	<b>Sound Level at 100 feet (dBA)</b>
M1A2 Abrams Tank	90
M2A2/A3 Bradley Fighting Vehicle	90 <sup>a</sup>
M88A1 Medium Recovery Vehicle	< 90 <sup>b</sup>
M88A2 Heavy Recovery Vehicle	< 90 <sup>b</sup>
Various Humvee's (HMMWVs; M1151A1, M1152, M1152A1, M1165, M1165A1, M1167, M997A3)	< 85

Source: (NGB, 2001)

HMMWV = high mobility multipurpose wheeled vehicle, commonly known as “Humvees”

<sup>a</sup> Assumed to be the same as the M1A2 Abrams.

<sup>b</sup> The M1A2 Abrams is the loudest piece of equipment (discounting firing) that would be used under the Proposed Action. Therefore, it is assumed that all other maneuver vehicles would have sound levels less than 90 dBA (see Appendix D).

<sup>3</sup> The inverse square law states that for every doubling of the distance from the sound source, the sound intensity will decrease by 6 dBs.



### **Aircraft**

Noise levels from Lawson Army Airfield (LAAF), Fort Benning's airfield, are presented in Figure 3.4-1. Both fixed- and rotary-wing tactical aircraft (i.e., planes and helicopters) operate out of LAAF. Fixed-wing aircraft are used for airborne jump training and helicopters for troop and cargo lift training and medevac. Both types of aircraft fly on established routes and within restricted military airspace. Noise contours associated with LAAF extend off-Post into South Columbus and small portions of Russell, Stewart, and Chattahoochee Counties (Fort Benning, 2019c). While encroachment into these areas off-Post is minimal, the potential for incompatible uses grows with increased development on these lands. Several aircraft flight routes pass over the Action Alternatives, but none of the Action Alternatives would change these aircraft routes or the baseline noise conditions at LAAF or the Installation, and would not cumulatively interact with the sounds produced by the Proposed Action within the ROI; therefore, they are not carried forward for further analysis.

### **Small Arms**

Existing small arms weapons noise contours are shown in Figure 3.4-2. Common Army small arms are the M16 rifle (5.56 millimeter [mm] ammunition), the M240 (7.62 mm) and M249 (5.56 mm) machine guns, and the 0.50 caliber machine gun. The small arms noise zones (i.e., Zones II and III) are predominately contained within the Installation; per AR 200-1, the LUPZ is not applicable to small arms weapons. The small arms noise Zone II (as shown in Table 3.4-2) extends beyond the northern boundary of the Installation by approximately 0.3 mile and beyond the eastern boundary by approximately 1 mile; this area includes some residences. Noise Zone III (as shown in Table 3.4-2) extends beyond the eastern boundary of the Installation less than 0.3 mile and encompasses open fields and pasture lands only (Fort Benning, 2019c).

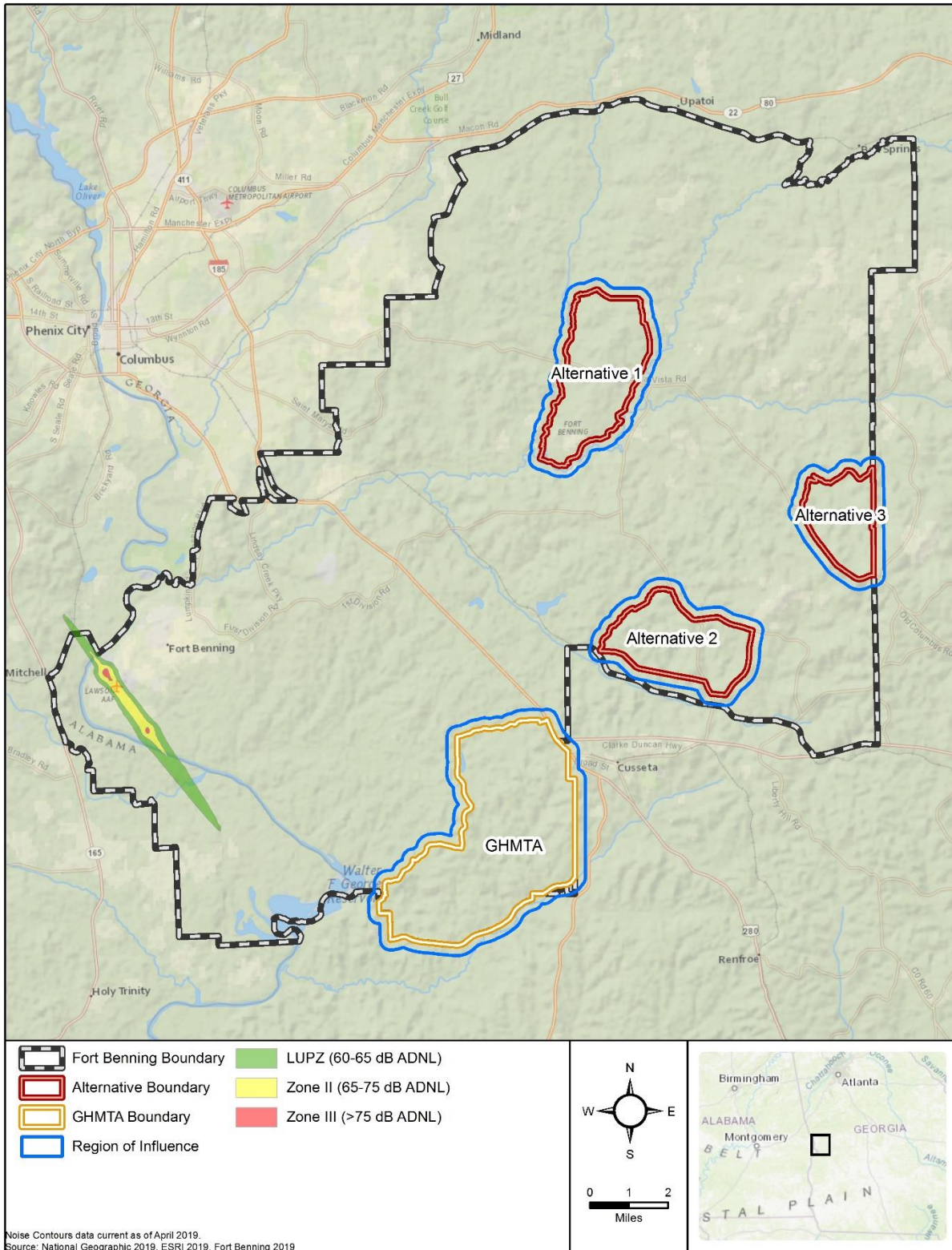
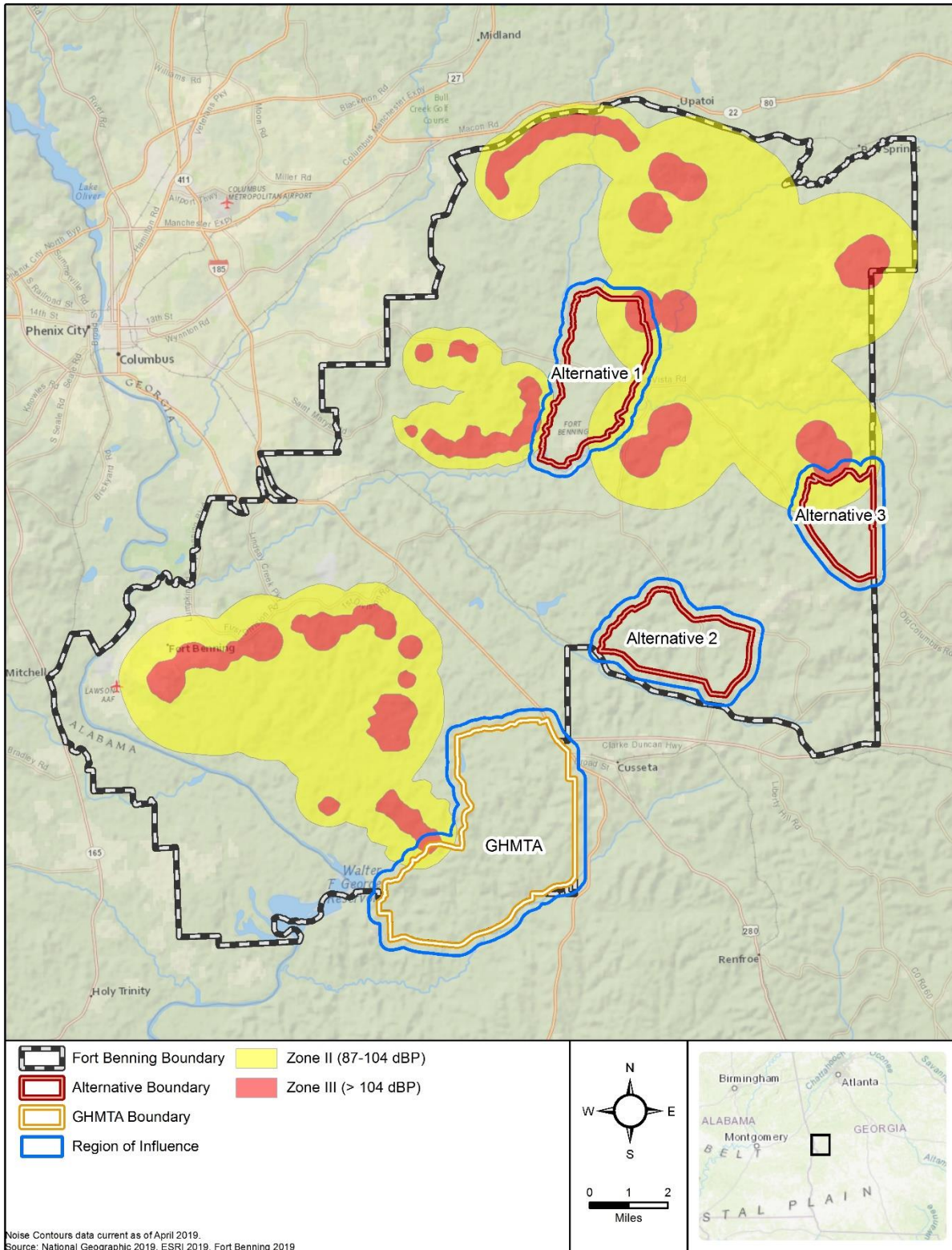
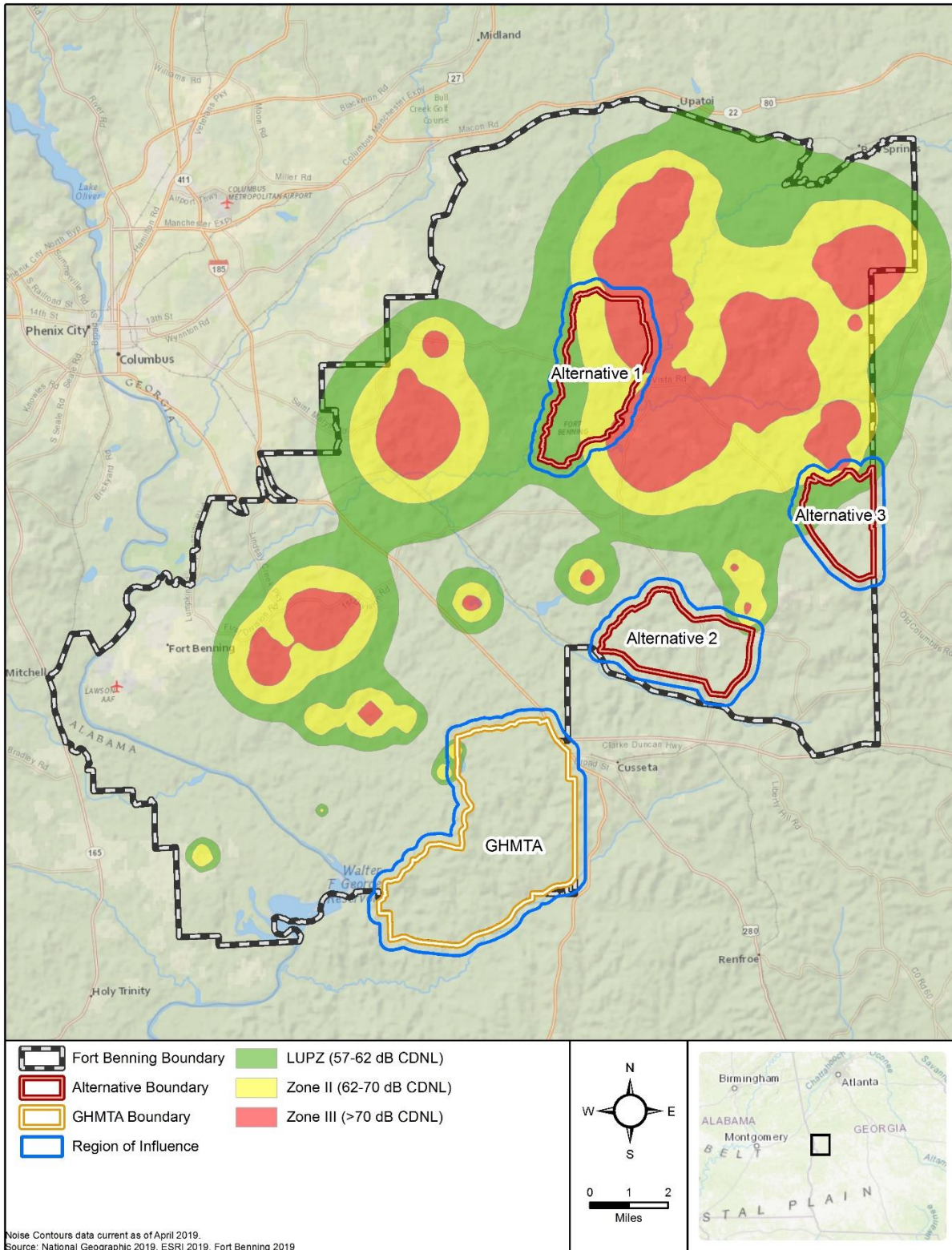


Figure 3.4-1: Existing Noise Contours for Aircraft Using LAAF



**Figure 3.4-2: Existing Noise Contours for Small-Caliber Weapons**





**Figure 3.4-3: Existing Noise Contours for Large-Caliber Weapons and Military Explosives**

### **Large-Caliber Weapons and Military Explosives**

The existing large-caliber weapons CDNL contours are shown in Figure 3.4-3. Large-caliber weapons use ammunition 20 mm and greater. The large-caliber noise zones are predominately contained within the Installation. Large-caliber noise Zone II extends beyond the eastern boundary approximately 1.4 miles, over areas with multiple residences. Noise Zone III extends approximately 0.8 mile beyond the eastern boundary, affecting a few residential properties (Fort Benning, 2019c). Intense large-caliber training activities occasionally lead to complaints, particularly when artillery firing takes place at night.

In addition to large-caliber weapons and explosives used during live-fire training, the Army also uses pyrotechnics and blanks to simulate noise generated by artillery, ground burst, grenades, and improvised explosive devices when live-fire training is not required to achieve training requirements. Any noise currently generated by these simulators is limited to Fort Benning and no off-Post receptors are exposed (see Appendix D).

### **Noise Management**

In accordance with AR 200-1, Fort Benning has implemented a Noise Management Program that outlines policies and procedures for managing noise impacts to the surrounding communities, based on the ICUZ study introduced above (Fort Benning, 2019c). The Program designates the Fort Benning PAO as the primary noise complaint point of contact. The PAO investigates all noise complaints for validity before pursuing appropriate mitigation measures, wherever feasible, and with the minimum amount of mission interruption. The overall goal of the program is to prevent the degradation of the mission due to controversy over noise impacts, while at the same time protecting the health and safety of the local community, on and off the Installation (Fort Benning, 2019c).

The Noise Management Program also establishes a noise complaint procedure that focuses on reducing the potential for noise complaints by keeping the public informed about ongoing and upcoming activities at the Installation. The Fort Benning PAO and Range Control Office maintain the “Smoke and Sound” website that provides additional information to the public about training activities that could impact the surrounding area. For example, there is a Community Notice Board that notifies nearby communities of planned training schedules and munitions to be used, and an

interactive noise map that provides the user with the types of equipment used, where it is used, and a description of the noise (i.e., volume) generated by the equipment (Fort Benning, 2018a).

The Fort Benning Joint Land Use Study (JLUS) identifies several additional noise management practices that the Army implements when feasible and appropriate (The Valley Partnership, 2008).

The practices most relevant to noise management include the following:

- **Army Compatible Use Buffer:** The Army coordinates with The Nature Conservancy (TNC) to assist in acquiring land or the development rights thereof near Fort Benning when the acquisition can protect both the environment and the military mission.
- **Land Use Guidelines:** The Army advocates that private entities (e.g., industry, retail, recreation, agriculture) seeking to develop land near the Fort Benning boundary ensure continued compatibility with Fort Benning operations. For example, the planned development areas should have a lower sensitivity to noise, smoke, and other potential operational impacts, and avoid concentrating people.
- **Revised Building Codes:** The Army coordinates with local governments to recommend revised building codes for noise-affected areas. The new codes require new residential or other noise-sensitive construction to incorporate design features to lower the amount of noise and vibration that penetrates windows, doors, and walls of new buildings.
- **Noise Easements:** The Army acquires noise easements from land owners near Fort Benning that grant the military the right to cause noise and vibrations in these areas, and protect against encroachment from new development.

### **No Action Alternative (ongoing use of the GHMTA)**

The noise environment within the GHMTA is described in the ETEA (Fort Benning, 2015b).

### **Alternative 1**

Alternative 1 is primarily forested; the ROI includes Lee Field (i.e., an anti-armor tracking range and parachute drop zone), Advanced Situational Awareness Training Range, Geronimo MOUT Range, Terry Demolitions Range, Carmouche Automated Multipurpose Training Range, land used for the 19K/D courses, and TTB Falcon (see Section 2.4.2).

As shown in Figure 3.4-2, Figure 3.4-3, and Table 3.4-4, Alternative 1 currently experiences noise generated by small arms, large-caliber weapons, and military explosives. For small arms, the eastern portion of Alternative 1 currently experiences Zone II noise levels, while the northeast corner has Zone III levels. For large-caliber weapons and military explosives, all of Alternative 1 experiences LUPZ noise levels, the eastern two-thirds has Zone II, and the northeastern corner has Zone III levels.

Alternative 1 also has noise consistent with the operation of ground-based vehicles and aircraft. Noise generated by ground-based military vehicles (see Table 3.4-3) ranges from 80 dBA to 90 dBA at a distance of 100 feet (NGB, 2001). Additionally, the Brown flight route passes east-west over Alternative 1 along Buena Vista Road, and is flown by UH-60 helicopters approximately 1,200 feet above ground level. This activity produces noise levels less than 71 dBA, although the noise attenuates to less than 65 dBA within approximately 0.25 mile of the flight path (USAPHC, 2019). Helicopters also use Lee Field as a parachute drop zone. Establishment of noise zones is not warranted for Fort Benning flight routes due to the limited frequency of overflights (see Appendix D).

There are no residences or other noise-sensitive receptors, such as schools, hospitals, churches, or day care facilities, within the ROI for Alternative 1 (see Figure 3.4-1 through Figure 3.4-3).

### **Alternative 2**

Alternative 2 is located south of the SMTA near Fort Benning's southern boundary. This area does not contain any existing ranges, but is used as the primary land navigation test course at Fort Benning (see Section 2.4.3).

As shown in Figure 3.4-2, Figure 3.4-3, and Table 3.4-4, the Alternative 2 ROI does not experience noise from aircraft, small arms fire, large-caliber weapons, or military explosives. Similar to Alternative 1, this area does experience noise from operation of ground-based military vehicles. Portions of northwestern Chattahoochee County within 1,400 feet of the Alternative 2 footprint also experience noise from ground-based military vehicles; however, there are no sensitive receptors within the ROI for Alternative 2 (see Figure 3.4-1 through Figure 3.4-3).

**Table 3.4-4: Summary of Existing Noise Characteristics, by Alternative**

<b>Resource Characteristic</b>	<b>Alternative 1 Location</b>	<b>Alternative 2 Location</b>	<b>Alternative 3 Location</b>
<b>Sensitive Receptors in ROI</b>	None	None	11 residences and 1 church
<b>Military Noise Zone – Small Arms</b>	Eastern portion experiences Zone II noise; the northeast corner experiences Zone III noise	None	Northern portion experiences Zone II noise Sensitive receptors within the ROI are south of the Zone II noise levels that extend off-Post
<b>Military Noise Zone - Large-Caliber and Military Explosives</b>	Entire footprint experiences LUPZ; eastern two-thirds experiences Zone II noise; northeastern portion experiences Zone III noise	None	Northern portion experiences LUPZ noise; a small portion of the northern boundary experiences Zone II noise Sensitive receptors within the ROI are south of the LUPZ noise levels that extend off-Post
<b>Military Ground-based Vehicle Operation</b>	80 dBA to 90 dBA at a distance of 100 feet	Same as Alternative 1	Same as Alternative 1
<b>Aircraft</b>	UH-60s create infrequent disturbance through the center of the Alternative (i.e., along Buena Vista Road)	None	UH-60s create infrequent disturbance along the southern and eastern boundaries, which may affect sensitive receptors within 0.25 mile

**Alternative 3**

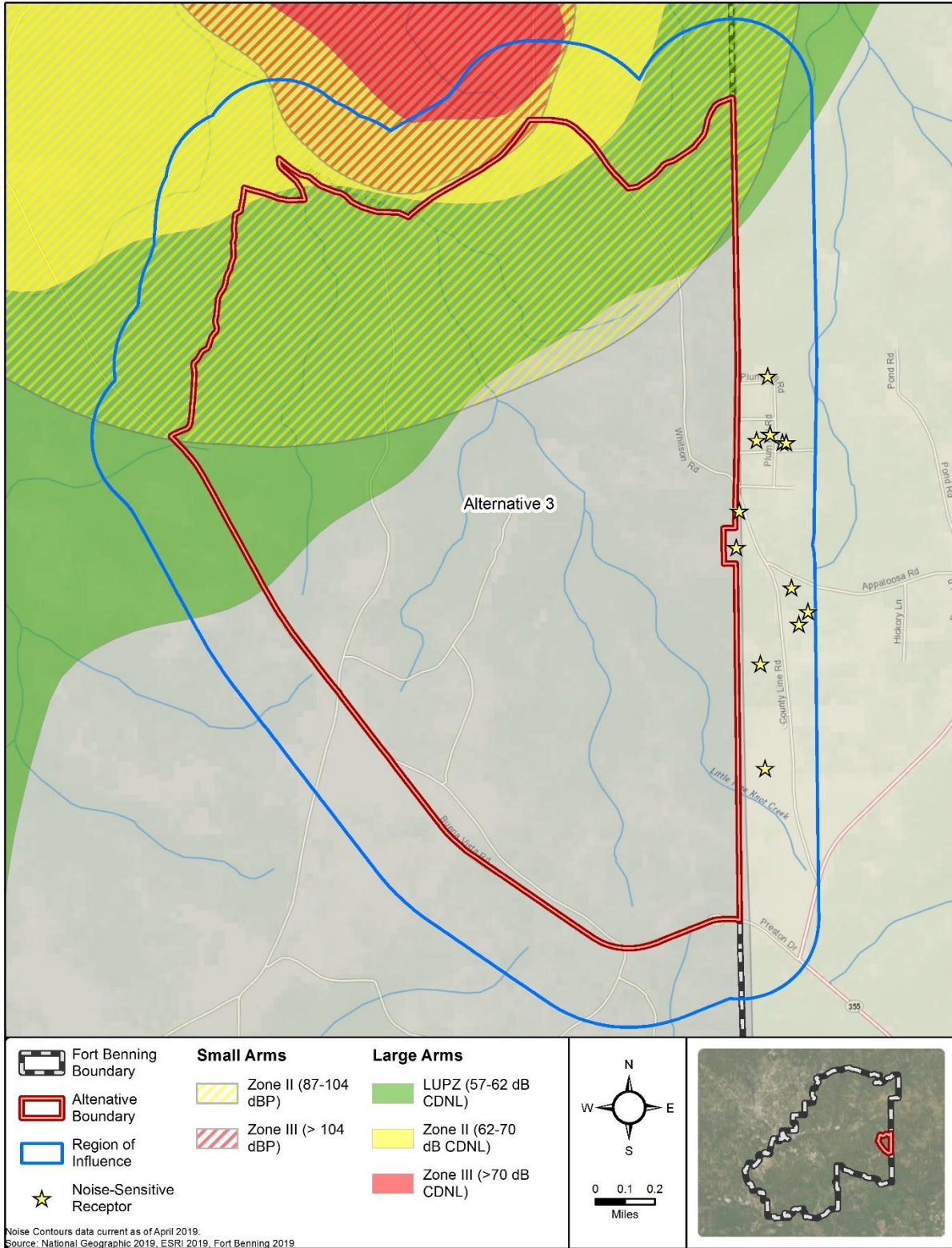
Alternative 3 is located between the northern duded impact area and the Installation’s eastern boundary. This area does not contain any ranges and is currently used for various training activities (see Section 2.4.4).

As shown in Figure 3.4-2, Figure 3.4-3, and Table 3.4-4, Alternative 3 currently experiences noise from small arms fire, large-caliber weapons, and military explosives. For small arms, the northern portion of Alternative 3 currently experiences Zone II noise levels. For large-caliber weapons and military explosives, the northern portion of Alternative 3 experiences Zone II levels and a small portion of the northern boundary has Zone III levels.



Alternative 3 also experiences noise from operation of ground-based military vehicles and aircraft. The Brown and Orange flight routes pass over Alternative 3. The Brown route, as described under Alternative 1, is oriented east-west over Buena Vista Road, which bounds Alternative 3 to the south. The Orange flight route passes over the Fort Benning boundary, which bounds Alternative 3 to the east. Both the Brown and Orange flight routes are flown by UH-60 helicopters approximately 1,200 feet above ground level, which produce noise levels less than 71 dBA, although the noise attenuates to less than 65 dBA within approximately 0.25 mile of the flight paths.

Twelve noise-sensitive receptors (i.e., 11 residences and a church; see Figure 3.4-4) are located within the ROI for Alternative 3, including four (i.e., the church and three residences) located within approximately 400 feet of the Installation boundary. These sensitive receptors are located south of the existing Zone II noise levels from small arms fire and south of the LUPZ, Zone II, and Zone III noise levels from large-caliber weapons and military explosives that extend beyond the Installation boundary. These receptors may also be subject to noise from the operation of ground-based military vehicles during current training events.



**Figure 3.4-4: Sensitive Receptors Located in Alternative 3 ROI**

### 3.4.2 Environmental Effects

This section discusses the potential short- and long-term, direct and indirect noise impacts that would occur under each Action Alternative and the No Action Alternative. A significant impact would occur if Proposed Action activities would cause a substantial increase in noise that may be very intrusive/annoying to identified sensitive receptors.

#### 3.4.2.1 Approach to the Analysis

In order to determine the potential noise impacts under each Alternative, the Army assumed that short-term impacts would occur during construction and long-term impacts would occur during operation and maintenance activities; maintenance activities would generate similar noise as construction of the Proposed Action, but would occur routinely over the life of the proposed HOMMTA.

The Army used impact threshold definitions presented in Table 3.4-5 to evaluate the intensity of the potential adverse impacts under each Alternative. This impact analysis was supported by a project-specific study conducted by the USAPHC, the Army's foremost authority on military training noise and associated impacts. The project-specific USAPHC study is presented in Appendix D.

**Table 3.4-5: Significant Adverse Impact Thresholds for Noise**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Large increase in noise that may be very intrusive/annoying in areas with sensitive receptors.
	Indirect Impacts	Large increase in noise outside the ROI of a specific Alternative that may be very intrusive/annoying in areas with sensitive receptors.

#### 3.4.2.2 No Action Alternative

Under the No Action Alternative, the Army would not construct or operate a new HOMMTA at Fort Benning, and would continue to operate under current conditions. The MCoE and Fort Benning tenant units would continue to conduct required heavy maneuver training at the GHMTA as analyzed in the ETEA (Fort Benning, 2015b), including use of military vehicles, blanks, simulators, and pyrotechnics. These activities would continue to have **minor to moderate, long-term, adverse impacts** on areas within 1,400 feet of the GHMTA, including on several sensitive

receptors (i.e., residences) near the Installation boundary in this vicinity. Operation of the GHMTA has not produced any noise complaints from these receptors or any other off-Post residents (Snook, 2019).

Noise conditions in the ROIs for the Action Alternatives would not change from the existing conditions, and no new sensitive receptors or off-Post areas would be exposed to changes in noise conditions. Therefore, activities in these areas would continue to have **negligible to minor, long-term adverse impacts** on the local noise environment. Fort Benning would continue to follow the applicable noise guidance discussed in Section 3.4.1.4 and implement the Noise Management Program (see Section 3.4.1.5).

### 3.4.2.3 Alternative 1

Overall, Alternative 1, due to its central location on Fort Benning, would result in **negligible adverse impacts** to the noise environment and would reduce existing minor to moderate adverse impacts to sensitive receptors near the GHMTA from heavy maneuver training to **minor levels**. Noise impacts under Alternative 1 would be *similar* to Alternative 2 and *less* than Alternative 3.

#### **Direct Impacts**

##### *Construction*

Short-term increases in noise would result from the temporary use of heavy equipment during construction activities. Noise during this period would primarily be caused by the use of cranes, concrete trucks, diesel generators, and heavy construction vehicles traveling to and from the site. Individual construction activities typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (see Table 3.4-6). With multiple items of equipment operating concurrently, noise levels can be relatively high at locations within several hundred feet of active construction. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from major equipment operations. Locations more than 800 feet from construction sites seldom experience appreciable levels of construction noise (USEPA, 1974).

**Table 3.4-6: Noise Levels Associated with Heavy Equipment**

Equipment	dBA L <sub>eq</sub> <sup>1</sup> at 50 feet from Source
Bulldozer	93-101
Grader	87-94
Truck	90
Roller	91-104
Backhoe	64-93
Jackhammer	102-111
Concrete mixer	74-88
Welding generator	101
Paver	86-88

Source: (USEPA, 1971) (ELCOSH, 2019) (CHC, 2019)

1. L<sub>eq</sub> = Equivalent Continuous Level

Construction noise would dominate the soundscape for all onsite personnel. These activities would be expected to generate the highest noise levels from the use of multiple trucks, jackhammers, backhoes, and other equipment. Noise levels expected from construction equipment in certain locations within Alternative 1 could exceed the thresholds for “very annoying” (i.e., potential hearing damage threshold for noises listed in Table 3.4-1). As such, contractors would implement EPMs and RCMs, including wearing appropriate protective gear during loud activities, to prevent hearing damage or other adverse impacts due to noise in accordance with OSHA and Army safety requirements (see Section 2.1.1).

During a normal daytime construction shift, the estimated maximum sound level at the Alternative 1 boundary would be well below the standard daytime maximum noise level limit of 60 dBA for industrial sources. Noise generated by vehicles traveling to and from the site would be consistent with other traffic in the area. Overall, due to the close proximity to other training areas and the distance to the nearest sensitive receptor, which is approximately 3.5 miles from the boundary of Alternative 1 (see Appendix D), the noise generated during construction activities would be consistent with, and generally masked by, current noise levels at the site (see Section 3.4.1.5). No sensitive receptors or off-Post areas would be affected by construction activities. As such, potential impacts would be **negligible, short-term, and adverse**.

### *Operation*

Heavy maneuver would occur along roads and off-road areas within Alternative 1. Military vehicles would produce noise levels at 100 feet comparable to construction equipment at 50 feet (see Table 3.4-3). The Army estimates that noise from military vehicle operation would attenuate to 70 to 78 dBA at 400 feet, 66 dBA at 800 feet, and below 60 dBA at 1,400 feet (see Appendix D).

Use of Army munition simulators, blanks, and pyrotechnics during training activities would produce intermittent loud bursts of noise; however, these bursts would be consistent with, and relatively minor compared to, existing noise sources (including live-fire activities) in the vicinity of Alternative 1 (see Section 3.4.1.5). No live-fire activities would occur as part of the Proposed Action. Therefore, potential impacts on the noise environment under Alternative 1 operations would be **negligible, long-term, and adverse**. The Army would continue to implement the noise management practices identified in Section 3.4.1.5 to further minimize any operational noise impacts.

### *Maintenance*

Vehicles used during maintenance activities would be expected to generate noise levels similar to the vehicles listed under *Construction* (see Table 3.4-6); however, vehicle use for maintenance activities would be for a shorter duration than construction activities, and would occur intermittently over the life of the project. Due to the close proximity to other training areas and the distance to the nearest offsite noise-sensitive receptors (i.e., residences approximately 3.5 miles away; see Appendix D), the noise generated during maintenance activities would be consistent with, and may be masked by, current noise levels at the site (see Section 3.4.1.5). No sensitive receptors or off-Post areas would be affected by these activities. Therefore, potential impacts on the noise environment from maintenance activities under Alternative 1 would be **negligible, long-term, and adverse**.

## **Indirect Impacts**

### *Construction*

Construction of Alternative 1 would be expected to have no indirect impacts.

### *Operation*

Under Alternative 1, some heavy maneuver training activities would be relocated from the GHMTA to the proposed HOMMTA. This would result in reduced adverse noise impacts within, and in the vicinity of, the GHMTA. As described under the No Action Alternative, heavy maneuver training in the GHMTA currently results in minor to moderate, long-term adverse impacts, including on sensitive receptors off-Post near the Installation boundary. Relocating some of these training activities to Alternative 1, which is not located near the Installation boundary or any sensitive receptor, would **reduce to minor levels** the adverse impacts associated with heavy maneuver training at the GHMTA on areas within 1,400 feet of the GHMTA.

### *Maintenance*

Maintenance of Alternative 1 would be expected to have no indirect impacts.

#### **3.4.2.4 Alternative 2**

Overall, Alternative 2, despite its location near Fort Benning's southern boundary, would result in potential **negligible adverse impacts** to the noise environment, as there are no proximate sensitive receptors in the vicinity and the area currently experiences higher level noises associated with other existing sources. Noise impacts under Alternative 2 would be *similar* to Alternative 1 and *less* than Alternative 3. Further, similar to Alternative 1, Alternative 2 would reduce existing minor to moderate adverse impacts to sensitive receptors near the GHMTA from heavy maneuver training to **minor levels**.

### **Direct Impacts**

#### *Construction*

Similar to Alternative 1, short-term increases in noise would result from the temporary use of heavy equipment during construction activities (see Table 3.4-6). Although the Alternative 2 footprint is near Fort Benning's southern boundary, there are no noise-sensitive receptors within 1,400 feet that would be impacted by construction vehicle noise. In addition, some of the areas inside the Fort Benning boundary that would be impacted currently have LUPZ or Zone II noise levels from large-caliber weapons and military explosives. While construction activities would generate additional noise, the noise levels would be consistent with current conditions and, therefore, the potential **short-term adverse impacts** would be **negligible**. No sensitive receptors

would be affected by construction activities; onsite contractors would implement the same EPMS and RCMs discussed under Alternative 1.

### *Operation*

Potential long-term, adverse noise impacts would result from heavy maneuver that would occur along roads and off-road areas within Alternative 2; there would be no live-fire activities. The noise levels generated by military vehicles would be the same as those shown in Table 3.4-3, and noise levels from the use of munition simulators, blanks, and pyrotechnics during training exercises would be the same as those discussed under Alternative 1. Some areas in Alternative 2's ROI currently have LUPZ or Zone II noise levels from large-caliber weapons and military explosives generated by nearby training areas (see Section 3.4.1.5). While heavy maneuver training exercises would generate additional noise, this noise would be consistent with current noise levels; as such, Alternative 2 would have potential **negligible, long-term adverse impacts** to the noise environment. Similar to Alternative 1, offsite noise-sensitive receptors would not be impacted because none are located within 1,400 feet of the Alternative 2 boundary (see Appendix D). The Army would continue to implement the noise management practices identified in Section 3.4.1.5 to further minimize any operational noise impacts.

### *Maintenance*

Like under Alternative 1, any vehicles used during maintenance activities would be expected to generate noise levels similar to the vehicles used for construction (see Table 3.4-6); however, vehicle use for maintenance activities would be for a shorter duration than construction activities and would occur intermittently over the life of the project. Due to the close proximity to other training areas and the distance to the nearest offsite noise-sensitive receptor (i.e., residences more than 1,400 feet away; see Appendix D), the noise generated during maintenance activities would be consistent with, and may be masked by, current noise levels at the site. No sensitive receptors or off-Post areas would be affected by these activities. Therefore, potential impacts on the noise environment from maintenance activities under Alternative 2 would be **negligible, long-term, and adverse**.



## **Indirect Impacts**

### *Construction*

Construction of Alternative 2 would be expected to have no indirect impacts.

### *Operation*

Alternative 2 would result in the same operational indirect impacts as Alternative 1, as the same amount of heavy maneuver training would be moved from the GHMTA to the proposed HOMMTA. Therefore, Alternative 2 would also **reduce to minor levels** the existing minor to moderate, adverse impacts associated with this training on areas within 1,400 feet of the GHMTA.

### *Maintenance*

Maintenance of Alternative 2 would be expected to have no indirect impacts.

## **3.4.2.5 Alternative 3**

Overall, Alternative 3, located on Fort Benning's eastern boundary near 12 off-Post sensitive receptors, would result in **moderate adverse impacts** to the noise environment. As described in Section 3.9, these receptors are also part of an EJ community. Noise impacts under Alternative 3 would be *greater* than Alternatives 1 or 2.

## **Direct Impacts**

### *Construction*

Similar to Alternatives 1 and 2, short-term increases in noise would result from the temporary use of heavy equipment during construction (see Table 3.4-6). Due to the location of Alternative 3, noise-sensitive receptors (i.e., 11 residences and a church) could be impacted by construction vehicle noise that occurs in the eastern portion of Alternative 3. While nearby residences would be able to hear these activities, construction near the Alternative 3 boundary would represent only a small amount of the overall construction activities that would occur under Alternative 3. Therefore, potential impacts would be **minor, short-term, and adverse**. Onsite contractors would implement the same EPMs and RCMs discussed under Alternative 1.

### *Operation*

Long-term, adverse noise impacts would result from heavy maneuver and the use of munition simulators, blanks, and pyrotechnics that would occur along roads and off-road areas within Alternative 3; there would be no live-fire activities. Because noise-sensitive receptors (i.e., 11

residences and a church) are located within 1,400 feet of the Alternative 3 boundary, they could be impacted by noise generated during these activities. The military vehicle noise generated within Alternative 3 would attenuate to 70-78 dBA at 400 feet, 66 dBA at 800 feet, and below 60 dBA at 1,400 feet, and the simulator/blank/pyrotechnics noise would attenuate to 115 dBP at approximately 1,640 feet (see Appendix D).

The noise generated during training exercises would be noticeable to the 11 off-Post residences and 1 church (especially at night), resulting in potential **minor to moderate, long-term (albeit intermittent) adverse impacts** due to proposed military training, although the elevated levels would be limited to when activities occur near the Installation boundary.

While these new noise levels could generate off-Post noise complaints, they would not be expected to reach the threshold of significance as identified in Table 3.4-5, as they would not represent a large increase in noise that “may be very intrusive/annoying” in areas with sensitive receptors. The Army would continue to implement the noise management practices identified in Section 3.4.1.5 to further minimize any operational noise impacts.

#### *Maintenance*

Similar to Alternatives 1 and 2, any vehicles used during maintenance activities would be expected to generate noise levels similar to the vehicles used for construction (see Table 3.4-6); however, vehicle use for maintenance activities would be for a shorter duration than construction activities and would occur intermittently over the life of the project. Due to the proximity to the nearest offsite noise-sensitive receptors (i.e., 11 residences and a church within approximately 1,400 feet; see Appendix D), the noise generated during maintenance activities would be noticeable, but generally only when conducted in close proximity to the Installation boundary. Therefore, potential impacts on the noise environment from maintenance activities under Alternative 3 would be **minor, long-term, and adverse**.

### **Indirect Impacts**

#### *Construction*

Construction of Alternative 3 would be expected to have no indirect impacts.

### *Operation*

Alternative 3 would result in the same operational indirect impacts as Alternatives 1 and 2, as the same amount of heavy maneuver training would be moved from the GHMTA to the proposed HOMMTA. Therefore, Alternative 3 would also **reduce to minor levels** the existing minor to moderate, adverse impacts associated with this training in the GHMTA on areas within 1,400 feet of the GHMTA; however, different sensitive receptors near Alternative 3 could be impacted.

### *Maintenance*

Maintenance of Alternative 3 would be expected to have no indirect impacts.

### **3.4.3 Mitigation**

Adverse impacts associated with Alternatives 1 and 2 would not extend off-Post; as such, no mitigation measures are identified for Alternatives 1 or 2.

The Army would consider mitigation measures for Alternative 3 to reduce potential minor to moderate adverse noise impacts on off-Post sensitive receptors during Proposed Action activities:

- Maintain a vegetated buffer along the eastern boundary of Alternative 3 such that there is a distance of at least 800 feet between the noise-sensitive receptors and the nearest likely construction, operation, and maintenance activities associated with the Proposed Action.

While this mitigation measure would be considered in order to reduce potential noise impacts, it could have adverse impacts on the quality of the Army's training by further limiting available off-road maneuver space.

- Through the JLUS or ACUB programs, reduce further incompatible development within approximately 1,400 feet of the eastern Fort Benning boundary within the noise ROI.

### **3.5 Soils and Topography**

This section addresses the existing conditions of, and potential impacts to, soils associated with the three Action Alternatives and the No Action Alternative within the Proposed Action's ROI. Soils refer to unconsolidated materials overlying bedrock or other parent material, while topography is the change in elevation over the surface of a land area.

No activities that would significantly alter topography, such as deep cuts and fills or activities that would result in slumping, are proposed. Topography is briefly described in this section as existing topography (i.e., slopes greater than 20 percent) limits mounted maneuver.

### **3.5.1 Affected Environment**

The following sections discuss Major Land Resource Areas (MLRAs), topography, and soils, with a focus on erodible soils, within the ROI.

#### **3.5.1.1 Region of Influence**

The ROI for soils and topography includes the land within the boundaries of the three Action Alternatives and the GHMTA. All land-disturbing activities that could affect soils and topography during construction, operation, and maintenance of the Proposed Action would occur within these areas; potential impacts from soil erosion and consequent sedimentation and water quality effects offsite are discussed in Section 3.6. Soils and topography would not be adversely affected in areas outside of the Action Alternative boundaries.

#### **3.5.1.2 Applicable Guidance and Management Practices**

##### **Soil Erosion Control Requirements**

To prevent soil erosion and consequent damage to habitats and water quality (see Section 3.6), the Army implements NPDES construction BMPs, as defined by the GADNR, Georgia Soil & Water Conservation Commission, Alabama Department of Environmental Management, or Alabama Soil & Water Conservation Committee, for construction projects at Fort Benning. As the Action Alternatives are all located within Georgia, the Alabama requirements do not apply to the Proposed Action.

In Georgia, construction projects that disturb 1 acre of land or greater require a State-approved ESPCP, fee submittal for disturbed acreage, and an NOI to meet the requirements of the Federal NPDES construction permit program and Georgia Erosion and Sedimentation Control Act. The ESPCP prescribes activities to limit erosion and sedimentation from the site during construction (including construction during maintenance activities). The ESPCP includes a site description, list of NPDES BMPs to be used, BMP inspection procedures to be performed by qualified personnel, procedures for timely BMP maintenance, requirements for sampling of discharges or receiving

streams for turbidity, and reporting requirements to the GADNR. Routine maintenance activities that revert an area to its as-built condition, and that do not include non-routine maintenance such as replacements or large repairs, do not require an ESPCP (GADNR, 2011); due to the narrow nature of this category, the Army may consult with the GADNR to ensure compliance during maintenance activities. Upon conclusion of activities covered under an ESPCP, a Notice of Termination must be submitted to terminate the NPDES permit.

### **Fort Benning-specific Soil Erosion Control Plans and Measures**

Fort Benning maintains an Installation-wide ESPCP to prevent environmental deterioration due to on-Post activities that could adversely affect stormwater, including through soil erosion, and to maintain compliance with State and CWA requirements.

The Installation's ITAM program establishes a training land management program, elements of which include inventorying and monitoring land condition to minimize soil erosion, as well as implementing rehabilitation and maintenance projects to restore soils and reduce erosion. Fort Benning's ITAM program goals include optimal sustained use of training lands (including soil resources) for the execution of realistic training; the use of Range and Training Land Assessment plots under the ITAM program allows ongoing adaptive management monitoring to help Fort Benning monitor the effects of training on soil resources and erosion. Areas experiencing non-sustainable use are evaluated and prescriptions are applied for sustainable soil uses.

The Installation's Integrated Natural Resources Management Plan (INRMP) (Fort Benning, 2016) specifies the components of the Installation's Soil Conservation Program (SCP). The overall objective of the SCP is to reduce and mitigate erosion and sedimentation on the Installation. The SCP has influenced hundreds of soil erosion projects over thousands of acres within Fort Benning, with a goal of preventing, controlling, and rehabilitating eroded areas. Fort Benning's highly erodible soils are prone to gully and ravine formation, some approaching up to 40 feet in depth. Severe erosion can not only prevent or impede vehicles maneuvering across the Installation, but it can present a safety hazard to personnel if left unchecked. The Army also conducts emergency soil erosion repairs or stabilization as required.

Fort Benning implements EPMs through the ITAM program and the INRMP to address impacts to erodible soils as funding is available (see Section 2.1.4). Soil erosion associated with

unimproved roads is managed through regrading, contouring, and vegetation management. Erosion associated with improved roads (i.e., in areas adjacent to, but influenced by, improved roads) is reduced through the establishment of proper erosion control structures and direct seeding of exposed soil along road cuts and drainage ditches. Heavily disturbed areas are periodically seeded to maintain vegetation cover. Where possible, a native species mix is used with the goal of establishing a complex root profile to increase resistance to soil movement (Fort Benning, 2016).

Erosion control has also been identified as a part of the RCW Endangered Species Management Component (ESMC) as set forth in Appendix E1 of the INRMP. The 2007 Army Guidelines (US Army, 2007) describe erosion control requirements specifically related to RCW management, including rapid response (within three days) to repair soil erosion damage in RCW clusters. Active and recruitment RCW clusters are given first priority when addressing soil erosion issues (Fort Benning, 2016). For more information regarding RCWs, refer to Section 3.7.

### **3.5.1.3 Existing Conditions**

#### **MLRAs**

MLRAs are geographically associated land resource units created by the US Department of Agriculture (USDA) NRCS. The dominant physical characteristics of the MLRAs include physiography, geology, climate, water, soils, biological resources, and land use (NRCS, 2006).

The Action Alternatives are located entirely within the “South Atlantic and Gulf Slope Cash Crop, Forest, and Livestock” Land Resource Region (LRR). This region extends from northern Virginia to Texas, and consists of generally flat Atlantic and Gulf Coast marine terraces and the hilly piedmont area. Elevation generally ranges from 80 to 655 feet above mean sea level (AMSL) on the coastal plain and from 330 to 1,310 feet AMSL in the piedmont. The coastal plain is generally flatter than the piedmont; hills in the coastal plain may rise up to 100 feet in elevation relative to surrounding topography (i.e., local relief), while hills in the piedmont may rise up to 200 feet relative to surrounding topography. Very thick deposits of sandy to clayey marine sediments are on the coastal plain and Precambrian and Paleozoic metamorphic and igneous rocks are in the piedmont.

The LRR is divided into a number of MLRAs. Fort Benning falls within three of these: the Carolina and Georgia Sand Hills, the Southern Coastal Plain, and, to a limited extent, the Southern Piedmont

(NRCS, 2006); the Southern Piedmont does not extend to the Action Alternatives. Figure 3.5-1 shows the distribution of these MLRAs within Fort Benning and the Action Alternatives.

#### *Carolina and Georgia Sand Hills*

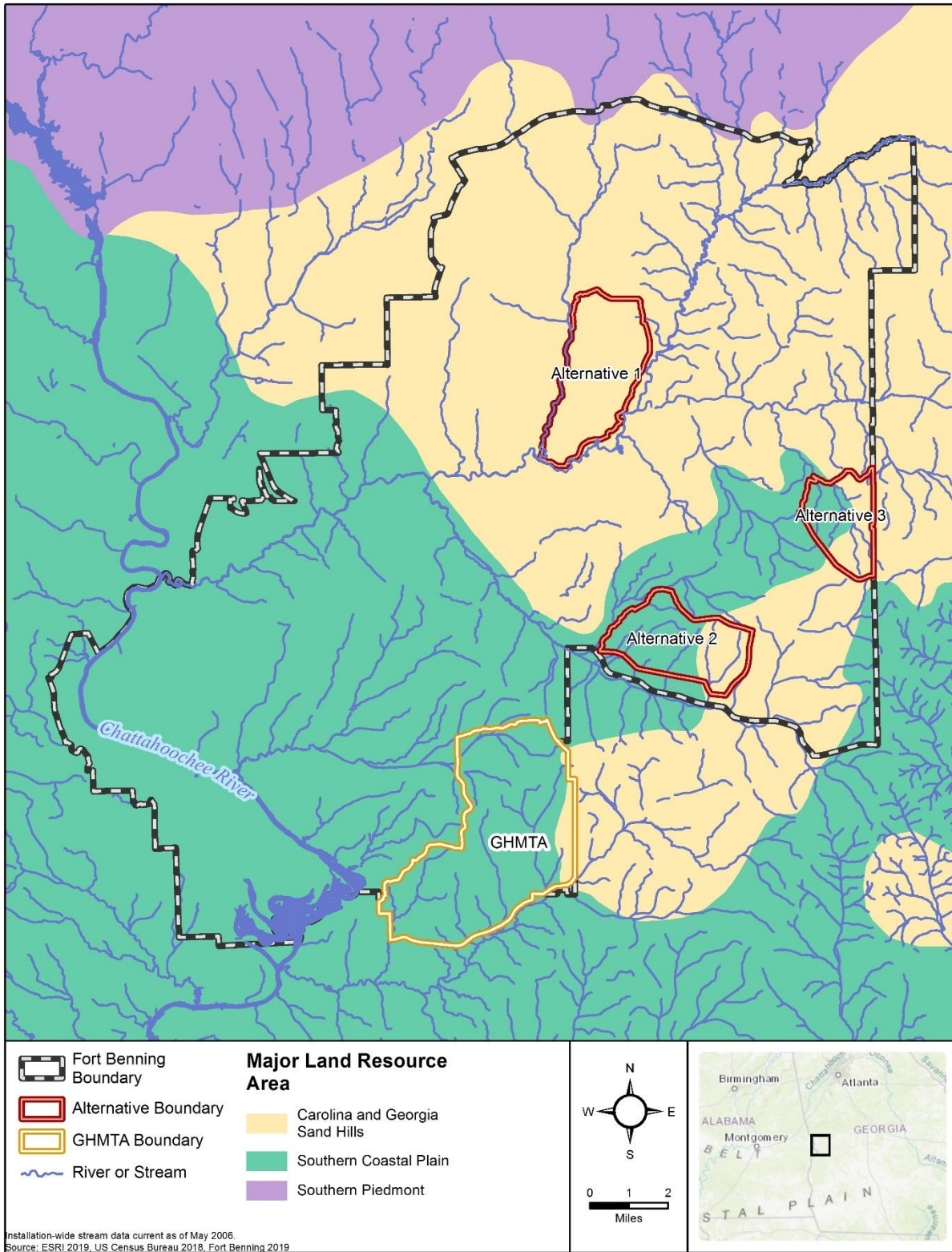
The Carolina and Georgia Sand Hills MLRA (i.e., MLRA 137) is in a transitional zone between the Southern Piedmont and the Southern Coastal Plain. This area is a dissected, rolling to hilly upland. Many of the more dissected areas have stabilized dunes, resulting in very irregular slopes. Elevation ranges from 165 to 660 feet AMSL, increasing gradually from south to north. Local relief varies mainly by 10 to 20 feet, but a few hills are 80 to 165 feet above the adjacent areas. This MLRA encompasses all of Alternative 1, the eastern portion of Alternative 2, the eastern and southern portions of Alternative 3, and the eastern edge of the GHMTA.

#### *Southern Coastal Plain*

The Southern Coastal Plain MLRA (i.e., MLRA 133A) extends from Virginia to Louisiana and Mississippi. This area is strongly dissected into nearly level and gently undulating valleys and gently sloping to steep uplands. Stream valleys generally are narrow in their upper reaches but become broad and have widely meandering stream channels as they approach the coast. Elevation ranges from 80 to 655 feet AMSL, increasing gradually from the lower coastal plain northward. Local relief varies mainly by 10 to 20 feet, but can also vary by 80 to 165 feet in some of the more deeply dissected areas. This MLRA encompasses the western portion of Alternative 2, the northwestern portion of Alternative 3, and the majority of the GHMTA.

### **Topography**

A topographic map of the Installation is shown in Figure 3.5-2. Topography at Fort Benning is largely influenced by the Fall Line, which is where the coastal plain or sandhill strata overlap with piedmont rocks. Most of Fort Benning is located south of the Fall Line; however, there is a small area of the Piedmont Province located in the northeastern part of the Installation outside the Action Alternatives. As noted above, the Carolina and Georgia Sand Hills MLRA is located in the transition zone between the coastal plain and piedmont (see Figure 3.5-1). Along the Fall Line sandhills, crystalline rocks of the piedmont are overlain by marine or fluvial sediments; these crystalline and sedimentary deposits may be exposed in relatively close proximity. For this reason, Fort Benning has a varied topography.



**Figure 3.5-1: MLRAs within Fort Benning**



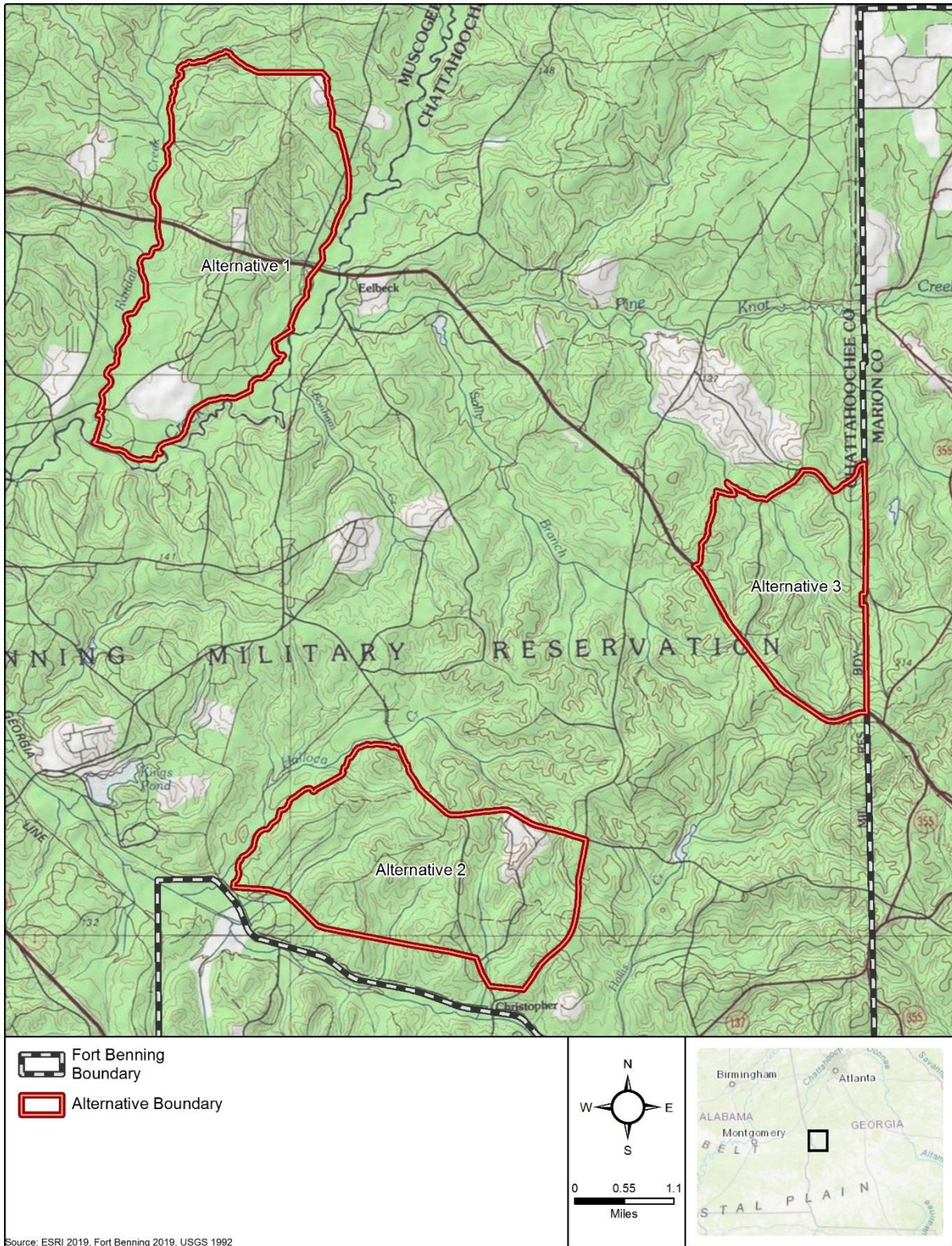


Figure 3.5-2: Topographic Map of the Action Alternatives

Upland slopes range from steep to gently sloping and are present throughout most of the land on the Installation. The remaining area consists of relatively flat uplands or terraces adjacent to or near the Chattahoochee River (Benson, 1997). The predominately rolling terrain is highest in the east, rising approximately 740 feet AMSL, and lowest in the southwest along the Chattahoochee River where it is about 190 feet AMSL (Fort Benning, 2016), representing an overall relief of approximately 550 feet across the Installation.

Of the Action Alternatives, Alternative 1 is the flattest. The southern portion of Alternative 1, where the Randall and Upatoi Creek valleys converge, has relatively gentle topographic variation and few hills, although the northern portion of Alternative 1 does contain more hills and ridges. Overall, the elevation ranges between approximately 280 and 510 feet AMSL. Alternative 2 contains hillier and higher elevation topography than Alternative 1, including four primary ridges that trend northerly/northeasterly perpendicular to the proposed maneuver avenues of approach; elevation ranges between 340 and 600 feet AMSL. Topography in Alternative 3 is intermediate between the topography of Alternatives 1 and 2, but more similar to the hillier Alternative 2. The elevation is highest along the southern boundary of Alternative 3, which is located along a ridge, and generally slopes down to the north, steeply in places, toward Little Pine Knot Creek. Overall, elevation in Alternative 3 ranges between 380 and 740 feet AMSL. Topography within the GHMTA is presented in the ETEA (Fort Benning, 2015b).

The Army carefully considered this topography in developing the Action Alternative concept designs shown in Section 2.4, as heavy mounted maneuver cannot occur on slopes greater than 20 percent. The designs recognize and incorporate steeper areas as buffer areas for avoidance by mounted maneuver. As the Proposed Action would not significantly alter topography within the Action Alternatives, this resource is not further discussed in this EIS.

### **Soils**

There are two soil provinces on Fort Benning, the Georgia Sand Hills and the Southern Coastal Plains, which correlate with the associated MLRAs described above. The Georgia Sand Hills soil province is a narrow belt of deep, sandy soils with rolling to hilly topography. These soils are primarily derived from marine sands, loams, and clays. South of the Georgia Sand Hills are the Southern Coastal Plain soils, which are divided into nearly level to rolling valleys and gently

sloping to steep uplands. Southern Coastal Plain soils in this area have a loamy or sandy surface layer and loamy or clayey subsoil (Cooperative Extension Service, 1993).

The Action Alternatives are located in areas covered by the following published soil surveys: Soil Survey of Chattahoochee and Marion Counties, Georgia (NRCS, 1997) and Soil Survey of Muscogee County (Soil Conservation Service, 1983). In the following subsections, Table 3.5-1 through Table 3.5-3 identify the soil map units that constitute each Alternative. The text also contains descriptions of hydric soils within each Action Alternative. Hydric soils are permanently or seasonally saturated by water, resulting in anaerobic conditions which require adaptation by residing plants and animals. Under saturated conditions, the rate of decay of plant matter is slowed, which results in accumulation of organic soils (i.e., peat). Hydric soils also comprise one of the three components that legally define wetlands in the US (NRCS, 2019a).

Due to the nature of the Proposed Action, erodible soils are of particular concern and are discussed separately following the general soils characterization. Prime farmland, defined by the USDA as “land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses” (NRCS, 2019b), is federally protected under the Farmland Protection Policy Act (7 USC 4201 *et seq*); however, land on Fort Benning was converted to military use prior to the enactment of this law. Fort Benning land is not available for agriculture. As such, this analysis does not include or address prime farmland.

#### *No Action Alternative (ongoing use of the GHMTA)*

Soils within the GHMTA are described in the ETEA (Fort Benning, 2015b).

#### *Alternative 1*

As shown in Table 3.5-1 and Figure 3.5-3, the most common soil in Alternative 1 is TVD, which is a loamy sand soil that comprises approximately 1,269 acres, or 27 percent, of Alternative 1. TVD is primarily associated with areas adjacent to streams and creeks. Other dominant soils, WaB (11.4 percent) and AaC (8.9 percent), are generally associated with the ridgelines and upland areas. The remainder of the area is comprised of smaller percentages (0 to 7.2 percent) of soils loamy or sandy in composition. Of the Action Alternatives, Alternative 1 contains the largest amount of hydric soils (468 acres, or 9.9 percent of the Alternative), which are concentrated along streams

and wetlands. This acreage is slightly more than double the amounts of hydric soils in Alternatives 2 and 3 (see Table 3.5-4).

**Table 3.5-1: Description of Soils within Alternative 1**

Soil Map Unit	Description	Acres	Percent of Alternative	K-Factor	Hydric
AaB	Ailey loamy coarse sand, 2 to 5 percent slopes	53.2	1.1%	0.05	No
AaC	Ailey loamy coarse sand, 5 to 8 percent slopes	421.6	8.9%	0.05	No
Bh	Bibb sandy loam	296.2	6.3%	0.20	Yes
DgA	Dogue loam, 1 to 2 percent slopes	0.5	0.0%	0.43	No
DoB	Dothan loamy sand, 2 to 5 percent slopes	65.9	1.4%	0.15	No
EtA	Eunola sandy loam, 0 to 3 percent slopes	330.0	7.0%	0.20	No
LaC	Lakeland sand, 5 to 10 percent slopes	65.8	1.4%	0.02	No
Pm	Pelham loamy sand	172.3	3.6%	0.05	Yes
SeA	Stilson loamy sand, 0 to 3 percent slopes	132.9	2.8%	0.10	No
To	Toccoa sandy loam	110.7	2.3%	0.20	No
TrB	Troup loamy fine sand, 2 to 5 percent slopes	339.3	7.2%	0.15	No
TrC	Troup loamy fine sand, 5 to 8 percent slopes	158.7	3.4%	0.15	No
TrD	Troup loamy fine sand, 8 to 12 percent slopes	120.8	2.6%	0.15	No
TVD	Troup, Vacluse, and Pelion loamy sands, 8 to 15 percent slopes	1,268.9	26.9%	0.10	No
Ua	Udorthents, loamy	129.6	2.7%	N/A	N/A
Ub	Udorthents, clayey	2.5	0.1%	N/A	N/A
VeC	Vacluse sandy loam, 5 to 8 percent slopes	245.5	5.2%	0.17	No
W	Water	24.9	0.5%	N/A	N/A
WaB	Wagram loamy sand, 2 to 5 percent slopes	540.7	11.4%	0.10	No
WaC	Wagram loamy sand, 5 to 8 percent slopes	241.8	5.1%	0.10	No
WhA	Wickham fine sandy loam, 0 to 2 percent slopes	0.5	0.0%	0.28	No
<b>Totals</b>		<b>4722.3</b>	<b>100.0%</b>		

### *Alternative 2*

As shown in Table 3.5-2 and Figure 3.5-4, the most common soil type in Alternative 2 is loamy sand soils (i.e. NkD3, TrC, and NaC); these soils comprise 18.9 percent, 16.8 percent, and 12.9 percent of Alternative 2, respectively. Other on-site soil types each comprise smaller areas but, like

the dominant soils, are also mostly characterized as loamy or sandy. There are fewer acres of hydric soils present within Alternative 2 than Alternative 1 (see Table 3.5-4). Hydric soils, found adjacent to waterbodies only on the western side of Alternative 2, comprise approximately 230 acres, or 6.0 percent of the Alternative.

**Table 3.5-2: Description of Soils within Alternative 2**

Soil Map Unit	Description	Acres	Percent of Alternative	K-Factor	Hydric
AaB	Ailey loamy coarse sand, 2 to 5 percent slopes	29.1	0.8%	0.05	No
AaC	Ailey loamy coarse sand, 5 to 8 percent slopes	61.9	1.7%	0.05	No
Bh	Bibb sandy loam, frequently flooded	87.5	2.3%	0.2	Yes
Ch	Chastain loam, frequently flooded	30.8	0.8%	0.24	Yes
COC	Cowarts and Ailey soils, 5 to 12 percent slopes	71.2	1.9%	0.15	No
COD	Cowarts and Ailey soils, 12 to 18 percent slopes	204.2	5.5%	0.05	No
CWE	Cowarts and Ailey soils, 18 to 25 percent slopes	274.9	7.3%	0.05	No
EmB	Esto sandy loam, 2 to 5 percent slopes	25.4	0.7%	0.24	No
EmC	Esto sandy loam, 5 to 8 percent slopes	29.9	0.8%	0.24	No
EtA	Eunola sandy loam, 0 to 3 percent slopes, occasionally flooded	3.3	0.1%	0.17	No
FuB	Fuquay loamy sand, 0 to 5 percent slopes	8.1	0.2%	0.10	No
FuC	Fuquay loamy sand, 5 to 8 percent slopes	18.6	0.5%	0.10	No
LaB	Lakeland sand, 0 to 5 percent slopes	6.3	0.2%	0.02	No
LaC	Lakeland sand, 5 to 12 percent slopes	1.4	0.0%	0.02	No
LuC	Lucy loamy sand, 5 to 8 percent slopes	8.7	0.2%	0.10	No
NaB	Nankin sandy loam, 2 to 5 percent slopes	50.9	1.4%	0.20	No
NaC	Nankin sandy loam, 5 to 12 percent slopes	484.3	12.9%	0.20	No
NkC3	Nankin sandy clay loam, 5 to 12 percent slopes, severely eroded	383.8	10.3%	0.17	No
NkD3	Nankin sandy clay loam, 12 to 18 percent slopes, severely eroded	706.6	18.9%	0.17	No



Soil Map Unit	Description	Acres	Percent of Alternative	K-Factor	Hydric
NnE3	Nankin sandy clay loam, 18 to 25 percent slopes, severely eroded	278.9	7.5%	0.17	No
Oc	Ochlockonee sandy loam, rarely flooded	109.0	2.9%	0.20	Yes
TrB	Troup loamy sand, 2 to 5 percent slopes	92.0	2.5%	0.10	No
TrC	Troup loamy sand, 5 to 12 percent slopes	629.9	16.8%	0.10	No
TrD	Troup loamy sand, 12 to 18 percent slopes	111.1	3.0%	0.10	No
TuE	Troup loamy sand, 18 to 25 percent slopes	32.3	0.9%	0.10	No
W	Water	2.5	0.1%	N/A	N/A
<b>Totals</b>		<b>3,742.6</b>	<b>100.0%</b>		

### Alternative 3

As shown in Table 3.5-3 and Figure 3.5-5, the most prevalent soil types within Alternative 3 are Cowarts and Ailey soils (i.e., COC, COD, COE, and CWE map units) which, among the various slope classes, comprise nearly half of Alternative 3. These soils are generally found on slopes on both sides of the stream valley. Similar to Alternatives 1 and 2, other on-site soil types each comprise smaller areas but, like the dominant soils, consist of sand, loam, or loamy sand. Alternative 3 has a similar acreage of hydric soils to Alternative 2 (i.e., approximately 240 acres), but due to the smaller size of Alternative 3, this acreage amounts to 9.8 percent of the Alternative (see Table 3.5-4). These soils are generally located along Little Pine Knot Creek and within adjacent wetlands.

**Table 3.5-3: Description of Soils within Alternative 3**

Soil Map Unit	Description	Acres	Percent of Alternative	K-Factor	Hydric
AaB	Ailey loamy coarse sand, 2 to 5 percent slopes	85.3	3.5%	0.05	No
AaC	Ailey loamy coarse sand, 5 to 8 percent slopes	162.3	6.8%	0.05	No
Bh	Bibb sandy loam, frequently flooded	227.5	9.5%	0.20	Yes
Ch	Chastain loam, frequently flooded	8.1	0.3%	0.24	Yes
COC	Cowarts and Ailey soils, 5 to 12 percent slopes	15.8	0.7%	0.15	No

Soil Map Unit	Description	Acres	Percent of Alternative	K-Factor	Hydric
COD	Cowarts and Ailey soils, 12 to 18 percent slopes	291.8	12.1%	0.15	No
COE	Cowarts and Ailey soils, 12 to 25 percent slopes	0.0	0.0%	0.05	No
CWE	Cowarts and Ailey soils, 18 to 25 percent slopes	793.1	33.0%	0.05	No
DoB	Dothan loamy sand, 2 to 5 percent slopes	4.4	0.2%	0.15	No
LaB	Lakeland sand, 0 to 5 percent slopes	15.8	0.7%	0.02	No
LaC	Lakeland sand, 5 to 12 percent slopes	18.2	0.8%	0.02	No
LaD	Lakeland sand, 12 to 18 percent slopes	3.8	0.2%	0.02	No
LuB	Lucy loamy sand, 0 to 5 percent slopes	8.8	0.4%	0.10	No
LuC	Lucy loamy sand, 5 to 8 percent slopes	12.7	0.5%	0.10	No
NaB	Nankin sandy loam, 2 to 5 percent slopes	33.7	1.4%	0.20	No
NaC	Nankin sandy loam, 5 to 12 percent slopes	90.0	3.7%	0.20	No
NkC3	Nankin sandy clay loam, 5 to 12 percent slopes, severely eroded	15.2	0.6%	0.17	No
NkD3	Nankin sandy clay loam, 12 to 18 percent slopes, severely eroded	21.6	0.9%	0.17	No
NkE3	Nankin sandy clay loam, 12 to 25 percent slopes, severely eroded	1.1	0.0%	0.17	No
NnE3	Nankin sandy clay loam, 18 to 25 percent slopes, severely eroded	42.8	1.8%	0.17	No
OrB	Orangeburg loamy sand, 2 to 5 percent slopes	21.1	0.9%	0.20	No
TrB	Troup loamy sand, 2 to 5 percent slopes	156.1	6.5%	0.10	No
TrC	Troup loamy sand, 5 to 12 percent slopes	172.1	7.2%	0.10	No
TrD	Troup loamy sand, 12 to 18 percent slopes	79.7	3.3%	0.10	No
TuE	Troup loamy sand, 18 to 25 percent slopes	123.0	5.1%	0.10	No
<b>Totals</b>		<b>2,404.1</b>	<b>100.0%</b>		



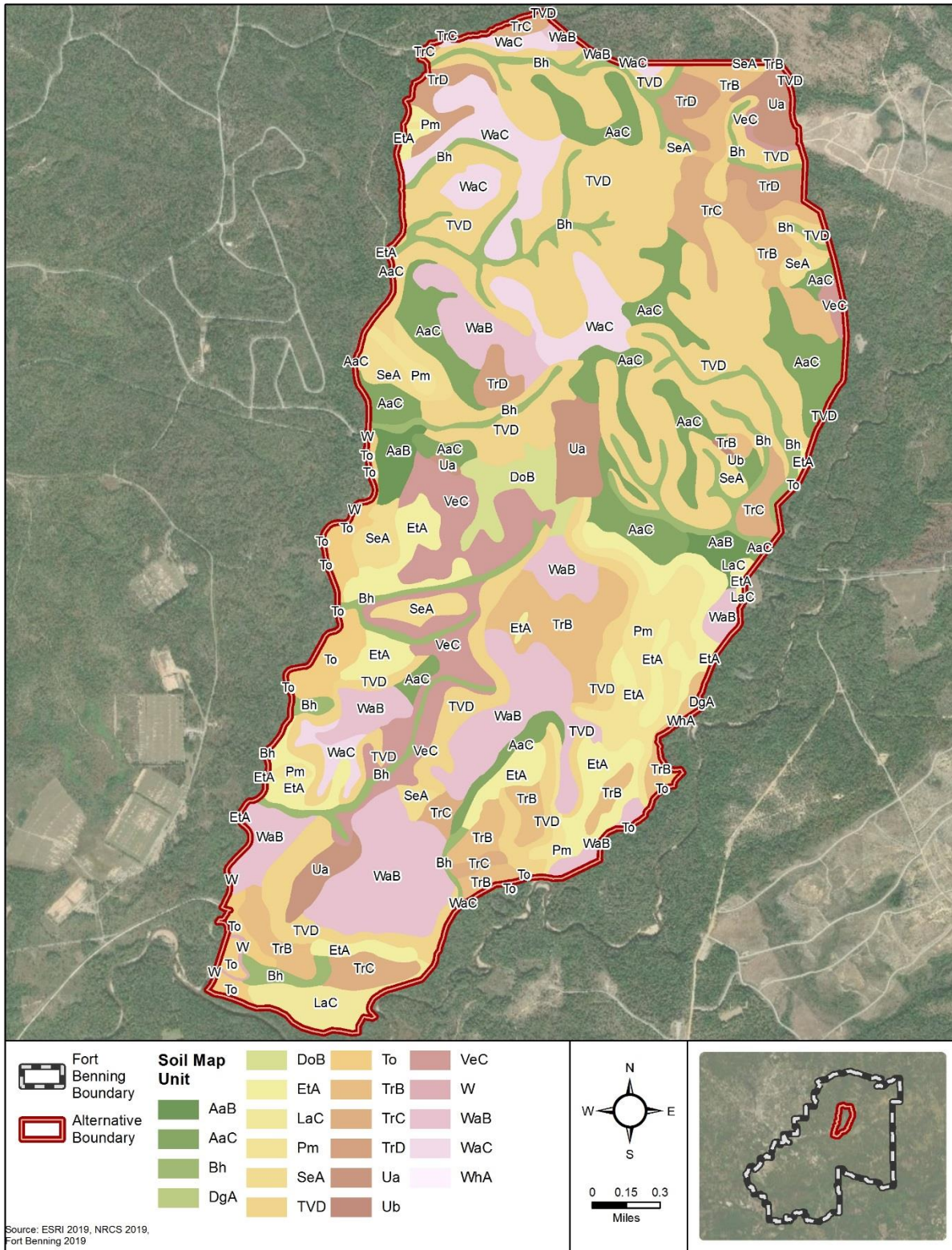


Figure 3.5-3: Soil Types within Alternative 1



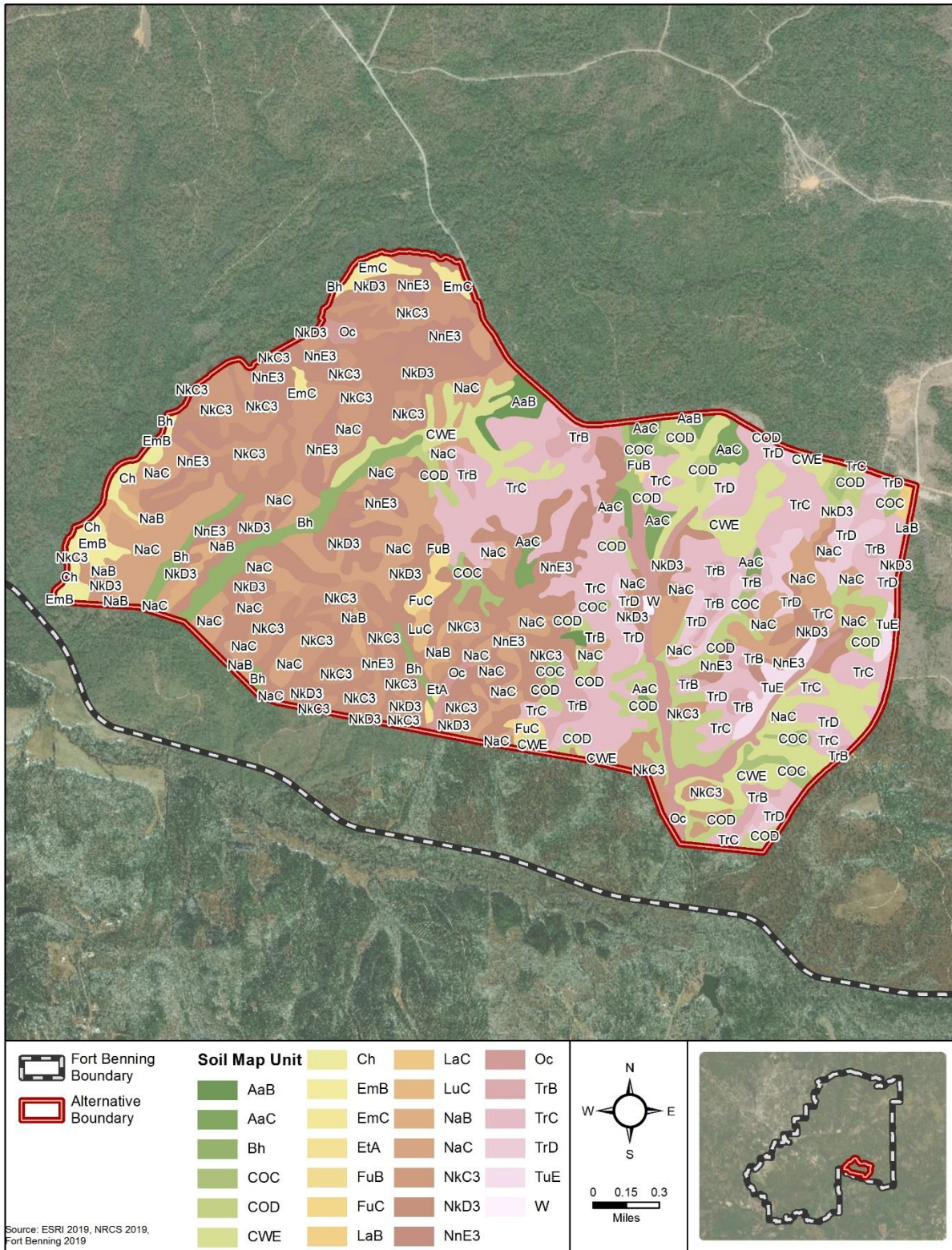


Figure 3.5-4: Soils Types within Alternative 2



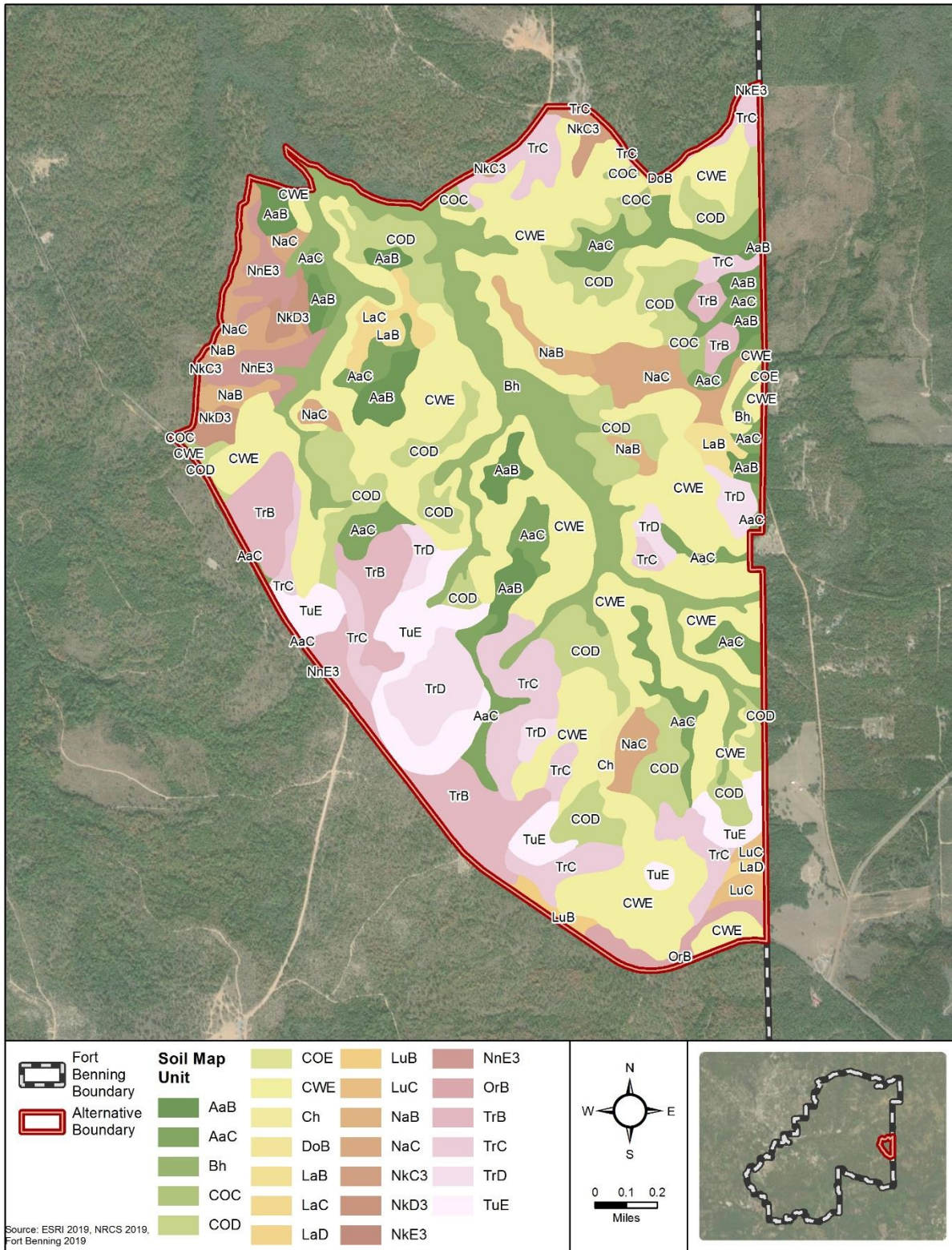


Figure 3.5-5: Soil Types Within Alternative 3

**Table 3.5-4: Comparison of Hydric Soils within the Action Alternatives**

Alternative	Hydric Soils	
	Acres	Percent of Alternative
1	468.5	9.9%
2	227.3	6.0%
3	235.6	9.8%

**Erodible Soils**

Figure 3.5-6, Figure 3.5-7, and Figure 3.5-8 display the soil erosion risk within each Action Alternative; Table 3.5-5 numerically summarizes this risk and compares the Action Alternatives.

Soil erosion risk is often characterized by the soil's K-factor. The K-factor represents inherent susceptibility to erosion (i.e., erodibility) of soils based on soil properties such as soil texture, organic matter, structure, and permeability (NRCS, 2020). K-factors range between 0.02 and 0.69, with lower values indicating lower erodibility because of resistance to detachment. It is important to note that K-factor does not necessarily account for the slope or vegetative cover of the land. These variables both have more impact on soil erodibility than does K-factor, as soil erodibility typically increases as slope angle and length increase and as soil cover decreases.

To provide a conservative analysis of potential for soil erosion, soils with a K-factor greater than 0.2 (e.g., silt-loams and silts) are considered highly erodible, and soils with a K-factor between 0.1 and 0.2 (e.g., coarse sandy soils) are considered moderately erodible. Soils with a K-factor of less than 0.1 are not considered to be erodible.

Much of Fort Benning's soils are identified as moderately or highly erodible (Fort Benning, 2016). Among the Action Alternatives, Alternative 2 has the most highly erodible soils (86 acres, or 2 percent of the Alternative), with most of these soils generally located on the Alternative's western boundary. Alternatives 1 and 3 have negligible amounts of highly erodible soils.



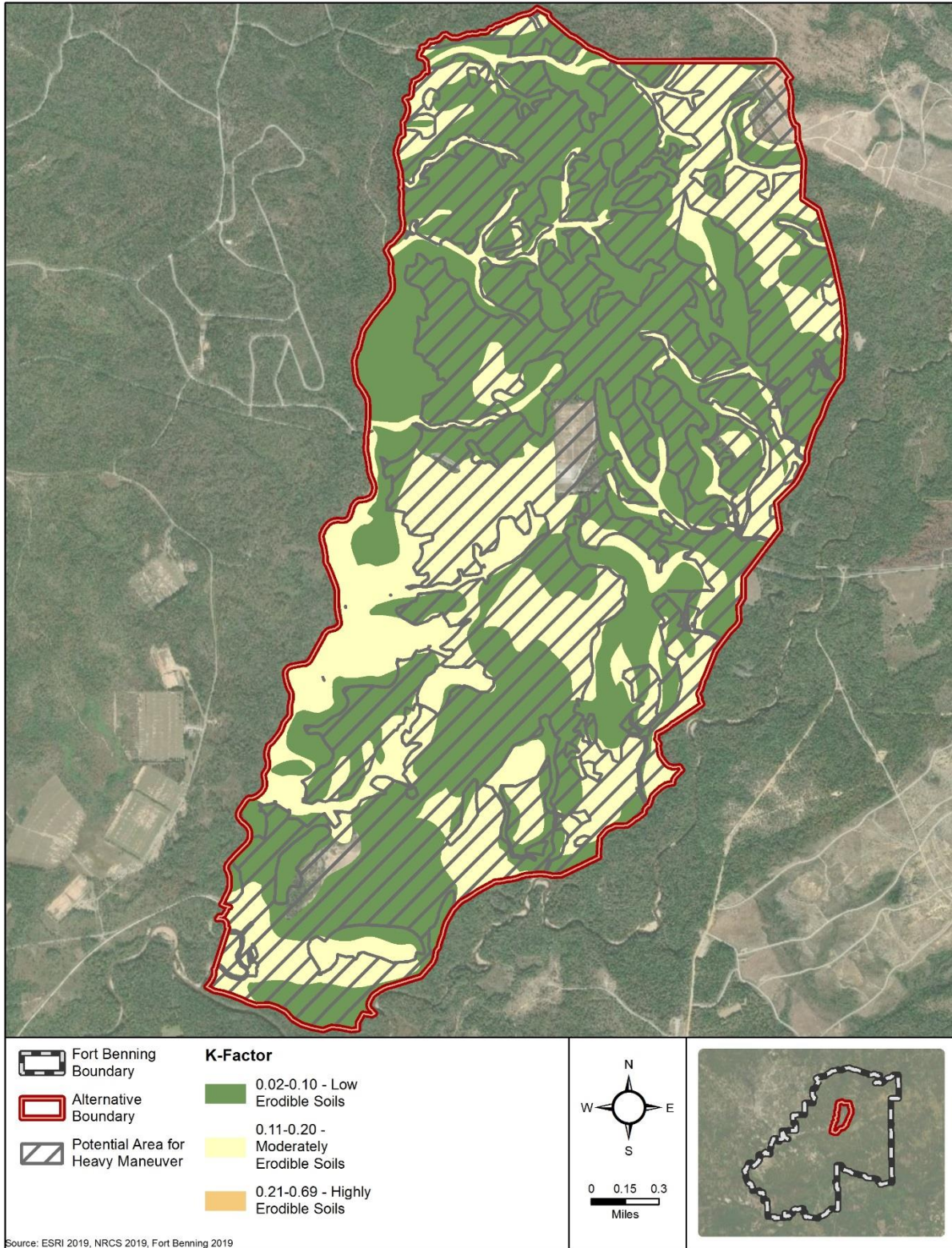


Figure 3.5-6: Soil Erodibility in Alternative 1



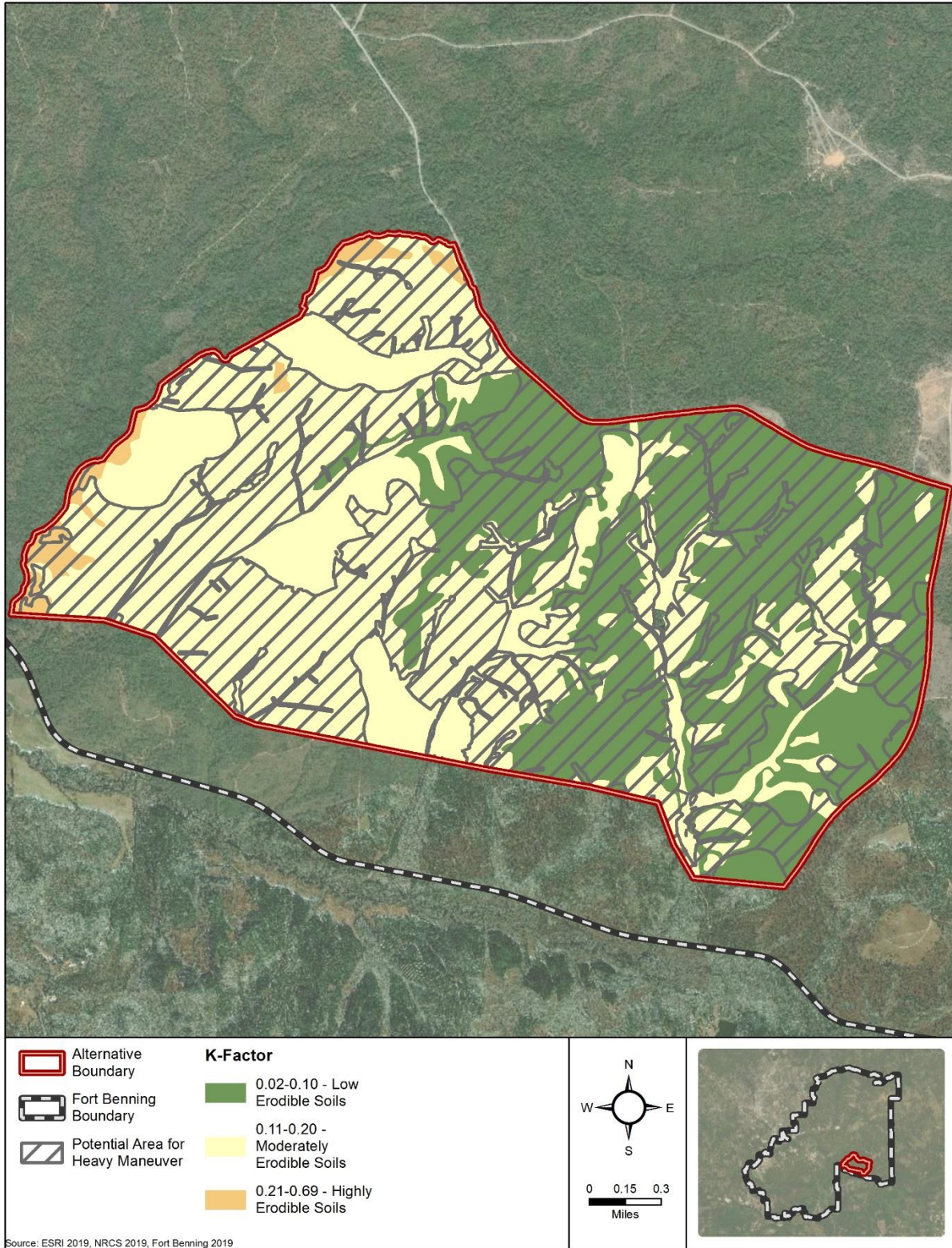
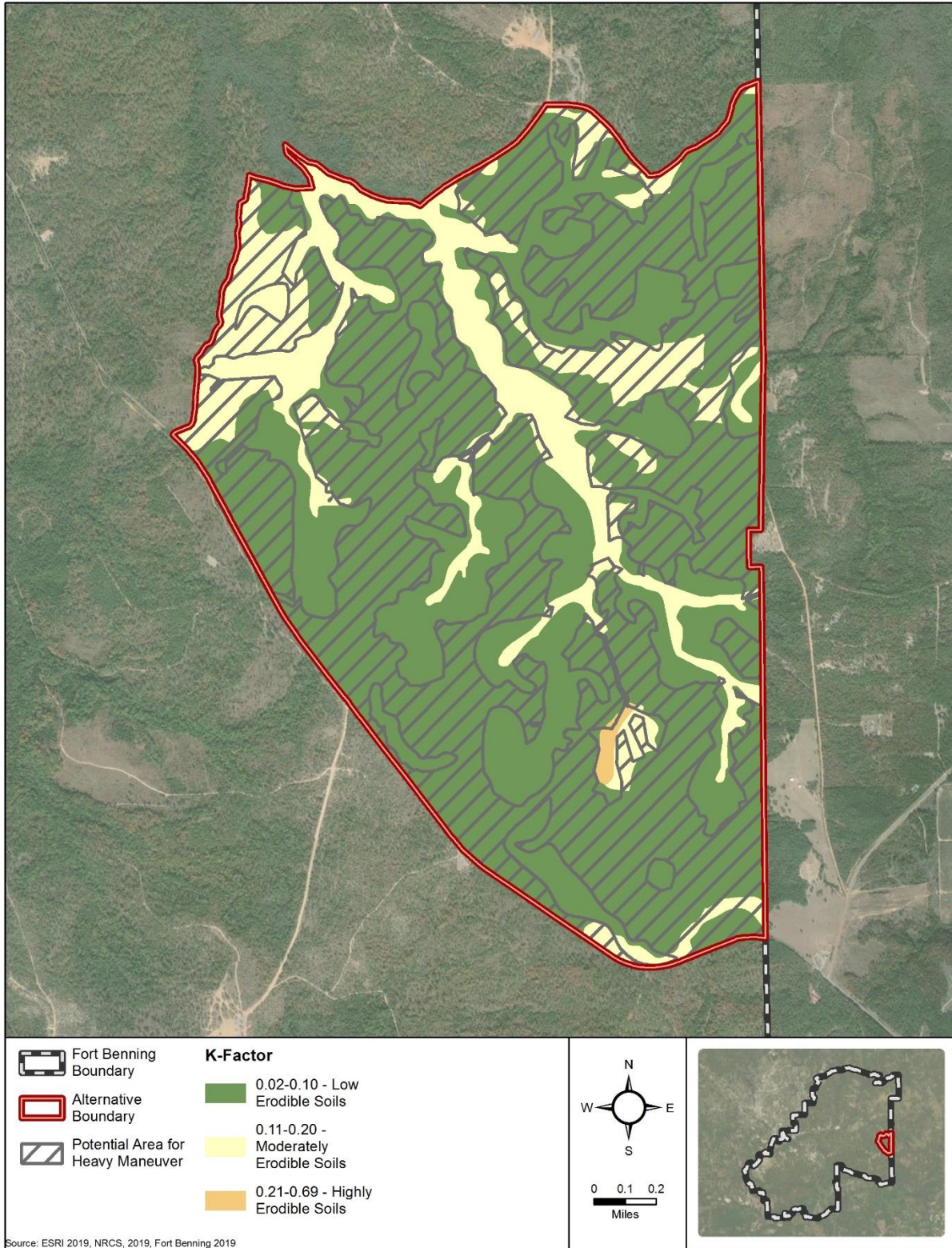


Figure 3.5-7: Soil Erodibility in Alternative 2





**Figure 3.5-8: Soil Erodibility for Alternative 3**



**Table 3.5-5: Comparison of Erodible Soils, by Action Alternative**

Resource Characteristic	Alternative 1		Alternative 2		Alternative 3	
	Total	Maneuver Area	Total	Maneuver Area	Total	Maneuver Area
Percent of area covered by highly erodible soils	<1%	<1%	2%	2%	<1%	<1%
Area covered by highly erodible soils (acres)	1	1	86	63	8	<1
Percent of area with moderately erodible soils	35%	22%	58%	41%	20%	9%
Area covered by moderately erodible soils (acres)	1,667	1,056	2,175	1,530	474	215
<b>Totals (acres)</b> <b>(% of land area)</b>	<b>1,668</b> <b>(35%)</b>	<b>1,057</b> <b>(22%)</b>	<b>2,261</b> <b>(60%)</b>	<b>1,593</b> <b>(43%)</b>	<b>482</b> <b>(20%)</b>	<b>216 (9%)</b>

Moderately erodible soils are more common than highly erodible soils within the Action Alternatives. Alternative 2 has the most moderately erodible soils with 2,175 acres (58 percent of the Alternative); these soils comprise most of the western half of Alternative 2 as well as portions of the eastern half. Alternatives 1 and 3 have 1,667 acres (35 percent of Alternative 1) and 474 acres (20 percent of Alternative 3) of moderately erodible soils, respectively. In each Action Alternative, moderately erodible soils tend to be co-located with water resources (see Section 3.6).

### 3.5.2 Environmental Effects

This section discusses the potential short- and long-term, direct and indirect soils impacts that would occur with implementation of the Action Alternatives and the No Action Alternative.

#### 3.5.2.1 Approach to the Analysis

A significant adverse impact to soils from project construction, operation, and/or maintenance would occur if an activity could result in either substantial soil loss or compaction or a violation of an applicable Federal or State law, regulation, or permit.

The Proposed Action has the greatest potential to impact soils during the construction phase; however, during the operational phase, off-road maneuver would result in the risk of perpetual soil

destabilization and erosion, notably in areas with moderately to highly erodible soils. Maintenance activities would be conducted using similar heavy equipment used during construction, and could cause negligible additional adverse impacts; however, maintenance activities would be largely focused on reducing adverse soil impacts from training activities and rehabilitating the HOMMTA, such as by stabilizing areas exhibiting erosion. As such, these activities are analyzed with operational activities in this section.

Given the nature of the Proposed Action, including minimal proposed changes in the built environment, potentially significant effects to hydric soils are not expected. Therefore, impacts to hydric soils are not discussed further. Impacts associated with erodible soils are of concern, and are discussed in this analysis. Table 3.5-6 presents the impact thresholds of when adverse soils impacts would be considered significant.

**Table 3.5-6: Significant Adverse Impact Thresholds for Soils**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Soils would be substantially affected through compaction or erosion, or the Proposed Action would lead to violation of regulations or standards. This includes, notably, activities proposed in areas with highly erodible soils where uncontrolled or irreparable soil erosion could occur.
	Indirect Impacts	Soils outside the boundaries of the Alternatives would be substantially affected through compaction or erosion, or the Proposed Action would lead to violation of regulations or standards in offsite areas. No significant adverse indirect impacts to soils are anticipated. Onsite soils impacts that would result in offsite water or air quality impacts are described in Sections 3.6.2 and 3.3.2, respectively.

**3.5.2.2 No Action Alternative**

Under the No Action Alternative, no vegetation removal, ground disturbance, soil compaction, or other soils impacts associated with construction, operation, or maintenance activities of the Proposed Action would occur. Current activities, as described in Section 2.4, would continue in the locations of all three Action Alternatives, including off-road and unimproved road use by vehicles, vegetation management, and other training activities, and would therefore continue to cause soil compaction and erosion. Similarly, ongoing use of the GHMTA for off-road heavy maneuver training would continue to result in soil disturbance.

As described in the ETEA (Fort Benning, 2015b), the Army currently implements proactive measures to address soil erosion and disturbance at the GHMTA to keep adverse soil impacts at minor levels; these measures include implementing 50-foot vegetation buffers from heavy maneuver training around streams and conducting preemptive sedimentation control projects.

Existing soil effects within the GHMTA and Action Alternatives are controlled on the Installation through the management programs described in Section 3.5.1.2, resulting in **minor, long-term adverse impacts**. As described in the following sections, adverse impacts from these ongoing activities are expected to be less than those that could potentially result from implementation of the Proposed Action.

### 3.5.2.3 Alternative 1

Overall, Alternative 1 would result in **negligible to moderate adverse impacts** on soils. Soils impacts under Alternative 1 would be *less* than both Alternatives 2 and 3.

#### **Direct Impacts**

##### *Construction*

Under Alternative 1, approximately 3,200 acres of land would be disturbed during construction, which would include vegetation removal and construction of several project components (e.g., tank trails, utility work, and water crossings) as discussed in Sections 2.1 and 2.4. Removal of vegetation would expose underlying soils to potential wind and water erosion until soil stabilization measures (e.g., reseeding) could be established. Without proper mitigation, this increased susceptibility to erosion could result in substantial amounts of soil being displaced, although the amount of erosion would depend on numerous factors like slope, erodibility, the degree and duration of exposure without stabilizing cover, and weather.

As shown in Table 3.5-5, Alternative 1 includes approximately 1,667 acres of moderately erodible soils and 1 acre of highly erodible soils. Based on a comparison of the heavy maneuver areas proposed under Alternative 1 overlaid onto the soil erodibility map (see Figure 3.5-6), the conceptual construction footprint includes approximately 1,056 acres of moderately erodible soils and 1 acre of highly erodible soils, for a total of 1,057 acres. This is because 611 acres of erodible soils are located within surface waters/wetlands, retained vegetative buffers, or other sensitive areas that would be protected.

As part of the Proposed Action, Fort Benning and its contractors would reduce potential erosion impacts through compliance with Federal and State regulations (e.g., preparation of a project-specific ESPCP) and implementation of BMPs in accordance with the *Manual for Erosion and Sediment Control in Georgia* (GSWCC, 2016) and *Georgia's Best Management Practices for Forestry* (Georgia Forestry Commission, 2009) to meet or exceed Georgia State minimum requirements. Please see Section 2.1.1 for more information regarding EPMs and RCMs incorporated into the Proposed Action. With successful implementation of these measures, Alternative 1 construction would result in **minor to moderate, short-term, direct adverse impacts** on soils from erosion.

Because construction activities would use heavy equipment in some areas not currently used for off-road activities, the Proposed Action could cause adverse impacts to soils through soil compaction. Compacted soil can be more difficult to re-vegetate, which could increase the long-term risk of soil erosion. Compacted soil also typically has a lower ability to absorb precipitation than uncompacted soil, which could result in increased runoff (and potentially greater erosion) during heavy precipitation events. As part of the NPDES construction BMPs described above, however, the Army would restore compacted soils to the extent feasible following construction. With successful implementation of these measures, these **short-term, direct adverse impacts** would be maintained at **negligible to minor** levels.

#### *Operation and Maintenance*

In a study on relationships between soil texture, land use intensity, and vegetation specifically on Fort Benning land, Dilustro et al. (2002) found that the most frequent and abundant soil disturbance at Fort Benning resulted from the collective use of active and remnant trails, roads, and vehicle tracks or trails. Another soil study of Fort Benning training land found that soil quality was not affected on light military-use sites, but on moderate and heavy maneuver sites (e.g., heavy maneuver training areas), soil quality was decreased for soil factors such as bulk density, soil carbon, and particulate organic matter (Garten et al., 2003).

Because the Proposed Action would conduct heavy maneuver with associated support vehicles during operation in off-road areas and on unimproved trails, it would cause ongoing, periodic, long-term disturbance of site soils, potentially resulting in **minor to moderate, long-term, direct**

**adverse impacts** on soil quality. Continuous or sustained off-road maneuver training within an area can result in damage to the vegetation and soil. When disturbed frequently, soils undergo physical and chemical alterations that cause them to lose the capability to support natural reseeding and groundcover reestablishment (Fort Benning, 2015b). Eventually, this can lead to further disruption of the soil that can make an area unsustainable for the intended military training. The establishment and maintenance of appropriate vegetation, when feasible, other soil stabilization measures, and proper drainage systems is the primary means of addressing these potential issues.

In addition to degrading soil quality, off-road maneuver would disrupt vegetative cover and the top layer of vegetative litter and topsoil structure. This would disturb and expose the soils, which in turn would increase the risk of erosion during precipitation events. Further, vehicle tracks (i.e., depressions left in the soils or trails) would increase the probability of accelerated and channeled runoff in these areas, which could increase the risk of rill and gully erosion throughout the proposed HOMMTA, but particularly in sloped areas.

Similar to construction, operation and maintenance activities could both result in **minor to moderate, long-term, direct adverse impacts** through soil compaction. Armor vehicles are anticipated to be the heaviest vehicles that would use the proposed HOMMTA, while maintenance vehicles would likely be the same or equivalent to those used during construction. These soil-compacting activities would increase the risk of soil erosion and limit the potential success of revegetation efforts.

While operation and maintenance of the HOMMTA could significantly degrade soil quality, compact soils, increase runoff, and increase erosion, the Army would follow the guidance and implement the prevention, monitoring, and maintenance management measures identified in Section 3.5.1.2; please also see Section 2.1.1 for more information regarding EPMs and RCMs incorporated into the Proposed Action. These include complying with the Installation-wide ESPCP, using the Fort Benning ITAM program to monitor and regularly repair areas of erosion to maintain sustainable training lands, and following prescriptions within the Installation's INRMP and SCP.

The implementation of these plans, including the monitoring, maintenance prioritization, and rehabilitation of sites having erosion problems, has served to minimize and control soil loss and

erosion from historical and current training activities at Fort Benning, including use of the GHMTA. Maintenance activities would be focused on training area sustainability, which would include conserving soil resources (e.g., inventorying and addressing erosion/revegetation concerns).

Alternative 1 would also include a new impervious surface within the proposed HOMMTA in the form of a 1-mile improved road. This impervious surface would increase runoff locally (i.e., immediately adjacent to the road) and increase the risk of erosion; however, because the majority of the Alternative 1 area would remain pervious and the trail is a linear feature, the runoff would be expected to infiltrate adjacent soils. Therefore, this would be a **negligible, long-term, direct adverse impact**.

As described in Section 3.5.1.3, Alternative 1 is the flattest of the three Action Alternatives. This more limited slope variation would result in a lower risk for soil erosion, including on the 1,057 acres of erodible soils potentially subject to heavy maneuver training, as compared to Alternatives 2 and 3.

### **Indirect Impacts**

#### *Construction, Operation, and Maintenance*

Implementation of Alternative 1 would enable the Army to transfer some of the heavy maneuver training load to the new HOMMTA. This would reduce the training load at the GHMTA, where heavy maneuver training currently occurs. By transferring these training activities, the Army would be able to “rest,” when feasible, and better maintain the GHMTA in accordance with ITAM goals and objectives and the Sustainable Range Program. As a result, there would likely be fewer soil impacts from heavy maneuver training and maintenance at the GHMTA as compared to existing conditions. This would **reduce current minor adverse impacts** to soils in the GHMTA.

Construction, operation, and maintenance of the proposed HOMMTA would result in increased impervious surfaces, areas of exposed soil, and soil compaction. In turn, these could result in increased air and water quality effects outside the Alternative footprint. These potential indirect impacts are discussed in Sections 3.3.2 and 3.6.2, respectively. With implementation of the NPDES construction BMPs, as well as the other EPMs and RCMs incorporated into the Proposed Action (see Section 2.1.1), these **short- and long-term, indirect adverse impacts** would be maintained



at **minor levels**. Further, Alternative 1 is located in a central portion of the Installation. This location would minimize the risk of off-Post indirect impacts.

#### **3.5.2.4 Alternative 2**

Overall, Alternative 2 would result in **negligible to moderate adverse impacts** on soils with implementation of the same BMPs, EPMs, and RCMs as Alternative 1. These soils impacts would be *greater* than those under Alternative 1, and *similar to* those under Alternative 3.

Alternative 2 would result in the same types of soils impacts as Alternative 1, and would include the same NPDES construction BMPs, EPMs, and RCMs discussed for Alternative 1. The primary differences between the levels of impacts between Alternatives 1 and 2, as well as the rationale, are discussed below.

#### **Direct Impacts**

##### *Construction*

- **Soil Erosion:** Alternative 2 would require 500 fewer acres of soil disturbance from vegetation removal and construction activities. Alternative 2, however, also has the steepest and most varied topography of all Action Alternatives, and contains substantially more moderately and highly erodible soils as compared to Alternative 1 within the conceptual design footprint (i.e., 1,593 acres, or 536 more acres of moderately and highly erodible soils under Alternative 2 than Alternative 1; see Table 3.5-5). Further, these erodible soils comprise most of the western half of Alternative 2, so avoidance would not be possible. Alternative 2 would include construction of 8 fewer water crossings than Alternative 1, and no utility improvements, but would include construction of 13 miles of unpaved trails throughout the HOMMTA (see Section 3.10) and construction of two 1-acre HET pads; the net result would be the construction of a more concentrated built environment than Alternative 1.

Due to the more varied topography, greater amount of moderately and highly erodible soils that could not be avoided, and more concentrated built environment construction, Alternative 2 would have a greater risk of soil erosion during construction than Alternative 1, despite the smaller acreage of soil disturbance (i.e., by 500 acres); however, these **short-**

**term, direct adverse impacts** would still be anticipated to remain at **minor to moderate** levels with implementation of the same BMPs, EPMs, and RCMs as Alternative 1.

- **Soil Compaction:** Soil compaction resulting during construction activities would be the same as described under Alternative 1. Therefore, these **short-term, direct adverse impacts** from soil compaction would remain at **negligible to minor** levels, although approximately 500 fewer acres of soils would be affected compared to Alternative 1.

#### *Operation and Maintenance*

- **Soil Quality and Compaction:** Alternative 2 would concentrate the same amount of training as Alternative 1 on a smaller land area (i.e., 500 fewer acres of proposed heavy maneuver area). Alternative 2 may also require more maintenance activity than Alternative 1 due to the greater risk of soil erosion, as described previously. These factors would result in potential **moderate, long-term, direct adverse impacts** to soil quality and compaction, which would be *greater* than under Alternative 1. In turn, reduced soil quality and more intensive training due to the smaller size of Alternative 2 would likely also make it more difficult to maintain vegetation in heavy maneuver areas, potentially further increasing the risk of wind and water erosion in the long-term.
- **Runoff:** Alternative 2 would include construction of more impervious surface than Alternative 1 due to the proposed increased lengths of unpaved trails and additional HET pads. Although unpaved trails are not completely impervious, they are typically more impervious than natural soils due to their compaction. This could lead to a greater increase in stormwater runoff under Alternative 2 than under Alternative 1, although the overall impact of these would still only be **negligible, long-term, direct, and adverse**.

### **Indirect Impacts**

#### *Construction, Operation, and Maintenance*

The **reduction in minor adverse impacts** to soils in the GHMTA would be the same as under Alternative 1. The **minor, short- and long-term, indirect adverse impacts** resulting from potential transport of soil erosion off-Post, via wind and water erosion, would be *greater* than under Alternative 1 (i.e., if on-Post impacts are not controlled) because Alternative 2 is located near the Installation's southern boundary and streams in Alternative 2 drain off-Post. Please refer to Sections 3.3.2 and 3.6.2 for more information.

### 3.5.2.5 Alternative 3

Overall, Alternative 3 would result in **negligible to moderate adverse impacts** to soils. These soils impacts would be *similar to* those described under Alternative 2, and *greater* than Alternative 1.

Alternative 3 would result in the same types of soils impacts as Alternatives 1 and 2, and would include the same NPDES construction BMPs, EPMs, and RCMs as Alternatives 1 and 2. The primary differences between the levels of impacts between these Alternatives, as well as the rationale, are discussed below.

#### **Direct Impacts**

##### *Construction*

- **Soil Erosion:** Alternative 3 would require 1,700 and 1,200 fewer acres of soil disturbance than Alternatives 1 and 2, respectively, from vegetation removal and construction activities. Alternative 3 also has slightly less varied topography than Alternative 2, but is still more varied than Alternative 1, and has the least moderately and highly erodible soils of all the Action Alternatives.

Based on a comparison of the heavy maneuver areas proposed under Alternative 3 overlaid onto the soil erodibility map (see Figure 3.5-8), the conceptual construction footprint includes approximately 215 acres of moderately erodible soils and 1 acre of highly erodible soils, for a total of 216 acres, as compared to 1,057 acres under Alternative 1 and 1,593 acres under Alternative 2. Alternative 3 also includes construction of 25 water crossings (i.e., two fewer than Alternative 1 and six more than Alternative 2), 10 miles of unpaved trails throughout the HOMMTA (see Section 3.10; slightly less than Alternative 2 but more than Alternative 1), and two 1-acre HET pads (i.e., the same as Alternative 2). Alternative 3 would also require burying 2 miles of existing utility lines, which is less than Alternative 1, but more than Alternative 2. The net result is a built environment construction effort *similar to* that of Alternative 2 and *greater* than Alternative 1.

Due to both the substantially lower acreages of proposed heavy maneuver areas (i.e., areas where vegetation removal and construction would occur) and of erodible soils within those areas compared to Alternatives 1 and 2, Alternative 3 is likely to have the least soil erosion

impacts of all the Action Alternatives during construction; these **short-term, direct adverse impacts** would be anticipated to remain at **minor** levels with implementation of the same BMPs, EPMs, and RCMs as Alternatives 1 and 2.

- **Soil Compaction:** Soil compaction resulting from construction activities would be the same as described under Alternatives 1 and 2; these **short-term, direct adverse impacts** would remain at **negligible to minor** levels, although approximately 1,700 and 1,200 fewer acres of soils would be affected compared to Alternatives 1 and 2, respectively.

### *Operation and Maintenance*

- **Soil Quality and Soil Compaction:** Alternative 3 would concentrate the same amount of training as Alternatives 1 and 2 on the smallest training area (i.e., only 1,500 acres of proposed heavy maneuver area). This would likely result in the *greatest* level of soil quality degradation and soil compaction during operation and maintenance of any of the Action Alternatives, although impacts would remain **moderate, long-term, direct, and adverse, similar** to Alternative 2 and *greater* than Alternative 1. In turn, reduced soil quality and more intensive training, relative to Alternative size, under Alternative 3 would likely also make it more difficult to maintain vegetation in heavy maneuver areas, potentially further increasing the risk of wind and water erosion in the long-term.
- **Runoff:** Alternative 3 would include construction of more impervious surfaces than Alternative 1, but slightly fewer than Alternative 2 (i.e., due to 3 fewer miles of unpaved trails). This could lead to an increase in stormwater runoff from the proposed HOMMTA that is *greater* than under Alternative 1, but *slightly less* than under Alternative 2. The overall impact of Alternative 3 would, like Alternative 2, be **negligible, long-term, direct, and adverse**.

## **Indirect Impacts**

### *Construction, Operation, and Maintenance*

The **reduction in minor adverse impacts** to soils in the GHMTA would be the same as under Alternatives 1 and 2. The **minor, short- and long-term, indirect adverse impacts** resulting from potential transport of soil erosion off-Post, via wind erosion, would be *greater* than under Alternatives 1 and 2 if on-Post impacts are not controlled, because Alternative 3 is located adjacent to the Installation's eastern boundary and proximate to sensitive receptors (see Section 3.4.1.5);

streams in Alternative 3 drain on-Post and have little potential to result in off-Post impacts. Please refer to Sections 3.3.2 and 3.6.2 for more information.

### 3.5.3 Mitigation

Impacts to soils have been minimized to the extent feasible through sensitive project conceptual design (see Figure 2.4-2 through Figure 2.4-4). As described in Section 2.1.1, EPMs have been proactively incorporated into the Proposed Action: suitable vegetated buffers would be maintained adjacent to surface waters and wetlands to slow runoff and contain soil erosion; areas of moderately to highly erodible soils would be avoided to the extent practical; water crossings would be sited to minimize cut/fill activities, where practical; and heavy maneuver training would avoid slopes greater than 20 percent. These sensitive design measures, which would be carried into final design, would serve to reduce potential adverse effects.

During construction, the Army would consider implementing additional mitigation measures to further reduce less-than-significant, direct and indirect impacts to soils from construction, where feasible. These measures could include:

- Planning construction activities to occur in a manner that reduces the potential for erosion, such as by minimizing the amount of time that soil is exposed (i.e., through revegetation measures), minimizing disturbance of moderately or highly erodible soils, or lightly wetting disturbed areas to reduce dust.
- Conducting vegetation removal and land disturbance activities during times of the year with generally lower amounts of precipitation to reduce the risk of erosion.
- Implementing stormwater/water quality mitigation measures described in Section 3.6.3; these measures would help maintain indirect effects to offsite areas at negligible to minor levels, confirmed through ongoing monitoring and adaptive management under Fort Benning resource/soils management plans and programs described in Section 3.5.1.2.

## 3.6 Water Resources

This section describes the water resources that could be affected by the Proposed Action. Water resources include surface waters, wetlands, floodplains, and groundwater. Stormwater that replenishes and sustains these resources is also an important component, as it has the potential

to introduce contaminants and sediments to these systems. The use and conversion of water resources, such as filling of wetlands and construction in floodplains, affects their quantity and quality.

The groundwater resources underlying the Action Alternatives would either not be affected by the Proposed Action or be subject only to **negligible adverse** impacts. The Proposed Action would not include any deep excavation activities; all earth-disturbing activities would be surficial. Surface waters and wetlands, where groundwater may occur at or near the surface, would be less susceptible to contaminated runoff due to the protective buffers incorporated into the Proposed Action (see Section 2.1). Further, as described in Section 3.11, compliance with existing management and response plans for HTMW would further reduce groundwater susceptibility to contaminated runoff during construction, operation, and maintenance of the proposed HOMMTA. As such, groundwater is not carried forward for detailed analysis in this EIS.

### **3.6.1 Affected Environment**

#### **3.6.1.1 Region of Influence**

A watershed includes the land area where all surface water drains to a specific point. Fort Benning implements Federal policies and Army regulations by managing water resources on or associated with the Installation. Fort Benning employs a watershed management approach to address the interrelated components of hydrologic systems, and to ensure the Army's compliance with applicable laws and regulations (see Table 3.6-1 and Section 3.6.1.2). The Army continually monitors, documents, and shares information with respect to water resources on Fort Benning.

The ROI for water resources includes Alternatives 1, 2, 3, and the GHMTA (i.e., No Action Alternative). Additionally, the ROI includes the portion of streams that drain the Alternatives within 500 feet of the Alternative boundaries, which would be the primary downstream areas potentially subject to impact from Proposed Action activities.



A description of the water resources within the GHMTA and the GHMTA’s ROI are described in the ETEA (Fort Benning, 2015b), and incorporated herein by reference.

**3.6.1.2 Applicable Guidance**

Table 3.6-1 identifies laws, regulations, and guidance applicable to the Proposed Action’s impacts on water resources, including notably the CWA.

**Table 3.6-1: Water Resources Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
CWA of 1972 (33 USC §1251 <i>et seq.</i> )	<p>Establishes the basic structure for regulating discharges of pollutants into WOUS and surface water quality standards. Key provisions of the Act include:</p> <ul style="list-style-type: none"> <li>▪ Section 404 – authorizes the USACE to regulate impacts to jurisdictional wetlands and streams. Under Section 404(b)(1), the USACE further established guidelines for specification of disposal sites for dredged or fill material (40 CFR 230).</li> <li>▪ Section 401 – requires that applicants for a Federal permit or license for any activity that may result in discharge to a waterbody obtain State Water Quality Certification to ensure compliance with State water quality standards.</li> <li>▪ Section 303(d) – establishes water quality standards and requires states to maintain a list of “impaired waters” subject to total maximum daily loads (TMDLs) (regulatory authority delegated to GADNR-EPD).</li> <li>▪ Sections 402 and 319 – mandates the NPDES program to regulate the discharge of point (end-of-pipe) and nonpoint (stormwater) sources of water pollution (regulatory authority delegated to GADNR-EPD).</li> </ul> <p>The only WOUS regulated under Section 404 within the Alternatives are wetlands and streams meeting specific criteria. Georgia operates under the pre-2015 program for regulating under Section 401.</p>
AR 200-1, <i>Environmental Protection and Enhancement</i>	Army environmental regulation that includes requirements related to the management of water resources.
Energy Independence and Security Act (EISA) of 2007 (42 USC §17094 <i>et seq.</i> )	<p>EISA Section 438 requires Federal agencies to incorporate, to the maximum extent technically feasible, low-impact development (LID) measures to maintain the pre-development hydrology of a site for projects involving 5,000 square feet or more of land disturbance.</p> <p>Additional guidance is provided in USEPA <i>Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act</i> (USEPA, 2009). Applicable DoD technical criteria are provided in UFC 3-210-10, Change 1, <i>Low Impact Development</i>.</p>

Requirements	Description/Applicability to Proposed Action
EO 11988, <i>Floodplain Management</i> (May 24, 1977)	Directs Federal agencies to determine whether a proposed action would occur within a floodplain and to avoid floodplains, to the maximum extent possible, when there is a practicable alternative. FEMA issued guidelines for implementing this EO, which includes an 8-step planning process (FEMA, 2015).
EO 11990, <i>Protection of Wetlands</i> (May 24, 1977)	Directs Federal agencies to minimize or avoid the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. This EO adopts the FEMA-issued guidelines for EO 11988.
Georgia Erosion and Sedimentation Act of 1975 (Official Code of Georgia Annotated 12-7-1)	State law requiring riparian buffers of 25 feet to be maintained during construction for all streams, and a buffer of 50 feet to be maintained during construction for primary and secondary trout streams. Land-disturbing activities therein require a stream buffer variance issued by the GADNR-EPD. No trout streams are present on Fort Benning.

**3.6.1.3 Existing Conditions**

**Watershed Management**

Watersheds divide the landscape into hydrologically defined areas whose biotic and abiotic components function interactively. Fort Benning is located in the approximately 19,500-square-mile Apalachicola River basin (see Figure 3.6-1) that includes the Chattahoochee River and Flint River (i.e., the western and eastern rivers, respectively, in the figure). More specifically, the Installation is located within Hydrologic Unit Code 03130003 (i.e., the Middle Chattahoochee-Walter F. George Reservoir; see Figure 3.6-2). This approximately 2,837-square-mile sub-basin encompasses parts of Georgia and Alabama.

**Figure 3.6-1: Apalachicola River Basin (USGS, 2018)****Figure 3.6-2: Hydrologic Unit Code 03130003 (USGS, 2018)**

To provide an Installation-specific framework for watershed planning and management, Fort Benning uses watershed management units (WMUs) based on the localized surface drainage network. A total of 29 WMUs occur at least partially within Fort Benning, 15 of which occur entirely within Fort Benning (see Figure 3.6-3).

#### *Alternative 1*

Approximately 50 percent of Alternative 1 is located within WMU 8 (2,735 acres, or 25 percent of WMU 8), comprising nearly all of the western portion of this Action Alternative. The eastern portion of Alternative 1 lies within portions of WMU 9 (976 acres, or 24 percent of WMU 9) and WMU 10 (1,013 acres, or 9 percent of WMU 10) (Fort Benning, 2016). The western half of Alternative 1 drains to Randall Creek, which bisects WMU 8 from north to south. Randall Creek discharges to Upatoi Creek in the southernmost extent of WMU 8; areas within WMU 9 and WMU 10 also drain to Upatoi Creek.

#### *Alternative 2*

Most of Alternative 2 lies within WMU 18 (3,092 acres, or 32 percent of WMU 18); however, an area of the northwest portion is part of WMU 17 (615 acres, or 12 percent of WMU 17). Several small, discontinuous areas within WMU 17 and WMU 16 occur along the perimeter of Alternative 2 (Fort Benning, 2016). Within Alternative 2, WMU 18 drains south to southwest into Ochillee Creek, a tributary of Upatoi Creek that enters Fort Benning near its confluence with Halloca Creek. The land area within WMU 17 is drained by Halloca Creek.

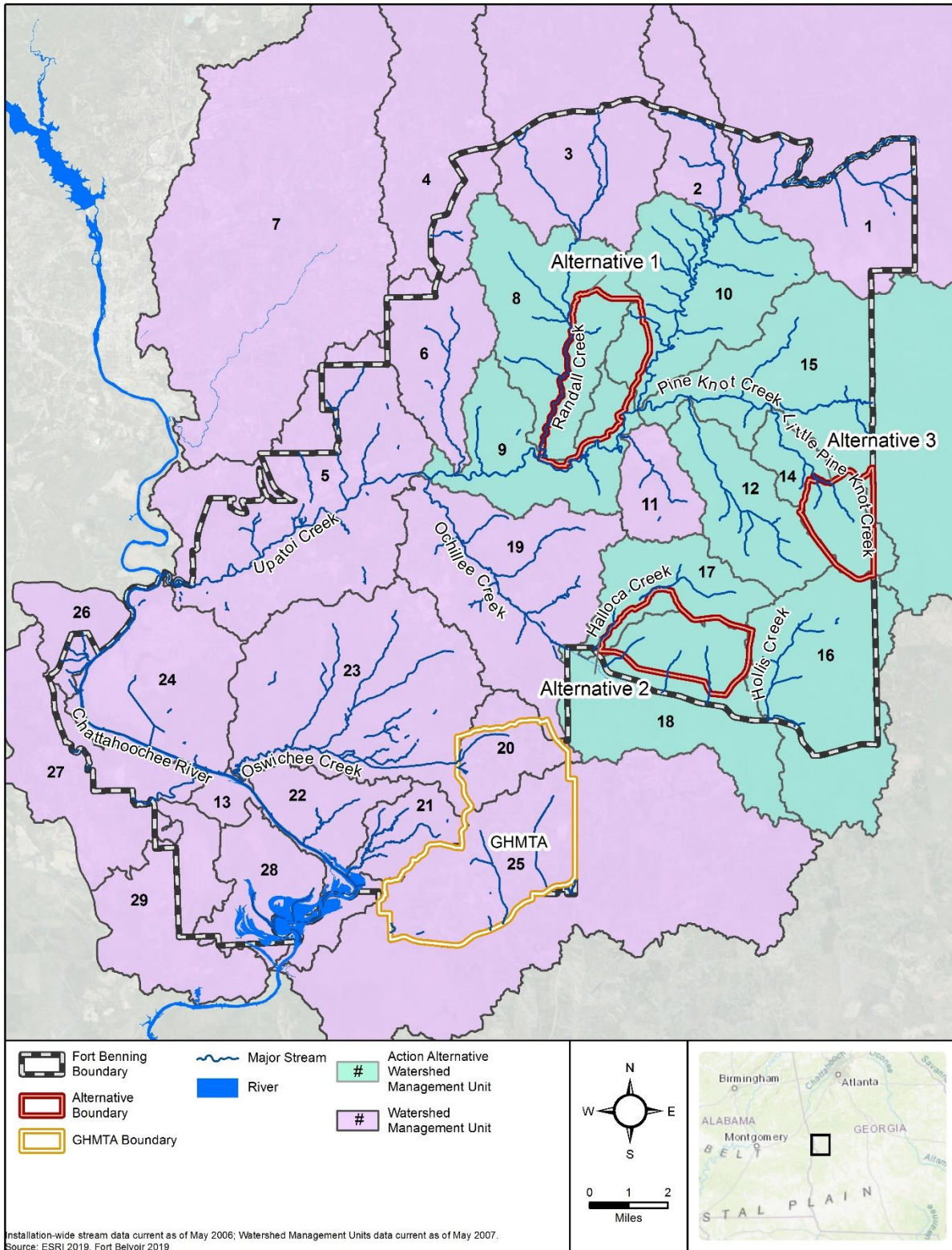


Figure 3.6-3: WMUs at Fort Benning and within the ROI

### *Alternative 3*

Nearly all of Alternative 3 lies within WMU 14 (2,195 acres, or 49 percent of WMU 14). A small, linear (north to south) strip of land in the northeast portion of Alternative 3 falls within WMU 15 (156 acres, or 4 percent of WMU 15). Several small, discontinuous areas to the south and southwest are part of WMU 16 and WMU 12, respectively (Fort Benning, 2016). Most of Alternative 3 drains to Little Pine Knot Creek in the central portion of WMU 14 and then flows northwest towards and into Pine Knot Creek; a small area also drains into Sally Branch Creek, which also discharges to Pine Knot Creek. Pine Knot Creek meanders in a westerly direction across the Installation and discharges to Upatoi Creek. The land areas within WMU 16 and WMU 12 drain south to southwest into Ochillee Creek.

### **Streams**

The majority of Fort Benning drains to the Chattahoochee River, which flows through approximately 15 miles of Fort Benning. Upatoi Creek (Georgia) and Uchee Creek (Alabama) are the main tributaries of the Chattahoochee River on the Installation. In Georgia, the southern half of Fort Benning drains directly into the Chattahoochee River, whereas upland areas to the north and northwest drain to Upatoi Creek before discharge into the Chattahoochee River. A small southeastern portion of Fort Benning, outside of the Action Alternatives, drains to the Flint River.

The streams of Fort Benning (see Figure 3.6-4) are of either piedmont or coastal plain origin (see Section 3.5.1.3). Within Georgia, those of piedmont origin generally flow in a southerly direction and those of coastal plain origin generally flow westerly. In some cases, streams have intermediate features of both the piedmont and coastal plain provinces.

Most streams on Fort Benning meander slowly between well-drained, sandy uplands with sparse, discontinuous areas of vegetation. There are three primary types of streams:

- **Perennial Streams** – These streams maintain continuous flow year-round.
- **Intermittent Streams** – These streams are generally seasonal, flowing during winter and spring when precipitation is most abundant, but drying up in the late summer or fall.
- **Ephemeral Streams** – These streams are typically dry, but flow during and immediately following rainfall events.



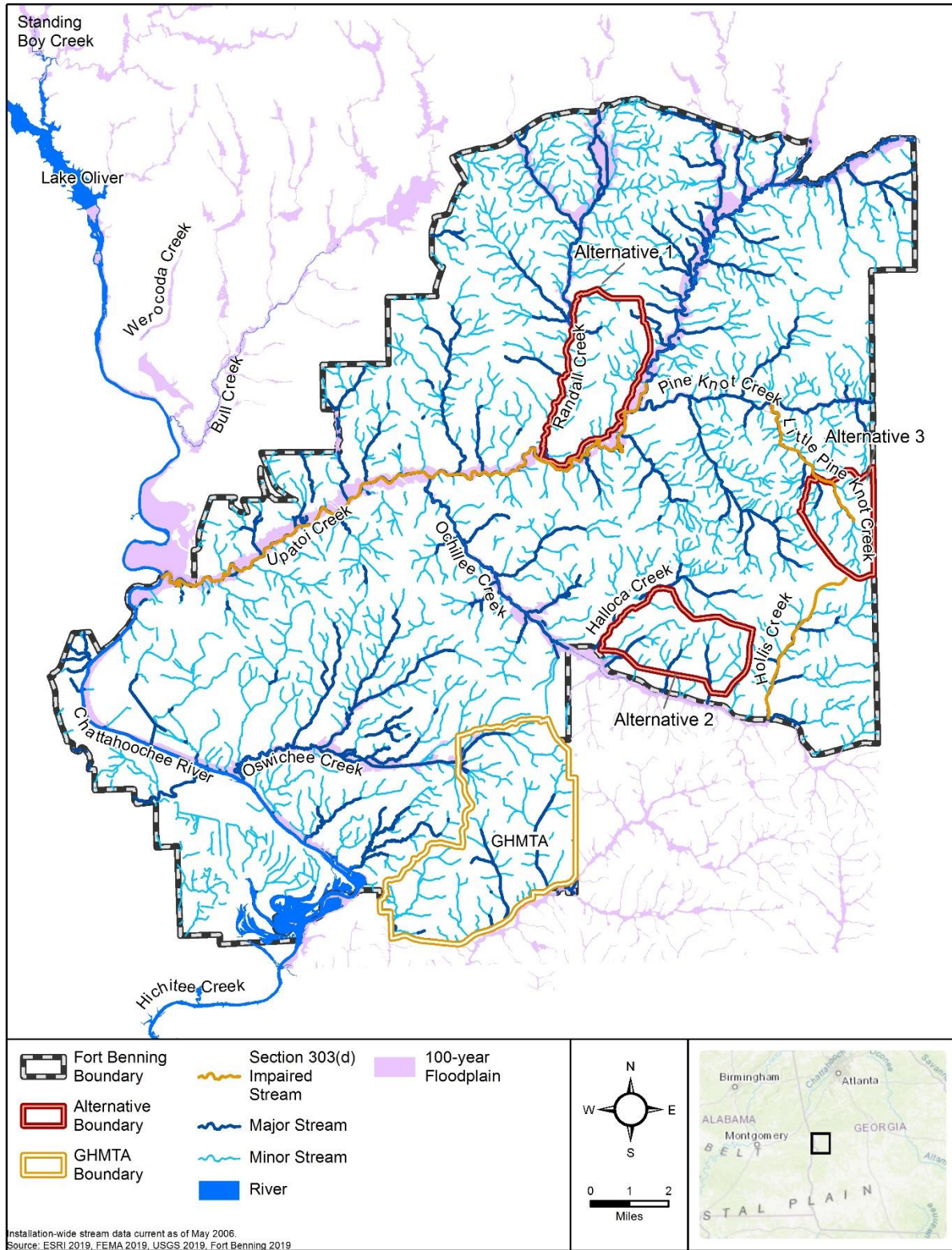


Figure 3.6-4: Surface Waters at Fort Benning

Perennial streams on the Installation are typically underlain by shale or interbedded sand and clay deposits. These streams maintain permanent water flow, receiving recharge from groundwater and the outlying sandy soils and hillslopes. In some areas, these streams flow through more densely vegetated valleys where marshes and floodplains fan out from streambeds. In other cases, sandy substrates become more common where ephemeral and intermittent stream channels connect to perennial streams. Due to seasonal evapotranspiration rates, stream discharge is lower in the summer and fall as compared to the winter and spring (Fort Benning, 2016).

Prior to applying for a Section 404/401 permit from the USACE Savannah District and State of Georgia, the Army conducts a formal jurisdictional delineation of those areas (including streams and wetlands) anticipated to be impacted by a proposed action, and receives a Jurisdictional Determination (JD) or an Aquatic Resource Delineation Review (ARDR) approval letter from the USACE. This includes a field inspection by the USACE to confirm jurisdictional boundaries. Using either the JD or the ARDR, the Army calculates specific impacts to each regulated water feature prior to submitting a permit application.

The State of Georgia, through the Georgia Erosion and Sedimentation Act of 1975, also requires riparian buffers of 25 feet wide to be maintained during construction for all streams. Land-disturbing activities therein (such as for water crossing construction) require the Army to receive a stream buffer variance from the GADNR-EPD. The required buffer width also increases to 50 feet under this Act for designated trout streams; however, no trout streams are present on Fort Benning.

The following provides descriptions of streams within and near each Action Alternative, reliant in part on data gathered during two onsite surveys. The Army first conducted a planning level survey of all streams and wetlands in each Action Alternative in 2019 (AECOM, 2019). Using this data, the Army identified specific potential locations for proposed water crossings within Alternative 1 (i.e., the Army's Preferred Alternative), and subsequently conducted a refined stream and wetland delineation in 2020 at each of those locations (AECOM, 2020a).

Please note that, due to schedule constraints, the original planning level survey of each Action Alternative was conducted during the spring; as such, intermittent streams often resembled perennial streams closely, and these categories were not differentiated during the survey. The



descriptions below present combined perennial and intermittent stream length data. No lakes or ponds are present within the Action Alternatives.

#### *Alternative 1*

Alternative 1 contains 118,989 linear feet (LF) of perennial and intermittent streams (see Table 3.6-2). The major streams include Upatoi Creek (a tributary of the Chattahoochee River) to the east and south, and Randall Creek to the west (a tributary of Upatoi Creek) (see Figure 3.6-4). Minor perennial and intermittent streams originate in adjacent upland areas and flow downslope to discharge points.

#### *Alternative 2*

Alternative 2 contains 134,689 LF of perennial and intermittent streams (see Table 3.6-2). The major streams include Ochillee Creek to the south (a tributary of Upatoi Creek) and Halloca Creek to the west and northwest (a tributary of Ochillee Creek) (see Figure 3.6-4). Minor perennial and intermittent streams originate in adjacent upland areas and drain south to southwest towards and into Ochillee Creek.

#### *Alternative 3*

Alternative 3 contains 55,792 LF of perennial and intermittent streams (see Table 3.6-2). The major streams include Little Pine Knot Creek (a tributary of Pine Knot Creek) and several of its tributaries (see Figure 3.6-4). Minor perennial and intermittent streams originate in adjacent upland areas and drain west to northwest towards and into Pine Knot Creek (a tributary of Upatoi Creek).

### **Water Quality**

The GADNR-EPD is responsible for administration and enforcement of State and many Federal water quality programs. This agency develops total maximum daily loads (TMDLs), issues NPDES construction permits, and monitors the quality of State waters pursuant to the CWA. Section 303(d) of the CWA establishes water quality standards and requires states to maintain a list of “impaired waters” subject to TMDLs. The GADNR-EPD also certifies Federal compliance with State water quality standards under the authority of CWA Section 401 (see Table 3.6-1).

A TMDL is the maximum amount of a substance that can be assimilated by a waterbody without causing impairment (USEPA, 2018g). It sets a pollutant load and outlines a strategy for corrective

action to restore or maintain a waterbody's designated use such as for drinking water, recreation, or fishing. Stream reaches on Fort Benning that are listed as "impaired" under Section 303(d) of the CWA associated with the Action Alternatives (see Figure 3.6-4) include:

- **Little Pine Knot Creek** (headwaters to Pine Knot Creek [6 miles]): TMDL completed for nonpoint source biota (fish) impairment in 2003.
- **Upatoi Creek** (upstream of Chattahoochee River, Columbus [14 miles]): TMDL completed for nonpoint source, urban runoff for fecal coliform impairment in 2013.
- **Hollis Creek** (headwaters to Ochillee Creek [4 miles]): TMDL currently pending reevaluation for biota (macroinvertebrate) impairment.

As shown in Figure 3.6-4, Alternative 1 does not contain, but drains directly (east and south; approximately 1,989 acres) and indirectly (west; approximately 2,735 acres) into a segment of Upatoi Creek designated as impaired under Section 303(d). Upatoi Creek is located adjacent to the southern and eastern boundary of Alternative 1. Alternative 2 also drains indirectly into the impaired segment of Upatoi Creek via Ochillee Creek; Upatoi Creek is approximately 7 miles downstream of Alternative 2. A small area along the eastern boundary of Alternative 2 also drains directly to the Section 303(d) impaired segment of Hollis Creek, which is approximately 0.8 mile east of Alternative 2. Most of Alternative 3 drains directly to a Section 303(d) impaired segment of Little Pine Knot Creek, and indirectly to Upatoi Creek via Pine Knot Creek. Approximately 9,000 LF of Little Pine Knot Creek are located within Alternative 3. The impaired portion of Upatoi Creek is approximately 5 miles downstream of Alternative 3. Wetlands are commonly found along these various stream reaches (see **Wetlands** below).

### **Stormwater Management**

Storm flow (stormwater) velocity and volume generally increase in proportion to the amount of impervious surfaces and compacted soils that are associated with the built environment. Streams and wetlands are susceptible to erosion, sedimentation, and channelization, particularly during prolonged, high intensity storm events. On Fort Benning, stormwater drains via culverts, ditches, swales, natural seepage, and overland flow into nearby streams and wetlands, either directly or indirectly. Fort Benning generally receives 50 to 52 inches of rainfall annually with about half of that amount occurring between April and September. The heaviest rainfall occurs in March, July,

and December; short duration, high intensity thunderstorms mostly occur in the summer months (Fort Benning, 2016).

The NPDES program regulates the discharge of point (end-of-pipe) and nonpoint (stormwater) sources of water pollution and requires a permit for any discharge of pollutants into surface waters. Georgia is a “fully authorized” State and administers its own NPDES program. Accordingly, GADNR-EPD issues individual and general permits that authorize discharges to surface waters. Individual permits are tailored to a specific discharger, whereas general permits cover multiple facilities, sites, and activities.

In Georgia, there are three General NPDES permits that authorize stormwater discharges associated with construction activities that would result in land disturbances equal to or greater than 1 acre in size (i.e., No. GAR10001 [stand-alone sites], No. GAR100002 [infrastructure sites], and No. GAR100003 [common development sites]). As a military facility, Fort Benning maintains a General NPDES permit (i.e., No. GAG480000) with the State for all new and existing point source discharges of stormwater in the cantonment areas of the Installation (i.e., a small municipal separate storm sewer system [MS-4] permit). The Proposed Action would be considered a stand-alone construction site and not covered under the Installation’s MS-4 permit. The Proposed Action would not include any point sources of water pollution; accordingly, all further discussion of NPDES refers to nonpoint sources.

As described in Section 3.5.1.2, construction projects in Georgia that disturb 1 acre of land or greater require a State-approved ESPCP, fee submittal for disturbed acreage, and an NOI to meet the requirements of the Federal NPDES construction permit program and Georgia Erosion and Sedimentation Control Act. The ESPCP prescribes activities to limit erosion and sedimentation from the site during construction (including construction during maintenance activities). The ESPCP includes a site description, list of NPDES BMPs to be used, BMP inspection procedures to be performed by qualified personnel, procedures for timely BMP maintenance, requirements for sampling of discharges or receiving streams for turbidity, and reporting requirements to the GADNR. Routine maintenance activities that revert an area to its as-built condition, and that do not include non-routine maintenance such as replacements or large repairs, do not require an ESPCP (GADNR, 2011); due to the narrow nature of this category, the Army consults with the

GADNR to ensure compliance during maintenance activities. Upon conclusion of activities covered under an ESPCP, a Notice of Termination must be submitted to terminate the NPDES permit.

Within the Alternatives, there are few stormwater management structures or controls present; these are generally road- and trail-side ditches and water breaks to channel water away from the transportation network into nearby streams, and earthen water breaks are used to slow water flow before entering the surface waterbody. Existing water crossings in the Alternatives are a mix of low-water crossings and culverted crossings.

### **Wetlands**

Wetlands perform several important hydrologic functions including water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, stormwater attenuation and storage, sediment detention, and erosion protection. Therefore, wetlands are protected as a subset of WOUS under Section 404 of the CWA. USACE defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR 329). For regulatory purposes, wetlands are defined by three factors: hydrologic regime, soil characteristics, and vegetation.

Palustrine wetlands are the predominant wetland community type on Fort Benning, and comprise all of the wetlands on the Action Alternative sites. These wetlands are non-tidal systems characterized by trees, shrubs, or emergent vegetation. Palustrine wetlands may also consist of small, shallow, open waterbodies of less than 20 acres in size and no more than 6.6 feet in depth. There are three sub-types of palustrine wetlands associated with the Action Alternatives, palustrine-forested (PFO), palustrine-scrub-shrub (PSS), and palustrine emergent (PEM) wetlands:

- **PFO wetlands** are dominated by trees and shrubs able to tolerate a shallow water table and saturated, anaerobic (i.e., oxygen-depleted) soils. Trees and shrubs must be at least 20 feet in height to be classified as a PFO wetland (Cowardin, 1979). Tree canopies are typically more mature than other palustrine systems and, depending upon species composition and density, a broad range of understory and groundcover vegetation types may also be present.

Dominant PFO wetland species within the ROI include red maple (*Acer rubrum*), black tupelo (*Nyssa sylvatica*), sweet-bay (*Magnolia virginiana*), switch cane (*Arundinaria tecta*), and loblolly pine (*Pinus taeda*).

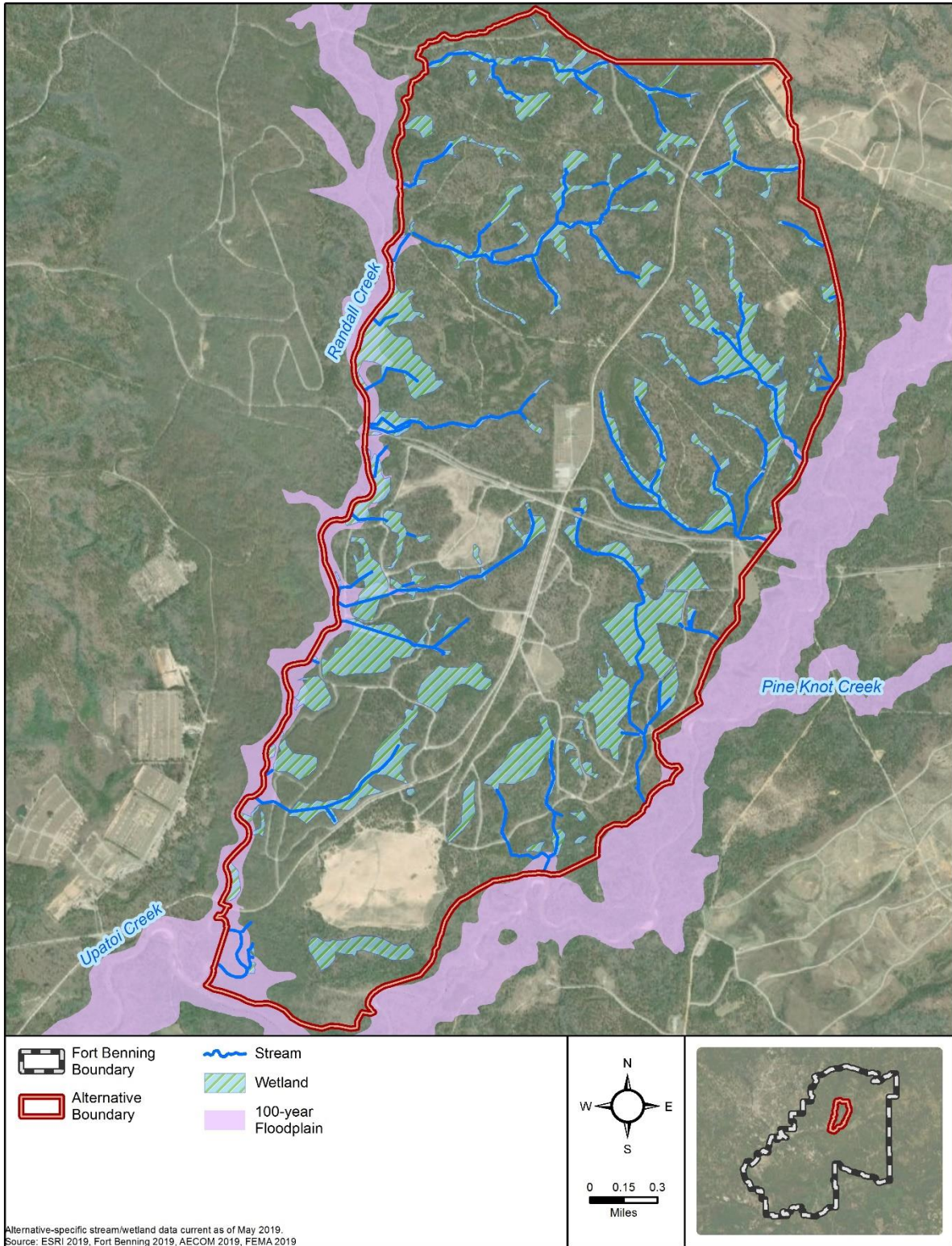
- **PSS wetlands**, often present on hillslopes where streams originate, are dominated by saplings and shrubs that are less than 20 feet in height (Cowardin, 1979). Dominant PSS wetland species within the ROI include inkberry (*Ilex glabra*), switch cane, heath-family shrubs (*Vaccinium* spp.), and laurel-leaf greenbrier (*Smilax laurifolia*).
- **PEM wetlands** are characterized by erect, rooted, herbaceous plants and are typically associated with large, open areas of land where groundwater occurs at or near the surface. Dominant PEM wetland species in the ROI include moss (*Sphagnum* spp.), chain fern (*Woodwardia* spp.), switch cane, broomsedge (*Andropogon virginicus*), rush (*Juncus* spp.), and sedge (*Carex* spp.) (Cowardin, 1979).

As noted previously, the Army conducted two stream and wetland surveys (i.e., a planning level survey for each Action Alternative, and a refined delineation for Alternative 1 at proposed water crossings). The survey results are shown in Figure 3.6-5 through Figure 3.6-7, and summarized in Table 3.6-2. The Army plans to submit an ARDR request to the USACE to obtain approval of the delineation results.

**Table 3.6-2: Wetlands and Streams, by Alternative**

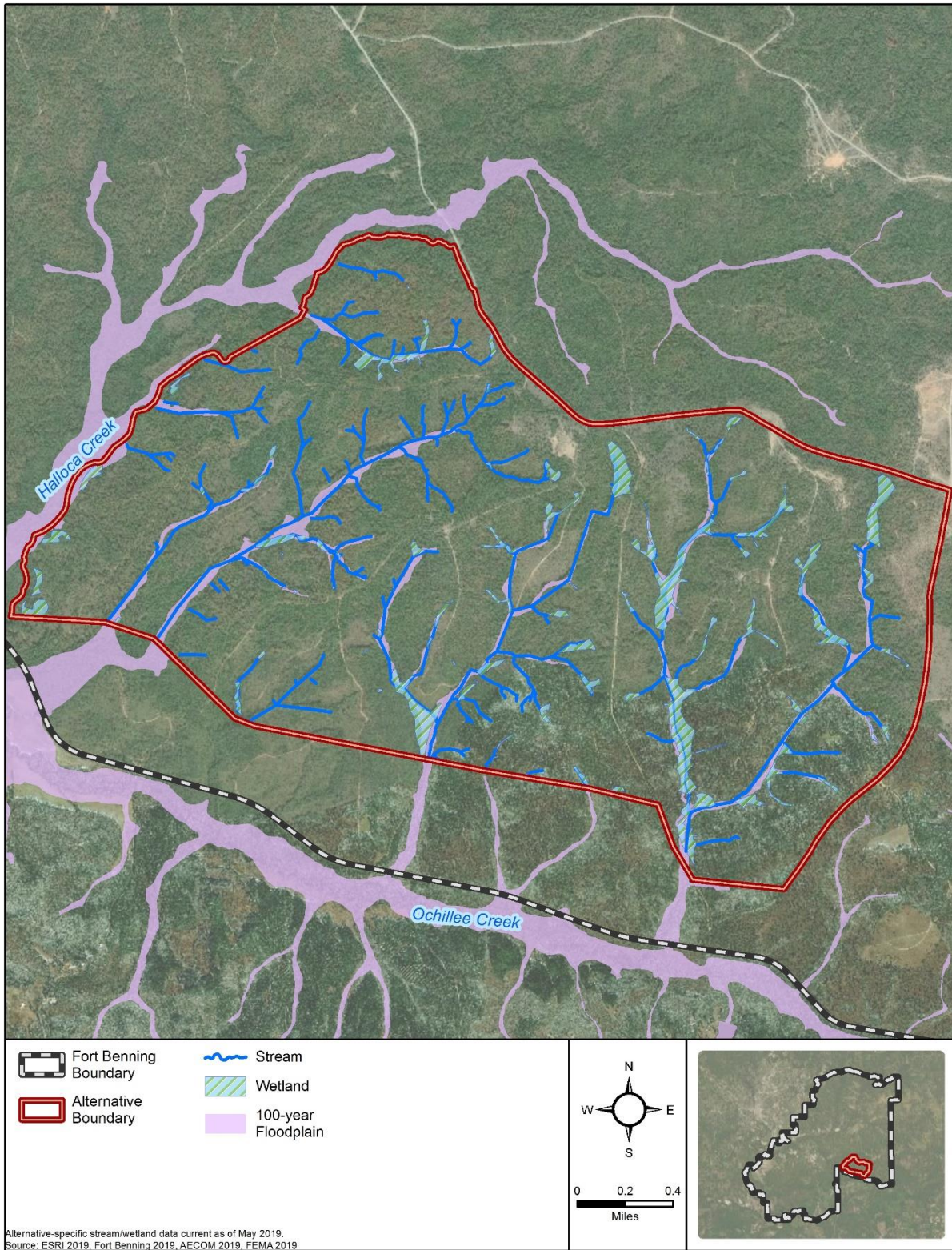
WOUS Type	Action Alternative		
	Alternative 1	Alternative 2	Alternative 3
<b>Wetlands (Acres)</b>			
<b>PFO</b>	736.3	147.1	311.3
<b>PSS</b>	0.3	11.8	1.6
<b>PEM</b>	23.8	0.0	0.0
<b>SUBTOTAL</b>	<b>760.4</b> (16% of Alternative 1)	<b>158.9</b> (4% of Alternative 2)	<b>312.9</b> (13% of Alternative 3)
<b>Streams (LF)</b>			
<b>Perennial / Intermittent</b>	118,989	134,689	55,792
<b>SUBTOTAL</b>	<b>118,989</b>	<b>134,689</b>	<b>55,792</b>

Source: (AECOM, 2019; AECOM, 2020a)



**Figure 3.6-5: Delineated Streams, Wetlands, and 100-Year Floodplains within Alternative 1**





**Figure 3.6-6: Delineated Streams, Wetlands, and 100-Year Floodplains within Alternative 2**



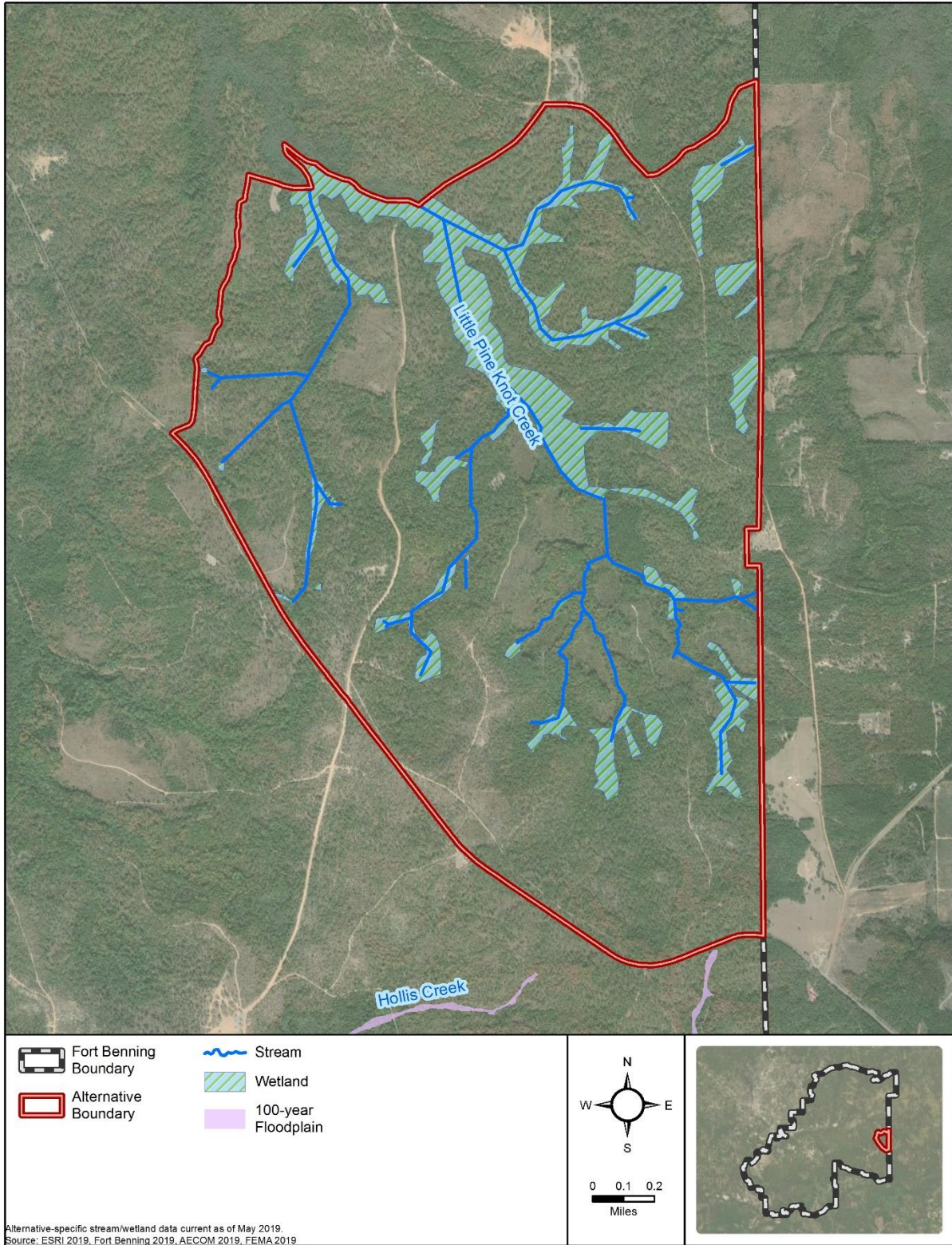


Figure 3.6-7: Delineated Streams, Wetlands, and 100-Year Floodplains within Alternative 3

## **Floodplains**

Floodplains are areas of low, level ground present along rivers, stream channels, or coastal waters that are subject to periodic or infrequent inundation due to rain or melting snow. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, nutrient cycling, water quality maintenance, and provision of habitat for a diversity of plants and animals (Wright, 2007).

The risk of flooding is influenced by local topography, the frequencies of precipitation events, the size of the watershed above the floodplain, and upstream development. Federal, State, and local regulations often limit floodplain development to passive uses, such as recreation and conservation activities, to reduce the risks to human health and safety. To assist with evaluating flood potential, FEMA prepares and updates Flood Insurance Rate Maps (FIRMs) for most of the US. These maps delineate 100- and 500-year floodplains, or areas that will flood approximately once every 100 or 500 years, respectively. As identified in Table 3.6-1, EO 11988 directs Federal agencies to determine whether a proposed action would occur within a 100-year floodplain and to avoid floodplains, to the maximum extent possible, when there is a practicable alternative.

### *Alternative 1*

Approximately 200 acres (4.2 percent) of Alternative 1 (see Figure 3.6-5) include 100-year floodplains (FEMA FIRM 1351580071F) (FEMA, 2019). These floodplains generally align with the western, southern, and eastern boundaries of this Alternative and occur adjacent to streams and wetlands; the majority of 100-year floodplains within Alternative 1 are associated with Randall Creek.

### *Alternative 2*

Approximately 196 acres (5.2 percent) of Alternative 2 (see Figure 3.6-6) include 100-year floodplains (FEMA FIRM 13053C0160C) (FEMA, 2019). These floodplains are relatively evenly distributed among the north-south drainages in the Action Alternative.

### *Alternative 3*

There are no FEMA-designated 100-year floodplains in Alternative 3 (FEMA, 2019).

### 3.6.2 Environmental Effects

This section assesses potential direct and indirect, short- and long-term impacts to water resources described in Section 3.6.1 associated with the construction, operation, and maintenance of the Action Alternatives and the No Action Alternative.

Direct impacts would occur within the boundary of an Alternative or within 500 feet downstream of the Alternative (see Section 3.6.1.1). An impact would be considered indirect if the Proposed Action would alter water resources elsewhere on Fort Benning (i.e., outside of the direct ROI described above), removed in time and distance from Proposed Action activities (e.g., sedimentation, changes in flows, or other offsite impacts to water resources, such as Section 303(d)-listed stream segments). Short-term impacts would occur if the effects would be limited to the construction phase; long-term impacts would occur if the effects would be permanent, or would be periodic for the life of the Proposed Action, such as through periodic maintenance activities.

#### 3.6.2.1 Approach to the Analysis

Table 3.6-3 summarizes the significant adverse impact thresholds applied to the analysis of potential water resources impacts. Table 3.6-4 at the end of this section provides a summary comparison of water resources impacts between all Action Alternatives.

**Table 3.6-3: Significant Adverse Impact Thresholds for Water Resources**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Impact would substantially alter quantity and/or quality of a water resource compared to existing conditions at the location of, or within 500 feet of, the Alternative, and/or violate Federal or State laws or regulations.
	Indirect Impacts	Impact would substantially alter quantity and/or quality of a water resource compared to existing conditions beyond 500 feet downstream of the Alternative boundary, and/or violate Federal or State laws or regulations.

During the scoping process for this EIS, the USACE Savannah District provided information regarding stream and wetland mitigation options for the Proposed Action; noted that consultation completed for biological resources (e.g., with USFWS regarding endangered species) and cultural resources (e.g., with HPD and the Tribes) would suffice for those requirements of the CWA Section 404 permit; inquired whether time-of-year restrictions would be implemented during proposed HOMMTA training; and inquired if there would be any recurring impacts outside the proposed

water crossing locations. Additionally, two private citizens inquired as to the potential impacts on water resources and what would be done to protect them. The Army proposes no time of year restrictions for use of the HOMMTA; such restrictions would limit the training value of the Proposed Action, and not fulfill the purpose of or need for the Proposed Action. The remaining comments are addressed in this analysis.

The only in-water work included in the Proposed Action is construction of water crossings. Currently, the proposed designs and locations for these water crossings are conceptual in nature (see Figure 2.4-2 through Figure 2.4-4 for proposed locations).

For the purposes of analysis, each proposed crossing is conservatively anticipated to have a permanent LOD width of 100 feet in total (i.e., 50 feet upstream and downstream of the proposed crossing location), and an additional total temporary LOD of 50 feet (i.e., 25 feet wide on both the upstream and downstream sides of the permanent LOD). The 100-foot permanent LOD would be maintained throughout the life of the HOMMTA, while the 50-foot temporary LOD would be returned to natural conditions following construction.

During the formal and final design stages, the Army would prepare a specific engineering design for each proposed crossing, including properly sized/engineered culverts, to ensure maintenance of local hydrology. EPMs and RCMs incorporated into the Proposed Action are presented in Section 2.1.1. These measures would proactively avoid the potential for significant adverse impacts to water resources. The Army has also prepared a Finding of No Practicable Alternative (FONPA) for proposed construction in wetlands and/or 100-year floodplains under each Alternative; this FONPA is provided in Appendix E.

### 3.6.2.2 No Action Alternative

Under the No Action Alternative, no vegetation removal, ground disturbance, or in-water work associated with construction, operation, or maintenance activities of the Proposed Action would occur. Current activities, as described in Section 2.4, would continue in the locations of all three Action Alternatives, including off-road and unimproved road use by vehicles, vegetation management, and other training activities. Generally, these activities currently have **negligible, long-term adverse impacts** on water resources in these areas.

Ongoing use of the GHMTA for off-road heavy maneuver training, however, would continue to result in direct and indirect impacts to water resources within and downstream of the GHMTA. Heavy maneuver training activities disturb soil and increase the risk of erosion, which can lead to sedimentation of water resources. As noted in Section 3.5.2.2, and described in greater detail in the ETEA (Fort Benning, 2015b), the Army currently implements proactive measures to prevent and reduce sedimentation impacts to water resources within and downstream of the GHMTA, such as maintaining 50-foot-wide vegetation buffers from heavy maneuver training around streams except at established water crossings, and implementing preemptive sedimentation control projects.

Under the No Action Alternative, the Army would continue to implement these proactive measures; as such, the No Action Alternative would result in continued **minor, long-term adverse impacts** to water resources in the GHMTA from off-road heavy maneuver training.

### 3.6.2.3 Alternative 1

Overall, Alternative 1 would result in **minor adverse impacts** to water resources. Implementation of the EPMs and RCMs identified in Section 2.1.1 would ensure these impacts are reduced to the extent feasible and maintained at acceptable levels. Impacts resulting from Alternative 1 would generally be *less* than those anticipated from Alternatives 2 and 3, as discussed below.

Alternative 1 would convert approximately 3,200 acres of mostly forested land in north-central Fort Benning from primarily overstory forest to primarily disturbed understory and herbaceous vegetation to establish, operate, and maintain the proposed HOMMTA. Vegetation removal would be accomplished with the use of commercial logging equipment and techniques, while avoiding approximately 1,500 acres of land not suitable for heavy off-road maneuver training (e.g., steep slopes, vegetated riparian buffers, significant cultural resources sites, and protected species habitats). Site improvements under this Alternative would include the installation of up to 27 water crossings; two additional existing low-water crossings would be bridged to support training exercises. Alternative 1 would also include constructing approximately 1 mile of new armor vehicle trails, burying 4 miles of utility lines, and constructing 2 miles of (existing) road upgrades or improvements.

## **Direct Impacts**

### *Construction*

**Streams and Wetlands.** Alternative 1 contains approximately 760 acres of mostly forested wetlands and 118,989 LF of perennial/intermittent streams (see Table 3.6-2). Through the conceptual design process described in Section 2.1, including the maintenance of a minimum heavy maneuver wetland/water buffers of approximately 25 to 100 feet (i.e., with buffer width dependent on slope), siting of infrastructure under Alternative 1 would avoid impacts to these water resources to the maximum extent practicable.

Construction, however, would include placement of water crossings across streams and wetlands. With the exception of the two bridges, all water crossings would include culverts, which are often enclosed pipes and therefore impervious to water. This could alter hydrologic conditions in the immediate vicinity of the water crossings. Under normal circumstances, surface waters are able to infiltrate the soil media of the streambed. When streams are confined to culverts, however, they are disconnected from the soil and infiltration cannot occur, potentially resulting in increased surface runoff and stream flow rates in relation to these affected areas. Disconnection from the soil medium may also lead to slight changes in wetland or stream chemistry. In the long-term, the placement of water crossings would not constitute a permanent diversion or impediment to water flowing through the affected areas. That is, the natural function benefits of the retained streams and wetlands would remain intact post-construction. As Fort Benning proposes to install appropriately sized and placed culverts sufficient to convey existing stream flows (as developed during the engineering design phase), long-term changes to flows would not occur.

Construction of the 27 water crossings, 2 bridge sites, and other infrastructure within Alternative 1 would permanently and adversely impact approximately 5.9 acres of wetlands, 3,200 LF of streams, and 4.2 acres of Georgia-regulated (i.e., 25-foot wide) stream buffer. During construction, an additional approximately 3.4 acres of wetlands, 1,500 LF of streams, and 2.1 acres of regulated stream buffer would be affected within the temporary LOD, although these areas would be restored to functioning condition following construction activities. These impacts would result from either resource loss (e.g., filling of wetlands) or degradation compared to existing conditions, and would be relatively small in relation to the overall extent of the resources within Alternative 1 (i.e., long-



term impacts to approximately 3 percent of streams and less than 1 percent of wetlands in Alternative 1).

Potential adverse impacts to streams and wetlands in Alternative 1 have been minimized to the extent practicable through the conceptual design process and incorporation of EPMs and RCMs into the Proposed Action. As noted previously, the Army used the initial planning level survey of streams and wetlands in Alternative 1 to identify potential water crossing locations that would minimize impacts to these resources (e.g., by choosing sites with narrow streams/wetlands) while still maintaining necessary training capabilities.

Further, as part of the Proposed Action, the Army would comply with the CWA by obtaining a Section 404/401 permit from the USACE and GADNR-EPD for anticipated stream and wetland impacts (see Section 2.1.1). This permitting process would establish appropriate mitigation requirements (e.g., purchase of mitigation bank credits or In-Lieu Fee program credits) to reduce adverse impacts and achieve “no net loss” of wetlands per EO 11990 and AR 200-1. As such, Alternative 1 would likely have **minor, short- and long-term, direct adverse impacts** on streams and wetlands during construction.

**Water Quality/Stormwater Management.** Alternative 1 includes 4,724 acres of land, of which approximately 3,200 acres would have forest vegetation removed. This process would disturb soils through use of heavy equipment, removal of tree stumps (and, potentially, attached rootballs), and site grading. Since disturbed soils are more easily eroded, these construction activities could lead to increased runoff, sedimentation, and water quality effects compared to existing conditions. Notably, as described in Sections 3.5.1.3 and 3.5.2.3, the construction footprint of the proposed HOMMTA under Alternative 1 would include approximately 1,057 acres of soils classified as moderately or highly erodible. Through preparation of a project-specific ESPCP as part of the Proposed Action, and implementation of the NPDES construction BMPs identified therein, potential **short-term, direct adverse** soil erosion and consequent water quality degradation impacts would be properly controlled and maintained at **minor levels**.

Additionally, although no Section 303(d)-listed stream segments occur within the Alternative footprint, Alternative 1 is located adjacent and drains to Upatoi Creek. This segment of Upatoi Creek is listed as impaired, and could potentially experience the adverse water quality impacts by

receiving potentially increased levels of runoff and sedimentation. The ESPCP for Alternative 1 would account for this possibility by addressing site-specific conditions and requirements in accordance with Upatoi Creek's TMDL Implementation Plan; this would include at least four of the NPDES BMPs as a condition of the applicable General Permit. With implementation of these BMPs, potential impacts to Upatoi Creek would remain **minor, short-term, direct, and adverse** during construction.

Construction of Alternative 1 would involve the use, and potentially maintenance, of heavy construction equipment and vehicles that require petroleum, oil, and lubricant (POL) products. Use and maintenance of these vehicles could result in accidental discharges of POLs to the environment. As described in Sections 2.1.1 and 3.11.2.3, Alternative 1 would employ standard construction EPMs to minimize the potential of an accidental discharge. Additionally, all construction activities would adhere to applicable Installation management plans such as the Spill, Prevention, Control, and Countermeasures (SPCC) Plan, Installation Spill Contingency Plan (ISCP), Hazardous Waste Management Plan (HWMP), and ESPCP, among others. With the noted practices and management protocols in place, these potential **short-term, direct adverse impacts** would be maintained at **minor levels**.

**Floodplains.** Alternative 1 includes approximately 200 acres of 100-year floodplains. While approximately 63 acres of 100-year floodplains would have forest vegetation removed to support mounted maneuver training, there would be no infrastructure construction or other actions associated with Alternative 1 that would reduce floodwater storage capacity or conveyance in any 100-year floodplains. All water crossings would be properly engineered to maintain existing flow capacity, including during flood events. Therefore, Alternative 1 would have **negligible direct adverse effects** on 100-year floodplains.

### *Operation*

Within the proposed HOMMTA, soils and vegetation would be regularly disturbed by heavy tactical vehicle off-road maneuver in open areas outside of established heavy maneuver training buffers and emplaced stream crossings; these would result in impacts similar to the construction-related impacts described above. Military operations would disturb and compact soils, making them more susceptible to erosion and sedimentation. This would include approximately 1,057

acres of moderately and highly erodible soils within these open maneuver areas. Without proper management, the rate, volume, and quality of runoff entering streams and wetlands would likely increase in relation to disturbed areas, resulting in potential **long-term, direct adverse** water resources effects. Implementation of the measures identified in Section 2.1.1 would ensure these water resources effects remain at **minor levels**, as is currently done at the GHMTA.

**Streams and Wetlands.** Military operations under Alternative 1 could directly affect streams and wetlands. Stream beds and banks or wetlands outside of the designated water crossings would be protected with a 25- to 100-foot vegetated, heavy maneuver buffers, and clearly demarcated in the field with signage and on all training area maps as “off limits” areas or equivalent. These buffers, as well as clearly demarcated stream crossings, would ensure training-related impacts to streams and wetlands would be minimized or avoided. No additional stream or wetland fills or disturbance would occur during operation; maneuver training would be prohibited in these areas.

Further, as described in Sections 2.1.1 and 3.5.2.3, the Army’s ITAM program would minimize the adverse effects of military training on natural resources, including water resources. Resource condition assessments would be conducted on a regular basis to manage or reduce impacts, and inform the repair, maintenance, or reconfiguration of damaged areas between training events. Monitoring would take place to ensure impacted areas are allowed adequate time to recover. The hardening of water crossings, coupled with installing properly engineered and sized culverts, under Alternative 1 would also help to minimize adverse effects to streams and wetlands by stabilizing areas where training activities directly intersect with water resources. With noted practices in place, these **long-term, direct adverse impacts** would be prevented or maintained at **minor levels**.

**Water Quality.** Under Alternative 1, heavy off-road maneuver training activities would uproot vegetation and disturb soils, making them more susceptible to erosion and sedimentation; the approximately 1,057 acres of moderately and highly erodible soils within active off-road maneuver areas would be particularly prone to erosion and consequent sedimentation impacts, both onsite and up to 500 feet downstream of the Alternative. Heavy maneuver vehicles would also compact soils, reducing the ability of stormwater to infiltrate them, and increasing the amount of runoff from the HOMMTA. Further, tracks created by vehicle maneuvers could result in rill and gully

erosion, channeling and accelerating the rate of water runoff into nearby streams and wetlands. These conditions would be worsened during and immediately after storm events.

Fort Benning's standard monitoring and maintenance actions identified in Sections 2.1.1 and 3.5.2.3 would serve to minimize these impacts and maintain them at **minor levels**. These measures include water quality monitoring that would be routinely conducted to manage impacts and inform the repair, maintenance, or reconfiguration of damaged areas (e.g., grading and revegetation). Surface water buffers from heavy maneuver training would also be maintained or, as needed, enhanced, further reducing the potential adverse effects of erosion and sedimentation that could result from training events. With these measures in place, anticipated **long-term, direct adverse impacts** would be maintained at **minor levels**.

**Floodplains.** Most of the approximately 200 acres of 100-year floodplains in Alternative 1 would be protected in surface water buffers from heavy maneuver training, although heavy maneuver training would occur within approximately 63 acres of floodplains. These training activities would not appreciably change the function or water storage capacity of the floodplains. Therefore, **negligible, long-term, direct adverse impacts** on 100-year floodplains would result from the operation of Alternative 1.

### *Maintenance*

Maintenance activities over the life of the Proposed Action would occur in discrete locations requiring repair or rehabilitation, as identified through the ITAM and Range and Training Land Assessment (RTLTA) programs. Such activities, like are currently conducted, would implement the measures identified in Section 2.1.1 and further described above under *Construction*. These impacts, therefore, would be expected to be **minor, long-term, direct adverse impacts** to water resources.

## **Indirect Impacts**

### *Construction*

**Streams, Water Quality/Stormwater Management, and Floodplains.** By controlling onsite impacts to water resources, as described above, only **negligible, short-term, indirect adverse impacts** to downstream water resources would be anticipated during construction from sedimentation. **No effects** to water quality would be anticipated beyond Fort Benning's boundary,

and **no effects** would be expected beyond a maximum of 500 feet downstream of the Alternative 1 boundary.

Since the construction of Alternative 1 would not reduce the function or water storage capacity of floodplains onsite, there would be no increased flood risk to life or property for areas downstream; therefore, there would be **no indirect impacts** on 100-year floodplains from construction under Alternative 1.

### *Operation*

**Streams, Water Quality/Stormwater Management, and Floodplains.** Since **minor, long-term, direct adverse impacts** on water resources would be maintained under Alternative 1, **negligible, long-term, indirect adverse impacts** to water resources downstream of this Alternative would likely result from military training operations; **no indirect effects** would be expected beyond 500 feet downstream of the Alternative 1 boundary.

Since the operation of Alternative 1 would not reduce the function or water storage capacity of floodplains onsite, there would similarly be no increased flood risk to life or property located downstream. Therefore, there would be **no long-term, indirect impacts** on 100-year floodplains from military operations under Alternative 1.

Alternative 1 would enable the Army to transfer some heavy maneuver training activities to the new HOMMTA from the GHMTA. This would reduce the training load at the GHMTA. As a result, current minor adverse impacts to water resources from heavy maneuver training at the GHMTA would be **reduced** as compared to the No Action Alternative.

### *Maintenance*

Maintenance activities over the life of the Proposed Action would occur in discrete locations requiring repair or rehabilitation, as identified through the ITAM and RTLA programs. Such activities, as are currently conducted, would implement the measures identified in Section 2.1.1 and further described above under *Construction* to maintain **long-term, indirect adverse impacts** to water resources at **negligible levels**.

### 3.6.2.4 Alternative 2

Overall, Alternative 2 would result in similar **negligible to minor adverse impacts** as Alternative 1 with implementation of the same EPMs and RCMs. Due to the greater potential for soil erosion and sedimentation/water quality effects, including drainage of Alternative 2 into adjacent off-Post lands as discussed in Section 3.5.2.4, the potential water resources impacts under Alternative 2, overall, would be *greater* than Alternative 1.

Direct impacts to streams and wetlands under Alternative 2, specifically, would be *less* than Alternative 1. Construction of Alternative 2 would permanently impact approximately 2.0 acres of wetlands, 1,600 LF of streams, and 2.6 acres of regulated stream buffer. During construction, an additional approximately 4.1 acres of wetlands, 1,600 LF of streams, and 5.0 acres of regulated stream buffer would be affected within the construction LOD, although these areas would be restored to functioning condition following construction. These impacts are relatively small compared to the overall extent of the resources within Alternative 2 (i.e., long-term impacts on 1 percent each of wetlands and streams in Alternative 2), and would be mitigated as part of the Proposed Action through compliance with Sections 401 and 404 of the CWA, as described under Alternative 1 (see also Section 2.1.1).

Aside from stream and wetland impacts, the primary differences between Alternatives 1 and 2 include that Alternative 2 (see Figure 2.4-3):

- Would only discharge directly to a Section 301(d)-listed stream segment from a very small portion on the eastern boundary of the Alternative (i.e., impacts would be negligible), as compared to Alternative 1 that discharges to the impaired Upatoi Creek.
- Includes 1,593 acres of moderately and highly erodible soils within proposed off-road maneuver areas, as compared to 1,057 acres of erodible soils included within proposed off-road maneuver areas in Alternative 1.
- Proposes approximately 500 acres less of primarily forest land conversion to off-road maneuver areas; however, this reduction would place the same training load in a smaller area compared to Alternative 1, would occur on a larger proportion of erodible soils, and would occur in an area of steeper topography, increasing the potential for soil disturbance, erosion, and sedimentation/water quality impacts.



- Proposes 19 stream crossings, as compared to 27 stream crossings under Alternative 1. Due to steeper topography in Alternative 2, however, coupled with more infrastructure (described below), this would result in greater stream and wetland quality impacts.
- Proposes 13 miles of new, unpaved armor vehicle trails; two new, 1-acre concrete HET pads; and 9 miles of (existing) road upgrades or improvements, as compared to 1-mile of new armor vehicle trails, burial of 4 miles of utility lines, and 2 miles of (existing) road upgrades or improvements under Alternative 1. As such, Alternative 2 would have more new road and hardened infrastructure than Alternative 1.
- Would result in vegetation removal and off-road maneuver training within approximately 72 acres of 100-year floodplains, as compared to 63 acres under Alternative 1. In the long-term, however, no permanent structures would divert or impede flood water flows or diminish their storage capacity.
- Would provide the same **reduction in current minor adverse impacts** to water resources in the GHMTA as Alternative 1.

### 3.6.2.5 Alternative 3

Overall, Alternative 3 would result in similar **negligible to minor adverse impacts** as Alternatives 1 and 2 with implementation of the same EPMs and RCMs (see Section 2.1.1). Due to the greater potential for soil erosion and sedimentation/water quality effects, including direct drainage of Alternative 3 into the impaired Little Pine Knot Creek, the potential water resources impacts under Alternative 3, overall, would be *greater* than Alternatives 1 or 2.

Direct impacts to streams and wetlands under Alternative 3 would be *similar* to Alternative 1, but *less* than Alternative 2. Construction of Alternative 3 would permanently impact approximately 6.3 acres of wetlands, 1,350 LF of streams, and 1.7 acres of regulated stream buffer. During construction, an additional approximately 12.5 acres of wetlands, 1,350 LF of streams, and 3.3 acres of regulated stream buffer would be affected within the construction LOD, although these areas would be restored to functioning condition following construction. These impacts are relatively small compared to the overall extent of the resources within Alternative 3 (i.e., long-term impacts on approximately 2 percent each of wetlands and streams in Alternative 3), and would

be mitigated as part of the Proposed Action through compliance with Sections 401 and 404 of the CWA, as described under Alternative 1 (see also Section 2.1.1).

Aside from stream and wetland impacts, the primary differences include that Alternative 3 (see Figure 2.4-4):

- Would discharge directly to a Section 303(d)-listed segment of Little Pine Knot Creek subject to a TMDL Implementation Plan, similar to Alternative 1 and largely different from Alternative 2. Whereas Upatoi Creek is located on the boundary of Alternative 1, Little Pine Knot Creek is located onsite in the middle of Alternative 3.
- Includes 216 acres of erodible soils within proposed off-road maneuver areas, as compared to 1,057 acres of erodible soils included within proposed off-road maneuver areas in Alternative 1 and 1,593 acres in Alternative 2.
- Proposes approximately 1,700 acres less of primarily forest land conversion to off-road maneuver areas than Alternative 1 and 1,200 acres less than Alternative 2; however, this reduction would place the same training load in a smaller area in Alternative 3, and would occur in an area of relatively steep topography draining to a Section 303(d)-listed stream segment, increasing the potential for soil disturbance, erosion, and sedimentation/water quality impacts.
- Proposes 25 stream crossings, as compared to 27 stream crossings under Alternative 1 and 19 under Alternative 2. Due to steeper topography in Alternative 3, however, coupled with more infrastructure (described below), this would result in stream and wetland impacts similar to Alternative 1, but less than Alternative 2.
- Proposes 10 miles of new, unpaved armor vehicle trails; two new, 1-acre concrete HET pads; 8 miles of (existing) road upgrades or improvements; and burying 2 miles of utility lines. This is similar to Alternative 2, and greater than Alternative 1.
- Would not result in vegetation removal and off-road maneuver training within 100-year floodplains, less than Alternatives 1 and 2.
- Would provide the same **reduction in current minor adverse impacts** to water resources in the GHMTA as Alternatives 1 and 2.

### 3.6.3 Mitigation

Implementation of the EPMS and RCMs identified as part of the Proposed Action in Section 2.1.1 would maintain water resources effects at acceptable levels, although minor impacts would still occur as described in this section.

To further reduce adverse water resources impacts, the Army would consider implementing the following additional mitigation measures:

- Maintain surface water buffers from heavy maneuver training activities that exceed the 25- to 100-foot widths anticipated as part of the Proposed Action, depending on site-specific resources and conditions.
- Implement proactive, long-term erosion control measures in areas where sedimentation is most likely (in addition to the ITAM program).
- Plan “rest and rehabilitation” periods, when feasible, and utilize “smart” scheduling to minimize impacts from multiple, sequential training events.
- Avoid conducting off-road heavy maneuver training, except when necessary, during or immediately following inclement weather when potential sedimentation impacts are most likely.
- Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternatives 1 and 2 when feasible.

**Table 3.6-4: Potential Impacts to Water Resources by Alternative**

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Construction, Operation, and Maintenance</b>				
<b>Section 303(d) Impaired Streams</b>	None.	Drains directly to impaired segment of Upatoi Creek.	Negligible.	Drains directly to Little Pine Knot Creek, located onsite.
<b>Water Quality/Stormwater</b>	<i>Minor, long-term, direct and indirect adverse impacts.</i>	<i>Minor, short- and long-term, direct and indirect adverse impacts.</i>	<i>Minor, short- and long-term, direct and indirect adverse impacts.</i>	<i>Minor, short- and long-term, direct and indirect adverse impacts.</i>
<b>Wetlands (permanent) (acres)</b>	None.	5.9	2.0	6.3
<b>Wetlands (temporary) (acres)</b>	None.	3.4	4.1	12.5
<b>Regulated Stream Buffers (permanent) (acres)</b>	None.	4.2	2.6	1.7
<b>Regulated Stream Buffers (temporary) (LF)</b>	None.	2.1	5.0	3.3
<b>Streams (permanent) (LF)</b>	None.	3,200	1,600	1,350
<b>Streams (temporary) (LF)</b>	None.	1,500	1,600	1,350
<b>Erodible Soils in Maneuver Footprint (acres)</b>	1,312	1,057	1,593	216
<b>Floodplains (acres)</b>	8	63	72	None.

### **3.7 Biological Resources**

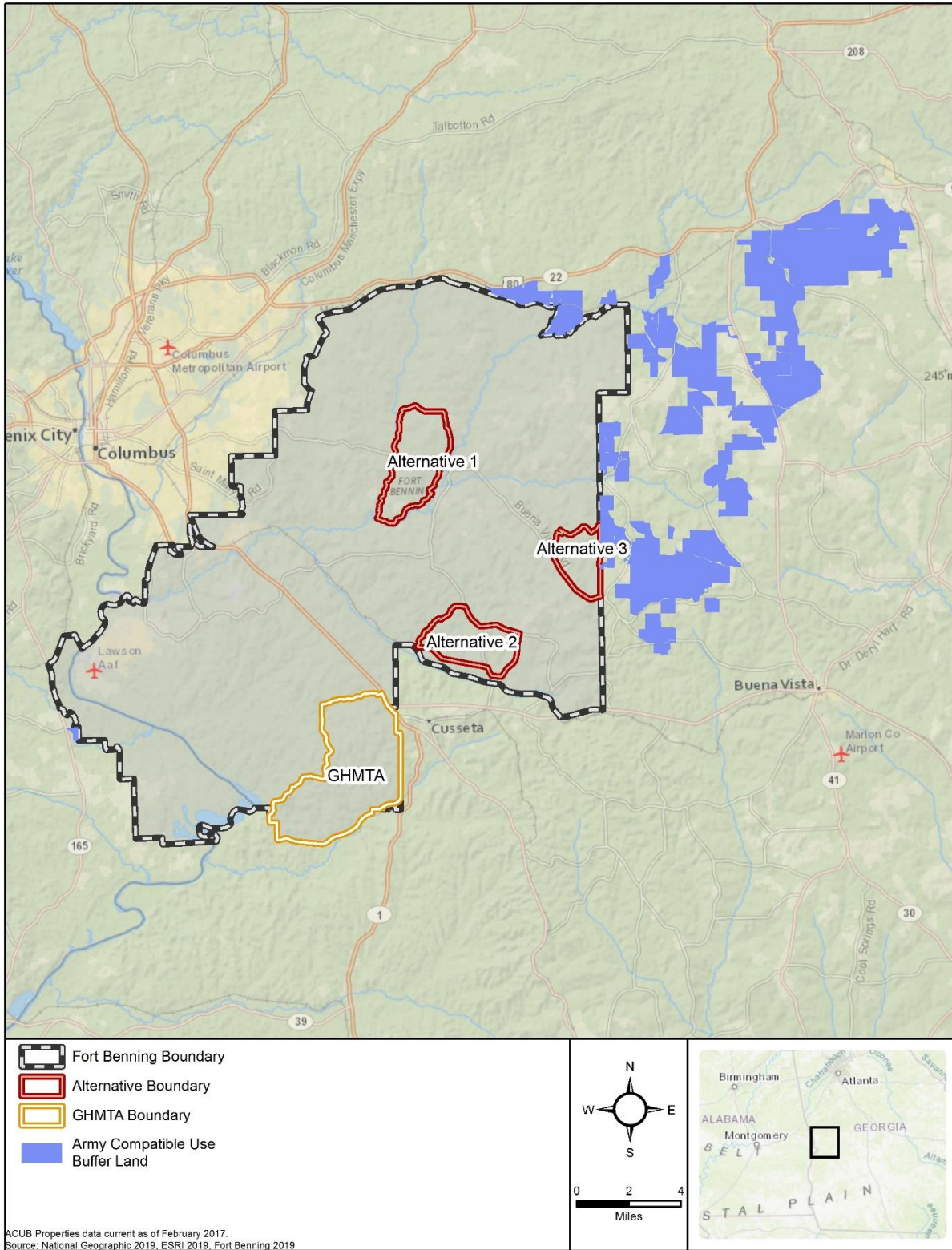
This section describes the existing conditions of, and potential impacts to, biological resources associated with the three Action Alternatives and the No Action Alternative within the Proposed Action's ROI. Biological resources include terrestrial and aquatic plants and animals and their habitats, as well as species afforded special protection through Federal and State regulations.

Fort Benning's INRMP guides the management of biological resources on the Installation (Fort Benning, 2016). The INRMP describes and implements the programs, plans, procedures, and projects for managing natural resources on Fort Benning. The INRMP adopts the principles of ecosystem management to sustain the military mission and ensures the Army's compliance with applicable laws and regulations (see Table 3.7-1).

#### **3.7.1 Affected Environment**

##### **3.7.1.1 Region of Influence**

The ROI for biological resources includes the entirety of Fort Benning and the Army Compatible Use Buffer (ACUB) properties (see Figure 3.7-1), as these areas are sufficient to include: (1) the Action Alternatives' footprints (i.e., Alternatives 1, 2, and 3, and the GHMTA); (2) adjacent lands that maintain biological resource connectivity to the Alternatives, including those with the potential to experience meaningful indirect effect(s) from the Proposed Action; (3) adjacent lands that could be utilized by wildlife displaced by the Proposed Action; and (4) lands the Army could use to mitigate adverse effect(s) from the Proposed Action.



**Figure 3.7-1: Fort Benning ACUB Land**

### 3.7.1.2 Applicable Guidance

Table 3.7-1 identifies laws, regulations, and guidance applicable to the Proposed Action’s impacts on biological resources.

**Table 3.7-1: Biological Resources Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
Sikes Act (16 USC 670a <i>et seq.</i> , as amended)	Requires Federal military installations with adequate wildlife habitat to develop a long-range INRMP and allows cooperative agreements with other natural resources agencies.
ESA of 1973 (16 USC §§ 1531 <i>et seq</i> )	Federal law that protects Federal-listed threatened and endangered plant and animal species and their habitats; prohibits jeopardizing the recovery of such species or adversely modifying critical habitat essential to their survival. Under Section 7, agencies that propose a Federal action that could jeopardize a listed species or result in destruction or adverse modification of its habitat must consult with the USFWS and/or the National Marine Fisheries Service (NMFS).
Bald and Golden Eagle Protection Act (BAGEPA) of 1940 (16 USC 668)	Federal law that prohibits the take, possession, or transport of bald eagles ( <i>Haliaeetus leucocephalus</i> ) and golden eagles ( <i>Aquila chrysaetos</i> ) or their nests and eggs without prior authorization via permit.
Migratory Bird Treaty Act (MBTA) of 1918 (16 USC Section 703 <i>et seq</i> )	Federal law that prohibits taking, killing, possessing, transporting, and importing of migratory birds, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11).
EO 13186, <i>Responsibilities of Federal Agencies to Protect Migratory Birds</i> (2001)	Mandates the conservation of migratory birds by Federal agencies and their consideration in the NEPA process. Pursuant to this EO, DoD and USFWS have in place a Memorandum of Understanding (USFWS and DoD, 2006) to promote the conservation of migratory birds in carrying out installation support functions such as facility demolition, construction, and operation (military readiness activities excluded).
EO 13751, <i>Safeguarding the Nation From the Impacts of Invasive Species</i> (2016)	Amends EO 13112, <i>Invasive Species</i> (1999), and directs Federal efforts to prevent and control invasive plant and animal species.
Georgia’s Protection of Endangered, Threatened, Rare, or Unusual Species Rule (391-4-10)	GADNR is required by Georgia’s Endangered Wildlife Act of 1973 and Georgia’s Wildflower Preservation Act of 1973 to determine and designate all plant and animal species indigenous to the State that are "rare," "unusual," or in "danger of extinction" and thereby "protected species" in the State. The Rules at 391-4-10 implement this Georgia law.



<p>USFWS Biological Opinions (BOs) Regarding RCW</p>	<p>2002 BO (USFWS, 2002): Approved Fort Benning’s specific management plan (i.e., ESMC) for RCWs in accordance with the 1996 Management Guidelines for the RCW on Army Installations, and included a “non-jeopardy” determination for the RCW. (This BO superseded a 1994 BO that identified a jeopardy designation for RCWs at Fort Benning.)</p> <p>2004 BO (USFWS, 2004): Issued by the USFWS for actions regarding the construction, operation, and maintenance of the DMPRC. This BO states that the incidental take of eight clusters and associated RCW groups under these actions would not likely jeopardize the continued existence of the RCW.</p> <p>2007 BO (USFWS, 2007): Issued by the USFWS for actions regarding the construction, operation, and maintenance of the BRAC and other Transformation Actions. This BO states that the incidental take of 32 RCW clusters under these actions would not likely jeopardize the continued existence of the RCW or cause destruction or adverse modification of habitat.</p> <p>2009 BO (USFWS, 2009): Issued by the USFWS for actions regarding the construction, operation, and maintenance of the MCoE. This BO was issued after the USFWS reviewed the MCoE BA that identified potential adverse impacts to relict trillium and RCWs (i.e., over 80 incidental takes of RCW clusters) (USACE, 2008).</p> <p>2011 Supplemental BO (USFWS, 2011): Issued by the USFWS as a supplement to the 2009 BO when two new RCW clusters were discovered adjacent to MCoE construction. Incidental take permits were issued for both of these clusters; these takes were determined not to be likely to jeopardize the continued existence of the RCW or cause destruction or adverse modification of habitat.</p> <p>2013 BO (USFWS, 2013a): Issued by the USFWS for potential effects to RCW clusters from bullets associated with the Malone Small Arms Range Complex. This BO states that the incidental take of one RCW cluster would not likely jeopardize the continued existence of the RCW or cause destruction or adverse modification of habitat.</p> <p>2014 Small Arms Ranges BO (USFWS, 2014a): Issued by the USFWS for potential effects to 10 RCW clusters and associated habitat from bullets associated with small arms ranges along Dixie Road. USFWS concurred that Army-implemented minimization efforts (e.g., an elevated berm) mostly eliminated the impacts that could result from live-fire military training.</p> <p>2014 ESMC Revisions BO (USFWS, 2014b): Approved major revisions to Fort Benning’s RCW ESMC that was approved under the 2002 BO, implementing the 2007 Management Guidelines for the RCW on Army Installations.</p> <p>2015 BO (USFWS, 2015): Issued by the USFWS for actions regarding enhanced training and the movement of training components (including heavy off-road mounted maneuver) to the GHMTA. This BO states that these actions would not likely appreciably reduce the survival and recovery of the RCW. Additionally, USFWS concurred that 30 RCW clusters with incidental take under the 2007 BO and 2009 BO were <i>not</i> taken and could count towards (i.e., be re-added to) Fort Benning’s RCW population recovery goals.</p> <p>2019 BO (USFWS, 2019a): Issued by the USFWS for actions regarding Fort Benning’s proposed conservation and crediting program for RCWs, which would implement a mitigation strategy that utilizes ACUB areas for RCW conservation (see Fort Benning’s ACUB Program description below).</p>
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Requirements	Description/Applicability to Proposed Action
USFWS Range-Wide Conservation Strategy for the Gopher Tortoise (USFWS, 2013b)	Guidance from the USFWS that guides gopher tortoise conservation efforts across the eastern population range.
DoDI 4715.03, <i>Natural Resources Conservation Program</i>	Guides and implements DoD's natural resources conservation program.
DoD Candidate Conservation Agreement (CCA) for the Gopher Tortoise (DoD, 2008)	Collectively implements conservation measures across the eastern range of the gopher tortoise, which includes Georgia. The CCA is a framework agreement for the range-wide management of the eastern population and put in place an organized and well-integrated conservation approach.
DoD Gopher Tortoise Conservation and Crediting Strategy (DOD et al., 2017)	An agreement between DoD and USFWS that implements conservation actions for the eastern population of the gopher tortoise. Allows credits to offset certain gopher tortoise impacts from DoD missions (e.g., Army training).
Management Guidelines for the Red-cockaded Woodpecker on Army Installations (US Army, 2007)	The 2002 USFWS-issued BO formally approved the use of the Army's Management Guidelines for RCWs at Fort Benning (USFWS, 2002); the 2007 guidelines were incorporated into a 2014 revision of the RCW ESMC approved by the 2014 USFWS-issued BO (USFWS, 2014b). These guidelines provide management guidance to Army installations for managing RCWs and their habitat, and for developing ESMCs for the RCW as part of an installation's INRMP.
Management Guidelines for the Gopher Tortoise on Army Installations (US Army, 2008)	These guidelines provide management guidance to Army installations for managing gopher tortoises and their habitat.
Fort Benning INRMP (Fort Benning, 2016)	Guides the management of biological resources on Fort Benning. Establishes that Installation actions must be implemented in accordance with policies and procedures that promote overall biological diversity and protection while also supporting the Installation's missions. The Sikes Act provides the basis for the implementation of INRMPs.
Fort Benning Unique Ecological Areas (UEAs) Management Plan (TNC, 2005)	In accordance with DoDI 4150.07, this plan identifies areas that have unique or rare ecological characteristics and ecological integrity that should be afforded additional conservation and protection on Fort Benning. It is included as part of the INRMP.
Fort Benning Pest Management Program (Fort Benning, 2016)	In accordance with DoDI 4150.07 and as part of the INRMP, Fort Benning implements a pest management program to control non-native, invasive plant and animal species. Fort Benning contains approximately 150 such plant species; however, the program is focused on high-priority species.

Requirements	Description/Applicability to Proposed Action
Fort Benning's Species Management Component (SMC) for Bald Eagle (Fort Benning)	Discusses threats the bald eagle faces on the Installation; defines conservation goals; and outlines a management plan for the species and its habitat that will enable achievement of conservation goals. It is consistent with USFWS Bald Eagle Recovery Plan (USFWS, 1989) and is included as part of the INRMP.
Fort Benning's Management Plan for Gopher Tortoise (Fort Benning, 2011)	Discusses threats the gopher tortoise faces on the Installation; defines conservation goals; and outlines a plan for management of the species and its habitat that will enable achievement of conservation goals. It is included as part of the INRMP.
Fort Benning's RCW ESMC (Fort Benning, 2018b)	An Installation-specific ESMC for management and conservation of the RCW in accordance with: the ESA; the Sikes Act; the 2007 Management Guidelines for the RCW on Army Installations; and the USFWS Recovery Plan for RCWs. USFWS approved the Fort Benning RCW ESMC in 2014; it was last updated in 2018.
Fort Benning's ACUB Proposal (TNC, 2006)	Outlines Fort Benning's proposed ACUB Program, which would facilitate the use of off-Post buffer land areas through a combination of no-development easements, conservation easements, and conservation-focused land acquisitions. The ACUB Program would emphasize RCW conservation through the acquisition of RCW habitat for restoration or conservation in the region around Fort Benning.
Fort Benning's RCW Off-Post Conservation Plan (Fort Benning, 2010)	Establishes a plan to secure property interests, ensure long-term management, and restore and conserve habitat for the RCW in the region around Fort Benning. This plan was established to adhere to the MCoE BA (USACE, 2008) and 2009 BO (USFWS, 2009) which proposed an acceleration of Fort Benning's proposed ACUB Program. It is included as part of the RCW ESMC in the INRMP.

### 3.7.1.3 Existing Conditions

#### Vegetation

There are more than 1,275 species of plants on Fort Benning located within approximately 29,000 acres of unforested land and 150,000 acres of forested land (i.e., woodland) (Fort Benning, 2016). Dominant pine species on-Post include loblolly pine (*Pinus taeda*), shortleaf pine (*Pinus echinata*), and longleaf pine (*Pinus palustris*); dominant deciduous hardwoods on-Post include species such as post oak (*Quercus stellata*), southern red oak (*Quercus falcata*), white oak (*Quercus alba*), pignut hickory (*Carya glabra*), and mockernut hickory (*Carya tomentosa*) (Fort Benning, 2016). On-Post woodlands may also include tree species such as blackgum (*Nyssa sylvatica*), tulip poplar (*Liriodendron tulipifera*), red maple (*Acer rubrum*), sweetgum (*Liquidambar styraciflua*), and scrub oaks such as bluejack (*Quercus incana*), sand post (*Quercus margarettae*), and turkey oaks (*Quercus laevis*). Common shrubs include deerberry (*Vaccinium stamineum*) and littlehip

hawthorn (*Crataegus spathulata*). Woody vines include greenbriers (*Smilax* spp.), muscadine grape (*Vitis rotundifolia*), crossvine (*Bignonia capreolata*), and yellow jessamine (*Gelsemium sempervirens*). Herbaceous species include arrowleaf heartleaf (*Hexastylis arifolia*), partridge berry (*Mitchella repens*), bracken fern (*Pteridium aquilinum*), as well as a diverse assemblage of legumes, grasses such as little bluestem (*Schizachyrium scoparium*), and asters such as blazing stars (*Liatris* spp.), sunflowers (*Helianthus* spp.), and goldenrods (*Solidago* spp.) (USACE, 2015). Fort Benning's vegetation is characteristic of the Fall Line Sandhill region that extends along the southeastern Coastal Plain-Piedmont Fall Line from southern North Carolina through Georgia and parts of Alabama (Dilustro et al., 2002).

Human activities have influenced and continue to influence the types and presence of vegetation on Fort Benning. Prior to the 1990s, non-native slash pine (*Pinus elliottii*) was planted throughout the southeastern US for wood production. Old fields, pastures, abandoned farmland, and manicured lawns typically include weedy successional species that are tolerant of human disturbance, such as broomsedge (*Andropogon virginicus*), bahia grass (*Paspalum notatum*), browntop millet (*Urochloa ramosa*), or Bermuda grass (*Cynodon dactylon*) (USACE, 2015). Invasive plant species on Fort Benning, such as autumn olive (*Eleagnus umbellata*), Japanese honeysuckle (*Lonicera japonica*), and kudzu (*Pueraria montana* var. *lobata*), have a preference for disturbed and open habitats and are typically able to reestablish quickly following disturbance events, such as fire (TNC, 2005; USDA Forest Service, 2003; USDA Forest Service, 2002). As described in Section 3.3.1.3, the existing human-induced fire regime (i.e., prescribed burns) in the Alternatives consists of small prescribed burns (approximately 200 to 300 acres each) in upland areas on a 2- to 3-year return interval. Invasive species are controlled under Fort Benning's Pest Management Program, as identified in Table 3.7-1.

Pine stand decline (i.e., the damage or death of pine trees in a contiguous forested area) is occurring on Fort Benning due to site constraints; insect infestations (e.g., the southern pine beetle); offsite species being introduced into a more frequent, intensive fire management regime; and disease (e.g., littleleaf disease), notably where longleaf pine would have historically been the dominant species. To combat this, the Army is converting loblolly, slash, and shortleaf pine stands at Fort Benning to longleaf pine where longleaf pine would have historically been the dominant species (USACE, 2015).

The Fort Benning INRMP defines 14 aquatic and terrestrial vegetative communities that are comprised of similar groupings of plants found in similar environments and which are influenced by similar physical, chemical, and biological processes (e.g., nutrient cycling, ecological community dynamics) (USACE, 2009). Table 3.7-2 through Table 3.7-4 list and describe the vegetative communities that are associated with the Action Alternatives; Figure 3.7-2 through Figure 3.7-4 show the vegetative communities that are associated with the Action Alternatives.

The GHMTA consists of three dominant vegetative communities: Dry-Mesic Hardwoods (i.e., primarily oak and hickory species interspersed with pine; 29.5 percent of the GHMTA), Plantations (i.e., areas historically planted with pines and utilized for wood production; 28.5 percent of the GHMTA), and Successional Upland Deciduous Forest (i.e., previously disturbed or open areas that have been recolonized by broad-leaved deciduous trees and loblolly pine; 15.3 percent of the GHMTA). The biological resources in the GHMTA are described in greater detail in the ETEA (USACE, 2007; Fort Benning, 2015b).

**Table 3.7-2: Vegetative Communities and UEAs in Alternative 1**

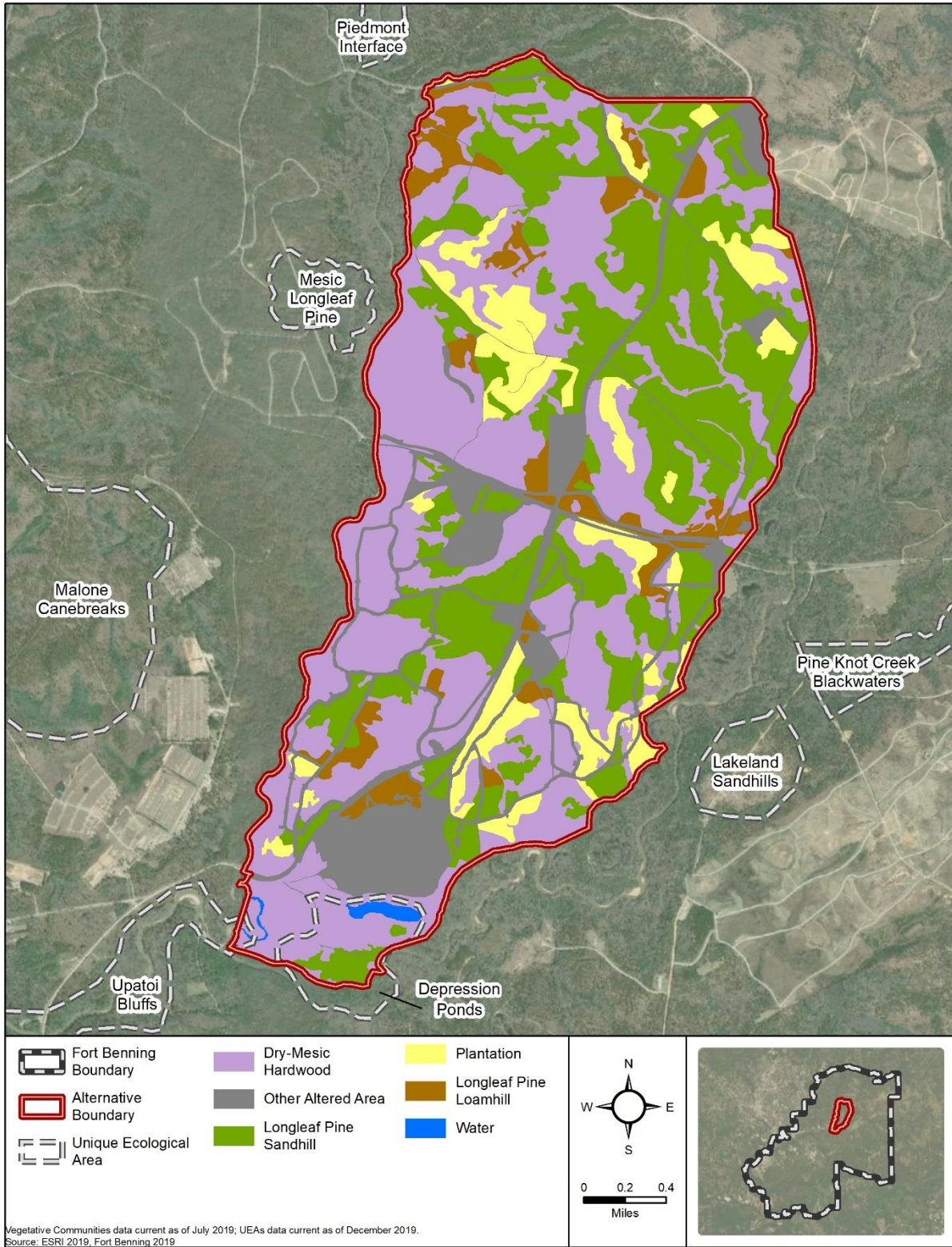
<b>Community</b>	<b>Approximate Acreage within Alternative</b>	<b>Notes</b>
<b>Vegetative Communities</b>		
Dry-Mesic Hardwoods	1,915	Primarily consists of blackgum, red maple, tulip poplar, sweetgum, and oak and hickory species interspersed with pine
Longleaf Pine Loamhills	262	Loblolly pine dominated stands
Longleaf Pine Sandhills	1,421	Longleaf pine, longleaf pine-hardwood, longleaf pine-mixed, and scrub oak-pine stands
Plantations	421	Longleaf and slash pine plantations
Other Altered Areas	677	Consists of unforested open land, utility rights-of-way, and training areas, with Lee Field as the predominant area
<b>Total</b>	<b>4,724</b>	-
<b>UEAs</b>		
Upatoi Bluffs	6.5	Southwestern corner of Alternative 1
Depression Ponds	127.2	South of Lee Field
<b>Total UEA Acreage</b>	<b>133.7</b>	<i>Less than Alternatives 2 or 3</i>

**Table 3.7-3: Vegetative Communities and UEAs in Alternative 2**

Community	Approximate Acreage within Alternative	Notes
<b>Vegetative Communities</b>		
Dry-Mesic Hardwoods	1,411	Primarily consists of tulip poplar, sweetgum, and oak and hickory species interspersed with pine
Longleaf Pine Loamhills	838	Loblolly or shortleaf pine-dominated stands
Longleaf Pine Sandhills	189	Longleaf pine, longleaf pine-hardwood, and scrub oak-pine stands
Plantations	1,201	Loblolly and longleaf plantations
Other Altered Areas	106	Consists of unforested open land and training areas
<b>Total</b>	<b>3,745</b>	-
<b>UEAs</b>		
Prosperity Church Oak-Hickory Forest	247.3	Almost the entirety of the UEA is in the northwestern corner of Alternative 2
<b>Total UEA Acreage</b>	<b>247.3</b>	<i>Greater than Alternative 1, but less than Alternative 3</i>

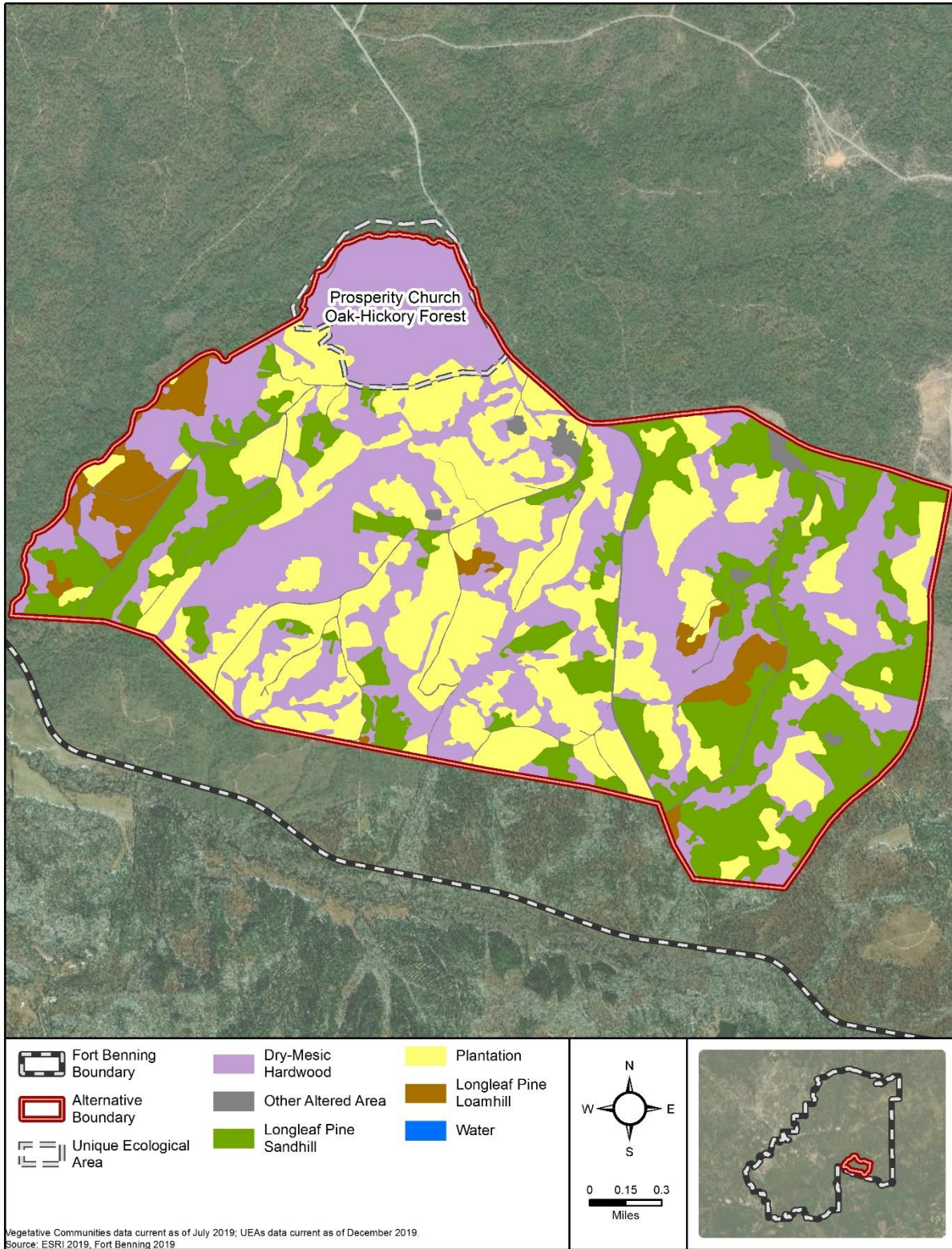
**Table 3.7-4: Vegetative Communities and UEAs in Alternative 3**

Community	Approximate Acreage within Alternative	Notes
<b>Vegetative Communities</b>		
Dry-Mesic Hardwoods	1,168	Primarily consists of tulip poplar, sweetgum, and oak and hickory species interspersed with pine
Longleaf Pine Loamhills	16	Loblolly or shortleaf pine-dominated stands
Longleaf Pine Sandhills	917	Longleaf pine, longleaf pine-hardwood, longleaf pine-mixed, and scrub oak-pine stands
Plantations	224	Loblolly, longleaf, and slash pine plantations
Other Altered Areas	65	Consists of open, unforested land
<b>Total</b>	<b>2,404</b>	-
<b>UEAs</b>		
Pine Knot Creek Blackwater	127.1	A small portion of this UEA is in the northern portion of Alternative 3
Slopes of Northern Affinities	652.8	Almost the entirety of the UEA is in the southern portion of Alternative 3
Arkansas Oak Rock Hills	0.6	This UEA is located along the southern border of Alternative 3
<b>Total UEA Acreage</b>	<b>780.5</b>	<i>Greater than Alternatives 1 or 2</i>



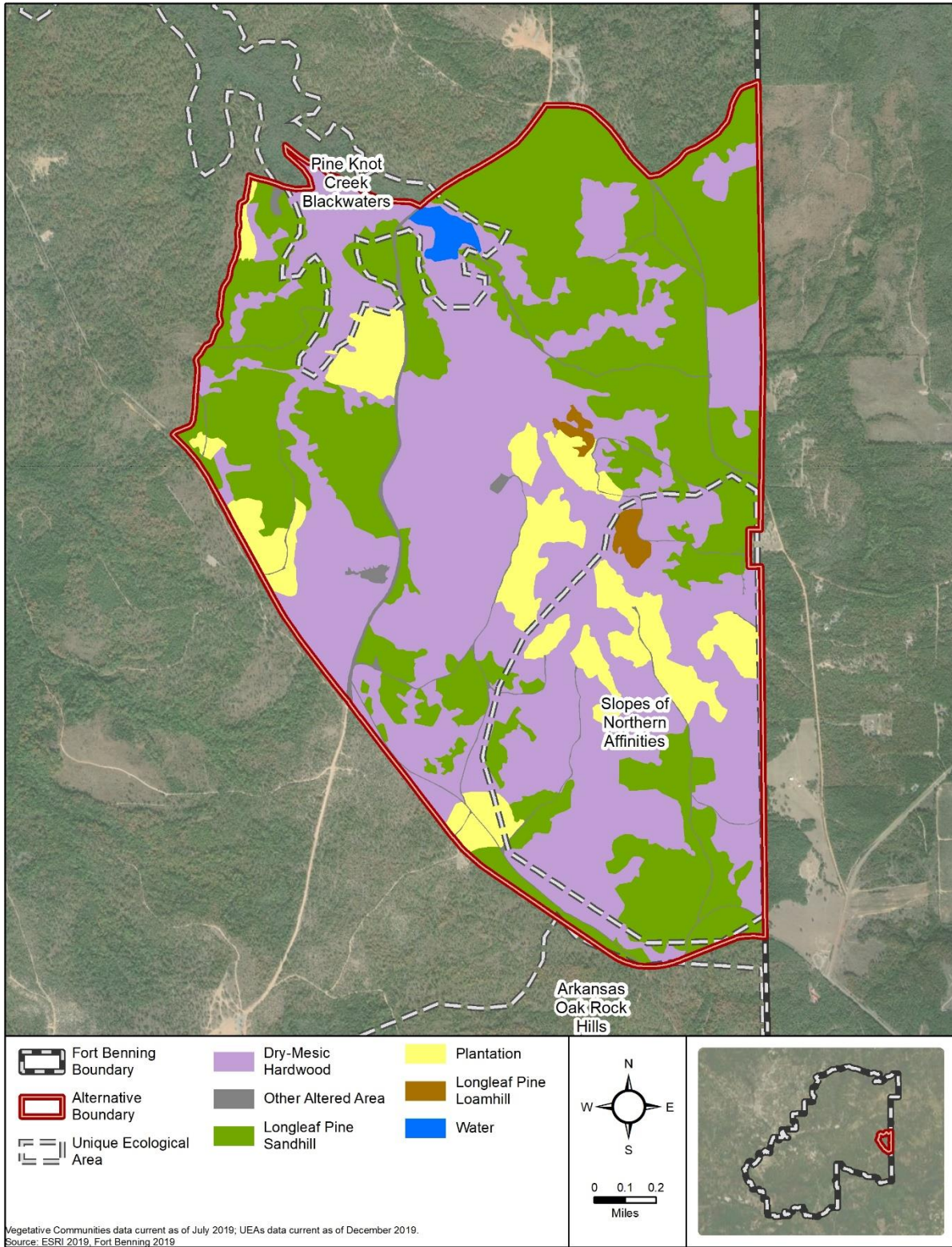
**Figure 3.7-2: Vegetative Communities and UEAs in Alternative 1**





**Figure 3.7-3: Vegetative Communities and UEs in Alternative 2**





**Figure 3.7-4: Vegetation Map of Alternative 3**

### **Unique Ecological Areas (UEAs)**

In accordance with DoDI 4715.03, the Fort Benning INRMP identifies areas that have unique or rare ecological characteristics and ecological integrity that should be afforded additional conservation and protection. These are categorized as UEAs based on characteristics such as forest or plant community type, soils, topography, slope, aspect, elevation, hydrology, and habitat value for flora or fauna. These areas have no formal protection status under Federal, State, or local law.

As identified in Table 3.7-1, UEAs are managed under Fort Benning's UEAs Management Plan. There are 19 UEAs on Fort Benning, encompassing nearly 21,400 acres (Fort Benning, 2016). UEAs within the Action Alternatives are described in Table 3.7-2 through Table 3.7-4. Figure 3.7-2 through Figure 3.7-4 show the location of the UEAs within the Action Alternatives. No UEAs are located within the GHMTA (TNC, 2005).

- **Upatoi Bluffs:** This 1,871-acre UEA is near the west-central boundary of the Installation and primarily consists of hardwood bluff forests on the southeastern side of Upatoi Creek. This UEA has ecological value in its typically nutrient-rich soils.
- **Depression Ponds:** This 172-acre UEA is located just south of Lee Field. It has unique seasonally flooded depression ponds and rare herbaceous wetland communities.
- **Prosperity Church Oak-Hickory Forest:** This 272-acre UEA is considered an area of local uniqueness due to its high-quality upland oak-hickory forests, which are not common at Fort Benning. Despite the high-quality oak-hickory forests, about 60 noncontiguous acres of this UEA are disturbed by military training and support modified vegetation that is of low ecological value.
- **Pine Knot Creek Blackwater:** This 1,630-acre UEA transects the DMPRC in the east-central portion of Fort Benning. It includes most of Pine Knot and Little Pine Knot Creeks. Bottomland plant communities and upland forests in this UEA are generally of high quality. The main purpose for this UEA's establishment is to conserve the ecological value of a stream that includes a special status fish species: the broadstripe shiner (*Pteronotropis euryzonus*). This special status species is described further in the *Special Status Species* section below.

- **Slopes of Northern Affinities:** This 656-acre UEA is a primarily mesic hardwood forest located in the east-central portion of the Installation. None of the plant communities in this UEA are particularly rare, but the forest is considered high quality and to be a distinct and intact forest habitat.
- **Arkansas Oak Rock Hills:** This 3,823-acre UEA is in the southeastern corner of the Installation. It has ecological value in its high-quality habitat areas, although approximately 1,330 noncontiguous acres of this UEA are presently disturbed by military training and pine harvesting. These disturbed areas support modified vegetation of low ecological value.

### **Fish and Wildlife**

As identified in the INRMP, Fort Benning is inhabited by more than 350 species of fish and wildlife, including 154 species of birds, 47 species of mammals, 48 species of reptiles, 25 species of amphibians, 67 species of fish, and 9 species of mussels, as well as numerous insect and other invertebrate species. A complete listing of all species at the Installation is provided in Fort Benning's INRMP (Fort Benning, 2016).

#### *Birds*

Common birds seen at Fort Benning include several species of raptors, wading birds, waterfowl, and songbirds, such as red-tailed hawk (*Buteo jamaicensis*), great egret (*Casmerodius albus*), Canada goose (*Branta canadensis*), American robin (*Turdus migratorius*), and house finch (*Carpodacus mexicanus*). The European starling (*Sturnus vulgaris*) is a non-native and naturalized bird species that is very common at Fort Benning and threatens native bird species by aggressively taking over nests. Northern bobwhite quail (*Colinus virginianus*) and eastern wild turkey (*Meleagris gallopavo*) are also common on the Installation and are a desirable resident game species by hunters. Some migratory waterfowl, such as the wood duck (*Aix sponsa*) and mallard (*Anas platyrhynchos*), are also hunted game species (Fort Benning, 2016). Migratory birds protected under the Migratory Bird Treaty Act (MBTA) are further discussed under the *Special Status Species* section, below.

#### *Mammals*

Mammals at Fort Benning include American beaver (*Castor canadensis*), eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), rabbits (*Sylvilagus* spp.), and other small

mammals that are common in forested and urban habitats. Seven bat species, the big brown bat (*Eptesicus fuscus*), little brown myotis (*Myotis lucifugus*), red bat (*Lasiurus borealis*), evening bat (*Nycticeius humeralis*), Seminole bat (*Lasiurus seminolu*), southeastern myotis (*Myotis austroriparius*), and Mexican free-tailed bat (*Tadarida brasiliensis*), are known to occur on the Installation. White-tailed deer are common on the Installation and are a desirable game species by hunters. Invasive feral swine are a nuisance at Fort Benning, as they damage soil and native vegetation through their rooting behavior. The INRMP recommends a reduction or elimination in the feral swine population at Fort Benning and liberal hunting regulations for the species are in effect (Fort Benning, 2016). Feral swine rooting, and consequent diminishing of native plant populations, is a management concern in the Depression Ponds UEA within Alternative 1 (TNC, 2005).

#### *Reptiles and Amphibians*

Reptiles and amphibians found on the Installation include, but are not limited to, eastern coachwhip (*Masticophis flagellum flagellum*), eastern diamondback rattlesnake (*Crotalus adamanteus*), southern copperhead (*Agkistrodon contortrix contortrix*), Florida pinesnake (*Pituophis melanoleucus mugitus*), southern cricket frog (*Acris gryllus*), bullfrog (*Rana catesbeiana*), marbled salamander (*Ambystoma opacum*), eastern tiger salamander (*Ambystoma tigrinum*), southern fence lizard (*Sceloporus undulates undulates*), and common snapping turtle (*Chelydra serpentina*) (Fort Benning, 2016). In general, reptiles and amphibians at Fort Benning are found in association with waterways and a variety could be present in the Alternatives.

#### *Fish*

Fort Benning supports a high diversity of native freshwater fishes, including both game and non-game species. Popular sport and game fish species include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), redear or shellcracker (*Lepomis microlophus*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), white bass (*Morone chrysops*), and hybrid white bass (*Morone chrysops saxatilis*). Native non-game fishes include such species as the blacktip shiner (*Lythrurus atrapiculus*), pugnose minnow (*Opsodpoedus emiliae*), gizzard shad (*Dorosoma cepedianum*), and southern brook lamprey (*Ichthyomyzon gagei*), among other species of shiners, darters, minnows, and shad (Fort

Benning, 2016). These common and native fish species may be in the waterways in the Alternatives. The non-native common carp (*Cyprinus carpio*) and the introduced flathead catfish (*Pylodictis olivaris*; species is only native to northeastern Georgia) are threats to Fort Benning's native fish populations as they outcompete native fish for food; the INRMP identifies management measures for their control (Fort Benning, 2016).

#### *Mussels and Other Invertebrates*

Invertebrate species at Fort Benning are numerous and diverse. Common insects in and nearby stream systems include larval and adult stages of stoneflies (Plecoptera), mayflies (Ephemeroptera), midges (Diptera), and caddisflies (Trichoptera) (Fort Benning, 2016). Soil-inhabiting insects, beetles, weevils, wood borers, and exotic insects are also common in the forests of Georgia (USACE, 2009). A wide variety of crustaceans, such as crayfish (Decapoda), isopods (Isopoda), snails (Gastropoda), and amphipods (Amphipoda) also occur within terrestrial and aquatic habitats.

Fort Benning is in the native range of approximately 18 mussel species, with nine species known to occur on the Installation (USACE, 2009; Fort Benning, 2016). Mussels are an important indicator species of water quality due to their sensitivity to degraded water quality and ecological integrity. Waterbodies on Fort Benning commonly containing mussels include the Chattahoochee River, Victory Pond, and Uchee, Cox, Shell, and Oswichee Creeks. Besides the native mussel species, Fort Benning's INRMP identifies the zebra mussel (*Dreissena polymorpha*) as an invasive species that is the greatest animal threat to the Installation's aquatic ecosystem in Alabama. Zebra mussels are currently not known to occur in Georgia, but the INRMP includes management measures designed to prevent zebra mussel spread and potential future threats to Fort Benning's aquatic ecological integrity (Fort Benning, 2016).

#### **Special Status Species**

Special status species include rare, threatened, and endangered plant and wildlife species that are afforded special protection under Federal and State regulations. This includes those species listed on Federal and State threatened, endangered, or special concern lists; those protected under the MBTA; and those protected under the Bald and Golden Eagle Protection

Act (BAGEPA). This section identifies and discusses the special status species with the potential to occur in the Alternatives.

#### *Federal and State Special Status Species*

Federal and State special status species known, or with a potential, to occur at Fort Benning are identified in Table 3.7-5.<sup>4</sup> Federal special status species were determined through the USFWS Information for Planning and Consultation (IPaC) database; State species of special concern were determined through a comparison of the INRMP's identified special status species and Georgia's protected species as identified in Georgia Rule 391-4-10 and through the Georgia Biodiversity Portal (GADNR, 2020a). Some species may be State-listed, but not Federal-listed. Definitions of designations, as defined by USFWS and/or GADNR, are as follows (USFWS, 2019b; GADNR, 2019a):

- **Endangered (E):** Any species which is in danger of extinction throughout all or a significant portion of its range.
- **Threatened (T):** Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
- **Candidate (C):** Any species which is proposed as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher priority listing activities.
- **Rare (R):** A species which may not be endangered or threatened but which should be protected because of its scarcity.

No Federal- or State-listed species are known or expected to occur in the GHMTA. It is unlikely that any special status species have a potential to occur within the highly disturbed GHMTA (USFWS, 2015; Fort Benning, 2015b).

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<sup>4</sup> Limited mapping of special status species' occurrences is provided in this EIS to protect the locations of these species.



**Table 3.7-5: Special Status Species Known or with Potential to Occur on Fort Benning**

**Key:**

**Green Highlight** – Known to occur within Alternative(s).

**Yellow Highlight** – Potential, but not known, to occur within Alternative(s).

**Red Highlight** – No potential to occur within Alternatives.

Common Name	Scientific Name	Federal Designation	State Designation	Known/Potential to Occur in Action Alternative(s) <sup>1</sup>
<b>Plants</b>				
Georgia rockcress	<i>Arabis georgiana</i>	T	T	No
Relict trillium	<i>Trillium reliquum</i>	E	E	No
Michaux's sumac	<i>Rhus michauxii</i>	E	E	No
Little amphianthus	<i>Amphianthus pusillus</i>	T	T	No
Harperella	<i>Ptilimnium nodosum</i>	E	E	No
Fringed campion	<i>Silene polypetala</i>	E	E	No
Flyr's nemesis	<i>Brickellia cordifolia</i>	-	T	1, 2, and 3
Croomia	<i>Croomia pauciflora</i>	-	T	1, 2, and 3
Pickering's morning-glory	<i>Stylisma pickeringii pickeringii</i>	-	T	1, 2, and 3
Parrot pitcherplant	<i>Sarracenia psittacina</i>	-	T	1, 2, and 3
Sweet pitcherplant	<i>Sarracenia rubra</i>	-	T	1, 2, and 3
Bay star-vine	<i>Schisandra glabra</i>	-	T	1, 2, and 3
Lax water-milfoil	<i>Myriophyllum laxum</i>	-	R	No
Indian olive	<i>Nestronia umbellula</i>	-	R	No

**Key:**

**Green Highlight** – Known to occur within Alternative(s).

**Yellow Highlight** – Potential, but not known, to occur within Alternative(s).

**Red Highlight** – No potential to occur within Alternatives.

Common Name	Scientific Name	Federal Designation	State Designation	Known/ Potential to Occur in Action Alternative(s) <sup>1</sup>
<b>Birds</b>				
Wood stork	<i>Mycteria americana</i>	T	E	No
Red-cockaded Woodpecker (RCW)	<i>Picoides borealis</i>	E <sup>2</sup>	E	1, 2, and 3
Bald eagle	<i>Haliaeetus leucocephalus</i>	Protected under the BAGEPA	T	1 and 2
Bachman's sparrow	<i>Aimophila aestivalis</i>	-	R	1, 2, and 3
Southeastern American kestrel	<i>Falco sparverius paulus</i>	-	R	1, 2, and 3
American swallow-tailed kite	<i>Elanoides forficatus</i>	-	R	1, 2, and 3
<b>Mammals</b>				
Southeastern pocket gopher	<i>Geomys pinetis</i>	-	T	No
<b>Reptiles</b>				
Gopher tortoise	<i>Gopherus polyphemus</i>	C	T	1, 2, and 3
Barbour's map turtle	<i>Graptmys barbouri</i>	-	T	No
Northern map turtle	<i>Graptmys geographica</i>	-	R	No
Alligator snapping turtle	<i>Macrolemys temminckii</i>	-	T	No
Southern hognose snake	<i>Heterodon simus</i>	-	T	1, 2, and 3
<b>Amphibians</b>				
Gopher frog	<i>Rana capito</i>	-	R	1, 2, and 3

**Key:**

- Green Highlight** – Known to occur within Alternative(s).
- Yellow Highlight** – Potential, but not known, to occur within Alternative(s).
- Red Highlight** – No potential to occur within Alternatives.

Common Name	Scientific Name	Federal Designation	State Designation	Known/Potential to Occur in Action Alternative(s) <sup>1</sup>
<b>Fish</b>				
Spotted bullhead	<i>Ameiurus serracanthus</i>	-	R	No
Sicklefin redbhorse	<i>Moxostoma spp.</i>	-	E	No
Bluestripe shiner	<i>Cyprinella callitaenia</i>	-	R	1, 2, and 3
Goldstripe darter	<i>Etheostoma parvipinne</i>	-	R	1, 2, and 3
Broadstripe shiner	<i>Pteronotropis euryzonus</i>	-	R	1, 2, and 3
<b>Molluscs/Crustaceans</b>				
Shinyrayed pocketbook	<i>Lampsilis subangulata</i>	E	E	No
Purple bankclimber	<i>Elliptoideus sloatianus</i>	T	T	No
Gulf moccasinshell	<i>Medionidus penicillatus</i>	E	E	No
Oval pigtoe	<i>Pleurobema pyriforme</i>	E	E	No
Apalachicola floater	<i>Anodonta heardi</i>	-	R	1, 2, and 3
Sly crayfish	<i>Procambarus versutus</i>	-	R	1, 2, and 3

Sources: (USFWS, 2019d; Fort Benning, 2016; GADNR, 2020a), Georgia Rule 391-4-10

1. The Army determined whether each special status species is known or has the potential to occur within each Action Alternative using the best available data from prior species surveys, known habitat suitability requirements of each species, and the existing habitat and conditions within each Action Alternative.
2. On September 25, 2020, the USFWS announced its proposal to downlist the RCW to “threatened” status.

While some Federal and State special status species may be present on Fort Benning, they do not have known presence or suitable habitat within the Action Alternatives. As such, the following species are eliminated from further discussion:

- **Georgia rockcress (Federal-T, State-T):** The presence of this plant in the Action Alternatives is unlikely as its presence on the Installation has only been noted along the Chattahoochee River (Fort Benning, 2016) (see Appendix F).
- **Relict trillium (Federal-E, State-E):** Seven populations of this plant are known to occur on Fort Benning, all of which are in the upper northern Range; no populations of this species have been found in any of the Action Alternatives (Fort Benning, 2016; USFWS, 2015; Fort Benning, 2015b) (see Appendix F). The Army completed a site-specific survey for this species within Alternatives 1, 2, and 3, but did not locate any new occurrences of this plant (AECOM, 2019).
- **Michaux's sumac (Federal-E, State-E):** One population of this species occurs on private land near the Installation, but no known populations occur on Fort Benning (see Appendix F). The Army completed a site-specific survey for this species within Alternatives 1, 2, and 3, but did not locate any new occurrences of this plant (AECOM, 2019).
- **Little amphianthus (Federal-T, State-T):** There are no known occurrences of this species on Fort Benning. The Action Alternatives do not have suitable habitat for this species (see Appendix F).
- **Harperella (Federal-E, State-E):** There are no known occurrences of this species on Fort Benning. The Action Alternatives do not have suitable habitat for this species (see Appendix F).
- **Fringed campion (Federal-E, State-E):** The presence of this plant in the Action Alternatives is unlikely as its presence has only been noted in the very northern portion of the Installation (see Appendix F).
- **Wood stork (Federal-T, State-E):** This species has only been sighted on the Alabama side of the Chattahoochee River, with one isolated sighting in 2000 in the southern Georgia portion of the Installation. It is unlikely the wood stork would be in the Action Alternatives (USFWS, 2015; Fort Benning, 2015b) (see Appendix F).
- **Shinyrayed pocketbook (Federal-E, State-E):** Critical habitat has been designated for this freshwater mussel species in eight river complexes or creeks, one of which is

Uchee Creek that flows on the Alabama side of the Installation (GADNR, 2018a; USFWS, 2019c). There is no critical habitat for this species in the Action Alternatives (USFWS, 2015; Fort Benning, 2015b). There are currently no known populations of this species on Fort Benning (see Appendix F).

- **Purple bankclimber (Federal-T, State-T):** Purple bankclimbers were found in 2000 and 2001 northwest of the Installation (i.e., in the Chattahoochee River in Lee County, Alabama and Harris County, Georgia). There are no known occurrences of this species on Fort Benning, and Fort Benning generally has unsuitable mussel habitat (see Appendix F).
- **Gulf moccasinshell (Federal-E, State-E):** There are no known occurrences of this species on Fort Benning, and Fort Benning generally has unsuitable mussel habitat (see Appendix F).
- **Oval pigtoe (Federal-E, State-E):** There are no known occurrences of this species on Fort Benning, and Fort Benning generally has unsuitable mussel habitat (see Appendix F).
- **Lax water-milfoil (State-R):** This species is known to occur in some UEAs at Fort Benning, but not in the UEAs associated with the Action Alternatives (TNC, 2005).
- **Indian olive (State-R):** This species is known to occur on the Alabama bank of the Chattahoochee River and in a few other isolated locations throughout the Installation. It is not known to occur within the Action Alternatives (Fort Benning, 2016).
- **Southeastern pocket gopher (State-T):** This species occurs in the Hastings Relict Sandhills UEA in the northeastern portion of the Installation; no populations of this species have been found in any of the Action Alternatives (USACE, 2009).
- **Barbour’s map turtle (State-T):** Barbour’s map turtles spend most of their lives in wide and swiftly flowing freshwater streams, often associated with areas of exposed limestone (GADNR, 2019b). The Action Alternatives do not have suitable habitat for this species.

- **Northern map turtle (State-R):** This species is found in large streams and rivers which have basking sites to accommodate the considerable amount of time this species spends basking (GADNR, 2019c). The Action Alternatives do not have suitable habitat for this species.
- **Alligator snapping turtle (State-T):** As with the northern map turtle, this species is found in large streams and rivers, specifically in undercut banks, log jams, and deep holes (GADNR, 2019d). The Action Alternatives do not have suitable habitat for this species.
- **Spotted bullhead (State-R):** This species inhabits rivers and large tributaries and prefers rocky substrates with moderate currents (GADNR, 2009). In Georgia, the spotted bullhead is known to occur in the Chattahoochee, Flint, Ochlockonee, and Withlacoochee Rivers (Fishes of Georgia, 2009a). The Action Alternatives do not have suitable habitat for this species.
- **Sicklefin redhorse (State-E):** This species prefers medium-sized rivers with swift currents (GADNR, 2016a). In Georgia, it is known to occur in the Tennessee River basin in the northern portion of the State (Fishes of Georgia, 2009b). The Action Alternatives do not have suitable habitat for this species.

Species that have a known or potential presence in the Action Alternatives, including their preferred habitats and location(s), are described below. Note that the bald eagle, which is afforded special protections under the BAGEPA, is described separately later in this section.

- **RCW (Federal-E,<sup>5</sup> State-E):** The RCW is a small (i.e., 20 centimeters [cm] in length) black and white woodpecker. This species requires large expanses of open pine forest with little or no hardwood mid-story, well-developed groundcover, and mature pine trees for foraging, nesting, and roosting habitat. The RCW's diet includes small insects such as spiders, ants, and millipedes found within pine bark. Nests/roosts are created

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<sup>5</sup> On September 25, 2020, the USFWS announced its proposal to downlist the RCW to "threatened" status. If needed, the Army would re-initiate consultation with the USFWS for this species; however, because Federal protections for threatened species are generally less than those for endangered species, the Army does not anticipate that the BO conclusions would change.



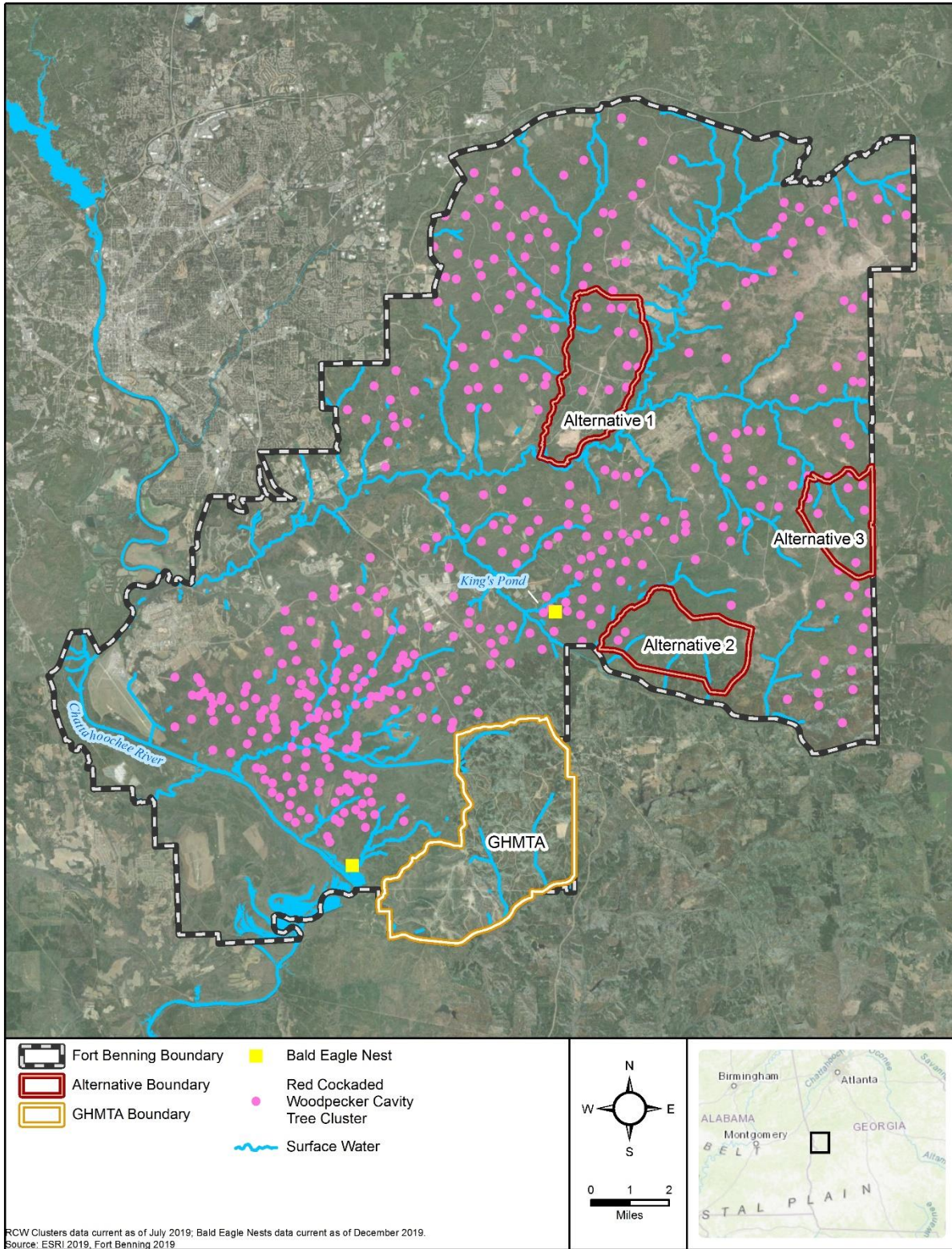
by excavating cavities in old living pines, a process that may take years to complete. They typically do not disperse over large geographic distances and usually remain within or near the territory in which they were born (GADNR, 2010c; USACE, 2009).

Fort Benning contains one of the largest populations of RCWs in the southeastern US. There are over 400 RCW clusters on the Installation (see Figure 3.7-5), with a “cluster” being an aggregate of cavity trees that are used for nesting and roosting by a family group of RCWs.

Currently, 10 active clusters exist in Alternative 1, two in Alternative 2, and seven in Alternative 3. There are no known active clusters in the GHMTA (USFWS, 2015; Fort Benning, 2015b). In addition, RCW habitat includes a foraging partition that extends 0.5 mile from the center of each cluster; as such, offsite clusters can also be affected by a proposed action.

The nearest managed RCW population located beyond the Installation boundary is at the Enon Plantation near Midway, Alabama, approximately 40 miles west-southwest of the Installation. In the past, Fort Benning has translocated RCWs to this population. As identified in Table 3.7-1, RCW populations are managed on the Installation through Fort Benning’s RCW ESMC, in accordance with USFWS BOs.

- **Gopher tortoise (Federal-C, State-T):** The gopher tortoise is a relatively large terrestrial turtle reaching 38 cm in length. It has shovel-like forelimbs for burrowing; individuals excavate unbranched burrows up to 33 feet long. Habitat requirements include sandy soil for burrowing, sunlight availability, and herbaceous vegetation for forage (GADNR, 2019e). The forest communities of the Georgia Sand Hills, including those of Fort Benning, provide suitable habitat for the gopher tortoise. The gopher tortoise is considered a “keystone” species of the longleaf pine community because other wildlife species (e.g., gopher frogs) utilize its burrows, it indirectly benefits seed dispersion and fertilization through its digging, and it provides other communal ecosystem benefits (USFWS, 2017a).



**Figure 3.7-5: RCW Clusters and Bald Eagle Nests at Fort Benning**

There are almost 8,400 active and inactive gopher tortoise burrows on Fort Benning. Gopher tortoises are common on Fort Benning but are particularly dense in the northeast portion of the Installation where dry, sandy soils and foraging habitat are abundant (Fort Benning, 2016). Overall, there are approximately 784 burrows in Alternative 1 (328 active), 155 burrows in Alternative 2 (85 active), and 423 burrows in Alternative 3 (174 active). As identified in Table 3.7-1, these populations are managed through Fort Benning's Gopher Tortoise Management Plan.

- **Flyr's nemesis (State-T):** Flyr's nemesis is a tall perennial herb with slightly ribbed stems and bristled, purple flowers (GADNR, 2019f). This species is found in diverse habitats: moist pine-oak-hickory woods and flats; dry woods, with southern red oak and loblolly pine; sandy, well drained riverbanks; upper ravine slopes with spruce pine, southern magnolia, and white oak; and often in basic soils. They survive in sunny openings, but may persist in shady, overgrown woods and disturbed areas (USFWS, 2019e). Fort Benning has 15 of the 17 Georgia populations found in the last 20 years (GADNR, 2019f). Based on its habitat preferences, this species could occur in suitable habitat in Alternatives 1, 2, and 3.
- **Croomia (State-T):** Croomia is a perennial herb with scale-like leaves around the base and 3 to 6 cordate to elliptical green leaves at the stem tip. This species spreads slowly by underground rhizomes (USFWS, 2019f). It prefers rich, moist, deciduous forests in ravines and river bluffs (GADNR, 2019g). Based on its habitat preferences, this species could occur in suitable habitat in Alternatives 1, 2, and 3.
- **Pickering's morning-glory (State-T):** Pickering's morning-glory is a white-flowered perennial herbaceous vine which flowers and fruits profusely; an individual plant can produce hundreds of fruits and seeds. It is found in bare, sandy soils of sandhills on the Fall Line and sand ridges along Coastal Plain rivers, although it may also be associated with turkey oak and longleaf pine communities (GADNR, 2019h). This species occurs in seven different population clusters on Fort Benning, including near concentrations of gopher tortoise burrows (Fort Benning, 2016). Based on its habitat preferences, this species could occur in suitable habitat in Alternatives 1, 2, and 3.

- **Parrot pitcherplant (State-T):** Parrot pitcherplant is a carnivorous plant found in boggy low-lying areas of pine forest. Leaves resemble narrow tubes having a wing on the side facing the center of the plant. Mature plants have leaves with a balloon-like reddish-purple hood with a mouth-like opening. These downward-facing hoods on mature leaves trap insects. This species grows in moist, swampy soil that is usually high in sphagnum moss and acid and low in nutrients such as nitrogen (NC State Extension, 2020a). Based on its habitat preferences and the Hydrologic Unit Code (HUC) 10 Watershed Report, this species could occur in suitable habitat in Alternatives 1, 2, and 3 (USFWS, 2020).
- **Sweet pitcherplant (State-T):** Sweet pitcherplant is a long-living (up to 30 years) perennial herb with modified tubular pitchers and red or green leaves with red veins. These pitchers capture and digest insects and other small animals, luring prey to the opening with a sweet-smelling nectar produced by glands at the top. This species can be found in bogs, seepy stream banks, and wet savannahs (GADNR, 2019i). This species is known to occur near, but not within Alternative 1. This species could occur in suitable habitat in Alternatives 1, 2, and 3.
- **Bay star-vine (State-T):** Bay star-vine is a woody vine with leaves 2 to 15 cm long and 1 to 8 cm wide, oval leaves with tapering bases, pointed tips, and widely spaced teeth along the margins. This species produces orange flowers and small, brightly colored red berries that are eaten by birds and other small animals (GADNR, 2020b). This species sprawls or twines over shrubs or high up in the canopy of trees in woodland areas, bluffs, and streambanks. This species is highly threatened by non-native plants like Japanese honeysuckle (NC State Extension, 2020b). Based on its habitat preferences and the Hydrologic Unit Code (HUC) 10 Watershed Report, this species could occur in suitable habitat in Alternatives 1, 2, and 3 (USFWS, 2020).
- **Bachman’s sparrow (State-R):** Bachman’s sparrow is a small bird, typically 15 cm in length with a rounded tail and alternating reddish-brown and gray vertical stripes running down its back. It feeds on insects, seeds, sedges, and some forbs. This species is typically found in mature open pinewoods, regenerating pine and hardwood clear-cuts, utility ROWs, and old pastures with dense ground cover. Major concentrations of

this species occur at Fort Benning (GADNR, 2010a). Based on its habitat preferences and according to USFWS IPaC, this species could occur in suitable habitat in Alternatives 1, 2, and 3 (USFWS, 2019d).

- **Southeastern American kestrel (State-R):** The southeastern American kestrel is the smallest falcon in North America, typically 23 cm in length. Distinguishing characteristics include a reddish-brown back with dark horizontal barring, a reddish-brown tail, a blue-gray cap with reddish-brown center, a white face with a dark mustache stripe under the eye, and a dark vertical stripe on the side of the head behind the eye. The kestrel feeds primarily on insects, small mammals, birds, and lizards, and prefers large open habitats such as grasslands, pastures, sandhills, and open pine forest (GADNR, 2010b). Based on its habitat preferences, data from the USFWS IPaC, and Fort Benning wildlife biologists, this species is known to occur in suitable habitat in Alternatives 1, 2, and 3 (USFWS, 2019d). Fort Benning has established kestrel nest boxes in Alternatives 1, 2, and 3.
- **American swallow-tailed kite (State-R):** The American swallow-tailed kite is typically 48 to 61 cm in length and is easily distinguished by its black and snow-white plumage. This species' diet includes insects such as dragonflies, butterflies, and beetles, as well as snakes, frogs, lizards, and smaller birds. It nests within wetland habitats where twig nests are often built at the tops of very tall trees (GADNR, 2010d). Kites roost and forage throughout Georgia, but breeding is restricted to the Coastal Plain (USFWS, 2017b). The distribution of this species at Fort Benning is unknown, although based on its habitat preferences it has the potential to occur in Alternatives 1, 2, and 3 (USACE, 2009).
- **Southern hognose snake (State-T):** Southern hognose snakes are short with stout bodies and sharply upturned snouts. Its background coloring is light brown to tan with a complex foreground coloring of dark brown, squarish, mid-dorsal blotches. This species is found in well-drained, xeric, sandy soils associated with longleaf pine and scrub oaks. This species is widely distributed in the Coastal Plain of Georgia, but tends to occur in small, disjunct populations that are sometimes isolated by several miles from the closest neighboring population (GADNR, 2019j). The distribution of this

species in the Action Alternatives is unknown, although based on its habitat preferences, it has potential to occur in Alternatives 1, 2, and 3.

- **Gopher frog (State-R):** The gopher frog is a medium-sized frog (i.e., 6.5 to 10.8 cm in length). Distinguishing features include dorsal coloration of either brown, gray, or creamy white with reddish brown/dark spots and a white or cream-colored belly with dark mottling. This species is restricted to longleaf pine ecosystems and typically resides in animal burrows, such as those of gopher tortoises. Their breeding occurs in isolated depressional wetlands (GADNR, 2018b). On the Installation, populations of gopher frogs are known to occur in two ponds in the northeastern corner of Fort Benning south of Hastings Range, and in one pond at the east-northeast border of the K15 Dudded Impact Area. While this species is not documented in the Alternatives, the proximity of xeric sandhill gopher tortoise habitat to the seasonal depression ponds in the Depression Ponds UEA of Alternative 1 provide preferred habitat for the gopher frog (Fort Benning, 2016). Based on its habitat preferences, this species could occur in suitable habitat in Alternatives 1, 2, and 3.
- **Bluestripe shiner (State-R):** The bluestripe shiner is a small fish (i.e., 9 cm in length) with a long and rounded head, dusky olive shading with a blue-black lateral stripe running along its upper sides, and 7 to 8 anal fin rays. Bluestripe shiners inhabit flowing waters in large creeks and medium-sized streams over rocky substrates (GADNR, 2016b). This species occurs in the Pine Knot Creek Blackwater UEA associated with Alternative 3, which was established partially in consideration of this species. Based on its habitat preferences, it is possible this species could also occur in the small streams of Alternatives 1 and 2.
- **Goldstripe darter (State-R):** The goldstripe darter is a small (i.e., 7.5 cm in length), robust fish with a short, rounded snout and a light-colored stripe along its lateral line. It is generally found in small streams and spring seepage areas associated with aquatic vegetation (GADNR, 2016c). This species is known to occur in the Chattahoochee, Flint, Ocmulgee, and Oconee River Basins (Fishes of Georgia, 2009c). It is possible this species could occur in the small streams of Alternatives 1, 2, and 3.



- **Broadstripe shiner (State-R):** The broadstripe shiner is a colorful minnow reaching a maximum length of about 7 cm. It has a bluish gray lateral stripe extending from the tip of its snout to the base of the caudal fin and is bordered by a narrow orange band. It prefers flowing areas of small- to medium-sized streams and is tolerant of moderately low pH waters (GADNR, 2016d). The broadstripe shiner is known to occur in the Chattahoochee River Basin (Fishes of Georgia, 2009d). It is possible this species could occur in the small streams of Alternatives 1, 2, and 3.
- **Apalachicola floater (State-R):** This mussel species has a very thin and inflated shell that is glossy and green on the exterior and white on the inside. This species inhabits Coastal Plain oxbow lakes and backwater sloughs of rivers, as well as some reservoirs. These habitats typically have little or no current and substrates composed of soft mud, sandy mud, and sand, often with detritus (USFWS, 2019g). It is possible this species could occur in the small streams of Alternatives 1, 2, and 3.
- **Sly crayfish (State-R):** The sly crayfish is dorsally tan or brown with cream and black markings. Striking cream-colored stripes run horizontally along the sides of the abdomen. When mature, this species reaches a maximum total body length of over 9 cm. This species is found only in clear, free-flowing streams. This species is usually found in streams of low pH. High quality habitat exists in Pine Knot Creek and other eastern tributaries of Upatoi Creek (Stanton, 2008). Based on its habitat preferences and the Hydrologic Unit Code (HUC) 10 Watershed Report, this species could occur in suitable habitat in Alternatives 1, 2, and 3 (USFWS, 2020).

### *Migratory Birds*

Fort Benning is utilized by approximately 150 species of migratory birds on an annual or seasonal basis for breeding and nesting, migration stop-over, and/or wintering activities. With some variation by species, the breeding season for migratory birds at Fort Benning generally occurs from the spring through summer months (USACE, 2009).

Migratory birds are provided Federal protection under the MBTA. Birds protected under the MBTA are generally Birds of Conservation Concern (BCC). BCCs are identified by the USFWS as “migratory and non-migratory bird species (beyond those already designated as federally



threatened or endangered) that represent [the USFWS’s] highest conservation priorities.” The BCC designation was created pursuant to the 1988 amendment to the Fish and Wildlife Conservation Act, which mandates that the USFWS “identify species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA of 1973.” BCCs can also include species not protected under the MBTA if their conservation status and efforts are of concern to the USFWS (USFWS, 2019h).

### *Bald Eagle*

The bald eagle is a large raptor with a wingspan of about 7 feet. Adults have a dark brown body and wings, white head and tail, and a yellow beak (USFWS, 2019i). Their diet consists of fish, waterfowl, birds, turtles, and small mammals. Preferred nesting sites include large, open-topped pine trees or other high ground near open water (GADNR, 2010e).

The bald eagle was de-listed from the ESA in June 2007 due to substantial increases in breeding pairs across the lower 48 US states; however, bald eagles remain protected under several other Federal statutes, including the BAGEPA, as described in Table 3.7-1. In Georgia, there are an estimated 123 occupied bald eagle nests (GADNR, 2019k).

There are two known breeding pairs of bald eagles on Fort Benning. One of the nests is located adjacent to the Chattahoochee River and the other is farther north, near King’s Pond (see Figure 3.7-5). Between the two pairs, there has been at least one fledgling per year since 1992.

As identified in Table 3.7-1, the management strategy on Fort Benning for bald eagles is detailed in a Species Management Component (SMC) and consists of maintaining the integrity of their habitat and feeding sources. Current management activities consist of surveys, monitoring efforts, and protection by limiting potentially disturbing activities within primary (i.e., 660-foot) and secondary (i.e., 0.6-mile) management zones around nest sites (Fort Benning, 2016; Fort Benning).

The USFWS IPaC identified bald eagles as having a potential presence in Alternatives 1 and 2 (USFWS, 2019d). The nest at King’s Pond is approximately 1.5 miles from the western boundary of Alternative 2 (Fort Benning), and approximately 3.5 miles from the southern boundary of Alternative 1. The nest along the Chattahoochee River is too far from Alternatives 1, 2, and 3 to be of concern.

The USFWS IPaC identified bald eagles as potentially within the GHMTA (USFWS, 2019d). The nest at King’s Pond is approximately 2.5 miles from the northern boundary of the GHMTA, and the nest along the Chattahoochee River is approximately 1.0 mile from the southwestern border of the GHMTA.

### 3.7.2 Environmental Effects

This section discusses the potential short- and long-term, direct and indirect biological resources impacts that would occur with implementation of the Action Alternatives and the No Action Alternative.

For the purposes of this biological resources effects analysis, *direct* impacts would occur within an Alternative. An impact would be considered *indirect* if the Proposed Action would alter biological resources elsewhere on Fort Benning or on off-Post lands (e.g., including ACUB lands) removed in time and distance from the Proposed Action activities (e.g., cause mobile species to move to other, offsite areas). *Short-term* impacts would occur if the effects would be limited to only the construction phase and would recover following construction; *long-term* impacts would occur if the effects would be permanent or would be periodic over the life of the Proposed Action.

#### 3.7.2.1 Approach to the Analysis

The Army used the impact threshold definitions presented in Table 3.7-6 to evaluate the intensity of the potential adverse impacts under each Alternative, and to benchmark when an adverse impact would be considered significant. The Army based significance thresholds for terrestrial and aquatic habitats on the magnitude of potential impacts as determined by a number of factors, including:

- The type and overall quality of the habitat affected
- The location or position of the habitat affected within the context of the landscape
- The amount of remaining similar habitat in the Alternative footprint, ROI, or affected watershed
- Whether the affected habitat is critical to a specific species or wildlife population, including special status species

**Table 3.7-6: Significant Adverse Impact Thresholds for Biological Resources**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	<ul style="list-style-type: none"> <li>• Would remove a substantial amount of vegetation from riparian or upland habitats in the ROI</li> <li>• Would permanently impact substantial amounts of a Fort Benning-defined UEA</li> <li>• Would substantially alter terrestrial or aquatic habitats, including direct loss or degradation of wetlands and other WOUS within the ROI</li> <li>• Would fragment/isolate substantial terrestrial and wetland habitats within the ROI</li> <li>• Would impede flow or aquatic organism movements in waterways, and/or would displace or degrade aquatic resources</li> <li>• Would adversely affect recovery of a Federal-listed or candidate species</li> </ul>
	Indirect Impacts	<ul style="list-style-type: none"> <li>• Would introduce or proliferate invasive species in the ROI</li> <li>• Would result in a notable downstream increase in turbidity, sedimentation, or nutrient/contaminant inputs</li> <li>• Would induce further changes offsite that would result in substantial changes to biological resources</li> </ul>

During the scoping process for this EIS, two members of the public commented on biological resources associated with the Proposed Action. Specifically, the public questioned: (1) what are the potential impacts to environmentally sensitive areas, including wetlands (see Section 3.6); and (2) of the total acreage of Fort Benning, specifically how many acres are unusable for military training because of RCW “infestation” and “planting” of colonies. These comments are addressed in this analysis. Public comments are provided in Appendix A.

To conduct this analysis, each Action Alternative was overlaid onto the existing biological resources environment using GIS, and the spatial relationships between Proposed Action components (i.e., based on the conceptual designs shown in Figure 2.4-2 through Figure 2.4-4) and biological resources were identified.

The Army determined potential direct and indirect impacts, including habitat loss and fragmentation, disruptions to movement, and loss of ecological function, by reviewing the Action Alternatives overlaid onto habitat community maps. In addition, the Army identified areas that may have seasonal construction constraints due to species presence (e.g., nesting special status bird species). A qualitative analysis of anticipated changes to biological resources was also conducted following the

quantitative analysis. Table 3.7-8 provides a summary comparison of biological resources impacts between all Alternatives and is included at the end of Section 3.7.3.

### 3.7.2.2 No Action Alternative

Under the No Action Alternative, there would be no change to existing training activities; heavy off-road maneuver training would continue to be conducted at the GHMTA. As evaluated in the ETEA, **minor, long-term adverse impacts** to existing vegetation would continue to occur in the GHMTA, such as root damage from off-road vehicle traffic (Fort Benning, 2015b). Continued heavy maneuver training and associated soil disturbance would maintain the vegetative communities in the GHMTA as disturbed understory and herbaceous communities and prevent succession into mature, natural communities. Disturbed soils and vegetative communities are typically more susceptible to invasion by invasive species that can rapidly dominate areas and outcompete native species. Similarly, heavy maneuver training can increase dispersal and establishment of invasive species by transporting seeds between areas. Fort Benning currently implements, and would continue to do so under the No Action Alternative, monitoring and control measures for invasive plant species through its Pest Management Program and INRMP to maintain these adverse impacts at minor levels (Fort Benning, 2015b).

Heavy maneuver training in the GHMTA would also continue to have **minor, long-term adverse impacts** on non-special status fish and wildlife in and around the GHMTA (Fort Benning, 2015b). Training activities currently lead to noise and other man-made disturbances that can deter wildlife from these areas. Additionally, sedimentation and increased turbidity in waterways from erosion and runoff decrease the quality of aquatic habitats and adversely impact aquatic species.

Fort Benning implements measures (e.g., stream buffers and the maintenance of some movement corridors and forage/shelter) to reduce impacts to wildlife in the GHMTA to the extent feasible and would continue to do so under the No Action Alternative to maintain impacts at minor levels.

The ETEA determined that heavy maneuver training in the GHMTA has **no effect** on migratory birds as the GHMTA does not diminish the capacity of migratory bird species to sustain themselves at a level that maintains genetic diversity, to reproduce, and to function effectively in their native ecosystem (Fort Benning, 2015b).

As described in Section 3.7.1.3, no Federal-listed or State-listed species are known and/or expected to occur in the GHMTA (USFWS, 2015; Fort Benning, 2015b). As evaluated in the ETEA, potential RCW habitat does exist in the GHMTA; however, there are no known active clusters in the GHMTA. The 2015 ETEA BO resulted in a “may affect, but not likely to adversely affect” finding relative to the RCW (see 2015 BO in Table 3.7-1; (USFWS, 2015)).

Additionally, Georgia rockcress, relict trillium, wood stork, gopher tortoise, and shinyrayed pocketbook are not present in the GHMTA; therefore, the No Action Alternative would have **no effect** on these special status species (USFWS, 2015; Fort Benning, 2015b). There is a bald eagle nest, however, approximately 1 mile from the GHMTA, so operation and maintenance activities could cause limited disturbance to these eagles; this would constitute a **minor, long-term adverse impact**.

Under current conditions, biological resources within the GHMTA and Fort Benning are adequately managed in accordance with Installation’s INRMP, ITAM program (see Section 3.5.1.2), and relevant Installation policies, programs, plans, and directives as described in Table 3.7-1.

### **3.7.2.3 Alternative 1**

Overall, Alternative 1 would result in **adverse impacts** on biological resources, which would vary from **negligible** to **significant levels**. Implementation of the EPMs and RCMs identified in Section 2.1.1 would ensure these impacts are reduced to the extent feasible; however, **significant adverse impacts** on substantial portions of UEAs would still occur.

#### **Vegetation**

##### *Direct Impacts*

Alternative 1 would convert approximately 3,200 acres of primarily forested land in north-central Fort Benning to primarily disturbed understory and herbaceous vegetation to construct, operate, and maintain the proposed HOMMTA. Table 3.7-7 identifies the acreage of each vegetative community anticipated to be affected. Vegetation removal would be accomplished through the use of commercial logging techniques while avoiding an additional approximately 1,500 acres of constrained lands (e.g., areas with steep slopes, vegetated riparian buffers, significant cultural resources sites, and protected species habitat). Site improvements under Alternative 1 would

include the water crossings, trails, utility line burial, and improvements as described in Table 2.4-1 and shown in Figure 2.4-2.

As shown in Table 3.7-7, construction of the proposed HOMMTA would remove approximately 2,270 acres of forest vegetation and 350 acres of plantation; approximately 610 acres of other altered areas would also be affected, but these areas are already disturbed by current and historic uses.

Alternative 1 is comprised mostly of Dry-Mesic Hardwoods (885 acres) and Longleaf Pine Sandhills (1,167 acres) vegetative communities, which would incur the most direct impacts. Therefore, direct impacts would primarily be to mixed pine and deciduous forest stands. This would include the long-term reduction of native regional forest vegetation in primarily upland habitats within the Alternative footprint and conversion of these areas to periodically disturbed herbaceous communities not anticipated to provide high-quality habitat.

Removal of existing forest would cause **moderate, short- and long-term, direct adverse impacts** to existing vegetation communities during construction of the proposed HOMMTA that would last throughout its lifespan. Operation and maintenance of the proposed HOMMTA would preclude forest re-establishment and maintain the heavy maneuver areas as periodically disturbed herbaceous vegetation, maintained through the Installation's ITAM program. Accordingly, there would also be a change in both vegetation species composition and abundance in Alternative 1; however, these changes would not be significant in the context of the ROI, as overall species abundance would not likely be substantially changed and the change in distribution of vegetative communities would be minor.

**Table 3.7-7: Potential Vegetative Community and UEA Impacts from Vegetation Removal from the Alternatives**

Community	Potential Impacts (acres)			
	No Action*	Alternative 1	Alternative 2	Alternative 3
<b>Vegetative Community</b>				
<b>Dry-Mesic Hardwoods</b>	None	<b>885</b>	<b>836</b>	<b>556</b>
<b>Longleaf Pine Loamhills</b>	None	<b>223</b>	<b>132</b>	<b>7</b>
<b>Longleaf Pine Sandhills</b>	None	<b>1,167</b>	<b>690</b>	<b>721</b>
<b>Plantations</b>	None	<b>350</b>	<b>989</b>	<b>170</b>
<b>Other Altered Areas</b>	None	<b>614</b>	<b>96</b>	<b>59</b>
<b>TOTAL</b>	<b>None</b>	<b>3,239</b>	<b>2,743</b>	<b>1,513</b>
<b>UEAs</b>				
<b>Upatoi Bluffs</b>	None	<b>5.9</b> ( <b>&lt;1% of total UEA</b> )	None	None
<b>Depression Ponds</b>	None	<b>94.9</b> ( <b>55% of total UEA</b> )	None	None
<b>Prosperity Church Oak-Hickory Forest</b>	None	None	<b>184.0</b> ( <b>68% of total UEA</b> )	None
<b>Pine Knot Creek Blackwater</b>	None	None	None	<b>34.1</b> ( <b>2% of total UEA</b> )
<b>Slopes of Northern Affinities</b>	None	None	None	<b>403.1</b> ( <b>61% of total UEA</b> )
<b>Arkansas Oak Rock Hills</b>	None	None	None	<b>0.6</b> ( <b>&lt;1% of total UEA</b> )
<b>TOTAL</b>	<b>None</b>	<b>100.8</b>	<b>184.0</b>	<b>437.8</b>

\* No additional vegetation removal would occur in the GHMTA as the area has already been converted to a heavy maneuver training area.

*Indirect Impacts*

As no offsite vegetation removal is proposed, **negligible to minor, short- and long-term, indirect adverse effects** to vegetation are anticipated from construction, operation, or maintenance activities; impacts to retained communities and offsite areas through soil erosion and sedimentation



would be controlled as described in Section 3.5.2.3. The character of vegetative communities retained within the HOMMTA (e.g., in dismount maneuver areas) and in adjacent offsite areas could change from an increase in “edge” habitat where increased sunlight may alter the species composition slightly.

There could also be a **negligible, indirect, long-term adverse impact** on vegetative communities from potential changes in the fire regime within Alternative 1. Because most upland areas would be converted to an active training area, these areas would lose much of their natural character. Consequently, the natural role of fire in perpetuating fire-adapted ecosystems (e.g., longleaf pine sandhills) and reducing fuel build-up would be less relevant to the lands in the HOMMTA. Further, any change in fire regime would likely be minor (i.e., prescribed burns may potentially occur approximately every 1.5 years, rather than every 2 or 3 years as under existing conditions) and unlikely to alter retained vegetation communities; these communities would often be located in buffers around streams and wetlands that would have a stronger influence on vegetative composition than would fire. For any future prescribed burns within Alternative 1, the Army would comply with applicable State requirements and plans (see Section 3.3.1).

As noted under the No Action Alternative, the frequent disturbance of soils and associated vegetative communities in heavy maneuver areas, coupled with the frequent traversing of these areas by vehicles during construction, operation, and maintenance activities, would enable the growth and spread of invasive plant species throughout the HOMMTA. Invasive species can often outcompete native species, potentially reducing the native species composition and habitat quality. Fort Benning would continue to manage invasive species through its Pest Management Program and ITAM Program in accordance with the INRMP to ensure invasive species are properly controlled during construction, operation, and maintenance activities. As such, these are considered **minor, long-term, indirect adverse impacts**.

## **UEAs**

### *Direct Impacts*

A total of about 101 acres of UEAs, including approximately 5.9 acres of the Uptoi Bluffs UEA (i.e., <1 percent of total UEA) and 94.9 acres of the Depression Ponds UEA (i.e., approximately 55 percent of total UEA) that occur at the southern end of Alternative 1, are within the concept

design off-road maneuver areas of the proposed HOMMTA under Alternative 1. This is a substantial amount of UEA. Since UEAs represent specific, unique areas of ecological value on Fort Benning, impacts in these areas during construction, operation, and maintenance would likely permanently degrade them, constituting a **significant, long-term, direct adverse impact** to the ecological characteristics and integrity of these UEAs. Fort Benning would adhere to the EPMs in the INRMP regarding UEAs, to the extent feasible; however, converting these areas to maneuver lands would remain adverse and significant.

#### *Indirect Impacts*

**Negligible, short- and long-term, indirect effects** to UEA areas offsite would be anticipated; impacts to UEA communities offsite from soil erosion and sedimentation into these areas would be controlled as described in Section 3.5.2.3.

### **Fish and Wildlife**

#### *Direct Impacts*

Construction, operation, and maintenance of Alternative 1 would result in temporary noise and other man-made disturbances associated with human presence, equipment, and activities. Wildlife (i.e., mammals, birds, reptiles, amphibians, and terrestrial invertebrates) would be expected to vacate the areas proximal to these activities if they are able; suitable habitat is available in the vicinity of Alternative 1 to support them while temporarily displaced. Some individuals of less mobile species (i.e., some small mammals, reptiles, amphibians) may be unable to vacate and would suffer loss of life during land-disturbing activities. Temporary displacement and limited loss of life of non-special status species during these activities would constitute **minor, short- and long-term, direct adverse impacts** on wildlife in the ROI.

Wildlife may return to Alternative 1 following construction, although there would be a long-term loss of existing forested wildlife habitat due to HOMMTA establishment. This would constitute a **moderate, long-term, direct adverse impact**, and would lead to a shift in wildlife composition in the Alternative footprint: the presence of forest-dependent species would likely diminish over time, while animal species tolerant of disturbed, herbaceous habitat would increase in population. Through this change in composition, native wildlife would be expected to adapt to, and coexist with, the HOMMTA operations in the long-term. Suitable and undisturbed habitat for displaced

forest-dwelling wildlife species is available in the ROI; however, there would be a long-term fragmentation of habitat and displacement of wildlife populations from their current territories and movement corridors within the Alternative footprint.

There also would be a permanent increase in operational activity levels in Alternative 1 due to frequent training and maintenance activities, which would decrease suitable and undisturbed habitat areas when compared to existing conditions. Alternative 1 already experiences training activities and proposed noise levels would be generally consistent with existing noise levels (see Section 3.4.2.3); therefore, long-term changes in activity and noise are not anticipated to be appreciably different from current conditions. Wildlife would continue to be managed through the Installation's INRMP, as applicable, during long-term operation and maintenance activities.

As identified in Section 3.6.2.3, Alternative 1 would permanently impact approximately 5.9 acres of wetlands, 3,200 LF of streams, and 4.2 acres of Georgia-regulated (i.e., 25-foot wide) stream buffer from installation of proposed water crossings. During construction, an additional approximately 3.4 acres of wetlands, 1,500 LF of streams, and 2.1 acres of regulated stream buffer would be affected within the temporary LOD, although these areas would be restored to functioning conditions at the end of the construction process. These impacts would cause a loss or degradation of habitat that is utilized by fish and other aquatic organisms, such as through destruction, erosion, water quality degradation, and/or sedimentation; however, these impacts would be relatively minor compared to the total amounts of these resources in Alternative 1 and the ROI. As such, aquatic habitat loss and degradation would have **minor, short- and long-term, direct adverse impact** to fish and other aquatic organisms that inhabit these communities. With implementation of proper soil and water quality management as described in Section 3.5 and Section 3.6, no other impacts would be expected during any stage of the Proposed Action.

Each water crossing would have permanent and temporary LODs totaling 150 LF during construction. During this time, fish would be expected to relocate away from these specific areas, either upstream or downstream within the ROI, to avoid construction-related disturbances and/or to reestablish in less-degraded areas. Less-mobile species, such as aquatic invertebrates, could suffer mortality from in-water construction work. Populations of native fish and other aquatic wildlife that remain or return would experience degradation of their habitats where the proposed

new stream crossings (i.e., culverts) are constructed; however, as noted previously, these crossings would represent small portions of streams scattered throughout the Alternative footprint.

### *Indirect Impacts*

Alternative 1 would be expected to produce **minor, short- and long-term, indirect adverse effects** to fish and wildlife. No offsite vegetation removal is proposed and therefore substantial suitable habitat adjacent to Alternative 1 would remain available for mobile species; however, that offsite habitat may experience higher usage from wildlife due to the HOMMTA. Soil erosion and downstream sedimentation into offsite areas would be controlled as described in Section 3.5.2.3. Proposed noise levels that could travel offsite would be generally consistent with existing noise levels (see Section 3.4.2.3); therefore, long-term changes in activity and noise offsite are not anticipated to be appreciably different from current conditions.

### **Special Status Species**

#### *Federal-listed and Candidate species*

One Federal-listed species and one candidate for Federal listing would be impacted by Alternative 1: the RCW and the gopher tortoise, respectively.

Concurrent with this NEPA process, the Army formally consulted with the USFWS under Section 7 of the ESA. The Army prepared a BA analyzing potential impacts to RCWs and gopher tortoises that may result from Alternative 1 (i.e., the Preferred Alternative), and the USFWS issued a BO; the Final BA, BO, and associated correspondence are provided in Appendix F. Data from these documents are summarized in the impact analysis for each of these species, below. If the Army selects another Action Alternative in the ROD, Fort Benning will consult with the USFWS on that Action Alternative, including preparing a site-specific BA.

**RCW.** The BA indicated that construction of Alternative 1 would directly take 11 active RCW clusters, which is likely more takes than would occur under Alternatives 2 and 3. Ten of these 11 clusters are located within the Alternative 1 footprint; 35 active and 55 inactive RCW cavity trees would be removed. Foraging habitat within these 10 clusters would also be directly degraded below the USFWS Standard for Managed Stability (SMS), which is a defined set of pine stand and habitat characteristics necessary for quality RCW foraging. One additional cluster outside the Alternative 1 footprint would be taken; none of its cavity trees would be removed, but proposed

vegetation removal within the Alternative 1 footprint would further degrade its foraging habitat, which is already below the SMS.

As the BA and BO concluded, Fort Benning would still maintain an RCW population above its recovery goal after Proposed Action construction. Fort Benning has an RCW population goal of 351 Potential Breeding Groups (PBGs). As of April 2019, Fort Benning had a total of 396 PBGs on-Post, exceeding the Installation's population goal. With the take of up to 11 RCW clusters and the associated PBGs under Alternative 1, assuming no other change in the RCW population, Fort Benning would still have 385 PBGs and therefore still remain well above its recovery goal; Alternative 1 would not adversely affect the recovery of this species. As such, this impact would be a **moderate, long-term, direct adverse impact** on Fort Benning's overall RCW population.

Implementation of EPMs and RCMs as part of the Proposed Action (see Section 2.1.1), including required mitigation in accordance with the USFWS BO for this Proposed Action (see Appendix F) would further reduce this adverse impact.

During operations and maintenance of the proposed HOMMTA, active and inactive RCW clusters would be monitored to determine the level of effect the Proposed Action causes. Future RCW management would be implemented in accordance with the ESA; USFWS RCW BOs, the US Army's Management Guidelines for the RCW, Fort Benning's INRMP, and Fort Benning's RCW ESMC (see Table 3.7-1). The Army would continue to coordinate with the USFWS and GADNR during all phases of the Proposed Action, as appropriate.

**Gopher Tortoise.** Alternative 1 contains approximately 784 burrows, of which 328 are active (Fort Benning, 2016). The total number of active burrows that would be disturbed by the Proposed Action, however, is likely to be less than 328, since some of the burrows are located in areas where vegetation removal and mounted maneuver would not occur (e.g., within wetland buffers or along the edge of Alternative 1). Gopher tortoise burrows would be checked for activity and any gopher tortoises found would be translocated prior to construction. With implementation of EPMs and RCMs identified in Section 2.1.1, including the mitigation measures identified in the BA and BO (see Appendix F), impacts on gopher tortoises would be anticipated to remain **moderate, long-term, direct, and adverse.**

As described in Section 2.1.1, to the extent feasible, operation and maintenance activities would avoid a 50-foot buffer around known gopher tortoise burrows (MCoE Regulation 350-19). Where applicable, guidelines in the *DoD CCA for the Gopher Tortoise* (DoD, 2008) and USFWS' *Range-Wide Conservation Strategy for the Gopher Tortoise* (USFWS, 2013b) would also be implemented. All gopher tortoise activities would be conducted in accordance with relevant gopher tortoise conservation plans and measures identified in Table 3.7-1.

#### *Non-Federal-listed Species*

Special status plants, birds (not including the RCW), reptiles (not including the gopher tortoise), amphibians, fish, and molluscs/crustaceans with potential to occur within Alternative 1 could experience **moderate, short- and long-term, direct adverse impacts** with implementation of the Proposed Action, *if present*. These species' population numbers and listing status would not be expected to change. The non-bird species that are less mobile could potentially suffer direct mortality during construction if they are unable to vacate the affected areas. Birds are highly mobile and would be able to relocate to habitats in the vicinity, although bird species could suffer loss if nesting. After construction, the southeastern American kestrel and, to some degree, the Bachman's sparrow and American swallow-tailed kite could utilize the open, non-forested habitats that would be created by the Proposed Action.

Migratory birds, including BCCs, would be expected to experience **minor, short- and long-term, direct adverse effects** with implementation of Alternative 1 as they would experience construction disturbance and permanently lose habitat, but would be expected to relocate to suitable habitat elsewhere in the ROI.

While the bald eagle may potentially be present in Alternative 1, this presence is likely limited to fly-over or perching, as the bald eagle pair that nests at King's Pond likely conducts most of its foraging activities at or in the immediate vicinity of King's Pond or other large waterbodies. Alternative 1 is located outside the secondary management zone for the nest at King's Pond; therefore, potential effects to the bald eagle would be **minor, short- and long-term, direct, and adverse**.

As identified in Section 2.1.1, the Army and its contractors would adhere to all applicable Federal and State regulations regarding special status species (see Table 3.7-1), including the ESA, DoDI

4715.03, MBTA, and BAGEPA. Special status species would also continue to be managed through the Installation's applicable plans and procedures as identified in Table 3.7-1, including the INRMP and the Bald Eagle SMC. Any avoidance, conservation, and minimization measures identified by USFWS and GADNR during ongoing coordination would also be implemented as appropriate to reduce adverse effects on special status species.

#### 3.7.2.4 Alternative 2

Overall, Alternative 2 would result in **adverse impacts** on biological resources like Alternative 1, which would vary from **negligible** to **significant levels** with implementation of the same EPMS and RCMs as Alternative 1. Potentially significant impacts to biological resources under Alternative 2 are identified below; impacts to the balance of the biological resources discussed would be similar to Alternative 1 and would be less than significant.

Specifically, compared to Alternative 1, construction, operation, and maintenance of Alternative 2 would have similar potential to alter the fire regime; introduce or enable increased growth of invasive species; and impact non-Federal-listed species, including migratory birds and the bald eagle. These impacts, however, would generally be *less* than those anticipated under Alternative 1 due to the smaller size of Alternative 2.

The primary differences between Alternatives 1 and 2 include that Alternative 2:

- **Vegetation.** Would remove approximately 617 fewer acres of forested habitat than Alternative 1. Alternative 2 would remove approximately 639 more acres of plantation than Alternative 1, which is generally less valuable habitat than native forest communities.
- **UEAs.** Would impact approximately 184 acres (i.e., approximately 68 percent) of the Prosperity Church Oak-Hickory Forest UEA. This is a substantial amount of UEA. This would be approximately 83 more acres of UEA impacts than Alternative 1; due to the size and location of the UEAs in each Alternative, it would be more difficult for the Army to avoid impacting the UEA in Alternative 2 than it would be to avoid the UEAs in Alternative 1.

This would be a **significant, long-term, direct adverse impact** to the ecological characteristics and integrity of these UEAs.



- **Aquatic Species and Habitats.** Would permanently impact approximately 2.0 acres of wetlands, 1,600 LF of streams, and 2.6 acres of regulated stream buffer from installation of proposed water crossings. During construction, an additional approximately 4.1 acres of wetlands, 1,600 LF of streams, and 5.0 acres of regulated stream buffer would be affected within the temporary LOD, although these areas would be restored to functioning condition following construction of each water crossing. Overall, associated impacts to aquatic species and habitats would be less than Alternative 1 but similar to Alternative 3.
- **Wildlife.** Would cause a greater relative increase in operational disturbance (e.g., noise and human presence) compared to Alternative 1, since less training is currently conducted in Alternative 2. Wildlife may return to Alternative 2 following construction, although there would be a long-term loss of existing forested wildlife habitat due to HOMMTA establishment.
- **RCW.** Would take two RCW clusters (i.e., nine fewer than under Alternative 1); Fort Benning would remain well above its recovery population goal with approximately 394 PBGs. Alternative 2 would not adversely affect the recovery of this species.

Although a BA was not prepared for Alternative 2, the number of takes was estimated using the same GIS analysis conducted for Alternative 1. The two anticipated takes would both be RCW clusters located within the Alternative 2 footprint for which all cavity trees would be removed. No RCW clusters located outside the Alternative 2 boundary would be expected to be taken.

- **Gopher Tortoise.** Would impact approximately 243 fewer active gopher tortoise burrows (i.e., 85 in Alternative 2, compared to 328 in Alternative 1).

### 3.7.2.5 Alternative 3

Overall, Alternative 3 would result in **adverse impacts** on biological resources like Alternatives 1 and 2, which would vary from **negligible** to **significant levels** with implementation of the same EPMS and RCMs as Alternative 1. Potentially significant impacts to biological resources under

Alternative 3 are identified below; impacts to the balance of the biological resources discussed would be similar to Alternatives 1 and 2, and would be less than significant.

Specifically, compared to Alternatives 1 and 2, construction, operation, and maintenance of Alternative 3 would have similar potential to alter the fire regime; introduce or enable increased growth of invasive species; and impact non-Federal-listed species, including migratory birds. These impacts, however, would generally be *less than* those anticipated under Alternatives 1 and 2 due to the smaller size of Alternative 3.

The primary differences between Alternatives 1 and 2 and Alternative 3 include that Alternative 3:

- **Vegetation.** Would remove approximately 991 fewer acres of existing forested habitat than Alternative 1, and 374 fewer acres of existing forested habitat than Alternative 2. Plantation vegetation removed under Alternative 3 would be less than both Alternatives 1 and 2.
- **UEAs.** Would impact approximately 438 acres of UEAs, including 34 acres (i.e., approximately 2 percent) of Pine Knot Creek Blackwater UEA, 403 acres (i.e., approximately 61 percent) of Slopes of Northern Affinities UEA, and 1 acre (i.e., <1 percent) of Arkansas Oak Rock Hills UEA. This is a substantial amount of UEA. In total, this would be approximately 337 more acres of UEA impacts than Alternative 1 and approximately 254 more acres of UEA impacts than Alternative 2; of the three Alternatives, UEA impacts in Alternative 3 would be the greatest and most difficult to avoid.

This would be a **significant, long-term, direct adverse impact** to the ecological characteristics and integrity of these UEAs, especially the Pine Knot Creek Blackwater UEA.

- **Aquatic Species and Habitats.** Would permanently impact approximately 6.3 acres of wetlands, 1,350 LF of streams, and 1.7 acres of regulated stream buffer from installation of proposed water crossings. During construction, an additional approximately 12.5 acres of wetlands, 1,350 LF of streams, and 3.3 acres of regulated stream buffer would be affected within the temporary LOD, although these areas would be restored to functioning condition following construction of each water crossing. Overall, associated impacts to aquatic species and habitats would be similar to Alternative 1 and greater than Alternative 2.

- **Wildlife.** Would cause a greater relative increase in operational disturbance (e.g., noise and human presence) compared to Alternatives 1 and 2, since Alternative 3 currently has the least amount of training. Wildlife may return to Alternative 3 following construction, although there would be a long-term loss of existing forested wildlife habitat due to HOMMTA establishment.
- **RCW.** Would take 12 RCW clusters (i.e., one more take than Alternative 1 and 10 more takes than Alternative 2); Fort Benning would remain well above its recovery population goal with approximately 384 PBGs. Alternative 3 would not adversely affect the recovery of this species.

Although a BA was not prepared for Alternative 3, the number of takes was estimated using the same GIS analysis conducted for Alternative 1. The 12 anticipated takes would include seven RCW clusters located within Alternative 3 for which all cavity trees would be removed, three foraging takes of RCW clusters outside the Alternative (i.e., foraging habitat degraded below the USFWS SMS standard), and two group takes of RCW clusters outside the Alternative.

- **Gopher Tortoise.** Would impact approximately 174 active gopher tortoise burrows, which is 154 fewer burrows than Alternative 1 and 89 more active burrows than Alternative 2.
- Would have **no effect** on the bald eagle.

### 3.7.3 Mitigation

Implementation of the EPMs and RCMs identified as part of the Proposed Action in Section 2.1.1 would ensure that biological resources impacts are reduced to the extent feasible. To further reduce adverse biological resources impacts, including potentially significant adverse impacts to UEAs, the Army would consider implementing the following additional mitigation measures:

#### Vegetation

Implementation of the following mitigation measures would further reduce the identified **moderate, short- and long-term adverse impacts** to vegetation:

*Alternatives 1, 2, and 3*

- Re-vegetate disturbed soils with plant species on Fort Benning’s approved plant list, to the extent feasible, in order to reduce the adverse impacts of vegetation removal.
- Implement the mitigation measures identified for Soils and Topography in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on vegetation.

**UEAs**

Implementation of the following measures would reduce the identified **significant, long-term adverse impacts** to UEAs to **negligible or minor levels**:

*Alternative 1*

- Avoid and mark as “off-limits” approximately 5.9 acres of the Upatoi Bluffs UEA and 94.9 acres of the Depression Ponds UEA in Alternative 1 during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur.

*Alternative 2*

- Avoid and mark as “off-limits” approximately 184.0 acres of the Prosperity Church Oak-Hickory Forest UEA in Alternative 2 during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur.

*Alternative 3*

- Avoid and mark as “off-limits” approximately 0.6 acre of the Arkansas Oak Rock Hills UEA and 34.1 acres of Pine Knot Creek Blackwater UEA in Alternative 3 during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. Potential avoidance of the Northern Affinities UEA in Alternative 3 would likely not be possible given the size and location of this UEA relative to the proposed off-road maneuver areas.

### **Fish and Wildlife**

No mitigation measures have been identified to reduce the potential **moderate, long-term adverse impacts** to wildlife from loss of habitat; however, implementation of the following mitigation measures would further reduce the identified **minor, short- and long-term adverse impacts** to species and habitats from disturbance of soils and water resources:

#### *Alternatives 1, 2, and 3*

- Where practical, use erosion control materials that are biodegradable and/or mobile to reduce their longevity in the environment. Remove erosion control measures following construction when not needed for long-term soil stabilization.
- Implement the mitigation measures identified for Soils and Topography identified in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on aquatic habitats.
- Implement the mitigation measures identified for Water Resources in Section 3.6.3 to minimize impacts to aquatic habitats and the species that inhabit these areas.

### **Special Status Species**

Implementation of the following mitigation measures would reduce the identified **moderate, short- and long-term adverse impacts** to special status species potentially to **minor levels**:

#### *Alternative 1, 2, and 3*

- Avoid construction within 200 feet of clusters during RCW (federally endangered) nesting season (April through July).
- If gopher tortoises are located during construction or maintenance of the proposed HOMMTA, avoid them to the extent feasible; if avoidance is not feasible, then relocate them in accordance with the *Management Guidelines for the Gopher Tortoise on Army Installations* and Fort Benning's INRMP.
- If State-listed wildlife or plant species are located during the construction or maintenance of the proposed HOMMTA, avoid or relocate these species to the extent feasible.
- Avoid construction within the nesting season of migratory birds (generally April to August, including spring and summer), if feasible.

**Table 3.7-8: Potential Impacts to Biological Resources by Alternative**

Resource Area	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Construction, Operation, and Maintenance</b>				
<b>Vegetation - Direct</b>	Impacts from continued operational disturbance to onsite vegetation.	Impacts (vegetation removal) on approximately <b>3,200 acres</b> , of which approximately 2,270 acres are forested.	Impacts (vegetation removal) of approximately <b>2,700 acres</b> , of which approximately 1,660 acres are forested.	Impacts (vegetation removal) of approximately <b>1,500 acres</b> , of which approximately 1,280 acres are forested.
<b>Vegetation - Indirect</b>	Impacts from the growth and spread of invasive plant species.			
<b>UEAs - Direct</b>	None.	Impacts to <b>5.9 acres</b> of the Upatoi Bluffs UEA and <b>94.9 acres</b> of the Depression Ponds UEA.	Impacts to <b>184.0 acres</b> of the Prosperity Church Oak-Hickory Forest UEA.	Impacts to <b>403.1 acres</b> of the Slopes of Northern Affinities UEA; <b>34.1 acres</b> of the Pine Knot Creek Blackwater UEA; and <b>0.6 acre</b> of the Arkansas Oak Rock Hills UEA.
<b>UEAs - Indirect</b>	None.	Negligible.		
<b>Fish and Wildlife - Direct</b>	Impacts from temporary displacement and limited loss of life, as well as aquatic habitat loss and degradation.			
<b>Fish and Wildlife - Direct</b>	None.	Impacts from loss of existing forested wildlife habitat.		
<b>Fish and Wildlife - Indirect</b>	Impacts from offsite soil erosion, downstream sedimentation, and offsite noise.			
<b>Federal-Listed Species - RCW</b>	None.	Take of <b>11 RCW clusters</b> .	Take of <b>2 RCW clusters</b> .	Take of <b>12 RCW clusters</b> .
<b>Candidate Species – Gopher Tortoise</b>	None.	Impacts to <b>328 active burrows</b> .	Impacts to <b>85 active burrows</b> .	Impacts to <b>174 active burrows</b> .

Resource Area	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Non-Federal-Listed Special Status Species</b>	None.	If present, impacts from temporary displacement and limited loss of life, as well as aquatic habitat loss and degradation.		
<b>Migratory Birds</b>	None.	Impacts from construction disturbance and habitat loss.		
<b>Bald Eagles</b>	Impacts from operational disturbance.	Impacts from construction and operational disturbance.		None.

**Key:**

- Green Highlight** – No or negligible to minor adverse impacts.
- Yellow Highlight** – Minor adverse impacts.
- Orange Highlight** – Moderate adverse impacts.
- Red Highlight** – Significant adverse impacts.



### 3.8 Cultural Resources

This section addresses existing cultural resources at Fort Benning within the ROI, Fort Benning's approach for the identification of cultural resources, and potential impacts to cultural resources from the Proposed Action. Fort Benning manages cultural resources through its ICRMP (Fort Benning, 2015a). The Fort Benning ICRMP sets forth the specific goals, policies, and procedures to identify potential historic properties (i.e., cultural resources, including above- and below-ground resources), assess them for eligibility for listing in the NRHP, nominate them for listing in the NRHP as appropriate, and manage them in accordance with applicable requirements. Information on the identification and evaluation of historic properties at Fort Benning in this section comes from the ICRMP (Fort Benning, 2015a).

#### 3.8.1 Affected Environment

Cultural resources are defined in AR 200-1, *Environmental Protection and Enhancement*, as historic properties as defined by the NHPA, cultural items as defined by NAGPRA, archeological resources as defined by ARPA, sacred sites as defined in EO 13007 (*Indian Sacred Sites*) to which access is afforded under the American Indian Religious Freedom Act (AIRFA), significant paleontological items as described by 16 USC 431–433 (*Antiquities Act of 1906*), and collections and associated records as defined in 36 CFR 79 (*Curation of Federally Owned and Administered Archeological Collections*). The NHPA provides the overarching regulatory framework for cultural resources management; the NAGPRA, ARPA, EO 13007, Antiquities Act, and other cultural resources regulations generally rely on the NHPA to ensure compliance and proper protection and stewardship by Federal agencies.

*Cultural resources*, as used in NEPA documents, is an inclusive term that encompasses the broad range of resources consisting of the physical evidence of past human activity. The term includes any prehistoric or historic structures, buildings, objects, sites, districts (i.e., a collection of related structures, building, objects, and/or sites), landscapes, natural features, traditional cultural properties, and cemeteries. There are no known paleontological items in or near any of the Alternatives; therefore, this resource is not addressed further in this EIS. For assessment in this EIS, cultural resources have been divided into four subsets of resources. These subsets are defined as:

- *Archaeological Sites* refer to prehistoric or historic sites where remnants of physical evidence, such as artifacts, features, and ecological evidence of a past culture are present. The prehistoric period in the US is generally considered to be prior to the arrival of European settlers and explorers (approximately AD 1500); the historic period includes the time since the arrival of Europeans.
- *Buildings and Structures* are structures, buildings, objects, sites, and districts that are over 45 years old from the date the FEIS for this Proposed Action is projected to be complete, which is 2020 (i.e., resources constructed on or before 1975). While the Secretary of the Interior (SOI) recommends evaluating resources 50 years or older, the Army has considered historic buildings and structures of 45 years of age or older to allow for unexpected delays in project planning.
- *Cemeteries* are the burial locations, formal or informal, of deceased persons from any time period, prehistoric or historic.
- *Native American Sacred Sites and Properties of Traditional and Religious Cultural Importance (PTRCI)* are places associated with the cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. A “sacred site” is a specific, discrete, narrowly delineated location identified by a Tribe or authorized Tribal representative to a Federal agency as sacred by virtue of its established religious significance to, or ceremonial use by, a Native American religion.

Not all cultural resources are considered significant under applicable cultural resources laws. Cultural resources that are significant must possess sufficient historic integrity to qualify the resource as a *historic property*, as defined by the NHPA (36 CFR 800.16(I)(1)):

- *Historic Property* means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the SOI. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to any Tribe or Native Hawaiian organization and that meet the NRHP criteria (36 CFR 60.4).

The following sections discuss guidance applicable to cultural resources, the methods used to identify cultural resources, and the cultural resources that have been identified in the ROI.

### 3.8.1.1 Region of Influence

The ROI for cultural resources is the Area of Potential Effects (APE), defined in Section 106 of the NHPA as “the geographic area within which an undertaking may directly or indirectly cause alteration in the character or use of historic properties, if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking” (36 CFR 800.16(d)). Direct effects are those that physically alter, damage, disturb, degrade, or demolish a cultural resource due to associated activities. Indirect effects may occur later in time, be further removed by distance (i.e., noise, vibration, and visual effects), or be cumulative.

The APE for the Proposed Action focuses on potential ground-disturbing activities associated with the construction, operation, and maintenance of the Action Alternatives. The APE, therefore, includes the entirety of Alternatives 1, 2, and 3 where such activities are proposed, as well as all cemeteries within and adjacent to the Action Alternatives which could be disturbed by the Proposed Action. Additionally, the ROI includes the GHMTA, where heavy maneuver training operations would continue to be conducted under the No Action Alternative.

### 3.8.1.2 Applicable Guidance

Cultural resources on Federal property are regulated by several laws, regulations, and EOs that require consideration of cultural resources in Federal planning, decision-making, and project execution. These are summarized in Table 3.8-1 and described below.

**Table 3.8-1: Cultural Resources Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
ACHP (36 CFR 800)	Section 106 of the NHPA requires Federal agencies to consider the effects of projects they carry out, approve, or fund on historic properties. The ACHP regulations at 36 CFR 800 guide Federal agencies in the Section 106 compliance process, which includes consultation, identification of properties, assessment of effects, and resolution of adverse effects.

Requirements	Description/Applicability to Proposed Action
NHPA (16 USC 470)	The NHPA seeks to preserve historic and archaeological sites in the US. Section 106 of the NHPA mandates Federal agencies to undergo a review process for all federally funded and permitted projects that may impact historic properties listed on, or eligible for listing on, the NRHP.
Archaeological and Historic Preservation Act (AHPA) (16 USC 469 - 469(c)(2), as amended)	The AHPA provides for the preservation of significant scientific, prehistoric, historic, and archaeological materials and data that might be lost or destroyed during construction activities.
ARPA (16 USC 470(aa-mm))	The ARPA defines archaeological resources as any material remains of past human life or activities that are of archaeological interest and at least 100 years old.
NAGPRA (31 USC 3001 <i>et seq.</i> )	The NAGPRA gives ownership and control of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony that are excavated or discovered on Federal land to Tribes or Native Hawaiian organizations. It also requires consultation with Tribes for any project that may impact those remains and/or burial objects.
AIRFA (42 USC 1996)	AIRFA states that it is a policy of the US to protect and preserve for Tribes their inherent right of freedom to believe, express, and exercise their traditional religions, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites.
Federal Antiquities Act (16 USC 431 <i>et seq.</i> )	This Act provides for the protection of historic, prehistoric, and scientific features located on Federal lands.
AR 200-1, <i>Environmental Protection and Enhancement</i>	AR 200-1 requires an ICRMP for planning purposes at Army installations and establishes processes for early coordination between the installation’s Commander and stakeholders to address cultural resource requirements for projects and other actions. For the NHPA, this regulation sets Army policy to treat potentially eligible historic properties (i.e., ones not yet fully evaluated for NRHP eligibility) as eligible until/unless determined otherwise.
Fort Benning ICRMP (Fort Benning, 2015a)	The ICRMP describes the Fort Benning CRM program and describes procedures to comply with applicable laws and regulations.

Federal regulations that implement the laws in Table 3.8-1 require the evaluation of potential impacts to cultural resources for all Federal proposed actions in accordance with Section 106 of the NHPA (54 USC 306108; 36 CFR 800).

The ACHP strives to ensure Federal agencies implement their work in harmony with the NHPA. Section 106 of the NHPA requires Federal agencies to consider the effects of projects they carry

out, approve, or fund on historic properties. The ACHP has published regulations that guide Federal agencies and other participants in the Section 106 process (36 CFR 800).

Fort Benning is approved to use the AAP instead of the ACHP regulations for NHPA Section 106 compliance. The main purpose of the AAP is to expedite and facilitate the review of undertakings in accordance with Section 106 that may affect historic properties, using the NEPA process for some coordination and consultation. Because the Proposed Action constitutes a Federal undertaking according to the NHPA, the Army is coordinating compliance with both the NHPA and NEPA.

Fort Benning's current ICRMP covers the period of 2015 to 2019 and contains a range of SOPs to address compliance with Federal laws and regulations, as well as the curation of archaeological collections in compliance with the NHPA as set forth in 36 CFR 79 (Fort Benning, 2015a). This ICRMP also details the structure of Fort Benning's CRM program.

In addition to the above laws, Section 106 compliance for this Proposed Action also is conducted in accordance with the SOI's *Standards and Guidelines for Archeology and Historic Preservation* (48 FR § 44716-2); the *Georgia Council for Professional Archaeologists' Georgia Standards and Guidelines for Archaeological Survey* (Georgia Council of Professional Archaeologists, 2014); National Register Bulletin 15: *How to Apply the National Register Criteria for Evaluation* (NPS, 1997); and National Register Bulletin 41: *Guidelines for Evaluating and Registering Cemeteries and Burial Places* (NPS, 1992).

### **3.8.1.3 Process for Identification of Resources**

#### **Research and Consultation**

An extensive body of cultural resource literature exists for Fort Benning. The Army conducted a comprehensive database review to identify previously conducted cultural resource investigations within the ROI and proximate areas, as well as to identify all previously recorded cultural resources within the ROI. This review identified that further research/action (i.e., a Phase II evaluation) was required to determine the NRHP eligibility status of 43 archaeological sites within the Action Alternatives. Contexts for the NRHP eligibility determination of cultural resources presented herein incorporate this literature and the Fort Benning ICRMP.

The Army also conducted Phase II evaluations of five historic cemeteries in Alternatives 1 and 2 and initiated consultation with the HPD regarding their NRHP eligibility; however, as discussed below, the Army subsequently determined that the Proposed Action would avoid impacts to all historic cemeteries by instituting 100-foot buffers around them from construction, maintenance, and heavy maneuver training as part of the Proposed Action, and that formal NRHP eligibility determinations for these historic cemeteries are not required.

Under Section 106 of the NHPA, various stakeholders are encouraged to participate in the cultural resources evaluation process as consulting parties. For this Proposed Action, the Georgia SHPO, or Georgia HPD; Tribes; representatives of local governments; applicants for Federal assistance, permits, licenses, and other approvals; and certain entities with a demonstrated interest in the undertaking may participate as consulting parties.

#### *State Historic Preservation Office*

Fort Benning has informed the HPD of the Proposed Action and provided the draft research designs for the Phase II evaluations and other documentation to the HPD. Although HPD concurrence with draft research designs is not required, the HPD did respond in a letter dated December 20, 2018 (see Appendix A) that it concurred with the proposed research designs for the NRHP evaluation of archaeological sites and historic cemeteries in the Action Alternatives, discussed below.

Subsequently, the Army provided the DEIS and Phase II reports to the HPD on May 29, 2020. In a letter dated July 10, 2020, the HPD concurred with all of the Army's NRHP eligibility determinations for archaeological sites in the APE. The HPD requested additional information regarding "historic resources" (e.g., buildings and structures) in the APE for further review of the Army's remaining determinations. As such, the Army updated this FEIS to provide additional detail as to how it determined that there are no other NRHP-eligible buildings and structures in the APE.

The HPD also concurred with the Army that one historic cemetery (in Alternative 1) is NRHP-eligible, but requested additional information be provided regarding the other four historic cemeteries. As the Proposed Action includes 100-foot buffers from heavy maneuver training around all historic cemeteries (see Section 2.1.1), the Army has determined that formal eligibility determinations for these historic cemeteries are not required for this Proposed Action.

Please refer to Appendix A for all correspondence with the HPD.

### *Native American Tribes*

There are 13 Tribes that claim traditional ties to land in and around Fort Benning and its satellite facilities: Alabama-Coushatta Tribe of Texas, Alabama-Quassarte Tribal Town of Oklahoma, Cherokee Nation, The Chickasaw Nation, Eastern Band of Cherokee Indians, Kialegee Tribal Town, Mississippi Band of Choctaw Indians, Muscogee (Creek) Nation, The Poarch Band of Creek Indians, Seminole Nation of Oklahoma, Seminole Tribe of Florida, Thlopthlocco Tribal Town, and United Keetoowah Band of Cherokee Indians. For these Tribes, Fort Benning has established a Native American Reinterment Site for the reburial of human remains and funerary objects that cannot be left in place at their original location on the Installation or in the region.

Fort Benning holds bi-annual consultation meetings with these Tribes as part of Fort Benning's CRM program. The Army discussed the need for a new HOMMTA with the Tribes during the consultation meeting on November 28-29, 2018, and provided more detailed information about the Proposed Action and archaeological resources in the Action Alternatives during the consultation meeting on May 7-8, 2019. Tribal representatives' consultation comments during this meeting regarding the HOMMTA were documented. The Army also shared the draft research designs for the Phase II evaluations with the Tribes on November 13, 2018, and requested formal consultation by letter to the Tribes during the EIS scoping process (i.e., starting on February 11, 2019) and DEIS comment period (i.e., starting on May 29, 2020). The Army shared the completed Phase II reports for archaeological sites and cemeteries in the Action Alternatives with the Tribes in the May 29, 2020 correspondence.

To date, the Cherokee Nation and The Chickasaw Nation both identified the Proposed Action as outside their area of interest, and The Seminole Tribe of Florida requested to be included in the mitigation and avoidance planning process.

Through Tribal consultation, both bi-annual consultation meetings and ongoing communications, Fort Benning identified several additional important topics for consideration and analysis related to the Proposed Action. Those topics include PTRCIs, vegetative buffers, and the development of a reclamation plan.



- Tribal representatives requested a plant important to their history and culture be planted as vegetative buffers along streams and wetlands in the HOMMTA to reduce sedimentation in the Action Alternatives. The plant currently grows in certain areas of Fort Benning, including potentially near surface water locations in the Action Alternative locations. Any existing population of that plant likely would remain within the vegetated stream and wetland buffers that are part of the Proposed Action, so **negligible adverse impacts** would be expected to existing populations. As most surface waters on Post are protected by regulatory measures (e.g., wetland permitting and stream bank buffers), **no potential cumulative impacts** would be expected from the proposed HOMMTA when considering other past, present, and reasonably foreseeable future actions in the area.

The Army considered establishing new populations of that plant in those vegetated buffer areas; however, logistical and resource limitations make that mitigation not feasible at this time. The Army does not have the resources, such as funding and manpower, to establish, maintain, and monitor the plant in all of the possible areas of an Action Alternative. Therefore, the mitigation measure of establishing, maintaining, and monitoring plant species that are important to one or more of the Tribes is considered not feasible as part of the HOMMTA. Fort Benning welcomes further consultation with one or more of the Tribes, however, that is not limited to the Proposed Action. For example, other areas of Post, besides the proposed HOMMTA, may be better suited for culturally important vegetation.

- Discussion of the PTRCI has been incorporated into the **Native American Sacred Sites and PTRCI** section below.
- Tribal representatives requested the Army provide a reclamation plan for the HOMMTA once it is no longer needed by the Army for training. Looking toward a closure scenario is not reasonably foreseeable, so that specific topic is not addressed in detail in the EIS. The HOMMTA is expected to be needed long-term; however, as prior BRAC actions have shown, Army installations may be subject to non-Army Federal use or transfer out of Federal ownership. Normally those types of actions seem to address an entire installation instead of a training area within an installation. If that is the case, then Congressional action would most likely include mandatory provisions for the condition of the property upon

transfer or non-military use. Uncertainty in future situations means that this FEIS cannot determine what those provisions would be, who would be the recipient of the property, or other related matters. The FEIS does address potential related aspects of divestiture in Sections 3.11 and Section 5.2.

All consultation comments from the Tribes have been considered in preparation of this FEIS. The Army will continue to consult with all Tribes throughout the NEPA and NHPA Section 106 processes. A record of consultation comments from the Tribes is provided in Appendix L.

### *Public*

Public participation is also an important component of Section 106 and NEPA. The Army is coordinating public participation for Section 106 consistent with the AAP and NEPA; consultation remains ongoing. Consistent with Section 106, the public and consulting parties have an opportunity to comment and have concerns taken into account on findings identified in the Section 106 evaluation and effects documents. These stakeholders may attend the NEPA-related public meetings for this Proposed Action where they can submit comments on the information presented, and may access the Section 106 documents via requests to the Army (see Section 1.9.1).

During the public scoping period, several public stakeholders provided comments on cultural resources (see Appendix A). Concerns were primarily focused on the Proposed Action's potential impacts to cemeteries within the Action Alternatives, including which cemeteries could be impacted, how the proposed HOMMTA could adversely affect cemeteries, how the Army would protect existing cemeteries from impacts, and whether cemeteries would still be available for family members to visit if the Proposed Action was implemented. These concerns are addressed within the impact analysis (see Section 3.8.2). No additional cultural resources comments on the DEIS were received from the general public.

### **Non-Cemetery Aboveground Resources (e.g., Buildings and Structures)**

The Army conducted background research to assess the potential for non-cemetery aboveground resources to be present within the Action Alternatives. Additionally, to account for potential visual impacts on resources outside the Action Alternative boundaries, the Army studied a 330-foot buffer around each Action Alternative; due to the forested nature of the areas surrounding each

Alternative, no visual impacts would be anticipated beyond this distance. There are no previously identified NRHP-eligible aboveground resources within the APE.

To assess the potential for previously unidentified resources (including structures and landscapes) to be present in the APE, the Army supplemented ongoing, routine inspections of the Installation by Fort Benning cultural resources staff with inspections of: (1) historic maps from 1942 through the present; (2) aerial photographs from 1944 to present; and (3) Light Detection and Ranging mapping from 2014. During this effort, the Army identified the Vietnam Demonstration Village and associated Objective Hamlets in Alternative 1, a historic dam and stone pile in Alternative 2, and a historic dam in Alternative 3, all of which are analyzed as archaeological sites; no other historic resources were identified.

The only extant buildings within Alternative 1 are utilitarian buildings and structures associated with military training. These buildings and structures consist of support facilities such as covered firing lines, latrines, pavilions, and small administrative buildings, and are located around Lee Field, TTB Falcon, and Terry Demolition Range. They are not eligible for the NRHP. Based on historic aerial photography, the structures around Lee Field were built in the late 1970s and early 1980s, the buildings at Terry Demolition Range were built in the late 1990s, and the buildings at TTB Falcon were built between 2010 and 2012.

The only existing buildings within Alternative 2 are associated with an unnamed training site consisting of three buildings and a lookout tower built between 1989 and 1991. TTB Condor and buildings associated with a Red Diamond land navigation support complex are located within the 330-foot buffer investigated around Alternative 2. TTB Condor consists of four buildings and four lookout towers built between 2010 and 2012, while the Red Diamond land navigation support complex is comprised of three buildings built between 2010 and 2012.

There are no extant buildings within Alternative 3. However, a church and cemetery, as well as several houses and outbuildings, are located off-Post within the 330-foot buffer investigated around Alternative 3. The houses and outbuildings were constructed in the 1980s and 1990s. The church, County Line Primitive Baptist Church, appears on the 1944 aerial, but the construction date is unknown. Because of additions, alterations, and lack of architectural, artistic, and historical importance, Fort Benning considers the church to be not eligible for the NRHP; if Alternative 3 is

selected for implementation, Fort Benning would consult with the HPD on its eligibility determination. The cemetery (Site 9CE1239) associated with the church was previously determined to be not eligible for the NRHP (Buchner, Jackson, Lolley, & Smith, 1997).

As there are no non-cemetery aboveground resources of historic age within the APE that are NRHP-eligible, the Proposed Action has no potential to adversely impact these resources. As such, these resources are not carried forward for detailed analysis.

### **Archaeological Sites**

The entire ROI (APE) has been subjected to previous comprehensive Phase I archaeological surveys. These surveys have identified 288 archaeological sites within the Action Alternatives (see Table 3.8-2). Ten of these 288 sites have previously been determined to be eligible for the NRHP. Of the remaining sites, the Army identified 10 archaeological sites in Alternative 1, 13 archaeological sites in Alternative 2, and 20 archaeological sites in Alternative 3, for a total of 43 sites requiring an evaluation of their NRHP eligibility status.

To support this EIS, Phase II evaluations of these 43 sites were subsequently performed by archaeologists who meet the SOI's Professional Qualifications Standards, as defined in 36 CFR 61. The research design prepared for these evaluations, with which the HPD concurred, details the field and laboratory methods used that include shovel testing and the excavation of formal test units (AECOM, 2018a). The results of the Phase II evaluations were documented in a report that meets applicable Federal and State regulations and guidelines, and incorporated into Section 3.8.1.4 (AECOM, 2020b; AECOM, 2020c; AECOM, 2020d). The HPD concurred with the Army's NRHP eligibility determinations for all Phase II archaeological site evaluations (see Appendix A).

### **Historic Cemeteries**

Historic cemeteries on Fort Benning mostly pre-date the Installation. Fort Benning manages cemetery access to non-Army personnel and protects cemeteries from potential Army impacts (e.g., damage from training activities). In the event that the Army damages the cemetery or grave markers within, the Army is responsible for repairing the damage. All other grave marker maintenance is the responsibility of descendants.

The Army identified six cemeteries within or adjacent to the Action Alternatives (see Table 3.8-2). Of these, one cemetery in Alternative 1 was previously determined to be NRHP-eligible, while three cemeteries in Alternative 1 and two cemeteries in or adjacent to Alternative 2 had not been assessed for the NRHP.

Phase II evaluations of the five unassessed cemeteries were performed by archaeologists who meet the SOI's Professional Qualifications Standards, as defined in 36 CFR 61. The research design prepared for these evaluations, with which the HPD concurred, details the field methods used that included mapping of surface features and topography, as well as geophysical survey and hand probing to investigate geophysical anomalies that may represent grave shafts (AECOM, 2018b). The results of the Phase II evaluations were documented in a report that meets applicable Federal and State regulations and guidelines, and incorporated into Section 3.8.1.4 (AECOM, 2020e). To date, as noted previously, the HPD has concurred in part with the Army's NRHP eligibility determinations for these cemeteries; however, the Army has determined that further consultation regarding these cemeteries is not required for this Proposed Action.

### **Native American Sacred Sites and PTRCI**

Tribal representatives have identified one PTRCI within an Action Alternative for the Proposed Action. While the Tribe(s) have not shared specific details of this site with Fort Benning, Fort Benning understands that it is associated with an existing NRHP-eligible archaeological site. Due to the sensitivity of this site, this FEIS does not identify its specific location or the Action Alternative within which it is located; accordingly, impact and mitigation analysis is provided in this subsection. Fort Benning will continue consultation with the Tribe(s) regarding the PTRCI via private communication.

As the PTRCI is co-located with an NRHP-eligible archaeological site, the Proposed Action would completely avoid the PTRCI. Therefore, there would be no physical disturbance within the PTRCI and the site would remain intact. Potential impacts to the PTRCI, however, could still occur from disturbance in the vicinity of the site. These potential impacts would be similar to the impacts identified for applicable VECs (i.e., VECs that may constitute components of the PTRCI) throughout this FEIS. Applying those analyses specifically to the PTRCI impact analysis, adverse impacts may occur to the PTRCI from the Proposed Action as follows: construction may have

**short-term, minor to moderate adverse impacts** to the air quality, noise, nearby vegetation and wildlife, surface water quality (if present), and accessibility of the PTRCI; operation and maintenance may have the same impacts on a long-term, periodic basis. Although the Proposed Action may have potential minor to moderate adverse impacts on this PTRCI, the Army does not know of any other PTRCI on Post; therefore, **no cumulative impacts** would be expected from the HOMMTA or other past, present, or reasonably foreseeable future actions on PTRCIs.

**3.8.1.4 Existing Conditions**

Detailed information concerning the prehistoric and historic settings of Fort Benning and the ROI is described in the associated Phase II cultural resources reports for the ROI. Table 3.8-2 summarizes the known cultural resources within each Action Alternative (except for the PTRCI), as described below. Please note that the locations of archaeological sites are not shown in this EIS to protect them.

**Table 3.8-2: Summary of Existing Cultural Resources in the APE**

Action Alternative	Total	NRHP-Eligible Sites	Non-NRHP-Eligible Sites
<b>Archaeological Sites</b>			
<b>1</b>	133	13	120
<b>2</b>	78	7	71
<b>3</b>	84	15	69
<b>Historic Cemeteries</b>			
<b>1</b>	4	2 NRHP-eligible; 2 remain partially unassessed	
<b>2</b>	2	Both remain partially unassessed	
<b>3</b>	0	N/A	

**No Action Alternative (ongoing use of the GHMTA)**

There are 11 archaeological sites and one historic cemetery in the GHMTA, of which 10 are NRHP-eligible and two are potentially NRHP-eligible. The Army marked all 10 of these resources for avoidance or fully mitigated any adverse impacts through data collection and excavation/relocation. Please refer to the ETEA for more information (Fort Benning, 2015b).

### **Alternative 1**

The Army has identified a total of 133 archaeological sites in Alternative 1, of which five have already been determined to be NRHP-eligible and 118 have been determined to be not eligible for the NRHP. During the environmental analysis for the Proposed Action, the Army evaluated the NRHP eligibility of the remaining 10 archaeological sites in Alternative 1, of which eight were determined to be NRHP-eligible, and two were determined to be not eligible for the NRHP. NRHP-eligible sites are listed in Table 3.8-3.

**Table 3.8-3: NRHP-Eligible Sites in Alternative 1**

<b>Resource Name</b>	<b>Type</b>	<b>Description</b>
<b>9ME674</b>	Prehistoric	Prehistoric Woodland period camp with ceramics and chipped stone artifacts in a deeply buried context
<b>9ME1040</b>	Historic	Historic 19 <sup>th</sup> century residential site with possible slave quarters.
<b>9ME1316 / 9ME281 / 9ME102</b>	Prehistoric and Historic	Large multi-component site with Middle Woodland, Historic Indian, and 19 <sup>th</sup> century residential components with dense buried artifact deposits
<b>9ME1319</b>	Prehistoric	Large prehistoric camp dating from the Late Archaic to Early/Middle Woodland with ceramics and chipped stone artifacts in a deeply buried context
<b>9ME1328</b>	Historic	Historic 19 <sup>th</sup> century residential site with blacksmith shop
<b>9ME1415</b>	Historic	Circa 1968 mock Vietnamese village training site, “Strategic Hamlet”
<b>9ME1411</b>	Historic	Circa 1968 mock Vietnamese village training site, “Objective Hamlet”
<b>9ME1412</b>	Historic	Circa 1968 mock Vietnamese village training site, “Objective Hamlet”
<b>9ME1413</b>	Historic	Circa 1968 mock Vietnamese village training site, “Objective Hamlet”
<b>9ME1414</b>	Historic	Circa 1968 mock Vietnamese village training site, “Objective Hamlet”
<b>9ME1416</b>	Historic	Circa 1968 mock Vietnamese village training site, “Objective Hamlet”

Four historic cemeteries have been documented within Alternative 1. Table 3.8-4 summarizes the known historic cemeteries in Alternative 1, including their current NRHP eligibility status. Cemeteries 32 and 60 have been determined to be eligible for the NRHP, while the eligibility of



Cemeteries 24 and 25 each remain partially unassessed. Cemetery locations in Alternative 1 are shown on Figure 3.8-1.

**Table 3.8-4: Cemeteries in Alternative 1**

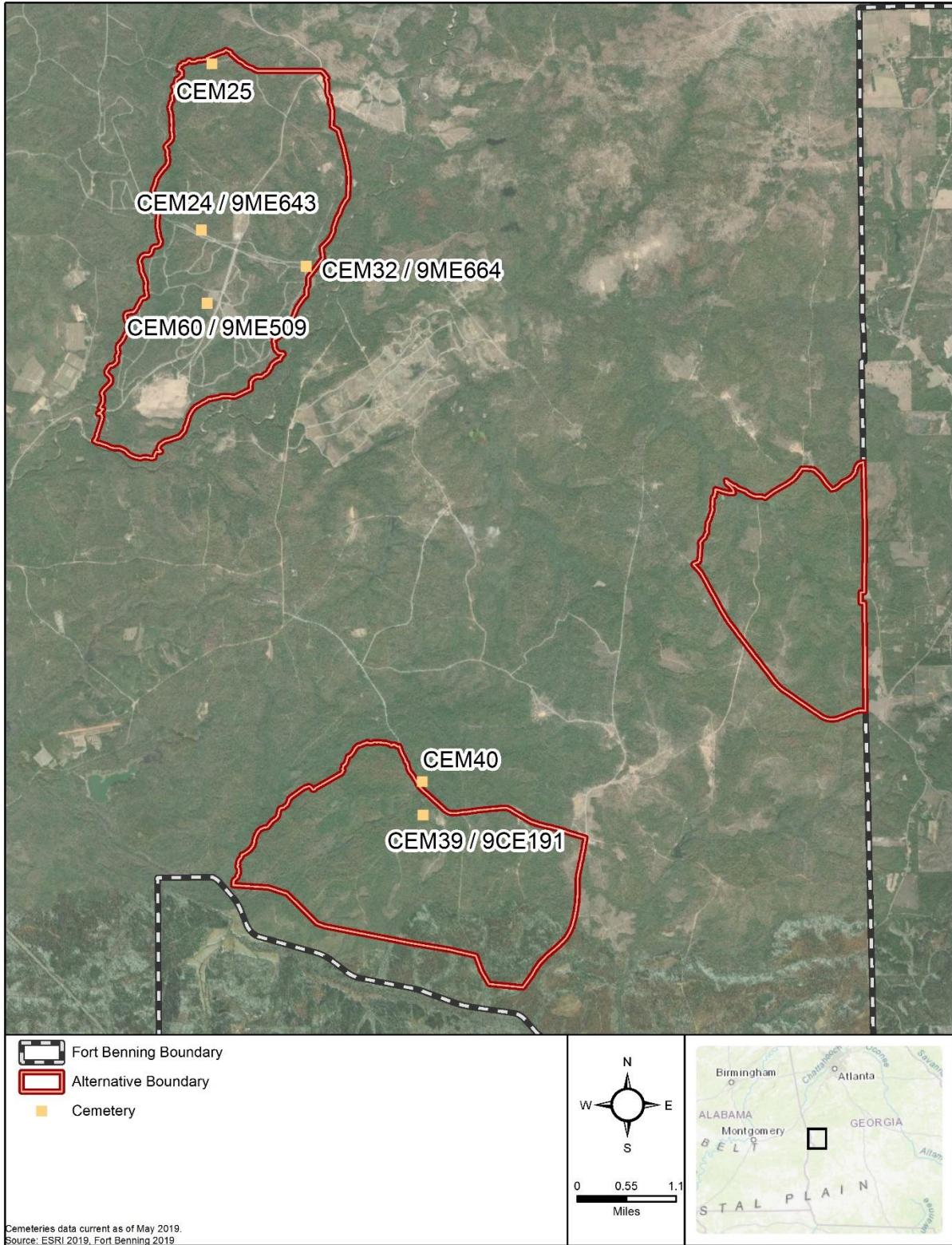
<b>Cemetery Number</b>	<b>Cemetery Name</b>	<b>Summary</b>	<b>NRHP Status</b>
<b>CEM24 / 9ME643</b>	Emmaus Church	+/- 9 graves	Unassessed
<b>CEM25</b>	Ginn-Pate Family Cemetery	26 known graves	Unassessed
<b>CEM32 / 9ME664</b>	McMurrain-Johnson	+/- 70 graves	<b>Eligible</b>
<b>CEM60 / 9ME509</b>	Unmarked Historic Cemetery	Over 20 graves	<b>Eligible</b>

### **Alternative 2**

The Army has identified a total of 78 archaeological sites in Alternative 2, of which two have already been determined to be NRHP-eligible and 63 have been determined to be not eligible for the NRHP. For this EIS, the remaining 13 archaeological sites in Alternative 2 were evaluated for NRHP eligibility; five of these sites were determined to be NRHP-eligible, while eight sites were determined to be not eligible for the NRHP. NRHP-eligible sites are listed in Table 3.8-5.

**Table 3.8-5: NRHP-Eligible Sites in Alternative 2**

<b>Resource Name</b>	<b>Type</b>	<b>Description</b>
<b>9CE102</b>	Historic	Historic 19 <sup>th</sup> century residential site
<b>9CE104</b>	Historic	Historic 19 <sup>th</sup> century residential site
<b>9CE117</b>	Prehistoric and Historic	Historic 19 <sup>th</sup> century residential site
<b>9CE1161</b>	Prehistoric	Prehistoric Middle Woodland camp with a dense ceramic midden and chipped stone artifacts
<b>9CE1792</b>	Historic	Historic 19 <sup>th</sup> and 20 <sup>th</sup> century residential site
<b>9CE1921</b>	Prehistoric	Prehistoric Middle Woodland and Late Mississippian Lamar campsite
<b>9CE2524</b>	Prehistoric and Historic	Prehistoric Middle Woodland and Historic Creek Indian campsite



**Figure 3.8-1: Cemeteries Located within the Action Alternatives**

One historic cemetery has been documented within Alternative 2. One additional cemetery is located immediately adjacent to Alternative 2 and has been included in this analysis due to its proximity. These cemeteries are shown in Figure 3.8-1 and summarized in Table 3.8-6. The NRHP eligibility of each of these cemeteries remains partially unassessed.

**Table 3.8-6: Cemeteries in Alternative 2**

Cemetery No.	Cemetery Name	Summary	NRHP Status
<b>CEM39 / 9CE191</b>	McCook Cemetery	28 known graves	Not Eligible
<b>CEM40</b>	Prosperity Church Cemetery	Four known and several unmarked graves	Not Eligible

### **Alternative 3**

The Army has identified a total of 84 archaeological sites in Alternative 3, of which three have already been determined to be NRHP-eligible and 61 have been determined to be not eligible for the NRHP. As part of this EIS, the remaining 20 archaeological sites in Alternative 3 were evaluated for NRHP eligibility; 12 of these sites were determined to be NRHP-eligible, while eight sites were determined to be not eligible for the NRHP. NRHP-eligible sites are listed in Table 3.8-7.

**Table 3.8-7: NRHP-Eligible Sites in Alternative 3**

Resource Name	Type	Description
<b>9CE44</b>	Prehistoric and Historic	Multi-component site with Early Archaic, Late Archaic, and historic Creek Indian components along with a mid-19 <sup>th</sup> to early 20 <sup>th</sup> century residence
<b>9CE1215</b>	Prehistoric	Multi-component prehistoric site with Middle Archaic, Late Archaic, Woodland, and Mississippian occupations
<b>9CE1216</b>	Prehistoric and Historic	Multi-component site with Middle Archaic, Late Archaic, Early Woodland, Middle Woodland, Mississippian and historic Creek Indian occupations
<b>9CE1218 (A) / 9CE1220</b>	Prehistoric	Multi-component Late Archaic, Woodland, and 19 <sup>th</sup> century historic components
<b>9CE1226</b>	Prehistoric	Multi-component Late Archaic, Middle Woodland, Late Woodland, and Mississippian occupations
<b>9CE1233</b>	Prehistoric	Multi-component Unknown Prehistoric campsite

Resource Name	Type	Description
9CE1251	Prehistoric	Multi-component Late Archaic, Middle Woodland, Middle Mississippian, and Late Mississippian components
9CE1254 / 9CE1259	Prehistoric	Multi-component Early Archaic, Late Archaic, Middle Woodland, and Late Woodland occupations
9CE1813	Historic	Historic early 19 <sup>th</sup> century residential site
9CE1814	Historic	Multi-component historic 19 <sup>th</sup> century residential site
9CE1978	Prehistoric	Multi-component Prehistoric Early Archaic, Middle Archaic, Late Archaic, and Middle Mississippian campsite
9CE2615	Historic	19 <sup>th</sup> to early 20 <sup>th</sup> century historic water-powered mill site

There are no known historic cemeteries located in Alternative 3.

### 3.8.2 Environmental Effects

This section identifies potential impacts to cemeteries and NRHP-eligible archaeological sites that could result from each of the Action Alternatives and the No Action Alternative as described in Section 2.4. This EIS also provides, in parentheses following the “NEPA” potential impact level, the level of anticipated effect using NHPA terminology (36 CFR 800.5) according to the following correlations: no impact (no effect); negligible adverse impact (no adverse effect); and minor, moderate, or significant adverse impact (adverse effect). Beneficial effects would not be anticipated.

#### 3.8.2.1 Approach to the Analysis

The Army used the following significance thresholds (see Table 3.8-8) to evaluate adverse impacts of the Proposed Action on cultural resources.

**Table 3.8-8: Significant Adverse Impact Thresholds for Cultural Resources**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct	Would result in damage to a cemetery within the Alternative footprint. Would result in damage to an NRHP-eligible resource within the Alternative footprint such that the resource would no longer be eligible for listing. Would result in the loss of an NRHP-eligible resource within the Alternative footprint without proper mitigation.
	Indirect	Would result in damage to a cemetery outside the Alternative footprint. Would result in damage to an NRHP-eligible resource outside the Alternative footprint such that the resource would no longer be eligible for listing. Would result in the loss of an NRHP-eligible resource outside the Alternative footprint without proper mitigation.

**3.8.2.2 No Action Alternative**

Under the No Action Alternative, the proposed HOMMTA would not be constructed or operated and no change would occur. There would be no new construction activities or expansion of training locations. Fort Benning would continue to follow the procedures stipulated in its ICRMP, which contains specific guidance for the inventory, evaluation, and management of culturally significant properties on the Installation (Fort Benning, 2015a). Continued implementation of the ICRMP would ensure that the Army remains compliant with applicable Federal, State, and local laws regarding cultural resources.

Existing heavy maneuver training activities would continue to occur in the GHMTA. As evaluated in the ETEA (Fort Benning, 2015b), this training has no effect on historic properties in the GHMTA or its ROI. These cultural resources have already either been marked for avoidance or fully mitigated through data collection and excavation/relocation of resources, as appropriate. As such, the No Action Alternative would continue to have **no effect** on historic properties.

**3.8.2.3 Alternative 1**

Overall, Alternative 1 would result in potential **minor adverse impacts** to cultural resources, but **“no effect”** to historic properties under the NHPA, with implementation of the EPMs and RCMs

identified in Section 2.1.1. Cultural resources impacts under Alternative 1 would be *similar* to Alternatives 2 and 3.

Thirteen archaeological sites and two cemeteries eligible for listing in the NRHP, as well as two additional cemeteries that are not NRHP-eligible, could be adversely affected by Alternative 1 (see Table 3.8-3 and Table 3.8-4).

The 13 NRHP-eligible archaeological sites are located in or near areas where vegetation removal (and grading), excavation, and construction is proposed. Heavy equipment used to remove trees and grade terrain could disturb archaeological deposits, alter archaeological features, remove archaeological materials, and mix artifacts. Heavy vehicle use during operation and maintenance could cause similar impacts to such features. While these actions could result in significant adverse impacts (adverse effects) to these historic properties, as discussed in Section 2.1.1 as part of the Proposed Action and in compliance with the NHPA, the Army is preparing and would implement site-specific mitigation plans to reduce anticipated adverse impacts to NRHP-eligible archaeological sites, resulting in **no impact (no effect)** on any historic properties avoided, or full mitigation of potential significant adverse impacts (adverse effects). There would, however, remain **minor, long-term, direct adverse impacts** (not regulated under the NHPA) to the repository of cultural resources knowledge at Fort Benning; even complete archaeological data recovery investigations limit the additional knowledge that could be gained from archaeological sites in the future if they had been left in their original, undisturbed context.

Further impact reduction could be achieved by implementing additional avoidance mitigation measures discussed in Section 3.8.3, although these additional measures could unacceptably hinder heavy maneuver training in some cases.

**Negligible, long-term, direct adverse impacts (no adverse effects)** could occur to two NRHP-eligible cemeteries and two other historic cemeteries due to increased noise. These impacts could occur during construction, operation, and maintenance activities, although the cemeteries would not be available for visitation during construction or operation. As noted in Section 2.1.1, the Army would establish buffers from vehicle traffic, digging, and other disturbance of up to 100 feet (i.e., depending upon the proximity of existing active roads and trails) around all cemeteries, regardless of NRHP status, that would be avoided throughout the project lifecycle. As such, no impacts (no

effect), including no visual impacts, would be anticipated from encroachment of or damage to the cemeteries; potential vibration impacts resultant from construction equipment and heavy maneuver vehicles would be negligible (see Appendix G).

The Army would further reduce impacts to cemeteries by implementing the EPMs and RCMs identified in Section 2.1.1., including marking cemeteries on all construction documents and in the field both prior to construction and during operation and maintenance. Additionally, Fort Benning CRM professionals would monitor cemeteries routinely throughout the HOMMTA's lifecycle. Cemeteries would remain available for visitation in accordance with current protocols when Proposed Action activities are not occurring.

**Minor, long-term, direct adverse impacts (adverse effects)** could occur to buried archaeological deposits or Native American burials not detected during prior cultural resources surveys. These resources could be inadvertently and adversely impacted during ground-disturbing activities associated with construction, operation, or maintenance of the proposed HOMMTA. As identified in Section 2.1.1, to minimize these potential impacts, any inadvertent discoveries of cultural resources would be addressed through the inadvertent discovery process specified in applicable laws, regulations, and the ICRMP.

#### **3.8.2.4 Alternative 2**

Overall, Alternative 2 would result in potential **minor adverse impacts** to cultural resources, but **“no effect”** to historic properties under the NHPA, with implementation of the EPMs and RCMs identified in Section 2.1.1. Cultural resources impacts under Alternative 2 would be *similar* to Alternatives 1 and 3.

Seven archaeological sites eligible for listing in the NRHP and two additional historic cemeteries (i.e., one of which is outside but adjacent to the Alternative 2 footprint) are located within Alternative 2 (see Table 3.8-5 and Table 3.8-6). As identified for Alternative 1, implementation of the EPMs and RCMs identified in Section 2.1.1 would ensure **“no effects”** or **“no adverse effects”** occur to historic properties under the NHPA, although other **minor, short- and long-term, direct and indirect adverse impacts** to archaeological sites and **negligible, long-term, direct adverse impacts** to historic cemeteries would be the *same as* discussed for Alternative 1. The additional mitigation measures identified in Section 3.8.3 could be used by the Army to further reduce effects.



### 3.8.2.5 Alternative 3

Overall, Alternative 3 would result in potential **minor adverse impacts** to cultural resources, but “**no effect**” to historic properties under the NHPA, with implementation of the EPMs and RCMs identified in Section 2.1.1. Cultural resources impacts under Alternative 3 would be *similar to* Alternatives 1 and 2.

Fifteen archaeological sites eligible for listing in the NRHP (and no cemeteries) could be adversely affected by Alternative 3 (see Table 3.8-7). As identified for Alternative 1, implementation of the EPMs and RCMs identified in Section 2.1.1 would ensure “**no effects**” occur to historic properties under the NHPA, although other **minor, short- and long-term, direct adverse impacts** to cultural resources would be the *same as* discussed for Alternative 1. The additional mitigation measures identified in Section 3.8.3 could be used by the Army to further reduce effects.

### 3.8.3 Mitigation

In compliance with the NHPA, potential adverse impacts to NRHP-eligible sites would be mitigated according to site-specific mitigation plans implemented prior to construction of the HOMMTA. Avoidance is always Fort Benning’s preferred method of mitigation; however, this would not be feasible in all circumstances. Site-specific mitigation plans are likely to identify data recovery as the necessary mitigation option for most archaeological sites, although the Army may attempt to preserve sites (completely or in part) as feasible without adversely impacting training (e.g., site 9ME1415). For the Vietnam-era training archaeological sites in Alternative 1, mitigation would also likely include interviewing personnel who trained at those sites, creating as-built engineering drawings, or adaptive re-use.

To further reduce impacts to these resources, the Army would consider implementing additional avoidance mitigation measures, including:

- Establishing a 50-foot buffer from all vehicle, digging, or other disturbance around NRHP-eligible archaeological site footprints (including, as applicable, the PTRCI) in the field prior to HOMMTA construction by installing Seibert Stake reflectors, along with “Sensitive Area” signage, at 45-foot intervals. Existing vegetation would be retained within these buffers as barriers to vehicle traffic, and boulders would be emplaced at 6-foot intervals, where needed, to supplement vegetative barriers.

- Monitoring NRHP-eligible archaeological sites and, as applicable, the PTRCI routinely throughout the HOMMTA’s lifecycle.

Consultation comments from Tribal representatives requested that a specific type of plant, important to the history and cultures of Tribes, be planted in vegetative barriers to reduce soil erosion. If that plant exists in the Action Alternatives, it probably would be located near surface waters that would be in the vegetative buffers. The Army considered establishing new populations of that plant in those vegetated buffer areas; however, logistical and resource limitations make that mitigation not feasible at this time. Fort Benning welcomes further consultation with the Tribes on this topic that is not limited to the Proposed Action. For example, other areas of Post than the proposed HOMMTA may be better suited for the plant.

### **3.9 Socioeconomics**

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. The following sections describe the socioeconomic conditions in the areas that may be meaningfully affected by the Action Alternatives (i.e., the Proposed Action ROI) with respect to population and housing, economic development, employment, taxes, and revenue. Another socioeconomic component, public services (e.g., fire, police, ambulance, school, and health care services), would not be affected by the Proposed Action and is not discussed further herein; the Proposed Action would not result in any changes in the number of personnel assigned to the Installation. As such, effects to these socioeconomic resources would be limited to changes due to construction and maintenance.

This section also addresses EJ considerations in the Proposed Action’s ROI. The importance of considering EJ issues in Federal proposed actions was elevated with the February 11, 1994 signing of EO 12898 (*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*). EO 12898 requires that “...each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations....” [Subsection 1-101]. EJ communities of concern include places that are home to high concentrations of minority and low-income populations. EJ effects could occur during construction, operation, or

maintenance of the Proposed Action, specifically when off-Post adverse effects associated with other VECs could occur.

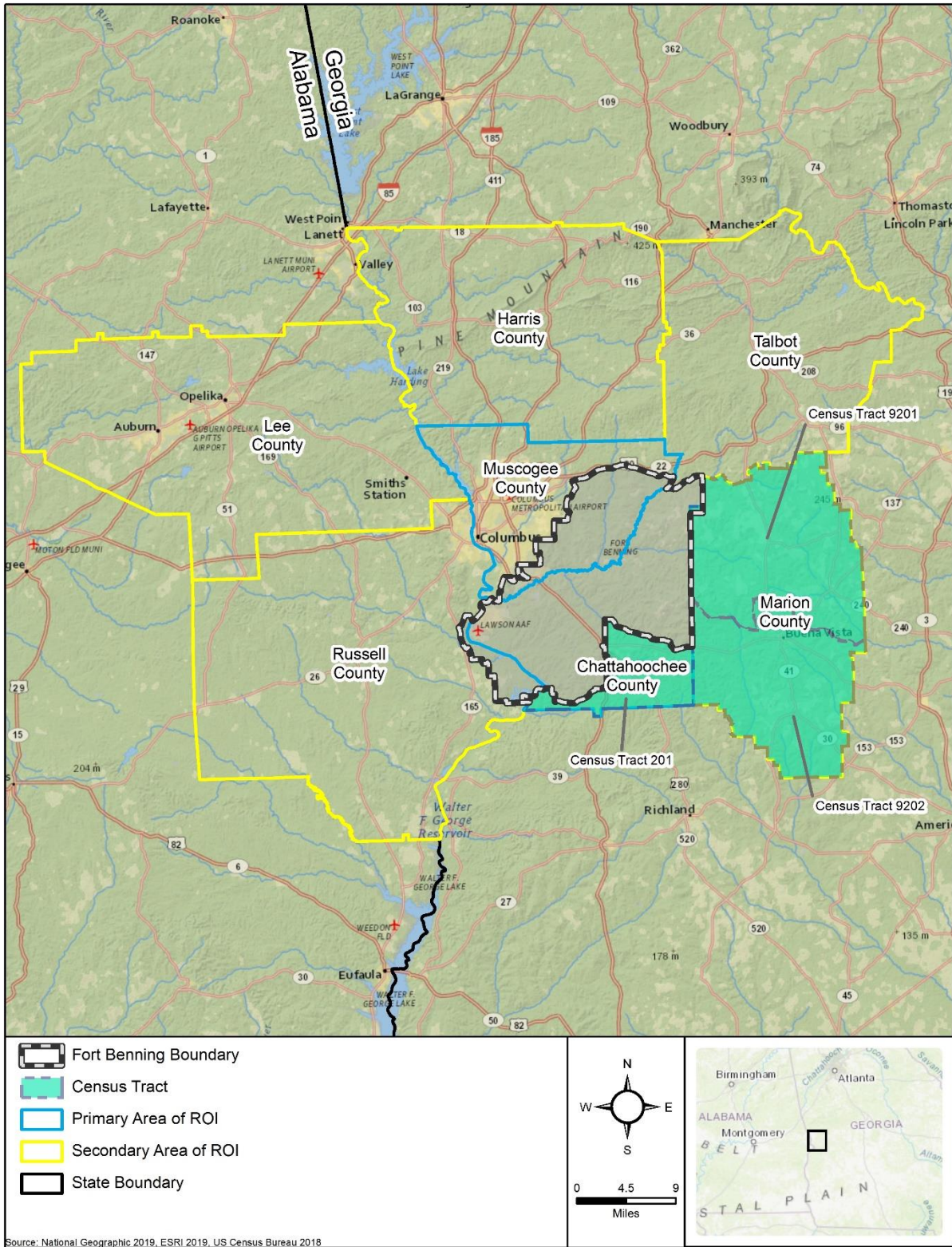
### **3.9.1 Affected Environment**

#### **3.9.1.1 Region of Influence**

Approximately 93 percent of Fort Benning's footprint, including its multiple cantonment and housing areas, is located within Muscogee and Chattahoochee Counties, Georgia, with the remainder located in Russell County, Alabama. The three Action Alternatives are located within Georgia. Socioeconomic resources associated with the GHMTA and its associated ROI were described in the ETEA (Fort Benning, 2015b). The reader is referred to that document for more information relevant to the No Action Alternative.

The ROI for socioeconomics includes two areas: the primary area and the secondary area. The Army determined the primary area of the ROI to include Muscogee and Chattahoochee Counties, Georgia, as these counties contain the majority of the Installation, including the Action Alternatives. The secondary area of the ROI includes Talbot, Marion, and Harris Counties in Georgia, and Russell and Lee Counties in Alabama; based on past similar construction and maintenance projects at Fort Benning, these are the additional counties from which Proposed Action non-military labor and materials would likely be procured, and in which construction jobs and earning effects generally also would be realized. Figure 3.9-1 shows the location of Fort Benning, the Action Alternatives, and the counties in the primary and secondary areas of the overall ROI.

This impact analysis presents the socioeconomic projections for the overall ROI (i.e., primary and secondary areas). As described below, the Proposed Action is anticipated to have no adverse impacts on socioeconomics, and all beneficial impacts would be minor. Based on modeling completed for this EIS, all impacts would remain minor even if they were all concentrated in the primary area of the ROI. Therefore, for concision, only the primary area is described in the affected environment discussion and is referenced as the ROI.



**Figure 3.9-1: Socioeconomic Impact Analysis ROI, Including Primary and Secondary Areas**

For EJ considerations, the ROI includes immediately off-Post areas that could experience meaningful adverse effects from the Proposed Action, such as noise and air quality effects. The EJ ROI for Alternative 2 includes census tract 201 within Chattahoochee County, and the EJ ROI for Alternative 3 includes census tracts 9201 and 9202 within Marion County (Figure 3.9-1). These census tracts include all off-Post areas potentially affected by Alternatives 2 or 3. Alternative 1 is in the central portion of Fort Benning and would not produce off-Post adverse effects with implementation of the Proposed Action.

### **3.9.1.2 Applicable Guidance**

NEPA directs Federal agencies to identify and address, as appropriate, the potential socioeconomic impacts of the Proposed Action and Alternatives prior to making a decision on a Federal proposal. In addition, based on guidance provided as part of the CEQ NEPA Regulation, “minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent; or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis,” while low-income populations should be identified based on poverty data (CEQ, 1997). The socioeconomic impact analytical process should identify mitigation measures to avoid or reduce potential adverse impacts and provide an avenue for public and agency participation in the decision-making process.

### **3.9.1.3 Existing Conditions**

The following sections include brief descriptions of typical socioeconomic indicators for the ROI.

#### **Population and Housing**

##### *Population*

Muscogee County has a population density of 877.5 people per square mile; Chattahoochee County has a population density of 45.3 people per square mile, reflecting its more rural character (USCB, 2019). As shown in Table 3.9-1, between 2010 and 2017, the population of Chattahoochee County decreased by 1.5 percent. During the same period, Muscogee County’s population increased by 4.6 percent, slightly more than the national rate of increase of 4.0 percent, but less than the State rate of increase of 5.3 percent (USCB, 2010; USCB, 2017b).

The more rural Chattahoochee County is projected to grow by 21.4 percent (2,377 people) between 2017 and 2025, outpacing the projected growth of the State of Georgia (13.1 percent) and the US (7.2 percent). Muscogee County is expected to grow by 10.9 percent (21,708 people) during the same period, greater than the nation’s growth rate, but less than the State’s growth rate (USCB, 2018).

**Table 3.9-1: Population and Trends in the ROI**

Jurisdiction	2010	Estimated 2017	Projection 2025	Percent Change 2010-2017	Percent Change 2017-2025
<b>Chattahoochee County</b>	11,267	11,096	13,473	-1.5	21.4
<b>Muscogee County</b>	189,885	198,647	220,355	4.6	10.9
<b>Georgia</b>	9,687,653	10,201,635	11,538,707	5.3	13.1
<b>United States</b>	308,745,538	321,004,407	344,234,000	4.0	7.2

Sources: (USCB, 2010; USCB, 2017b; USCB, 2018)

### *Regional Demographics and Housing*

Table 3.9-2 summarizes demographic information for Muscogee and Chattahoochee Counties. The median age of people living in the more rural Chattahoochee County is 23.7 years, which is notably less than Muscogee County (33.7 years), the State of Georgia (36.4 years), and the US (37.8 years). Chattahoochee County also has a larger household size (3.4 persons per household) than Muscogee County (2.6 persons), the State of Georgia (2.7 persons), and the US (2.6 persons). At 74.8 percent, Chattahoochee County has the lowest housing occupancy rate compared to Muscogee County and the State and national levels (USCB, 2017b; USCB, 2017c; USCB, 2017d; USCB, 2017e).

### **Economic Development and Employment**

As shown in Table 3.9-2, approximately 81 percent of the population of Chattahoochee County is in the labor force, which is a higher rate than Muscogee County (61.7 percent) and the State and national levels. The more rural Chattahoochee County has per capita income of \$22,774, less than Muscogee County (\$24,604), and substantially less than the State and national levels (USCB, 2017b; USCB, 2017c; USCB, 2017d; USCB, 2017e).

**Table 3.9-2: Regional Demographics and Housing in the ROI**

Characteristic	Chattahoochee County	Muscogee County	Georgia	United States
<b>Population</b>	11,096	198,647	10,201,635	321,004,407
<b>Median Age (years)</b>	23.7	33.7	36.4	37.8
<b>Under 18 Years (percent)</b>	22.3	24.9	24.5	22.9
<b>65 and over (percent)</b>	3.7	12.2	12.0	14.9
<b>Average Household Size</b>	3.4	2.6	2.7	2.6
<b>Average Family Size</b>	3.4	3.4	3.3	3.2
<b>Population In Labor Force (percent)</b>	80.9	61.7	62.9	63.4
<b>Mean Travel Time to Work (minutes)</b>	15.5	20.0	28.0	26.4
<b>Median Household Income</b>	\$46,096	\$43,239	\$52,977	\$57,652
<b>Per Capita Income</b>	\$22,774	\$24,604	\$28,015	\$31,177
<b>Housing Units</b>	3,349	84,150	4,203,288	135,393,564
<b>Occupancy Rate (percent)</b>	74.8	87.0	87.1	87.8
<b>Vacant Housing Units</b>	844	10,971	540,184	16,567,643
<b>Renter-Occupied Housing Units</b>	1,830	37,724	1,356,332	42,992,786
<b>Rental Vacancy Rate (percent)</b>	10.1	4.7	7.4	6.1

Sources: (USCB, 2017b; USCB, 2017c; USCB, 2017d; USCB, 2017e)

Table 3.9-3 presents employment characteristics of the counties in the primary ROI, State, and nation. Muscogee County has a higher unemployment rate (5.7 percent) than Chattahoochee County (4.5 percent), the State of Georgia (4.7 percent), and the US (4.1 percent). The largest employment sectors in Chattahoochee County include Public Administration (23.1 percent); Educational, Health, and Social Services (21.0 percent); and Retail Trade (12.7 percent); while the three largest sectors in Muscogee County are Educational, Health, and Social Services (22.2 percent); Retail Trade (12.8 percent); and Arts, Entertainment, Recreation, Accommodation, and Food Services (12.1 percent).



**Table 3.9-3: Employment in the Primary ROI**

Characteristic	Chattahoochee County	Muscogee County	Georgia	United States
Average Unemployment Rate in 2017 (percent)	4.5	5.7	4.7	4.1
Employed Labor Force in 2017	7,067	95,358	5,026,306	162,184,325
Employed Civilian Population in 2017 (aged 16 years and over)	2,210	79,022	4,978,910	161,159,470
Agriculture, forestry, fishing and hunting, and mining (percent)	3.9	0.2	1.1	1.9
Construction (percent)	6.7	4.6	6.5	6.4
Manufacturing (percent)	3.8	9.6	10.6	10.3
Wholesale Trade (percent)	0.7	1.3	2.9	2.7
Retail Trade (percent)	12.7	12.8	11.8	11.4
Transportation and Warehousing, and Utilities (percent)	4.1	4.0	6.2	5.1
Information (percent)	1.8	1.7	2.5	2.1
Finance, Insurance, Real estate and Rental and Leasing (percent)	3.7	11.8	6.3	6.6
Professional, Scientific, Management, Administrative, and Waste Management Services (percent)	8.6	8.1	11.8	11.3
Educational, Health, and Social Services (percent)	21.0	22.2	20.8	23.1
Arts, Entertainment, Recreation, Accommodation and Food Services (percent)	7.9	12.1	9.4	9.7
Other Services Except Public Administration (percent)	2.0	3.8	4.9	4.9
Public Administration (percent)	23.1	7.8	5.1	4.7

Source: (USCB, 2017d)

As of 2019, the Fort Benning work force totaled 42,870 personnel, of which 32,693 (76 percent) are uniformed Soldiers, 3,665 (9 percent) are Department of the Army civilian employees, and 6,512 (15 percent) are civilian contractors. Installation expenditures totaled \$2,266,490,543 regionally during 2005, and payroll expenditures amounted to \$1,054,214,521 (Fort Benning,

2019d). According to a study by the Greater Columbus Georgia Chamber of Commerce, Fort Benning’s 2016 total annual economic impact was approximately \$4.75 billion (GCGCOC, 2019).

### **Taxes and Revenue**

The majority of tax revenue in the State of Georgia is derived from individual income taxes and sales and use taxes. These sources constituted 51.3 percent and 26.2 percent, respectively, of total State tax revenues (\$22.7 billion) in FY 2018. The sales and use tax rate in both counties of the ROI is 8 percent, which includes the State sales and use tax rate of 4 percent, and local education and special purpose local taxes (GDR, 2019a).

In Georgia, the *ad valorem* tax (e.g., property tax), initially imposed by law in the 1800s, serves as the primary source of revenue for county governments, municipalities, and public schools in the State. On January 1, 2016, the State levy of annual *ad valorem* property tax was eliminated (GDR, 2019b). The governing authority of the county or other taxing jurisdiction annually sets the tax rate (millage) in each county.

Table 3.9-4 summarizes the net assessed value of general property, as well as millage rates by county in the ROI. The table also presents county revenue on both a per acre and per capita basis. Table 3.9-4 indicates that annual property tax revenues per acre and per capita differ greatly between Muscogee County and the more rural Chattahoochee County. In FY 2018, Muscogee County collected an average of \$1,671.20 per acre and \$1,165.10 per capita; Chattahoochee County collected an average of \$9.40 per acre and \$134.20 per capita (GDR, 2019b; GDR, 2018).

**Table 3.9-4: Property Values, Tax Rates, and Estimated Revenues in the ROI – FY18**

County	Net Assessed Value (\$)	Millage Rate <sup>1</sup>	Estimated Revenue (\$)	Average Revenue Per Acre (\$)	Per Capita Revenue (\$) <sup>2</sup>
Chattahoochee	58,059,000	25.653	1,489,388	9.40	134.20
Muscogee	5,714,401,000	41	231,438,955	1671.2	1,165.10

Source: (GDR, 2019b; GDR, 2018)

<sup>1</sup> Millage rates are Calendar Year 2017. One mill represents a tax liability of \$1 per \$1,000 of assessed value.

<sup>2</sup> Estimated per capita revenue based on US Census Bureau American Community Survey (ACS) 5 Year Estimates 2013 - 2017 population

### **Environmental Justice**

To determine if the off-Post areas adjacent to Alternatives 2 and 3 had EJ populations of concern, the Army conducted a demographic screening exercise. US Census American Community Survey (ACS) 2012-2017 data was downloaded for the three relevant census tracts (i.e., tract 201 for Alternative 2 and tracts 9201 and 9202 for Alternative 3) and tabulated (see Table 3.9-5) (USCB, 2017f; USCB, 2017g). The total number of minority persons in a given area includes all races or ethnicities except “Not Hispanic or Latino” White.

**Table 3.9-5: Demographic Composition of Relevant Off-Post Census Tracts (EJ ROI) and Georgia**

Race or Ethnicity	Alternative 2 (Chattahoochee County)	Alternative 3 (Marion County)		Georgia
	Census Tract 201	Census Tract 9201	Census Tract 9202	
“Not Hispanic or Latino” White	1,444	3,788	1,277	5,469,446
“Hispanic or Latino” White	0	15	19	592,375
Black or African American	878	153	2,906	3,195,268
American Indian and Alaska Native	15	0	0	30,552
Asian	14	61	0	388,946
Native Hawaiian and other Pacific Islander	0	40	0	5,237
Some other race alone	35	16	134	282,570
Two or more races	100	48	101	237,241
<b>Total</b>	<b>2,486</b>	<b>4,121</b>	<b>4,437</b>	<b>10,201,635</b>
<b>Minority Percentage</b>	<b>41.9%</b>	<b>8.1%</b>	<b>71.2%</b>	<b>46.4%</b>

Source: (USCB, 2017f; USCB, 2017g)

As shown in Table 3.9-5, the percentage of minority persons in the State of Georgia was used as a threshold population for comparative purposes. Based on the 2012-2017 ACS dataset, the percentage of minority persons in the State is 46.4 percent. Black or African-American persons constitute the single largest minority group, accounting for 31 percent of the population in the State. “Not Hispanic or Latino” White persons accounted for nearly 54 percent of the total population in the State. Compared to the State, census tract 9202 in Marion County has a greater percentage of minority persons (71.2 percent). The percentages of minority persons within the

other two census tracts neither exceed 50 percent of the total population nor are greater than the minority population of the State.

In terms of income, median household incomes in census tract 201 were reported to be \$36,463; median household income in census tract 9201 was reported to be \$42,829; and median household income in census tract 9202 was reported to be \$37,597. All tracts reported incomes lower than the median household incomes within the State of Georgia of \$52,977, based on 2013-2017 ACS data (see Table 3.9-6) (USCB, 2017h). The Army also found that poverty levels within all three tracts were higher than the State threshold of 16.9 percent (USCB, 2017i). Therefore, the EJ ROIs for both Alternatives 2 and 3 have a higher proportion of low-income persons and persons below the poverty level than the rest of the State.

**Table 3.9-6: Median Household Income in the EJ ROI and the State**

Economic Metrics	Alternative 2 (Chattahoochee County)	Alternative 3 (Marion County)		Georgia
	Census Tract 201	Census Tract 9201	Census Tract 9202	
Median household income in the past 12-months (in 2017 inflation-adjusted dollars)	\$36,463	\$42,829	\$37,597	\$52,977
Percentage of Persons Below Poverty Line	24.3%	18.7%	27.3%	16.9%

Source: (USCB, 2017h; USCB, 2017i)

Adjacent to Alternative 2, the nearest off-Post residences are approximately 0.5 mile to the south. These residences are far enough away so that no off-Post noise or air quality impacts from the Proposed Action would be expected.

Adjacent to Alternative 3, off-Post residences are near the Installation boundary: approximately 11 occur within 1,400 feet to the east, including three within approximately 400 feet (see Figure 3.4-4). As such, any off-Post adverse impacts from the Proposed Action, such as from air quality or noise emissions (see Sections 3.3.2 and 3.4.2, respectively), could have an adverse EJ effect on these neighboring low-income populations.

### 3.9.2 Environmental Effects

This section discusses the potential short- and long-term, direct and indirect socioeconomic impacts that would occur under each Alternative in the ROI.

#### 3.9.2.1 Approach to the Analysis

The Army used the following thresholds (see Table 3.9-7) to determine if adverse impacts of the Proposed Action on socioeconomic resources would be significant.

**Table 3.9-7: Significant Adverse Impact Thresholds for Socioeconomics**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	<p>Would cause substantial changes to socioeconomic conditions in the ROI, such as property values, demographic composition, local spending, tax base, employment levels, housing supply, or other socioeconomic factors.</p> <p>Would increase material, equipment, and service purchases in the ROI such that they would exceed supply.</p> <p>Would directly disproportionately affect minority or low-income communities, such as through displacements.</p>
	Indirect Impacts	<p>Would indirectly cause substantial changes to socioeconomic conditions in the ROI, such as property values, demographic composition, local spending, tax base, employment levels, housing supply, or other socioeconomic factors.</p> <p>Would indirectly disproportionately affect minority or low-income communities, such as through substantial adverse off-Post air quality or noise impacts.</p>

#### 3.9.2.2 Economic Analysis Methodology

Capital investment for the Proposed Action would create additional jobs and associated wages during the construction period. The Army used the US Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II) to estimate jobs and earnings effects resulting from the construction of each Action Alternative. The Army separated capital expenditures into construction and professional services expenditures. RIMS II multipliers measure the total change (i.e., direct, indirect, and induced effects) in output, employment, and earnings that results from an incremental change to a particular industry. The multipliers used in the analysis were based on the structure of the economies of the ROI.

Direct effects, as they apply to the RIMS II model, are those on industries that are directly used to implement the Proposed Action, including the construction industry. Indirect effects are those on supporting industries that supply goods and services (e.g., equipment parts, steel, concrete, wood, and other raw materials) to the directly affected industries. Induced effects include those effects of workers (from directly and indirectly affected industries) spending their personal income on consumer goods and services (e.g., food, housing, clothing, recreation) in the broader economy; for this analysis, induced effects are considered additional indirect effects. Additional details regarding the economic impact analysis methodology are presented in Appendix H.

Based on the results of the RIMS II analysis, Table 3.9-8 provides a summary of potential construction impacts for each Action Alternative. Table 3.9-9 shows the potential impacts to employment and earnings for long-term maintenance of the Proposed Action through implementation of Fort Benning’s ITAM program under any of the proposed Action Alternatives; these impacts would be expected to be similar under any Action Alternative. Employment effects are expressed in job-years, which are defined as one job for one person for one year. Costs and earnings are expressed in 2025 US dollars, matching the anticipated approximate initial construction year of the Proposed Action under any Action Alternative.

**Table 3.9-8: Estimates of Socioeconomic Construction Employment Impacts**

	Type of Service	Spending Category	Alternative			
			No Action	1	2	3
<b>Employment (job-years)</b>	<b>Construction</b>	Direct	0	191	219	198
		Indirect	0	161	185	168
		<b>Total</b>	<b>0</b>	<b>352</b>	<b>404</b>	<b>366</b>
	<b>Professional Services</b>	Direct	0	54	57	55
		Indirect	0	50	53	51
		<b>Total</b>	<b>0</b>	<b>104</b>	<b>110</b>	<b>106</b>
<b>Earnings (2025 \$)</b>	<b>Construction</b>	Direct	\$0	\$11,504,000	\$13,203,000	\$11,943,000
		Indirect	\$0	\$6,880,000	\$7,896,000	\$7,141,000
		<b>Total</b>	<b>\$0</b>	<b>\$18,384,000</b>	<b>\$21,099,000</b>	<b>\$19,084,000</b>
	<b>Professional Services</b>	Direct	\$0	\$4,228,000	\$4,454,000	\$4,286,000
		Indirect	\$0	\$2,053,000	\$2,163,000	\$2,083,000
		<b>Total</b>	<b>\$0</b>	<b>\$6,281,000</b>	<b>\$6,617,000</b>	<b>\$6,369,000</b>

Earnings rounded to nearest \$1,000

Source: RIMS II multipliers produced by the Regional Product Division of the BEA, Series 2013 (updated in 2016); see Appendix H

**Table 3.9-9: Summary of Employment and Earnings Impacts Across All Industries from Proposed Action Maintenance (under any Action Alternative)**

	First Year	Subsequent Years (each year)
<b>Total Employment (job-years) *</b>	31	27*
<b>Total Earnings (2025 \$)</b>	\$2,368,000	\$2,146,000

Earnings rounded to nearest \$1,000

Source: RIMS II multipliers produced by the Regional Product Division of the Bureau of Economic Analysis, Series 2013 (updated in 2016); see Appendix H

\* Maintenance requirements after the first year would decline as the site stabilizes.

The Proposed Action would not increase or change training load, number of Soldiers, or throughput at Fort Benning. All activities are proposed within the boundaries of Fort Benning to accommodate existing requirements. The Proposed Action would also not change demand for housing or public services.

### 3.9.2.3 No Action Alternative

Under the No Action Alternative, the Army would not construct, operate, or maintain a new HOMMTA at Fort Benning and would continue to operate under current conditions. The MCoE and Fort Benning tenant units would continue to conduct required training at the GHMTA. There would be no Proposed Action-related changes to any socioeconomic condition under this Alternative. Ongoing expenditures and jobs under the ITAM program at the Installation relative to GHMTA maintenance would continue, providing **beneficial, minor long-term impacts**; however, no new jobs would be created, and no additional construction expenditures would occur. No EJ impacts would occur.

### 3.9.2.4 Alternative 1

Overall, Alternative 1 would result in **minor beneficial socioeconomic impacts** in the ROI. **No adverse socioeconomic impacts** would be expected. No direct or indirect EJ impacts would occur due to Alternative 1's central location on the Installation; this would be *less* impacts than Alternative 2 and *substantially less* than Alternative 3.



## **Direct Impacts**

### *Construction*

During construction, Alternative 1 would require vegetation removal from approximately 3,200 acres of primarily forested areas, and construction of tank trails, water crossings, utility improvements, and road upgrades. This would create 245 direct job-years (191 in construction and 54 in professional services), with projected combined direct earnings of over \$15.7 million.

Based on the anticipated job creation and direct earnings values, the average wage for these jobs would be estimated to be \$64,200 per job-year, which is approximately 45 percent greater than the median household incomes in the ROI, and greater than State and national median household incomes by lesser amounts. A portion of the construction workforce could come from outside the ROI, which could temporarily increase the local population or demand for housing, but these effects would be negligible.

The Proposed Action's direct economic impact to the economy during construction would be **minor, beneficial, and short-term**. Based on anticipated requirements, construction materials to support the Proposed Action are available in the ROI, and suppliers would experience an economic benefit. There would be no direct impact to other socioeconomic conditions during construction.

### *Operation*

Operation of the proposed HOMMTA would not result in new jobs or additional revenues, as the Proposed Action is intended to support the existing training load. Therefore, operation would have **no effect** on socioeconomic conditions in the ROI.

### *Maintenance*

Maintenance of the HOMMTA, conducted largely through the Installation's ITAM program, would cost approximately \$3.5 million in the first year, with spending going towards equipment rentals, employee salaries, and aggregate purchases. Subsequent year maintenance costs are expected to be less, estimated at \$2.75 million per year. Maintenance operations would be expected to provide

a total<sup>6</sup> of 31 job-years in the first year, resulting in \$2.4 million in earnings, and a total of 27 job-years in each subsequent year, resulting in \$2.1 million in earnings per year.

Based on these anticipated job creation and direct earnings values, the average wage for these jobs would be estimated to be \$76,400 per job-year during the first year, and \$79,600 per job-year during subsequent years. These wages would be approximately 75 percent higher than the median household incomes in the ROI. Fort Benning anticipates that direct hiring to support ongoing HOMMTA maintenance would be approximately 10 people; these new employees would likely be equipment operators and/or similar professionals. The direct impact to the economy associated with maintenance of the HOMMTA would be **minor, beneficial, and long-term**.

### **Indirect Impacts**

#### *Construction*

Construction of Alternative 1 would result in a total of 211 indirect job-years (161 in construction and 50 in professional services) in the ROI's economy as a whole, with projected combined indirect earnings of over \$8.9 million. Based on these job creation and indirect earnings values, the average wage for these jobs would be estimated to be \$42,200 per job-year, which is approximately 5 percent below the median household incomes in the ROI. The majority of the indirect employment and income impacts would be from expenditure of the wages earned by the construction workforce, as well as from the local workforce used to provide materials and services. These indirect economic impacts during construction would constitute potential **minor, beneficial, short-term** impacts in the ROI.

#### *Operation*

Operation of the proposed HOMMTA would not result in new jobs or additional revenues; **no indirect effect** on socioeconomic conditions in the ROI would be expected.

#### *Maintenance*

Maintenance of the proposed HOMMTA would produce additional indirect economic benefits to the local economy through indirect creation of approximately 21 job-years in the first year and 17

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<sup>6</sup> The RIMS II data for maintenance job creation includes both direct and indirect job creation; as described in the text, Fort Benning would directly hire approximately 10 new maintenance staff.

job-years annually thereafter, purchases and spending by the new maintenance employees, and procurement of additional maintenance materials. These indirect socioeconomic effects from ongoing HOMMTA maintenance would result in **minor, beneficial, long-term impacts**.

### 3.9.2.5 Alternative 2

Similar to Alternative 1, Alternative 2 would result in **minor beneficial socioeconomic impacts** in the ROI. **No direct adverse socioeconomic impacts** would be expected. There could be **negligible, indirect adverse EJ impacts** to off-Post low-income populations; these adverse EJ impacts would be *greater* than Alternative 1 and *substantially less* than Alternative 3.

#### **Direct Impacts**

##### *Construction*

Construction of Alternative 2 would require vegetation removal from approximately 2,700 acres of primarily forested areas, construction of water crossings and two HET drop-off pads, and construction of substantially more trails and road upgrades than Alternative 1. This would result in 276 direct job-years (219 in construction and 57 in professional services industries), with projected combined direct earnings of nearly \$17.7 million.

These short-term increases in job-year creation and direct earnings would be larger than would occur under Alternative 1, but would still comprise **minor, beneficial, short-term impacts** overall during the construction phase. Based on these job creation and indirect earnings values, the average wage for these jobs is estimated to be \$64,000 per job-year (i.e., slightly less than under Alternative 1). Similar to Alternative 1, the ROI would also be expected to supply necessary construction materials for Alternative 2, although there would be a slightly greater economic benefit since more material would be needed. No other direct impacts to socioeconomic conditions would be anticipated during construction.

##### *Operation and Maintenance*

Operation and maintenance impacts under Alternative 2 would be the same as under Alternative 1. Therefore, Alternative 2 would result in **minor, beneficial, long-term impacts** to socioeconomic conditions in the ROI through limited job creation for maintenance activities.

## **Indirect Impacts**

### *Construction*

Construction of Alternative 2 would result in creation of 238 indirect job-years (185 in construction and 53 in professional services) in the ROI, with projected combined indirect earnings of approximately \$10.1 million. In comparison to Alternative 1, this would represent a smaller **minor, beneficial, short-term impact**, although the average wage per job-year would be the same as under Alternative 1.

### *Operation and Maintenance*

Alternative 2 would support the same indirect economic effects during ongoing maintenance (i.e., from indirect creation of job-years, spending associated with maintenance materials, and discretionary spending by maintenance employees) as compared to Alternative 1, since the same number of maintenance jobs would be created. In the context of the overall economy, these impacts would be **minor, beneficial, and long-term**.

### *Construction, Operation, and Maintenance*

As discussed in Section 3.3.2.4, Alternative 2 could result in **short- and long-term, indirect adverse effects** on off-Post air quality due to the spread of airborne fugitive dust from construction, operation, and maintenance activities. The population residing near Fort Benning south of Alternative 2 is considered low-income, so these potential air quality impacts could disproportionately affect an EJ population; however, because all residences are located at least 0.5 mile from the Alternative 2 boundary, potential impacts would likely be **negligible**, as fugitive dust would likely settle and/or dissipate before reaching populated areas. The Army would also implement the EPMs identified in Section 2.1.1 to reduce fugitive dust impacts during construction and maintenance activities to the extent feasible.

### **3.9.2.6 Alternative 3**

Alternative 3 would result in **minor beneficial socioeconomic impacts** in the ROI. **No direct adverse socioeconomic impacts** would be expected. There could be **minor to moderate, indirect adverse EJ impacts** to off-Post minority and low-income populations. These EJ impacts would be *greater* than Alternatives 1 and 2 due to the proximity of off-Post EJ populations.

## **Direct Impacts**

### *Construction*

Construction of Alternative 3 would require vegetation removal from approximately 1,500 acres of primarily forested areas, and construction of water crossings, new trails, road upgrades, utility improvements, and two HET drop-off pads. This Action Alternative is the smallest by total acreage and would require slightly less construction effort than would Alternative 2. Alternative 3 would result in the generation of 253 direct jobs-years (198 in construction and 55 in professional services industries), with projected combined direct earnings of over \$16.2 million.

Based on these job creation and direct earnings values, the average wage for these jobs is estimated to be \$64,200 per job-year (i.e., the same as Alternative 1, but slightly more than Alternative 2). These short-term increases in job-year creation and direct earnings would be larger than would occur under Alternative 1 but smaller than would occur under Alternative 2, and would also comprise **minor, beneficial, short-term impacts**. Like Alternatives 1 and 2, the ROI would be expected to supply necessary construction materials for Alternative 3. No other direct impacts to socioeconomic conditions would be anticipated during construction.

### *Operation and Maintenance*

Operation and maintenance impacts under Alternative 3 would be the same as under Alternatives 1 and 2. Therefore, Alternative 3 would result in **minor, beneficial, long-term impacts** to socioeconomic conditions in the ROI through limited job creation for maintenance activities.

## **Indirect Impacts**

### *Construction*

Construction of Alternative 3 would create 219 job-years (168 in construction and 51 in professional services) in the ROI, with projected combined indirect earnings of over \$9.2 million. This would represent a slightly greater impact than under Alternative 1 and smaller than under Alternative 2, but would still be a **minor, beneficial, short-term** impact to socioeconomic conditions in the ROI. The average wage for these jobs would be the same as under Alternatives 1 and 2.

### *Operation and Maintenance*

Alternative 3 would support the same indirect economic effects during ongoing maintenance (i.e., from indirect creation of job-years, spending associated with maintenance materials, and discretionary spending by maintenance employees) as compared to Alternatives 1 and 2, since the same number of maintenance jobs would be created. In the context of the overall economy, these impacts would be **minor, beneficial, and long-term**.

### *Construction, Operation, and Maintenance*

As identified in Sections 3.3.2.5 and 3.4.2.5, there are 11 off-Post residences and a church sensitive to air quality and noise that could experience associated **minor to moderate, short- and long-term, indirect adverse impacts** from implementation of Alternative 3.

Four of these receptors are located within approximately 400 feet of Alternative 3's eastern boundary (see Figure 3.4-4). The populations that reside adjacent to the Installation boundary east of Alternative 3 are considered low-income and, in the case of census tract 9202, minority; as such, EJ populations may be disproportionately impacted by these potential indirect air quality and noise impacts.

Due to the higher number and closer proximity of sensitive receptors along the eastern boundary of Alternative 3, these EJ impacts would be *notably greater* when compared to the negligible EJ impacts anticipated under Alternatives 1 and 2. The Army would implement the EPMS identified in Section 2.1.1 to reduce fugitive dust and noise impacts during construction and maintenance activities to the extent feasible, which would maintain potential **short- and long-term, indirect adverse impacts** at **minor to moderate** levels.

### **3.9.3 Mitigation**

The Action Alternatives would not result in any adverse impacts to socioeconomic resources, except EJ concerns under Alternative 3 (i.e., Alternative 2 EJ impacts would be expected to be negligible, and Alternative 1 EJ impacts would be none). The Army would consider implementing the mitigation measures identified in Section 3.4.3, in addition to the noise and air quality EPMS and RCMs identified in Section 2.1.1, to reduce potential impacts to off-Post EJ communities adjacent to Alternative 3.

### 3.10 Infrastructure

This section describes the infrastructure serving Fort Benning that could be affected by the Proposed Action. This includes on-Post electrical and telecommunications utilities and the on- and off-Post transportation system that is in and connects to the Alternatives. Water, wastewater, and natural gas utilities do not occur within any of the Alternatives, nor would they be required by the Proposed Action; therefore, they are not analyzed in this EIS.

#### 3.10.1 Affected Environment

##### 3.10.1.1 Region of Influence

The ROI for infrastructure is limited to within the boundaries of Fort Benning, and specifically consists of the three Action Alternatives and the GHMTA, as well as the utility corridors and road network servicing these areas. The ROI for utilities is limited to within and immediately adjacent to the Alternatives within the Installation. The Proposed Action would not affect utility corridors outside of the Installation. For transportation, the ROI consists of the three Action Alternatives, the GHMTA, and the road network that connects these sites to the major roads servicing the Installation, as well as roads that could be used as detours during HOMMTA operation, if needed. The road network connected to the Alternatives includes those roads that would be used for the movement of construction equipment, armor vehicles, and support vehicles to and from the HOMMTA.

##### 3.10.1.2 Applicable Guidance

A summary of relevant and applicable guidance and regulations is provided in Table 3.10-1; as described in Section 2.1.1, the Army would comply with all Federal, State, and Army laws, regulations, and Installation policies and management plans in implementing the Proposed Action as related to infrastructure.

**Table 3.10-1: Infrastructure Laws, Regulations, and EOs**

Requirements	Description/Applicability to Proposed Action
DoDI 6055 – DoD Traffic Safety Program	Explains the policy, responsibilities, and procedures for administering the DoD Traffic Safety Program to reduce deaths, injuries, and property damage caused by vehicular mishaps
AR 385-10 – The Army Safety Program	Provides Army safety management procedures, including those for motor vehicle` safety and electrical safety



### 3.10.1.3 Existing Conditions

#### **Regional Overview**

##### *Utilities*

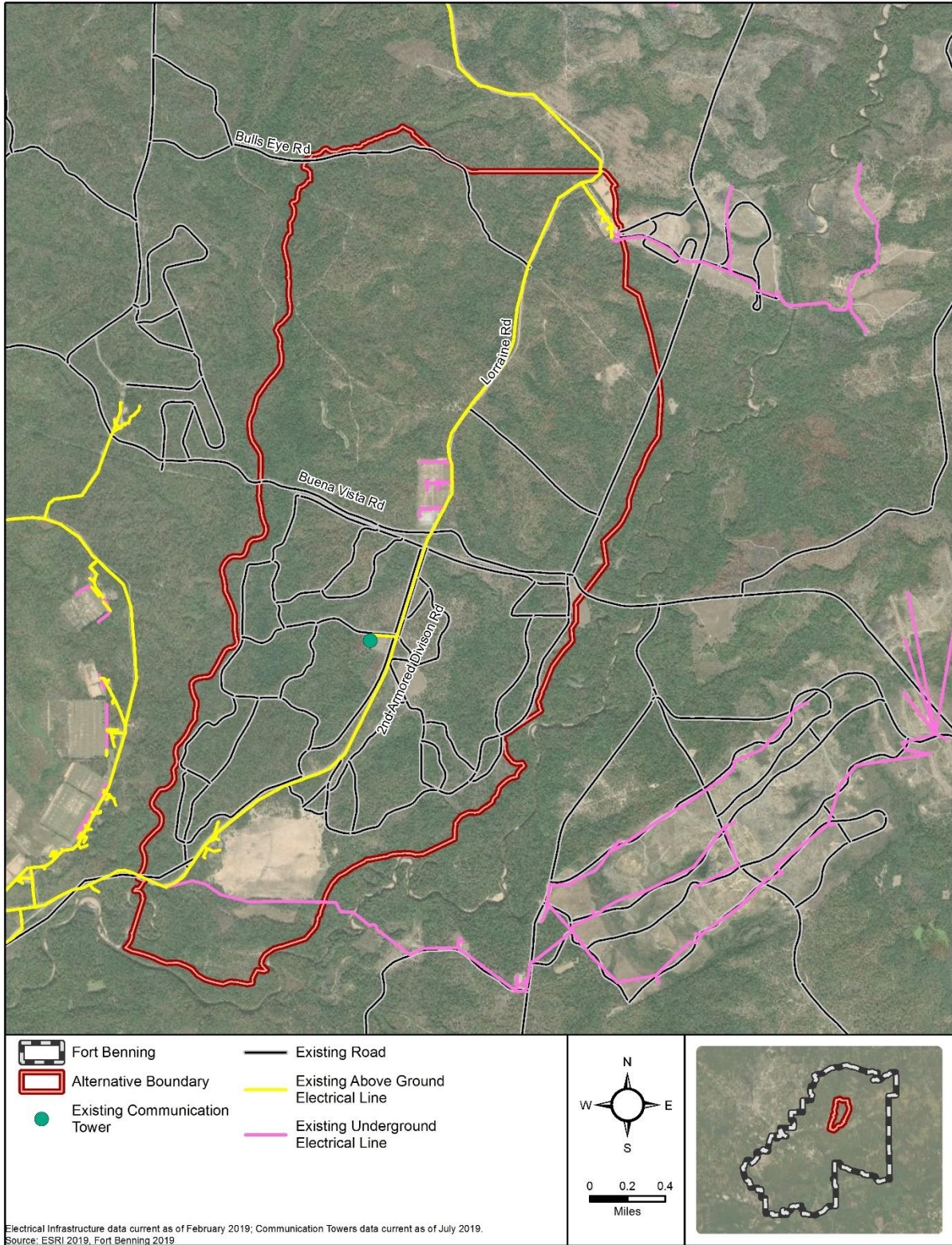
Georgia Power Corporation (GPC) provides electricity to Fort Benning via three dedicated 115 kilovolt GPC main substations: Sand Hill, Fort Benning, and Fort Benning #2. The Sand Hill substation is located approximately 0.5 mile from the western border of the Installation, within the residential community just east of US Route 280. The Fort Benning substation is located within the Installation on Marne Road. The Fort Benning #2 substation is located approximately 5 miles outside the Installation in Russell County, Alabama. All three substations are operating well below capacity with a consistently stable load (AECOM, 2018c). Voltage is transformed, metered, and fed to seven distribution substations owned by Flint Electric Membership Corporation (EMC) that are also operating well below capacity. Transmission lines from these substations supply power to the Fort Benning cantonment areas, family housing, and other developed areas (AECOM, 2018c; Fort Benning, 2015b). Fort Benning also has two solar fields to enhance electric service and energy security on the Installation.

Bell South provides telecommunications service at Fort Benning to military and civilian housing. In addition, cellular phone towers in the region provide service from several carriers including Verizon, AT&T, and T-Mobile (CellReception, 2019). The Army also owns and maintains an internal communication system, which includes a fiber communication network to and around most of the new and existing ranges, as well as telecommunication towers, such as those present in Alternatives 1 and 2 (see Table 3.10-2). Overall, Fort Benning's utility systems are capable of meeting the demands of existing and expected future populations and requirements on the Installation (Fort Benning, 2017b). Important characteristics of the utility networks in the ROI are described in Table 3.10-2. Figure 3.10-1 through Figure 3.10-3 show the utility network in the ROI.

**Table 3.10-2: Utility Network Characteristics in the ROI, by Alternative**

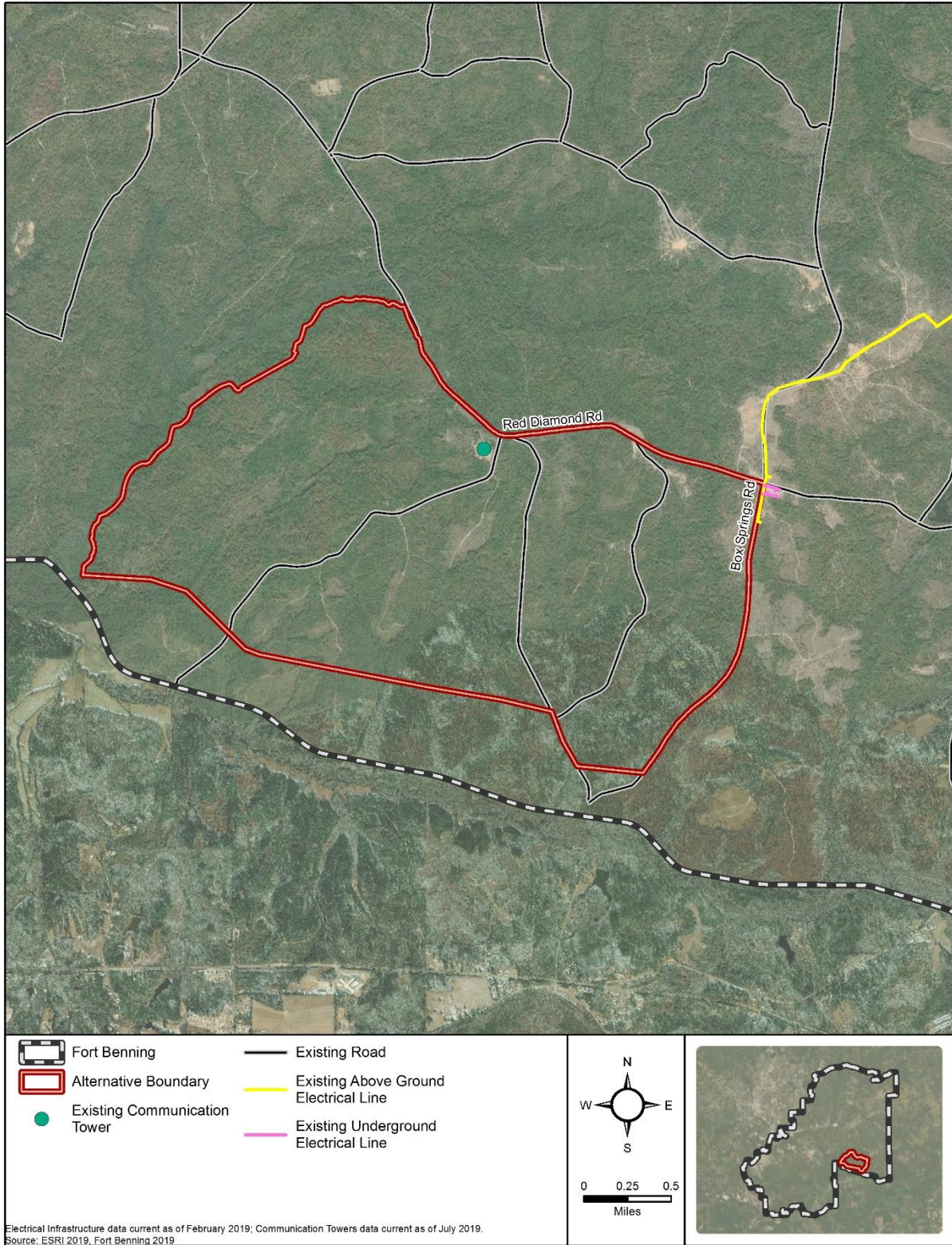
Utility	Alternative 1	Alternative 2	Alternative 3
<b>Electric</b>	<p>Two electrical lines:</p> <p>(1) Above-ground, three-phase line parallels 2<sup>nd</sup> Armored Division Road and Lorraine Road through the southern and center portion of the Alternative; provides power to training facilities inside the site (e.g., TTBFalcon), as well as those located to the north</p> <p>(2) Above-ground line traverses the southern tip of the Alternative; provides power to the DMPRC located to the east</p>	None	<p>One three-phase, above-ground line parallels Cactus Road and runs along a portion of Buena Vista Road along the southern edge of the Alternative between Cactus Road and the Installation boundary</p>
<b>Telecommunication Tower(s)</b>	One Army-owned tower onsite	One Army-owned tower onsite	None
<b>Fiber Optic</b>	Under-ground fiber optic line parallels 2 <sup>nd</sup> Armored Division Road and Lorraine Road	None	None

Note: The utilities within the GHMTA are described in the ETEA (Fort Benning, 2015b), incorporated herein by reference.



**Figure 3.10-1: Existing Infrastructure in the Alternative 1 ROI**





**Figure 3.10-2: Existing Infrastructure in the Alternative 2 ROI**



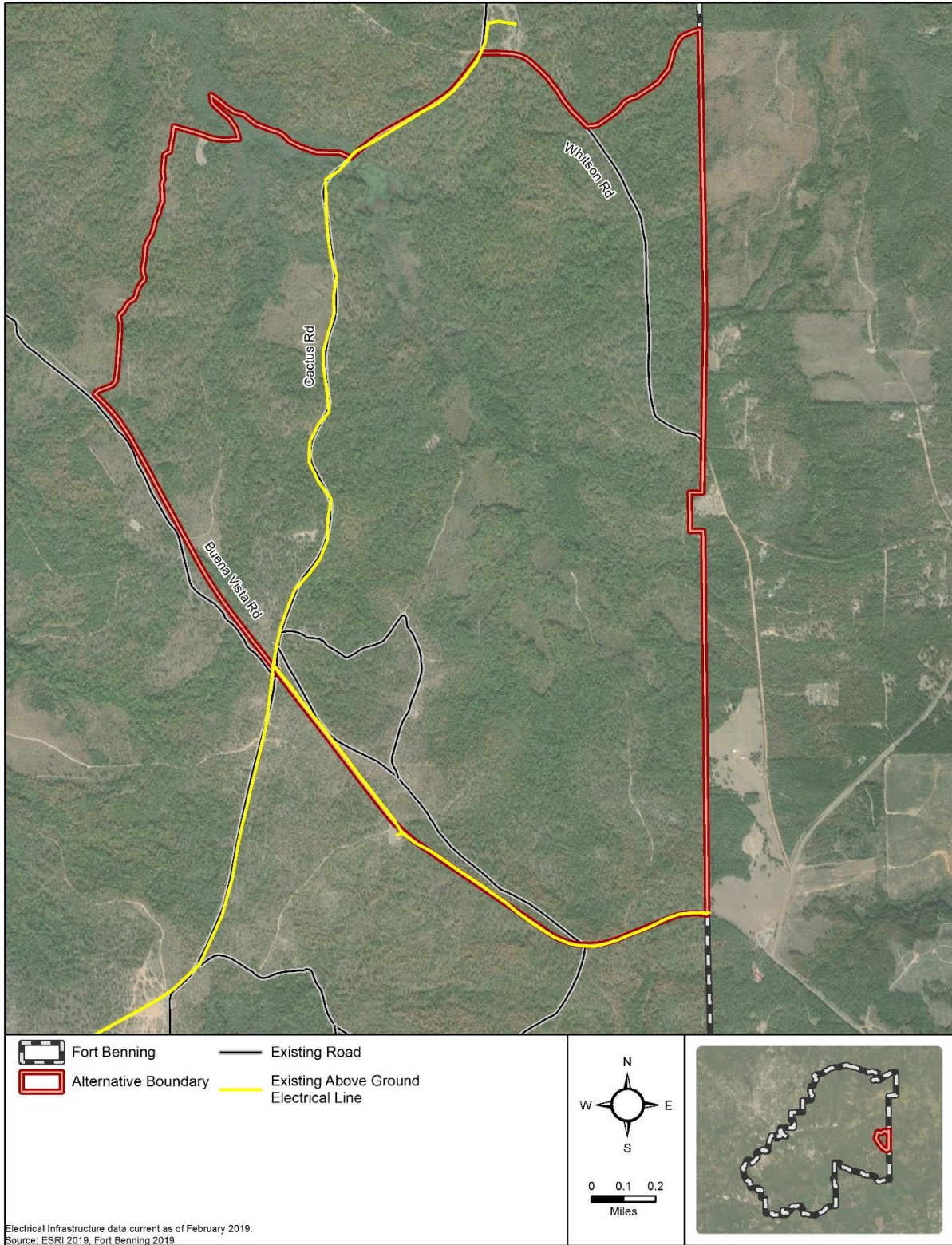


Figure 3.10-3: Existing Infrastructure in the Alternative 3 ROI

### *Transportation*

Major regional roads that border or traverse Fort Benning include Interstate 185; US Routes 27, 280, and 80; and Georgia State Routes (SRs) 355 and 41. The primary local roads used to access Fort Benning are Fort Benning Road and Lindsay Creek Parkway, which are connected to US Route 280 and Interstate 185, respectively (see Figure 2.4-1). There are eight operating controlled access points along these regional and local roadways, including the main visitor access/center access on Lindsay Creek Parkway.

Based on current Georgia Department of Transportation (GDOT) data (GDOT, 2017), the annual average daily traffic (AADT) counts (i.e., the average daily total volume of vehicle traffic on a roadway during one year) for these roads in the vicinity of Fort Benning are:

- 44,000 on Interstate 185
- 13,000 (inside Fort Benning) to 28,000 (outside Fort Benning) on US Route 280
- 8,400 to 10,000 on US Route 80
- 180 (inside Fort Benning) to 2,400 (outside Fort Benning) on Georgia SR 355
- 631 to 1,700 on Georgia SR 41
- 9,500 on Benning Boulevard
- 30,000 on Lindsay Creek Parkway.

As shown above, AADT counts are lower, sometimes substantially lower, within Fort Benning boundaries as compared to off-Post areas. Additionally, AADT counts within Fort Benning demonstrate that the western portion of the Installation surrounding the cantonment areas (i.e., 13,000 AADT on US Route 280) experiences more traffic than the eastern training areas (i.e., AADT counts between 180 and 570 on SR 355) (GDOT, 2017).

Besides these major regional and local roads, Fort Benning has a network of primary bordering and interior roadways that serve the cantonment areas and provide access to the training areas, such as Custer Road, 8<sup>th</sup> Division Road, 1<sup>st</sup> Division Road, and Hourglass Road. On-Post transportation infrastructure will generally accommodate anticipated future traffic growth, and

most intersections on Fort Benning operate at an acceptable Level of Service (LOS) D<sup>7</sup> or better during the morning and evening peak hours (Fort Benning, 2017b).

In addition to this road network, Fort Benning has a secondary tank trail network used by armor and other combat vehicles to access maintenance and training areas. These trails have different design characteristics – wider lanes, stronger structure, and harder materials – to accommodate wider and heavier vehicles and different traction systems (Fort Benning, 2015b). There are more than 200 miles of light/wheel maneuver trails and approximately 150 miles of heavy/track maneuver trails that lead into the training areas within Fort Benning (Fort Benning, 2017b). This includes the network that supports heavy off-road mounted maneuver traffic to and from the GHMTA. When not in use, heavy maneuver vehicles associated with the GHMTA are stored inside Fort Benning, just east of US Route 280, on an exterior hardstand near the intersection of 8<sup>th</sup> Division Road and Wheaton Street.

A 3.3-mile segment of Chattahoochee River Walk, a paved pedestrian and bicycle trail, traverses Fort Benning along the Chattahoochee River west of LAAF. The pedestrian trail system is not in the Proposed Action's ROI.

Important characteristics of the transportation network in the ROI are described in Table 3.10-3. As described therein, improved asphalt and concrete roads, as well as gravel roads, are generally well maintained; dirt and sandy roads are less to poorly maintained. Table 3.10-3 also identifies that ROI roadways currently support low traffic volumes, with over 90 percent of the roadways' capacity remaining (see Appendix I) and a LOS A. Figure 3.10-1 through Figure 3.10-3 show the transportation network within the ROI.

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<sup>7</sup> The Transportation Research Board's Highway Capacity Manual (HCM) describes LOS D as approaching a level of unstable flow, with delays that are tolerable. LOS A is the best LOS, and LOS F is the worst. LOS A is described in the HCM as free-flowing traffic with no or negligible delays. LOS F identifies that the roadway or intersection is over capacity and in need of traffic improvements (Transportation Research Board, 2010).



**Table 3.10-3: Transportation Network Characteristics in the ROI, by Alternative**

Roadways / Trails	Alternative 1	Alternative 2	Alternative 3
<b>Improved Roads</b>	<p><b>2<sup>nd</sup> Armored Division Road/Lorraine Road:</b> two-lane; concrete; centrally crosses the Alternative roughly north to south; connects the cantonment area with northern portions of Fort Benning</p> <p><b>Buena Vista Road:</b> two-lane; asphalt; centrally crosses the Alternative roughly east to west; connects the DMPRC to the east to training lands west</p>	<p><b>None</b></p>	<p><b>Buena Vista Road:</b> one-lane; asphalt; along the southwestern edge of the Alternative; serves as the primary access road</p> <p><b>Cactus Road:</b> two-lane paved road; crosses the Alternative roughly north to south</p>
<b>Unimproved Roads</b>	<p><b>Bull’s Eye Road:</b> gravel road; located to the north</p>	<p><b>Box Springs Road:</b> dirt; runs north to south along the eastern side of the Alternative; becomes asphalt as it connects to the SMTA located to the north</p> <p><b>Series of unnamed gravel roads:</b> approximately 25 feet wide; extend along the ridge lines</p>	<p><b>Whitson Road:</b> gravel; traverses the northeastern portion of the Alternative</p> <p><b>Series of unnamed roads:</b> sandy; approximately 12 to 15 feet wide</p>
<b>Tank and Maneuver Trails</b>	<p><b>Unnamed trails:</b> trail network is more extensive in the southern half of the Alternative; network includes: (1) gravel tank trails approximately 35 feet wide that parallel Buena Vista Road on both sides; (2) maintained gravel roads about 25 feet wide; and (3) unmaintained trails approximately 10 to 15 feet wide</p>	<p><b>Red Diamond Road:</b> gravel tank trail/road that traverses east to west across the northern portion of the Alternative; provides the primary connection to the site</p> <p><b>Unnamed trails:</b> unimproved; relatively low number</p>	<p><b>None</b></p>
<b>Road Capacity<sup>1</sup> (maximum vehicles per hour; percent capacity use)</b>	<p><b>2<sup>nd</sup> Armored Division Road/Lorraine Road:</b> 19 – 25; 2.6 - 3.4%</p> <p><b>Buena Vista Road:</b> 7; 0.9%</p> <p><b>Bulls Eye Road:</b> 1; 0.3%</p>	<p><b>Box Springs Road:</b> 37; 9.3%</p> <p><b>Red Diamond Road:</b> 9; 2.3%</p>	<p><b>Buena Vista Road:</b> 1 – 2; 0.3% - 0.5%</p> <p><b>Cactus Road:</b> 1; 0.3%</p> <p><b>Whitson Road:</b> 1; 0.3%</p>

Roadways / Trails	Alternative 1	Alternative 2	Alternative 3
<p><b>Current Average Traffic Classes (Light/Heavy)<sup>2</sup></b></p>	<p><b>2<sup>nd</sup> Armored Division Road/Lorraine Road:</b> 160 / 18  <b>Buena Vista Road:</b> 36.5 / 3  <b>Bulls Eye Road:</b> 8 / 0</p>	<p><b>Box Springs Road:</b> 4.5 / 0  <b>Red Diamond Road:</b> 62 / 4.5</p>	<p><b>Buena Vista Road:</b> 4.75 / 0  <b>Cactus Road:</b> 12 / 0  <b>Whitson Road:</b> 4.5 / 0</p>
<p><b>General Road Conditions and/or Limitations</b></p>	<p><b>2<sup>nd</sup> Armored Division Road/Lorraine Road:</b> designed to accommodate armored vehicles  <b>Gravel trails:</b> well-maintained  <b>Dirt trails:</b> not as utilized or maintained</p>	<p><b>Red Diamond Road:</b> used as a land navigation test course  <b>Gravel roads:</b> well-maintained</p>	<p><b>Unimproved, unnamed roads:</b> sandy; notably rutted</p>

Note: The roadways/trails within the GHMTA are described in the ETEA (Fort Benning, 2015b), incorporated herein by reference.

Sources: (Appendix I).

1. Per the HCM, two-lane improved roads (i.e., concrete or asphalt paved with centerline striping) have a maximum service volume of 740 vehicles per hour. Unimproved roads (i.e., gravel and dirt roadways, or concrete or asphalt without centerline striping) have a maximum service volume of 400 vehicles per hour (Transportation Research Board, 2010).
2. Includes traffic classes present during weekdays (i.e., regular operations); weekends are not included. Values are an average of eastbound and westbound or northbound and southbound traffic, as appropriate. Light vehicles include personal vehicles, HMMWVs, buses, other Soldier transport vehicles, and farm tractors. Heavy vehicles include tractor trailers, larger military vehicles, and any vehicles with three or more axles.

### 3.10.2 Environmental Effects

This section assesses potential direct and indirect, short- and long-term impacts to transportation, electrical, and telecommunications infrastructure associated with the construction, operation, and maintenance of the Action Alternatives and the No Action Alternative.

*Direct* impacts would occur within an Alternative or along a servicing corridor leading to it if the Proposed Action would directly impact that infrastructure (e.g., temporary closure of a road, interruption of electrical service). An impact would be considered *indirect* if the Proposed Action would alter these resources elsewhere on Fort Benning, removed in time and distance from the Proposed Action activities (e.g., an increase in traffic elsewhere on the Installation avoiding a proposed temporary road closure or increased demands on utility or road infrastructure that would limit service to other facilities). *Short-term* impacts would occur if the effects would be limited to the construction phase; *long-term* impacts would occur if the effects would be permanent or would be periodic but extend over the life of the Proposed Action.

#### 3.10.2.1 Approach to the Analysis

Given that potential effects would be largely limited to within the Installation (see Section 3.10.1.1), the impact analysis focuses on potential changes to utilities, traffic, and roadways within the ROI, including road upgrades required by the Proposed Action. The Army conducted a project-specific traffic analysis to provide current traffic condition data for the ROI and inform the analysis (see Appendix I). The Army used the impact threshold definitions presented in Table 3.10-4 to evaluate the intensity of the potential adverse impacts under each Alternative, and to benchmark when an adverse impact would be considered significant.

**Table 3.10-4: Significant Adverse Impact Thresholds for Infrastructure**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Would create local or regional electrical, transportation, or telecommunications demand in excess of existing supply or capacity, or would interrupt service or capability to the extent that it would negatively affect the Installation’s mission. Would cause interruptions or changes to traffic flow (e.g., closing, rerouting, or constructing roads; changes in daily or peak-hour traffic volume) such that it would adversely affect the Installation’s mission or reduce LOS of any roadway to worse than LOS D.
	Indirect Impacts	Would have noticeable impacts on electrical, transportation, or telecommunications demand, service, or capability on Fort Benning, away from the Proposed Action, that would impact the Installation’s mission. Would cause interruptions or changes to traffic flow (e.g., closing, rerouting, or constructing roads; changes in daily or peak-hour traffic volume) on Fort Benning, away from the Proposed Action, that would substantially adversely affect the Installation’s mission or reduce LOS of any roadway to worse than LOS D.

**3.10.2.2 No Action Alternative**

Under the No Action Alternative, there would be no change to existing traffic/transportation conditions and no change in electrical or telecommunications infrastructure within the ROI or on Fort Benning. Under current conditions, Fort Benning has adequate infrastructure to accommodate current and future mission activities. Existing heavy maneuver training activities would continue to occur in the GHMTA. As evaluated in the ETEA, overall impacts to traffic and transportation from the GHMTA are **negligible and long-term**. Utilities were not carried forward for analysis in the ETEA (Fort Benning, 2015b).

**3.10.2.3 Alternative 1**

Alternative 1 would have a **minor adverse and beneficial effects** on electrical infrastructure. There would be **no effect** on the telecommunication tower, network demand, network capacity, or the fiber optic network. Alternative 1 would have **minor adverse effects** on the traffic, access, and flow on some Fort Benning road and trail networks. Alternative 1 would have a **minor beneficial effect** through the proposed improvements to transportation and utility infrastructure. Infrastructure impacts under Alternative 1 would be *greater* than Alternative 2 and *similar* to Alternative 3.

## **Direct Impacts**

### Utilities

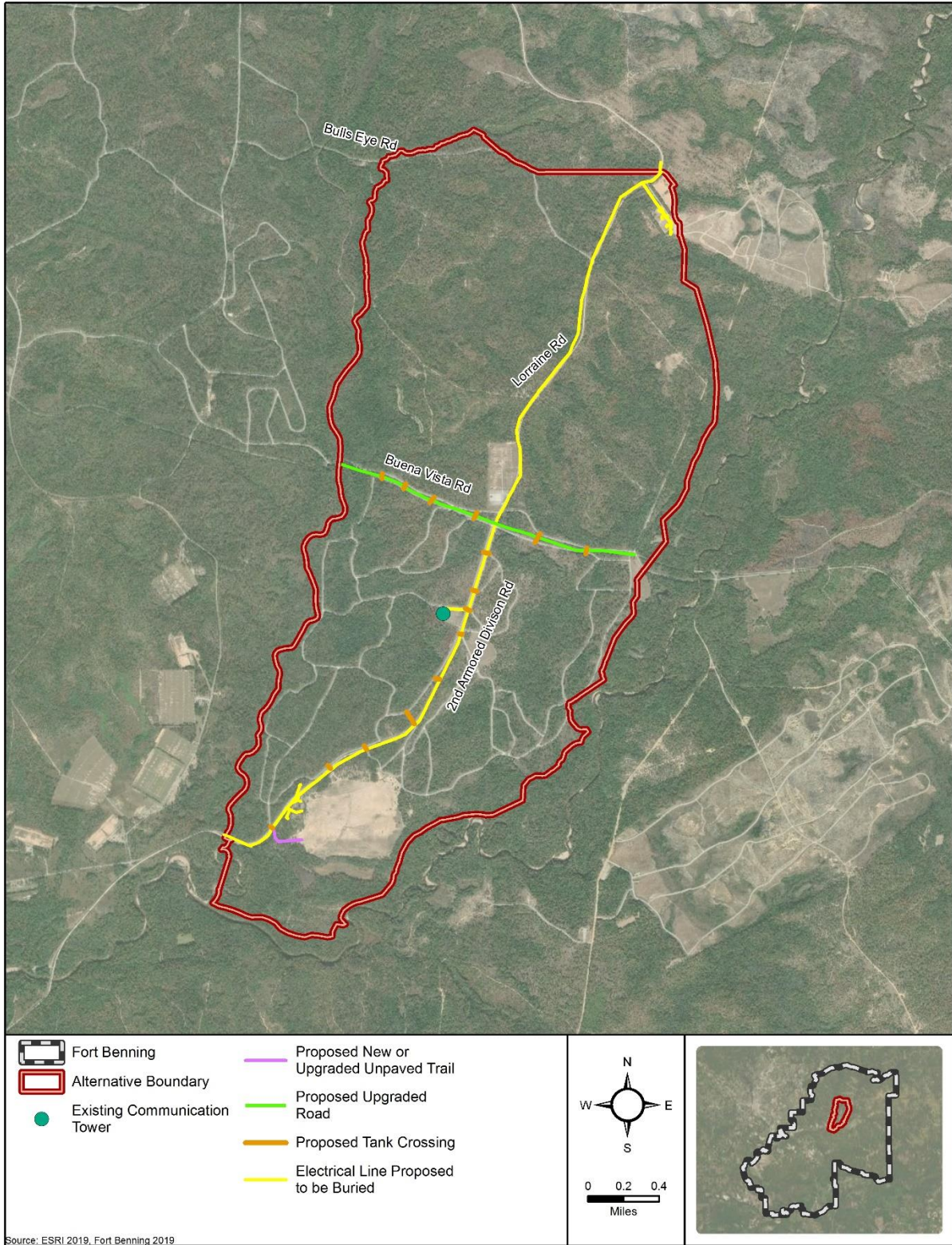
#### *Construction, Operation, and Maintenance*

During construction, approximately 4 miles of above-ground, three-phase electric lines would be replaced with underground lines of similar or greater capacity (see Figure 3.10-4). The existing electrical line would remain in service as long as possible while the new line is buried at a sufficient depth to avoid impacts during operation and maintenance. The overhead line would be removed from service when the newly buried line is connected to the electrical power distribution system on the Installation. There would be a brief period of electric service disruption during the transfer of this connection during construction. With implementation of the EPMs identified in Section 2.1.1, these direct impacts would be maintained at **minor, short-term adverse** levels.

**No long-term change** in, and therefore **no effects** on, the overall electrical system demand would occur during Alternative 1 construction, operation, or maintenance. Repairs to and maintenance of buried lines is typically more intensive and disruptive than for overhead lines; however, **minor, beneficial, long-term effects** to electrical system integrity would result from burial of utility lines. Specifically, after burial, this segment of line would be protected from weather, wildfire, and potential training accidents, therefore reducing the line's future needs for repairs and maintenance.

**No change** in, and therefore **no effects** on, telecommunication structures, network demand, or network capacity would occur during construction, operation, or maintenance of Alternative 1. The telecommunication tower currently located in Alternative 1 would remain in its existing location, incorporated as part of the maneuver environment, and be marked in the field and on all training maps with sufficient buffer to ensure avoidance (see Section 2.1.1).

Constructing hardened tank crossings (i.e., installing a minimum 10-inch concrete surface) at nine locations on 2<sup>nd</sup> Armored Division Road (see Figure 3.10-4) would not interfere with the existing fiber optic cable lines that run parallel to the road. The fiber optic lines that parallel 2<sup>nd</sup> Armored Division Road and Lorraine Road are buried at sufficient depth such that the Proposed Action would have **no effect** to their operation, and hardened tank crossings would provide further protection to the fiber optic network from vehicles crossing the roads.



**Figure 3.10-4: Proposed Infrastructure in the Alternative 1 ROI**

## Transportation

### *Construction*

Within Fort Benning, roadways in the Alternative 1 ROI have over 90 percent capacity available and would be able to accommodate the additional worker and construction vehicle traffic (see Section 3.10.1.3). During construction, temporary road closures and short-term minor increases in traffic within the Alternative 1 ROI could occur but would be reduced to acceptable levels with implementation of the EPMs identified in Section 2.1.1, resulting in **minor, short-term, direct adverse effects**. Short-term impacts from road closures and traffic disruption could occur on Buena Vista Road, 2<sup>nd</sup> Armored Division Road, and Lorraine Road during the construction of road upgrades (i.e., hardening of a 2-mile segment of Buena Vista Road with 10 inches of concrete) and at the 15 proposed tank crossing locations on Buena Vista Road and 2<sup>nd</sup> Armored Division Road (see Figure 3.10-4).

Additionally, within Alternative 1, portions of the trail network would be unavailable for use during construction. Some trails would also be closed during construction of the 27 new stream crossings, two bridges, and approximately 1 mile of improved armor vehicle trail near Lee Field in the southwestern portion of Alternative 1. Portions of the trail network would be unavailable for use during construction; training movement through the area could be disrupted temporarily. No roads or trails outside the Alternative 1 ROI would experience closures, and sufficient road and trail options with ample capacity are available to re-route traffic around the construction sites.

Transportation infrastructure in the Alternative 1 ROI would experience **minor, beneficial, long-term effects** from the proposed road improvements (i.e., Buena Vista Road) and new tank crossing sites in Alternative 1.

### *Operation*

During operation, changes in the number of light and heavy vehicles in the Alternative 1 ROI would be **minor**. Since Alternative 1 is already used for training, the area currently experiences levels of light and heavy vehicle traffic (see Table 3.10-3). For example, during a typical training day, 2<sup>nd</sup> Armored Division Road/Lorraine Road experiences levels of 160 light vehicles and 18 heavy vehicles per day. When compared to the proposed approximately 24 vehicles (and associated support vehicles) during a Proposed Action training event, this difference would be **minor**. Any



increases in personnel and training vehicles on Alternative 1 ROI roads would remain well within the capacity of these roads, which have available capacities of over 90 percent (see Table 3.10-3). Therefore, activities associated with the proposed HOMMTA would not overwhelm current roadway capacity.

On-Post traffic not associated with HOMMTA operations would be restricted from full use of 2<sup>nd</sup> Armored Division Road, Lorraine Road, or Buena Vista Roads during HOMMTA training exercises and temporary road closures in the Alternative 1 ROI could occur intermittently, but regularly, over the life of the HOMMTA. With implementation of the EPMs identified in Section 2.1.1, these direct adverse impacts would be maintained at **minor, long-term** levels.

In addition, due to the overall low volumes of traffic recorded in this location (see Section 3.10.1.3), diversion or re-direction of this traffic would be unlikely to have substantial adverse impacts on the existing LOS A. Traffic would be either detoured around Alternative 1 or traffic controls (e.g., signage, barricades, and/or access guards) may be used to direct traffic safely through or around the area, resulting in minor potential delays during operations.

### *Maintenance*

Transportation infrastructure in the Alternative 1 ROI would experience **negligible to minor adverse impacts** during periodic maintenance activities. These effects would be similar to construction impacts but focused in specific areas for a finite amount of time, and would occur intermittently, but regularly, over the life of the HOMMTA. For example, periodic, localized detours and closures could occur during repair of road segments. With implementation of the EPMs identified in Section 2.1.1, these impacts would be maintained at **minor, long-term adverse** levels.

## **Indirect Impacts**

### Utilities

#### *Construction, Operation, and Maintenance*

There would be **no indirect effects** on utilities under Alternative 1 during construction, operation, or maintenance. The Proposed Action would have no impacts on electrical or telecommunications demand, service, or capability on Fort Benning outside the Alternatives.

## Transportation

### *Construction and Maintenance*

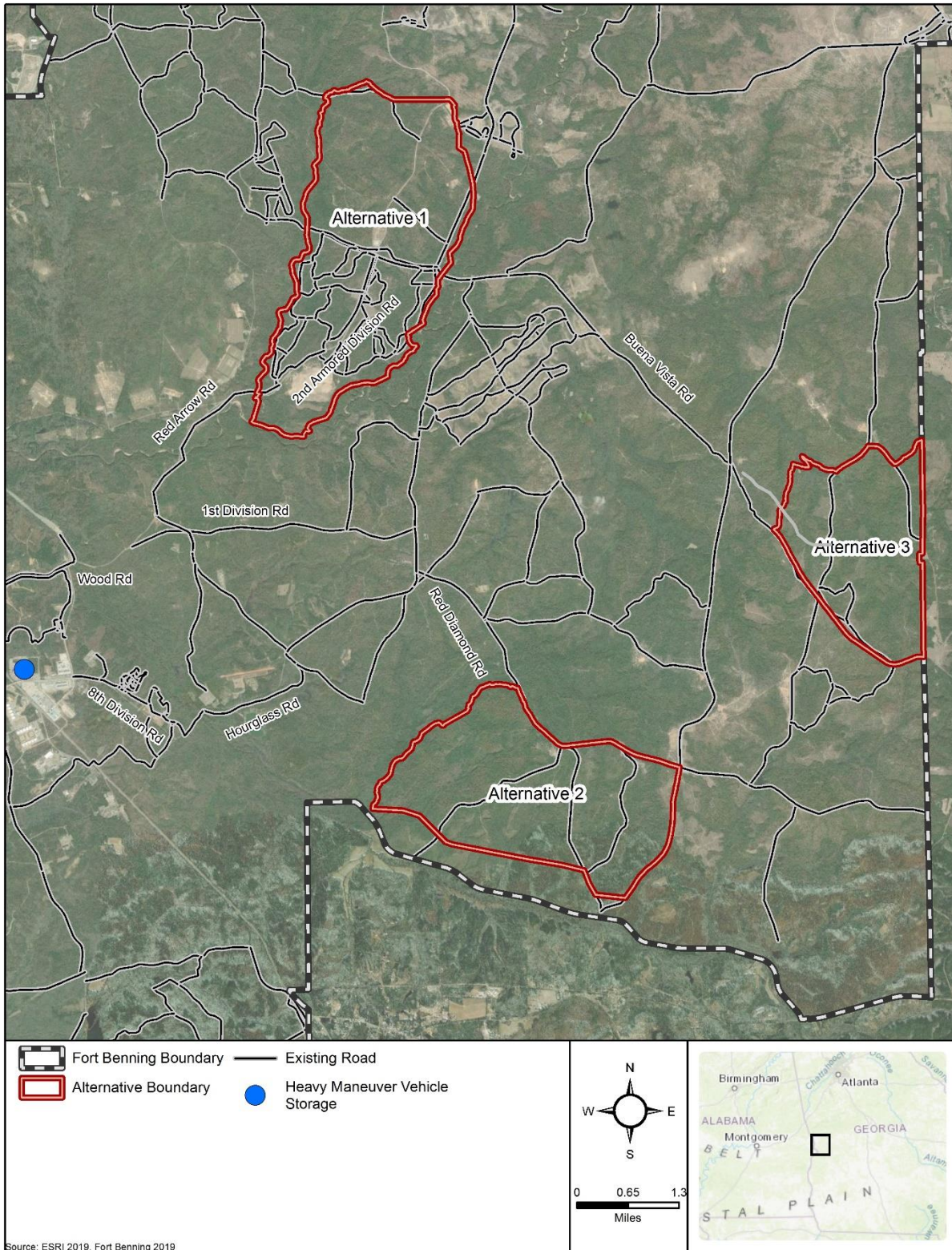
Proposed Action construction and maintenance personnel (i.e., there may be a slight increase in maintenance personnel, which would be insignificant relative to the overall on-Post population; see Section 3.9) would generate additional, temporary construction- or maintenance-related vehicle traffic during normal working hours on roads on and leading to Fort Benning due to commuting workers and construction trucks; however, these increases in traffic are not anticipated to perceptibly affect the existing traffic levels or capacity of roadways. Traffic increases outside of Fort Benning would be **negligible** when compared to existing AADT loads.

### *Operation*

During Alternative 1 operation, there would be no noticeable changes in existing numbers of on-Post personnel and no change in the number of armor and support vehicles on the Installation (i.e., military vehicles currently training at GHMTA would be partially migrated to the new HOMMTA on a rotational basis). Therefore, there would be **no effect** on total long-term, Installation-wide traffic volumes.

Some changes in training traffic patterns would occur within Fort Benning causing **minor adverse effects** to traffic flow. Some traffic that currently routes to GHMTA would instead travel to Alternative 1. Traffic within and around the GHMTA would decrease, but that decrease would be **negligible** and would be more distributed across the Installation on roads of sufficient capacity.

Heavy maneuver vehicles would continue to be stored on the exterior hardstand near the intersection of 8<sup>th</sup> Division Road and Wheaton Street but, when deployed, would likely travel north on Wood Road, then east on 1<sup>st</sup> Division Road, then north on Red Arrow Road, and then east on 2<sup>nd</sup> Armored Division Road (see Figure 3.10-5). This traffic flow change would result in **no effect** to the Installation's mission and would not reduce the LOS of any roadway in that area to worse than LOS D.



**Figure 3.10-5: Proposed Travel Routes of Heavy Maneuver Vehicles from Storage to Alternatives**

### 3.10.2.4 Alternative 2

Unlike Alternative 1, Alternative 2 would have **no effect** on electrical infrastructure, as these infrastructure components are not located in Alternative 2. Similar to Alternative 1, Alternative 2 would have **no effect** on telecommunication infrastructure, and **minor adverse effects** on the traffic, access, and flow on some Fort Benning road and trail networks that would be managed at acceptable levels with implementation of the EPMs identified in Section 2.1.1. Alternative 2, like Alternative 1, would also have **minor benefits** to transportation due to the proposed improvements to transportation infrastructure. Infrastructure impacts under Alternative 2 would be *less* than Alternatives 1 or 3.

#### **Direct Impacts**

##### Utilities

###### *Construction, Operation, and Maintenance*

There is no electrical or fiber optic infrastructure within the Alternative 2 ROI (see Table 3.10-2), so **no effects** would occur. As with Alternative 1, the Alternative 2 telecommunication tower would remain in-place and be incorporated as part of the maneuver environment with a suitable protective buffer.

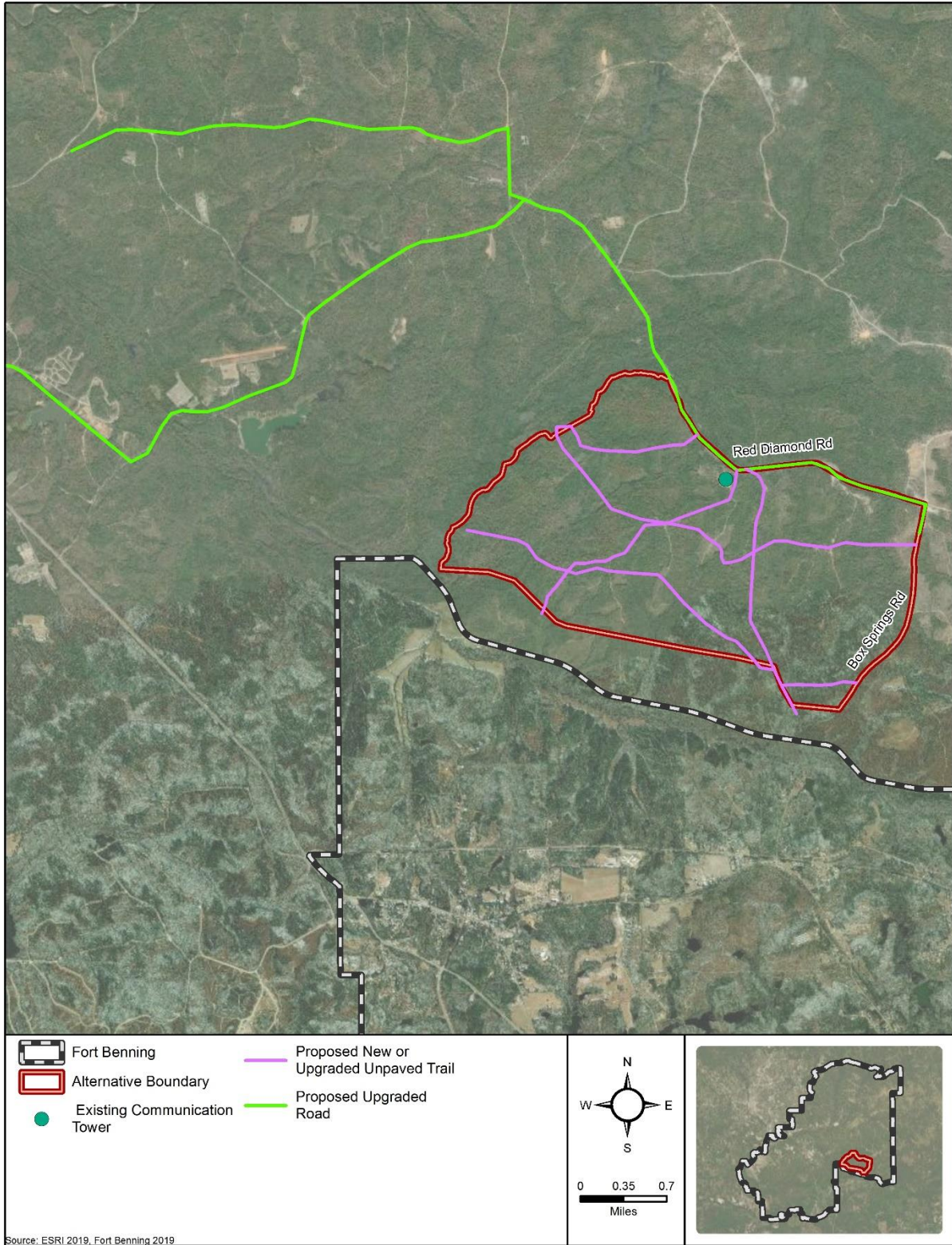
##### Transportation

Impacts to traffic and transportation under Alternative 2 would be the same as Alternative 1, except:

###### *Construction*

- Short-term impacts from road closures and traffic disruption would occur on 1<sup>st</sup> Division Road, Hourglass Road, Red Diamond Road, and Box Springs Road during the proposed construction of 9 miles of improved roads (i.e., a proposed upgrade of 10 inches of concrete from the intersection of 1<sup>st</sup> Division Road and Red Arrow Road to the drop-off point on Box Springs Road) (see Figure 3.10-6). Portions of tank and maintenance trails would also be closed during construction of 19 new water crossings and the construction of 13 miles of new and upgraded unpaved trails. Like Alternative 1, implementation of the EPMs identified in Section 2.1.1 would maintain these effects at **minor, short-term adverse** levels.





**Figure 3.10-6: Proposed Infrastructure in the Alternative 2 ROI**

- The Alternative 2 ROI currently experiences low levels of vehicle traffic (see Table 3.10-3). Based on the existing road use and capacity (see Table 3.10-3), the Proposed Action would proportionately increase traffic in the area of Alternative 2 to a greater extent than Alternative 1 during the construction phase, but local transportation infrastructure has sufficient capacity to support this increase (see Table 3.10-3).

### *Operation*

- During operation, on-Post traffic not associated with HOMMTA operations could be restricted from full use of Red Diamond Road and Box Springs Road during some training exercises and temporary road closures in the Alternative 2 ROI could occur intermittently, but regularly, over the life of the HOMMTA. Like Alternative 1, implementation of the EPMs identified in Section 2.1.1 would maintain these effects at **minor, long-term adverse** levels.
- The transportation infrastructure in the Alternative 2 ROI would experience **minor, long-term benefits** from the addition of 9 miles of improved roads and 13 miles of trails, which is greater than Alternative 1's road improvement mileage. During operation, new and upgraded roads and trails would provide **minor, long-term benefits** for Range maintenance, emergencies, and vehicle recovery access.

### *Maintenance*

- Transportation infrastructure in the Alternative 2 ROI would experience **negligible to minor impacts** during periodic maintenance activities over the life of the HOMMTA. With implementation of the EPMs identified in Section 2.1.1, these impacts would be maintained at **minor, long-term adverse** levels, similar to Alternative 1.

## **Indirect Impacts**

### *Construction, Operation, and Maintenance*

Indirect effects would be the same as Alternative 1, not exceeding the level of **minor** impacts, and would be controlled by implementing the EPMs identified in Section 2.1.1. Heavy maneuver vehicles would continue to be stored on the exterior hardstand near the intersection of 8<sup>th</sup> Division Road and Wheaton Street, but, when deployed, would likely travel south on 8<sup>th</sup> Division Road, then east on Hourglass Road to Red Diamond Road to the Alternative 2 location (see Figure 3.10-5).

### 3.10.2.5 Alternative 3

Like Alternative 1, Alternative 3 would have **minor adverse and beneficial effects** on electrical infrastructure. Like Alternatives 1 and 2, Alternative 3 would have **minor adverse effects** on the traffic, access, and flow on some Fort Benning road and trail networks, and there would be **minor benefits** through the proposed improvements to transportation infrastructure under Alternative 3. There is no telecommunications infrastructure within the Alternative 3 ROI; **no effects** would occur. Infrastructure impacts under Alternative 3 would be the *same* as Alternative 1, but *greater* than Alternative 2.

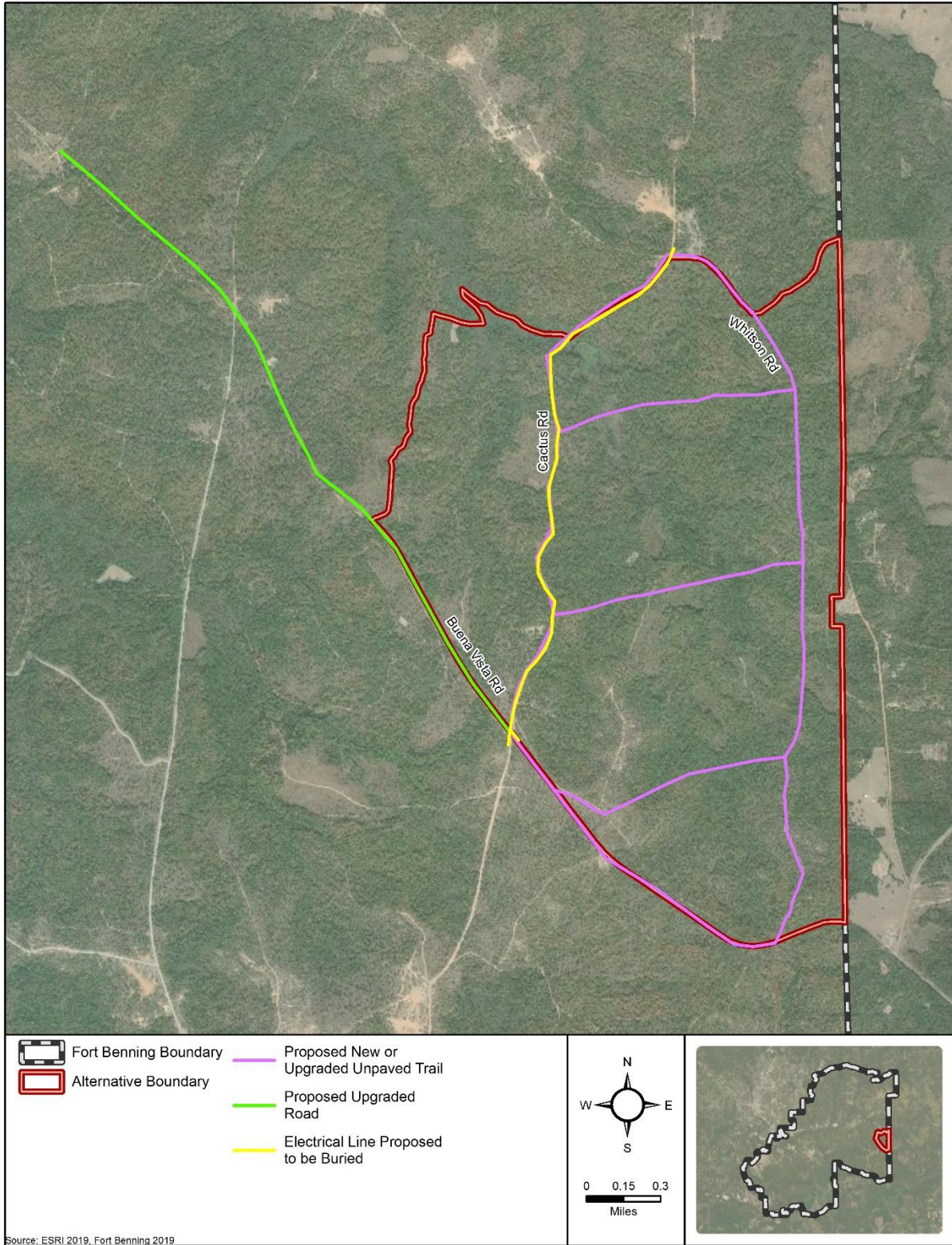
#### **Direct Impacts**

##### Utilities

###### *Construction, Operation, and Maintenance*

Two miles of three-phase, above-ground line that parallels Cactus Road and runs along a portion of Buena Vista Road along the southern edge of Alternative 3 between Cactus Road and the Installation boundary would be buried (see Figure 3.10-7). Impacts to this utility would be similar to Alternative 1; the EPMs described in Section 2.1.1 would ensure these effects remain at acceptable **minor, short-term adverse** levels. No long-term change in the overall electrical system demand would occur during Alternative 3 construction, operation, or maintenance. Similar **minor, beneficial, long-term effects** to electrical system integrity would result from both Alternatives 1 and 3.





**Figure 3.10-7: Proposed Infrastructure in the Alternative 3 ROI**

## Transportation

Impacts to traffic and transportation under Alternative 3 would be the same as Alternative 1, except:

### *Construction*

- Short-term impacts from road closures and traffic disruption would occur on Buena Vista Road, Lorraine Road, and Cactus Road during the construction of 8 miles of improved roads (i.e., a proposed upgrade of 10 inches of concrete from the existing intersection of Buena Vista Road and Lorraine Road to the drop-off point on Cactus Road) (see Figure 3.10-7). Portions of tank and maintenance trails would also be closed during construction of 25 new water crossings and the construction of 10 miles of new and upgraded unpaved trails. Like Alternatives 1 and 2, implementation of the EPMs identified in Section 2.1.1 would maintain these effects at **minor, short-term adverse** levels.
- The Alternative 3 ROI currently experiences low levels of vehicle traffic (see Table 3.10-3). Based on existing road use and capacity (see Table 3.10-3), Alternative 3 would proportionately increase traffic in this area to a greater extent than Alternatives 1 and 2 during the construction phase, but local transportation infrastructure has sufficient capacity to easily support this increase (see Table 3.10-3).

### *Operation*

- During operation, on-Post traffic not associated with HOMMTA operations could be restricted from full use of Buena Vista Road, Lorraine Road, and Cactus Road during some training exercises and temporary road closures in the Alternative 3 ROI could occur intermittently, but regularly, over the life of the HOMMTA. Like Alternatives 1 and 2, implementation of the EPMs identified in Section 2.1.1 would maintain these effects at **minor, long-term adverse** levels.
- The transportation infrastructure in the Alternative 3 ROI would experience long-term benefits from the addition of 8 miles of improved roads and 10 miles of trails, which is greater than Alternative 1's road improvement mileage but less than Alternative 2's. During operation, new and upgraded roads and trails would provide **minor, long-term benefits** for Range maintenance, emergencies, and vehicle recovery access.

### *Maintenance*

- Transportation infrastructure in the Alternative 2 ROI would experience **negligible to minor impacts** during periodic maintenance activities over the life of the HOMMTA. With implementation of the EPMs identified in Section 2.1.1, these impacts would be maintained at **minor, direct, long-term adverse** levels, similar to Alternatives 1 and 2.

### **Indirect Impacts**

#### *Construction, Operation, and Maintenance*

Indirect effects would be the same as Alternatives 1 and 2, not exceeding the level of **minor impacts**, and would be controlled by implementing the EPMs identified in Section 2.1.1. Heavy maneuver vehicles would continue to be stored on the exterior hardstand near the intersection of 8<sup>th</sup> Division Road and Wheaton Street, but, when deployed, would travel south on 8<sup>th</sup> Division Road, then east and northeast on Hourglass Road, then south on Buena Vista Road (see Figure 3.10-5).

### **3.10.3 Mitigation**

No additional project-specific mitigation measures are identified. Appropriate EPMs to maintain infrastructure impacts at appropriate levels have been included as part of the Proposed Action, as identified in Section 2.1.1.

### **3.11 Hazardous and Toxic Materials and Waste**

This section presents an overview of HTMW at Fort Benning, how they are managed, and the HTMW conditions in and around the Alternatives. This section also identifies potential changes to the HTMW environment that could result from implementation of each Alternative, as well as mitigation measures to reduce any anticipated adverse effects, where appropriate.

Section 3.11.1.2 defines and summarizes relevant laws and regulations related to HTMW, as well as Fort Benning's plans that are currently in place to maintain compliance with applicable requirements. Section 3.11.1.3 discusses current use or presence of these materials (including compliance-related cleanup sites) within the Proposed Action's ROI, as well as Fort Benning's hazardous waste and solid waste management programs; the ROI is defined in Section 3.11.1.1. Section 3.11.2 analyzes potential impacts to these resources from the Proposed Action, including under each of the three Action Alternatives and the No Action Alternative.

### **3.11.1 Affected Environment**

A hazardous substance is any material or agent (i.e., biological, chemical, physical) that has the potential to cause harm to humans, animals, or the environment, either on its own or through interaction with other factors. The terms “hazardous material,” “toxic substance,” and “hazardous waste” are used in this section and are defined in terms of their unique applications under specific Federal regulations.

#### **3.11.1.1 Region of Influence**

The use, management, and/or disposal of HTMW associated with the construction, operation, and/or maintenance of the Proposed Action would have adverse impacts if the materials were released into or spread within the environment. Release of the materials into the environment could result in air, soil, and/or surface water contamination, which could threaten human health, wildlife, and vegetation. Contamination also has the potential to spread through these media to areas nearby the release site. Therefore, the ROI for HTMW encompasses all of Fort Benning, although lands within and adjacent to the Action Alternatives and the GHMTA would be most at-risk.

#### **3.11.1.2 Applicable Guidance**

HTMW is defined and regulated in the US primarily by laws and regulations administered by OSHA, USEPA, and the US Department of Transportation (USDOT). Each agency incorporates hazardous substance terminology in accordance with its unique Congressional mandate. The OSHA regulations categorize substances in terms of their impacts on employee and workplace health and safety, the USEPA regulations in terms of protection of the environment and public health, and the USDOT regulations in terms of their safety in transportation. Congress delegated to many States, including Georgia, the enforcement of many Federal laws pertaining to HTMW. A summary of relevant and applicable guidance and regulations is provided in Table 3.11-1; as described in Section 2.1.1, the Army would comply with all Federal, State, and Army laws, regulations, and Installation policies and management plans in implementing the Proposed Action.

**Table 3.11-1: HTMW Laws, Regulations, and EOs**

<b>Requirements</b>	<b>Description/Applicability to Proposed Action</b>
<b>Federal</b>	
OSHA Hazard Communication Regulation (29 CFR 1910.1200)	Regulates workplace exposure to hazardous substances
OSHA 29 CFR 1920 and 1926	Addresses the management of asbestos
40 CFR 61	Addresses the management of asbestos
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	Establishes reportable quantities for spills and cleanup of historically contaminated sites
Emergency Planning and Community Right-To-Know Act	Requires an inventory of hazardous materials
Resource Conservation and Recovery Act (RCRA)	Primary law for regulation and management of solid and hazardous wastes
Toxic Substances Control Act	Addresses management of asbestos, lead, polychlorinated biphenyls (PCBs), and radon
Oil Pollution Prevention (40 CFR 112)	Response to spills
EO 13101, <i>Greening the Government through Waste Prevention, Recycling, and Federal Acquisition</i>	Addresses waste management programs
EO 13148, <i>Greening the Government through Leadership in Environmental Management</i>	Addresses environmental management programs
USDOT Hazardous Materials Regulations (49 CFR 171)	Regulates the transportation of hazardous materials
Military Munitions Rule (40 CFR 266)	Addresses management of military munitions wastes
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)	Use and management of insecticides and rodenticides
<b>State</b>	
Georgia Comprehensive Solid Waste Management Act of 1990 (Official Code of Georgia Annotated [OCGA] 12-8-20)	Regulates public and private solid waste management, collection, and disposal
Oil or Hazardous Spills or Releases (OCGA 12-14-1)	Mandates reporting and notification of oil or hazardous substance spills and establishes civil penalties for such spills

<b>Requirements</b>	<b>Description/Applicability to Proposed Action</b>
Georgia Asbestos Safety Act (OSCGA 12-12-1)	Authorizes Board of Natural Resources to adopt, administer, and enforce an asbestos training and licensing program to remove friable asbestos-containing materials (ACM) from facilities
Rules of Georgia, Chapter 391-3-4, <i>Solid Waste Management</i>	Establishes policies, procedures, requirements, and standards for the management, handling, and disposal of solid waste
Rules of Georgia, Chapter 511-3, <i>Environmental Health Hazards</i> , Subject 511-3- 4, <i>Solid Waste</i>	Defines types of solid waste and designates use, storage, and disposal
Georgia Hazardous Waste Management Act (OCGA 12-8-60)	Supplements RCRA by managing the generation, transportation, treatment, storage, and disposal of hazardous wastes
Georgia Hazardous Site Response Act (OCGA 12-8-90)	State version of Superfund; provides a trust to remediate hazardous waste sites
Rules of Georgia, Chapter 391-3-11, <i>Rules for Hazardous Waste Management</i>	Establishes policies, procedures, requirements, and standards to implement the Georgia Hazardous Waste Management Act with regard to hazardous waste and material use, storage, disposal, permits; used oil management; and universal waste management
Rules of Georgia, Chapter 391-3-15, <i>Underground Storage Tank Management</i>	Addresses management of regulated substances stored in underground storage tanks
Rules of Georgia, Chapter 391-3-24, <i>Lead-Based Paint Management</i>	Provides procedures and requirements for the accreditation of renovation and lead-based paint (LBP) activities training programs, certification of persons and firms engaged in renovation and LBP activities, and standards for performing such activities
<b>Army/Installation</b>	
AR 200-1, <i>Environmental Protection and Enhancement</i>	Requires proper management of HTMW on Army installations
Fort Benning Integrated Pest Management Plan (IPMP) (Fort Benning, 2018c)	Addresses the use and management of pesticides on Army installations
Fort Benning SPCC Plan (Fort Benning, 2015c) and ISCP (Fort Benning, 2015d)	Addresses the management of bulk fuels and approach to spills
Fort Benning HWMP (Fort Benning, 2019f)	Addresses the management of hazardous wastes on Army installations
Fort Benning ISWMP (Fort Benning, 2017a)	Addresses recycling and management of non-recyclable solid wastes on Army installations

Requirements	Description/Applicability to Proposed Action
Fort Benning Storage Tank Management Plan (Fort Benning, 2015e)	Provides a comprehensive management strategy for operating aboveground storage tanks at Army installations
Fort Benning Lead Management Plan (Fort Benning, 2019e)	Addresses the management of potential hazards associated with LBP on Army installations
Fort Benning Asbestos Management Plan (Fort Benning, 2019g)	Details the management of friable and non-friable ACM to minimize occupational and non-occupational exposure on Army installations
Fort Benning Pollution Prevention Plan (Fort Benning, 2018d)	Discusses the Pollution Prevention Program and applicable management techniques to reduce or eliminate pollutants

### 3.11.1.3 Existing Conditions

#### **Relevant Compliance and Management Plans**

To meet applicable regulatory requirements, Fort Benning maintains multiple HTMW compliance plans, including the SPCC Plan (Fort Benning, 2015c); ISCP (Fort Benning, 2015d); Storage Tank Management Plan (Fort Benning, 2015e); Lead Management Plan (LMP) (Fort Benning, 2019e); HWMP (Fort Benning, 2019f); Integrated Pest Management Plan (IPMP) (Fort Benning, 2018c); Asbestos Management Plan (AMP) (Fort Benning, 2019g); Pollution Prevention Plan (Fort Benning, 2018d); Integrated Solid Waste Management Plan (ISWMP) (Fort Benning, 2017a); and US Army Defense Environmental Restoration Program Compliance-Related Cleanup Installation Action Plan (IAP) (Fort Benning, 2019h). These plans support long-term goals such as enhancing quality of life and protecting Fort Benning’s environment. These plans are discussed further in the sections below.

#### *Hazardous Materials Management*

On Fort Benning, a variety of hazardous materials are used during routine operations, such as vehicle and equipment maintenance, military training activities, Installation upkeep, and administrative and housing functions. Common hazardous materials used during military training activities include carbon cleaning kits, propellants, ration heaters, and calcium hypochlorite.

Hazardous materials used in the maintenance of facilities, equipment, and vehicles include paints and paint-related materials, stains, adhesives, solvents, and coatings. Batteries and POLs are used to power both military and civilian equipment and vehicles, and pesticides are used to control plant and animal pests throughout the Installation. When not in use, these materials are generally stored



at maintenance facilities in the cantonment areas. Construction contractors are generally required to meet recycling goals and dispose of waste off-Post in permitted facilities.

The garrison activities and tenants at Fort Benning procure hazardous materials through several supply channels. The primary supply channel is the Hazardous Materials Management Program that is centrally managed by the Logistics Readiness Center (LRC). A contracted company operates a Hazardous Material Control Point (HMCP) for the procurement and distribution of products needed to maintain the Installation's facilities and sustain the military mission.

HMCP contractors, who are trained in hazardous materials management, utilize the local purchase process to conduct materials' requisition and issue transactions. These transactions are entered into an Army-approved database program that relies on a process of review and authorization to limit the types and quantities of hazardous materials that may be brought to the Installation. Through the use of the database, HMCP staff assist with user accountability for issued materials by providing a means of tracking each material through its lifecycle.

Pesticide use at Fort Benning is governed under the regulations promulgated by Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The Installation has an IPMP, as required under AR 200-1 and FIFRA, that outlines a pest management approach that combines biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks (Fort Benning, 2018c). The IPMP aims to reduce the use of potentially toxic chemicals by emphasizing non-chemical strategies; however, the use of pesticides may be required, in combination with other methods, to control certain pests. The IPMP outlines the approach to protect sensitive environmental areas and endangered species habitat during pesticide applications. It also describes the methods used to address pesticide spills.

Bulk quantities of fuels (e.g., heating oil, gasoline, diesel) and other POLs are managed in underground storage tanks (USTs) and above ground storage tanks (ASTs) located across the Installation (Fort Benning, 2015c; Fort Benning, 2015f). Emergency generators are typically supplied with fuel (e.g., diesel or motor gasoline) stored in tanks; however, a few emergency generators on the Installation are fueled by natural gas and do not have associated tanks. All of these storage facilities represent potential sources of leaks and spills. The ASTs and USTs at Fort Benning are managed in accordance with their respective Storage Tank Management Plans to

ensure compliance with all applicable Federal, State, and local regulations, as well as AR 200-1, to minimize the potential for release. The plans describe the basic requirements for operating storage tanks and includes an inventory of all the storage tanks at the facility, as well as their date of installation, capacity, and contents (Fort Benning, 2015e).

POLs at Fort Benning are also managed in compliance with the requirements set forth in the current Installation SPCC Plan. The SPCC Plan and the ISCP provide guidance for protection of human health and the environment by outlining policies and procedures for the prevention, control, and handling of POL spill incidents. The SPCC Plan also ensures proper procedures are incorporated into the day-to-day operations of those Installation organizations that operate and maintain the affected facilities.

The ISCP establishes a spill response management system to be used by all personnel at the Installation who discover and/or are involved in a spill/release incident. The ISCP describes the steps necessary to remove, minimize, and/or mitigate effects of accidental spills or discharges to ensure appropriate and required measures are taken to initiate appropriate emergency response and corrective actions (Fort Benning, 2015d). These steps include self-protection; removing the source of the spill; enveloping, absorbing, or containerizing the spill; and notifying appropriate authorities. Spill response actions and types of resources needed to contain and/or prevent a spill depend on the nature and magnitude of the spill and/or spill potential.

There is no HTMW stored on or near any of the Action Alternatives; HTMW associated with the GHMTA is described in the ETEA (Fort Benning, 2015b). HTMW may be periodically present during existing training and maintenance activities and are managed in accordance with the above plans.

### *Hazardous Waste Management*

Routine operations across Fort Benning generate a variety of hazardous wastes, including various solvents; paints; antifreeze; aerosols; contaminated filters, rags, and absorbents; weapon cleaning patches and sludges; and some items managed as universal wastes, such as used batteries and fluorescent light tubes. Centralized Accumulation Areas and Satellite Accumulation Areas are located throughout the Installation and contain a variety of wastes, typically stored in 5-gallon pails, 55-gallon drums, and other similarly sized containers.

Fort Benning's EMD advises units and offices regarding the management of hazardous waste and implements provisions of the HWMP (Fort Benning, 2019f). The HWMP outlines the requirements for collection and storage of hazardous wastes and makes sure that the wastes are transported offsite in accordance with applicable Federal, State, and DoD regulations. Requirements for inspection of hazardous waste storage sites, training of personnel, and record-keeping are outlined in the HWMP. The HWMP also addresses management procedures for used oil, POLs, jet-A fuel, batteries, mercury-containing lamps, petroleum-contaminated soil, military munitions, and pesticides.

Currently, Fort Benning operates as a Resource Conservation and Recovery Act (RCRA) Large Quantity Generator (Facility Identification Number GA3210020084) and manages compliance with the relevant regulations through its HWMP. There are no hazardous wastes generated or stored on or near any of the Action Alternatives or the GHMTA, except for those that may be generated (and appropriately managed) during existing training and maintenance activities. These training-derived wastes are managed in accordance with the above plans.

### *Solid Waste Management*

Solid waste generated at the Installation includes waste generated from family housing, administrative areas, troop units, and contractors, and is managed in accordance with the ISWMP. On the Installation, food-producing buildings have the largest amount of waste, generating over 8,000 tons of food waste annually (Fort Benning, 2017a). Fort Benning is currently investigating the feasibility and efficacy of a food waste compost operation in order to meet food waste reduction goals; in 2018, approximately 84 tons of food were recycled (Fort Benning, 2018e).

Solid waste from Fort Benning is hauled by a licensed waste management contractor to the Phenix City Transfer Station in Phenix City, Alabama, and then subsequently transported to Salem Waste Disposal Landfill in Opelika, Alabama. Additional landfills are located within 50 miles of Fort Benning, including the Columbus Pine Grove Municipal Solid Waste Landfill in Columbus, Georgia, and WI Taylor County Disposal, LLC in Mauk, Georgia; sufficient capacity for waste disposal is available to Fort Benning (Fort Benning, 2017a).

Fort Benning's policy on recycling is governed by the August 2018 Policy Memorandum #200-1-4, entitled "Qualified Recycling Program." Under this policy, Army personnel and contractors are

required to participate actively in the recycling program, and all of the proceeds from the program are retained by the Installation.

Fort Benning's Materials Recovery Facility (MRF) processes and sells 10 material types: aluminum, corrugated cardboard, mixed cardboard, mixed and shredded paper, white paper, plastics, scrap metal, scrap wood, and printer cartridges. The MRF accepts recyclables from 79 buildings on the Installation and over 200 strategically placed drop-off points for cardboard collection (Fort Benning, 2017a).

In 2018, Fort Benning recycled approximately 480 tons of paper/wood fiber, 1,450 tons of metal, 200 tons of plastic, 20 tons of tires, 80 tons of oil, and 270 tons of mixed recyclables (Fort Benning, 2018e). Recyclable materials are turned-in to the Installation Defense Reutilization Marketing Service and the MRF for processing (Fort Benning, 2017a).

Contractors do not have permission to dispose of waste on Fort Benning. Construction and demolition wastes are typically hauled out and disposed of or recycled by the construction contractors (Fort Benning, 2017a).

There are no permanent sources of solid waste on the Alternative sites. Solid waste may be generated at these sites periodically during training and maintenance activities, but is removed from the sites following the specific event in accordance with the above plans and procedures.

#### *Asbestos-Containing Materials (ACM) Management*

Fort Benning's AMP outlines the procedures that are followed when ACMs are encountered (Fort Benning, 2019g). Routinely, all Fort Benning facilities scheduled for maintenance, renovation, remodeling, and demolition are inspected for the presence of ACMs. When required by law or as a precautionary measure, ACMs are removed through outside contracts by licensed specialized firms. Removed ACMs are transported offsite by appropriately licensed transporters and disposed of in appropriately permitted landfill facilities in accordance with applicable Federal, State, local, and DoD regulations.

There is no known ACM on any of the Alternative sites.

### *Lead-Based Paint (LBP) Management*

There are several structures known or suspected to contain LBP on the Installation. LBP is generally managed in-place in accordance with industry guidelines and practices in order to minimize the potential for creation of respirable dust, direct contact with the LBP surfaces, and contamination of the surrounding environment. Fort Benning's LMP addresses LBP risk assessment, as well as handling and disposal procedures for LBP, coatings, and LBP-contaminated soils. The LMP also addresses safety procedures for the workers who conduct this work. All construction contractors are required to follow LMP procedures. Also, in accordance with the LMP, lead-contaminated waste is disposed of as hazardous waste (Fort Benning, 2019e).

There is no known LBP on any of the Alternative sites.

### *Polychlorinated Biphenyls (PCB) Management*

Fort Benning complies with Toxic Substances Control Act and other relevant regulatory requirements with regard to transportation, storage, sampling, and disposal of PCBs. Since the utilities' privatization initiative was implemented in 1999, the operation, maintenance, and repair of the electrical distribution system and, therefore, most of the PCB-containing electrical equipment on Fort Benning, has been under the control of Flint Electric. One exception is the electrical system at LAAF, which is under the management of Interior Electric (USACE, 2007). The non-Federal owners of the electric system on the Installation are responsible for any PCB spills and other spills resulting from the operation of those electric systems.

There are no known PCBs on any of the Alternative sites.

### **Existing Cleanup Sites on Fort Benning**

Past waste management practices at Fort Benning have resulted in the presence of hazardous waste contamination at some locations. In response, Fort Benning has undertaken mitigation and cleanup activities under its Installation Restoration Program (IRP) to manage these sites, referred to as Solid Waste Management Units.

The Fort Benning EMD actively manages programs that address contaminated sites in compliance with RCRA and the National Oil and Hazardous Substances Pollution Contingency Plan. A summary of the cleanup sites on the Installation is provided in the Fort Benning IAP (Fort Benning,

2019h). There are no IRP sites on or near the Alternative sites. Additionally, no perfluorooctane sulfonate (PFOS) or perfluorooctanoic acid (PFOA) contaminants are present in the Action Alternatives based on recent survey efforts (Arcadis, 2018).

Incidents of historical spills on the Installation from 2000 to 2019 were reviewed to determine occurrences on or near the Action Alternatives. No spills have been documented in Alternative 2; however, spills have occurred near or on Alternatives 1 and 3. Table 3.11-2 presents a summary of these incidents.

**Table 3.11-2: Spill Log at Action Alternative Sites**

<b>Spill Number</b>	<b>Material Spilled</b>	<b>Cause of Spill</b>	<b>Remediation Action</b>
<b>Alternative 1</b>			
SL031108-01	JP-8 fuel	Heavy Expanded Mobility Tactical Truck (HEMTT) fueler was over-fueled resulting in 10 to 12 gallons of spilled fuel	Cleaned with dry sweep
SL030724-02	JP-8 fuel	Fuel line broke on M969 fuel tanker resulting in 50 gallons of spilled fuel	Contaminated soil was removed (up to 6 feet) and placed into rolloffs for disposal
SL031108-02	Kitchen/dining waste	An unknown quantity of waste was improperly disposed of from kitchen/dining operations during field training exercise.	Waste was drained from the pit and then pumped into 55-gallon drums for disposal
SL031111-01	JP-8 fuel	HEMTT fueler leaked 100 gallons of JP-8	Waste was drained from the pit and the affected dirt road was cleaned along the 6 to 8 miles where residue was visible. Soil in other areas was dug out and containerized for disposal
SL131003-01	POL	An overturned and vandalized vehicle leaked 6 quarts of POLs	Waste was cleaned with absorbent materials, booms, plastic sheeting, and dry absorbent powder
<b>Alternative 2</b>			
No spills have been reported on the Alternative 2 site			

Spill Number	Material Spilled	Cause of Spill	Remediation Action
<b>Alternative 3</b>			
OS-010522-01	4.2-inch mortar chemical round	An orphan 4.2-inch mortar chemical round was found onsite	Removed
SL030724-01	JP-8 fuel	A vehicle was over filled, spilling 1 quart of JP-8	Sand, absorbent socks, and pads were used to collect standing liquid
SL031209-01	POL	A vehicle used for target practice was not properly drained and an unknown quantity of POL was spilled	Unknown

### 3.11.2 Environmental Effects

This section identifies potential impacts to the management of HTMW at Fort Benning, as well as any impacts from these materials or existing contamination within the ROI on the Proposed Action. Each of the Action Alternatives and the No Action Alternative, as described in Section 2.4, is analyzed.

#### 3.11.2.1 Approach to the Analysis

The Army used the following significance thresholds (see Table 3.11-3) to evaluate adverse impacts of the Proposed Action on or from HTMW management or presence. Impacts associated with the release, spread, or change in management of HTMWs on or near the Alternatives would all be considered *direct*, while these impacts occurring outside of the Alternatives would be *indirect*.

As discussed in Section 3.11.1.3, no ACM, LBP, PCBs, or IRP sites are present within or near the Alternatives; thus, the Proposed Action would have no potential to affect these hazardous materials or waste sites. As such, these resources are not carried forward for further analysis.

The Proposed Action, under any Alternative, would not change the throughput, personnel complement, vehicles, equipment, or types of training on the Installation; the Proposed Action would change only the magnitude and style of training in the Action Alternatives by relocating portions of the current training conducted at the GHMTA to the new HOMMTA. As such, no changes in HTMW management on the Installation would occur under any Alternative, and existing compliance plans would continue to manage these materials effectively at Fort Benning.



**Table 3.11-3: Significant Adverse Impact Thresholds for HTMW**

Impact Threshold	Type of Impact	Impact Threshold Definition
Significant Adverse Effect	Direct Impacts	Would result in a violation of an applicable regulation or standard; pose considerable risk to human health and safety; or result in a substantial increase in, or spread of, existing or new contamination in or near the Alternative.
	Indirect Impacts	Would result in a violation of an applicable regulation or standard; pose considerable risk to human health and safety; or result in a substantial increase in, or spread of, existing or new contamination outside the Alternative.

### 3.11.2.2 No Action Alternative

Under the No Action Alternative, no changes in baseline conditions for HTMW generation, storage, transport, or disposal at Fort Benning would occur. Current activities, as described in Section 2.4, would continue in the locations of all three Action Alternatives, potentially generating training-derived waste. Hazardous materials, such as an AST for fuel and some household cleaning products, are present in the GHMTA. The ongoing focused training use of the GHMTA would continue to concentrate the potential for releases from equipment to the environment in this area; training activities would involve the use of a variety of hazardous materials, such as POLs and solvents, necessary to perform military training activities and training area upkeep.

As noted in Section 3.11.1.3 and discussed in greater detail in the ETEA (Fort Benning, 2015b), the Army currently implements proactive measures and programs to safely manage HTMW handling within the Installation while minimizing the risk of human exposure and release into the environment. Under the No Action Alternative, the Army would continue to implement these programs. Fort Benning would continue to minimize any adverse impacts of HTMW by following all applicable laws, regulations, and Installation plans, resulting in **minor, long-term adverse impacts**.

As described in the following sections, adverse impacts from these ongoing activities are expected to be *less* than those that could potentially result from implementation of the Proposed Action, primarily due to construction activities associated with the Proposed Action.

### 3.11.2.3 Alternative 1

Overall, Alternative 1 would result in **minor adverse impacts** to HTMW. HTMW impacts under Alternative 1 would be *similar* to both Alternatives 2 and 3, as the magnitude of the construction activities associated with the Proposed Action would be similar among the three Alternatives; however, there would be *less* risk of HTMW migrating off the Installation than Alternative 2 due to Alternative 1's central location on the Installation.

#### **Direct Impacts**

##### *Construction*

Construction activities associated with Alternative 1 would involve the use of heavy equipment and other vehicles, and thus require increased storage and use of fuels, other POLs, paints, solvents, and other potential contaminants in Alternative 1 compared to existing conditions, thereby increasing the potential for a release to the environment. In addition, solid and hazardous waste generation could increase temporarily during construction but would be almost **negligible** relative to the Installation's current waste stream and would be the responsibility of the construction contractor(s).

HTMW would be used, managed, stored, transported, and disposed of in accordance with applicable Federal and State regulations as detailed in the Installation's existing management plans and procedures, such as the SPCC, ISCP, and HWMP, including as they apply to contractors, to minimize the potential for release (see Section 2.1.1). In addition, solid waste would be recycled to the extent possible. Compliance with applicable regulations and Installation plans and programs would maintain potential **short-term, adverse impacts at minor** levels.

Given the history of five previously recorded spills within Alternative 1 (see Table 3.11-2), there is a low to moderate likelihood of inadvertent discovery of existing contamination or other environmental health and safety hazards during construction. Should existing contamination be discovered during any Proposed Action activities, onsite operations would cease, Fort Benning EMD and Range Control would be notified, and the Army would implement appropriate procedures to secure, investigate, and remediate the area to required, safe levels (see Section 2.1.1). With adherence to appropriate regulations and management plans, the resulting **short-term, direct adverse impact** of an inadvertent discovery would be **minor**.

### *Operation*

During training activities, hazardous materials, such as fuels, may be periodically present and stored in Alternative 1. In addition, armor and support vehicles would be operated within Alternative 1 on a periodic, but relatively frequent, basis over the life of the HOMMTA.

Like construction vehicles, these military vehicles would have similar potential to release HTMW to the environment, including the potential for larger spills from mobile fuel tankers that may be used to refuel vehicles in the field. Field refueling would be a required component of training; a 10,000-gallon Heavy Expanded Mobility Tactical Truck (HEMTT) refueling tanker would be the largest single source of hazardous materials present at the site during training activities.

To minimize potential spills from refueling activities, the Army would adhere to Installation policy and remain at least 100 feet away from surface waters during refueling, and maintain spill kits proximate to refueling activities (see Section 2.1.1). In addition, through compliance with applicable Federal and State regulations as detailed in the Installation's existing management plans and procedures, such as the SPCC, ISCP, and HWMP, these potential **long-term, adverse impacts** would remain **minor**.

Similar to construction, inadvertent discoveries of HTMW during operation would be addressed according to appropriate regulations and management plans, resulting in **minor impacts**.

### *Maintenance*

Maintenance of Alternative 1 would involve heavy equipment and activities similar to those involved with construction; therefore, potential impacts resulting from maintenance activities would generally be the same as those identified for construction but would be smaller and more focused in scale. Because maintenance activities would be conducted intermittently, although regularly, over the life of the HOMMTA, these potential **minor adverse impacts** would be considered **long-term**.

Similar to construction, inadvertent discoveries of HTMW during maintenance activities would be addressed according to appropriate regulations and management plans, resulting in **minor impacts**.

## **Indirect Impacts**

### *Construction*

As noted above, impacts associated with releases of HTMW during construction would generally be limited to areas where construction would occur (i.e., within the Alternative 1 footprint). There is potential, however, for construction releases in Alternative 1 to have indirect impacts on the ROI if releases were to migrate down-gradient, including via surface water, to areas outside of Alternative 1. This would occur if releases are not identified and addressed quickly. Through compliance with applicable Federal and State regulations as detailed in the Installation's existing management plans and procedures, such as the SPCC, ISCP, and HWMP, the risk of release would be minimized to the greatest extent practicable, releases would be identified and addressed quickly, and potential **indirect adverse impacts** would be **minor**.

### *Operation*

Operation of Alternative 1 could also result in **minor, indirect adverse impacts** if spills during refueling activities, for example, were to migrate offsite. These potential impacts would be controlled and minimized to the greatest extent practicable through quick and effective implementation of Installation plans and procedures (see Section 2.1.1).

Additionally, implementation of Alternative 1 would enable the Army to transfer some of the heavy maneuver training load from the GHMTA to the new HOMMTA. This would reduce the potential for release of HTMW into the environment surrounding the GHMTA, as well as reduce the required training activities that may involve the use of hazardous materials at the GHMTA (e.g., vehicle and equipment maintenance, military training activities, and training area upkeep). As a result, **current minor adverse impacts** on HTMW in the GHMTA **would be reduced**.

### *Maintenance*

Maintenance of Alternative 1 would involve heavy equipment and activities similar to those involved with construction; therefore, potential indirect impacts resulting from maintenance activities would generally be the same as those identified for construction. Because maintenance activities would be conducted intermittently in focused, localized areas, although regularly, over the life of the HOMMTA, these potential **adverse impacts** would be considered **minor and long-term**.

### 3.11.2.4 Alternative 2

Overall, Alternative 2 would result in **minor adverse impacts** to HTMW. HTMW impacts under Alternative 2 would be similar to, but *slightly greater* than, impacts under either Alternatives 1 or 3.

#### **Direct Impacts**

##### *Construction*

Impacts would be as described for Alternative 1, resulting in potential **minor, short-term, adverse impacts**.

##### *Operation*

Impacts would be as described for Alternative 1, resulting in potential **minor, long-term, adverse impacts**.

##### *Maintenance*

Impacts would be as described for Alternative 1, resulting in potential **minor, long-term, adverse impacts**.

#### **Indirect Impacts**

##### *Construction*

Impacts would be as described for Alternative 1, resulting in potential **minor, short-term, adverse impacts**. As Alternative 2 drains to nearby off-Post lands, the potential for impacts from any release to affect off-Post areas would be greater than Alternatives 1 or 3.

##### *Operation*

Impacts would be as described for Alternative 1, resulting in potential **minor, long-term, adverse impacts**. As Alternative 2 drains to nearby off-Post lands, the potential for impacts from any release to affect off-Post areas would be greater than Alternatives 1 or 3. The **reduction in minor adverse impacts** to the GHMTA would be the same as Alternative 1.

##### *Maintenance*

Impacts would be as described for Alternative 1, resulting in potential **minor, long-term, adverse impacts**. As Alternative 2 drains to nearby off-Post lands, the potential for impacts from any release to affect off-Post areas would be greater than Alternatives 1 or 3.

### 3.11.2.5 Alternative 3

Overall, Alternative 3 would result in **minor adverse impacts** to HTMW. HTMW impacts under Alternative 3 would be approximately the same as Alternative 1.

#### **Direct and Indirect Impacts**

##### *Construction, Operation, and Maintenance*

Please see impact presentation under Alternative 1. Similar impacts would be expected under Alternative 3. Despite its location along the Installation's boundary, Alternative 3 drains on-Post, so there would be little risk of off-Post migration of HTMW.

### 3.11.3 Mitigation

No additional project-specific mitigation measures have been identified beyond compliance with existing Federal and State laws and regulations, and implementation of Installation policies, management plans, and procedures as described in this section. These EPMs and RCMs are included as part of the Proposed Action, as identified in Section 2.1.1.

## 4.0 Cumulative Effects

### 4.1 Introduction

This section analyzes the potential cumulative effects of the Proposed Action and past, present, and reasonably foreseeable future actions within the Proposed Action’s ROI. Cumulative effects of the Proposed Action can be viewed as “the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource” (USEPA, 1999). The cumulative effects analysis determines if construction, operation, and maintenance of the Proposed Action would have the potential to result in either adverse or beneficial cumulative impacts when considering other actions in the ROI.

### 4.2 Applicable Guidance

In accordance with the CEQ NEPA Regulation (40 CFR 1508.7), and as detailed in CEQ guidance entitled *Considering Cumulative Effects Under the National Environmental Policy Act* (1997) and *Memorandum: Guidance on the Considerations of Past Actions in Cumulative Effects Analysis* (June 24, 2005), the Army must analyze whether the Proposed Action could have cumulative impacts, defined as the impact on the environment which results 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.” Each of these actions has the potential to affect resources in the same time and space as the Proposed Action; as such, these potential cumulative effects need to be analyzed.

Cumulative effects may be accrued over time and/or in conjunction with other pre-existing effects from other activities in the ROI (40 CFR 1508.25). Therefore, previous impacts and multiple smaller impacts are also considered. Overall, assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the Proposed Action to determine if they overlap in space and time.

The NEPA, CEQ, and Army NEPA Regulations require the analysis of cumulative environmental effects of a proposed action on resources that may often be expressed only at an aggregated level, such as traffic congestion, air quality, noise, biological resources, cultural resources, socioeconomic conditions, utility system capacities, and others. Cumulative effects can result from individually minor, but collectively significant, impacts occurring to the same resource over time.



In addition, if the Proposed Action would have a significant effect on a VEC that is also experiencing effects from other projects, the cumulative effect would be significant.

### **4.3 Approach to the Analysis**

This cumulative effects analysis follows the CEQ's process to assess potential cumulative effects. The process assists in determining whether the Proposed Action's effects on specific VECs would have the potential to result in cumulative effects with other past, present, and reasonably foreseeable future actions. The CEQ's process is to:

1. Identify issues for cumulative impact analysis. VECs that would experience no or negligible impacts from the Proposed Action would not result in cumulative impacts and typically would not be carried forward for cumulative impact analysis; all VECs analyzed in this EIS would be impacted to some degree and are assessed for cumulative impacts.
2. Determine the ROI and timeframe for the cumulative impact analysis.
3. Identify past, present, and reasonably foreseeable future actions within the ROI that may interact with impacts of the Proposed Action Alternatives.
4. Describe the potential environmental impacts of past, present, and reasonably foreseeable future projects and how they may interact with the effects of the Proposed Action Alternatives.
5. Determine the incremental impacts of the Proposed Action Alternatives when considering the impacts of past, present, and reasonably foreseeable future projects; characterize the potential cumulative impact.
6. Determine if additional mitigation is needed to minimize or avoid cumulative impacts.

### **4.4 Region of Influence**

The ROI for the cumulative effects analysis includes the ROI for the analyzed VECs, as described throughout Section 3.0, including the entire Installation and off-Post lands in the immediate vicinity. The ROI includes areas where the Proposed Action's effects would most likely contribute to cumulative environmental effects. The temporal scope of the cumulative effects analysis spans the next approximately 10 years (2020 to 2030) to include all components of the Proposed Action, plus the timeline within which other actions are reasonably foreseeable.

#### 4.5 Past, Present, and Reasonably Foreseeable Future Projects

The cumulative effects analysis considers projects, identified through Army coordination and community input, likely to have the potential for contributing to cumulative effects within the ROI (see Table 4.5-1 and Figure 4.5-1). These projects include institutional, infrastructure, recreational, and transportation projects planned within the ROI.

While the term “past, present, and reasonably foreseeable future” projects is used in this analysis to describe all considered actions that may interact with the Proposed Action, the cumulative effects analysis focuses on reasonably foreseeable future projects. Past and present projects have been assessed in the establishment of the environmental baseline and are already considered in the Alternatives’ impact analysis presented in Section 3.0 of this EIS (*Affected Environment and Potential Impacts*). Present projects are only considered in analysis if their timeframe continues into the future (e.g., ongoing projects), while past projects are only considered in this cumulative effects analysis if their long-term and operational impacts would occur to similar VECs at the same time as the Proposed Action, contributing to cumulative impacts.

It is important to note that identified reasonably foreseeable future projects are planned through approximately 2030. Although continuous development within the ROI throughout the life of the project (i.e., at least 40 years) is likely, it would be speculative to include actions that may have only been proposed at this time. In order to prevent overestimating future cumulative effects, this analysis only includes “reasonably foreseeable” projects; specifically, those projects that are well-developed, in mature planning stages, and/or have funding secured. Table 4.5-1 identifies each project’s approximate implementation timeframe (e.g., within the next five years or in five to 10 years); Figure 4.5-1 illustrates their geographical proximity to the Alternatives. All projects are Army actions on Fort Benning; identified and known non-Army actions proposed in the ROI were considered and none would contribute to cumulative effects.

**Table 4.5-1: Present and Reasonably Foreseeable Future Projects**

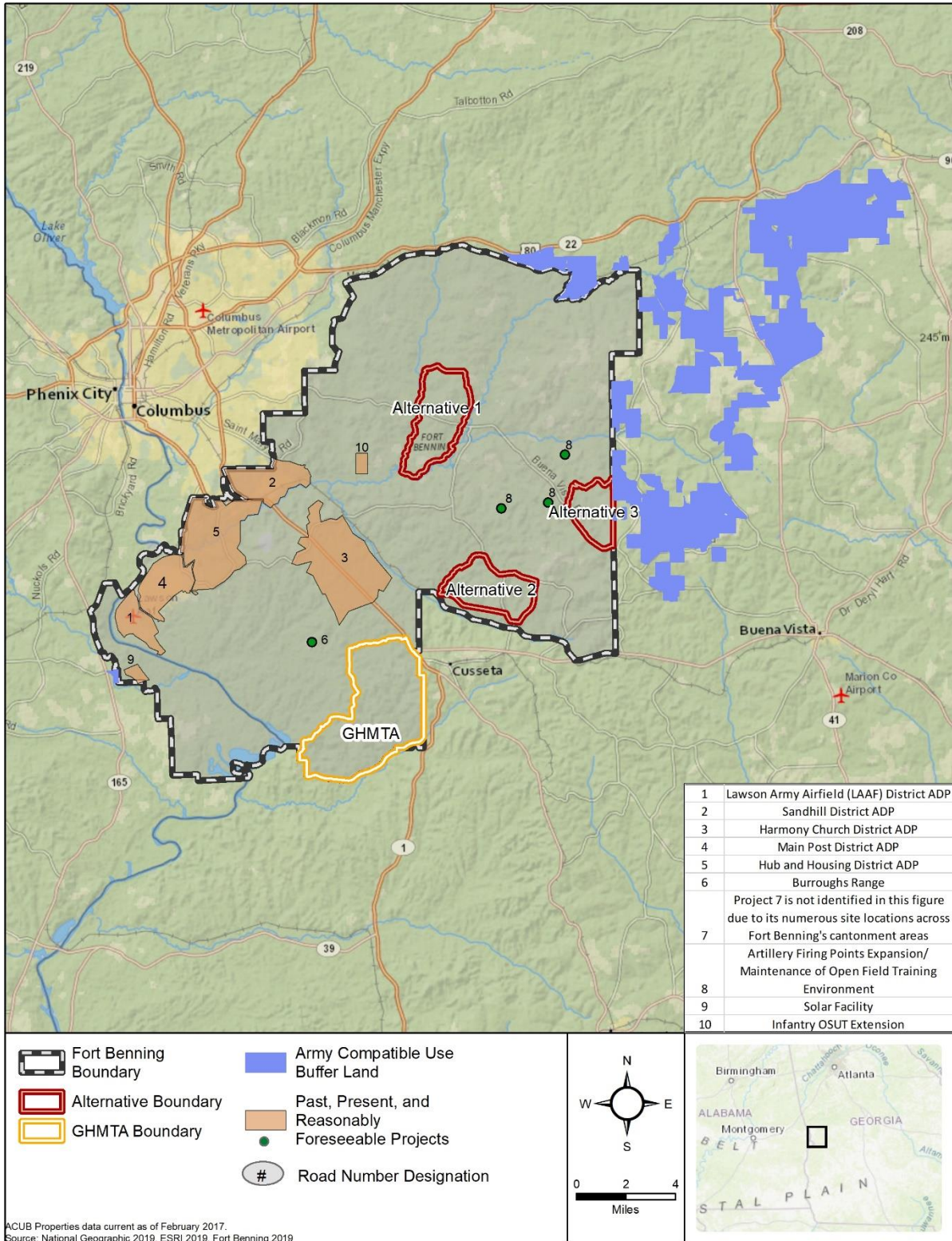
No.	Potentially Contributing Project	Distance from the Proposed Action*	Type of Project	Description of Activity	VECs Impacted	Estimated Timeframe	
						2020 to 2025	2025 to 2030
1	LAAF District Area Development Plan (ADP)	13.1 miles	Transportation, Institutional, Recreation, Infrastructure	A collection of 35 development projects planned for implementation over the next 20 years under the LAAF ADP would sustain modern and adaptable facilities; create connected networks; enhance training, deployment, and Power Projection; promote partnerships; and protect historic assets. Preparation of the ADP is currently in progress.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X
2	Sandhill District ADP	3.8 miles	Transportation, Institutional, Recreation, Infrastructure	A collection of 36 projects are proposed for the Sandhill District, including upgrading the 11 <sup>th</sup> Airborne Division Road; creating a town center with the chapel as the focal point; renovating and expanding the recreation center; establishing a bike share program at the recreation center; creating a parking area for Family Day; and constructing a new fire/emergency service/police station facility. Plans for bike trails would connect the District and provide recreational amenities. Signage and wayfinding would encourage multiple modes of transportation and recreational activities. Additional food choices and community gardens would help promote the Healthy Army Communities Initiative. New construction areas would total roughly 116,000 to 750,000 sf. A total of approximately 111,000 sf would be demolished.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X

No.	Potentially Contributing Project	Distance from the Proposed Action*	Type of Project	Description of Activity	VECs Impacted	Estimated Timeframe	
						2020 to 2025	2025 to 2030
3	Harmony Church District ADP	2.0 miles	Transportation, Institutional, Recreation, Infrastructure	A collection of 54 projects are proposed for the Harmony Church District, including transportation network improvements; a fitness/recreation facility; shared Military Advisory Training Academy/Airborne and Ranger Training Brigade facilities; Warrior Training Center facilities; two Security Force Assistance Brigade campuses; and additional facilities to improve Soldier quality of life, training, and working experiences. These efforts would create a better-connected District and invest in facilities to improve quality of life, training environment, and maintenance capabilities. These areas would become more pedestrian- and bicycle-friendly, which would provide alternatives to driving. In total, 97,184 sf would be demolished. New construction would range from 2.0 million to 5.4 million sf.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X
4	Main Post District ADP	10.1 miles	Transportation, Institutional, Recreation, Infrastructure	A collection of 45 projects, including street, pedestrian, and open space improvements; construction of new facilities to support mission requirements; renovation of historic structures; provision of additional Soldier and Family support and quality of life needs; demolition of surplus facilities; and the creation of a compact, mixed-use town center that would serve all of Fort Benning. An extensive network of street, pedestrian, and open space improvements are proposed to increase connectivity while improving safety and efficiency for vehicles, bicycles, and pedestrians. A mixed-use town center is proposed to provide a campus-like connection between Abrams Hall and McGinnis-Wickam Hall. Implementation of all projects would result in a total of 1.2 million sf of new construction and expansion, and 1.8 million sf of demolitions.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X

No.	Potentially Contributing Project	Distance from the Proposed Action*	Type of Project	Description of Activity	VECs Impacted	Estimated Timeframe	
						2020 to 2025	2025 to 2030
5	Hub and Housing District ADP	6.6 miles	Transportation, Institutional, Recreation, Infrastructure	A collection of 35 renovation, demolition, and development projects are proposed to address major topics concerning quality of life, future infrastructure projects, and increasing accessibility and connectivity within the District. Transportation improvements include increasing the capacity of major east-west roads, constructing a transit hub near the I-185 access control point, and expanding the trail system to improve trail connectivity. Quality of life improvements would focus on adding family-centric amenities and providing schools in easily accessible locations. Plans to demolish the former hospital site would create opportunities to construct a civic center for the Installation and relocate Army Community Services to the facility. A total of 847,376 sf would be demolished for development of up to 2.3 million sf.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X
6	Other Future Actions	N/A	Institutional	Additional projects are planned for the Installation, including relocation of the firing line at Burroughs Range, expanding range usage for the 75 <sup>th</sup> Ranger Regiment, and updating facilities that have reached their end of life cycle or require upgrades. The majority of these projects exists in current infrastructure and would be replaced in kind. These projects are in the planning stages.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	X
7	Infrastructure Footprint Reduction Program	N/A	Institutional	This project would remove buildings and other structures considered obsolete/outdated, cost prohibitive to sustain, in excess of Army utilization needs, and in some cases contain potential human health and safety concerns. Approximately 150 buildings and structures totaling more than 2 million sf would be demolished over the next five years.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	

No.	Potentially Contributing Project	Distance from the Proposed Action*	Type of Project	Description of Activity	VECs Impacted	Estimated Timeframe	
						2020 to 2025	2025 to 2030
8	Artillery Firing Points Expansion/ Maintenance of Open Field Training Environment	0.1 miles	Institutional	Improvements and long-term maintenance activities to existing training assets are needed to support the missions of the Airborne and Ranger Training Brigade, 75 <sup>th</sup> Rangers, and the Field Artillery units of the Infantry School and the 1-28 <sup>th</sup> Infantry Battalion Task Force, as well as other tenant and/or visiting units’ training requirements. These assets include Drop Zones, Helicopter Landing Zones/Pick-up Zones, and Firing Points for Mortars and Howitzer guns, and are generally referred to as “open field training environments.”	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	
9	Solar Facility	13.0 miles	Infrastructure	An 80-acre addition of 13-megawatt solar panels is being developed at Dove Field, near the western boundary of Fort Benning within Russell County, Alabama. This project would supply renewable energy for the Installation to contribute to compliance with the Energy Policy Act of 2005 and provide critical load support in the event of an emergency.	Air Quality; Noise; Soils; Water Resources; Biological Resources; Cultural Resources; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	
10	Infantry OSUT Extension	1.8 miles	Institutional	The Army will extend OSUT for Infantry Soldiers from 14 weeks to 22 weeks to increase Soldier readiness. The new course will include extended weapons training, increased vehicle-platform familiarization, extensive combatives training, and a 40-hour combat-lifesaver certification course. Additional changes include more time in the field for both day and night operations and an increased emphasis on drill and ceremony maneuvers.	Noise; Socioeconomics; Infrastructure; Hazardous Materials and Waste	X	

Note: \* Distance from the nearest Action Alternative



**Figure 4.5-1: Past, Present, and Reasonably Foreseeable Future Projects**



## 4.6 Cumulative Effects Analysis

### 4.6.1 Significance Thresholds

The cumulative effects significance thresholds are the same as the resource-specific significance thresholds as described throughout Section 3.0. Cumulative impacts would be potentially significant if the incremental effect of the Proposed Action, considered with effects of past, present, and reasonably foreseeable future projects, would rise to the level of significance under those criteria.

### 4.6.2 Cumulative Impacts under the No Action Alternative

Under the No Action Alternative, the Army would not develop and operate a new HOMMTA at Fort Benning. Current conditions would continue for the foreseeable future; the MCoE and Fort Benning tenant units would continue to conduct training at the GHMTA. While this would result in long-term adverse impacts at the GHMTA as identified throughout Section 3.0, no cumulative impacts would occur as the training at the GHMTA is ongoing. As identified in the ETEA, that Proposed Action resulted in **no significant cumulative effects** (Fort Benning, 2015b).

### 4.6.3 Cumulative Impacts under Alternative 1

#### 4.6.3.1 Land Use (Recreation)

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

Construction of proposed and future projects would create disturbances, such as noise and dust, to nearby hunting areas and other recreational facilities, as well as potential temporary closures of these amenities. Temporary traffic delays from construction movements could also affect public access to and use of recreational sites. This disturbance would be negligible and temporary, however, and only last for the duration of the construction phase; hunting and other recreational activities would not be impacted in the long term. There would be minor, long-term beneficial impacts from the creation of new recreational amenities. The Sandhill District ADP is proposing to expand a recreation center, establish a bicycle share program, and create community gardens, while the Main Post District ADP would create new playgrounds. These proposed projects and other planned cantonment projects would benefit recreation by providing more resources for the population on-Post. Past, present, and reasonably foreseeable future projects are not anticipated to reduce long-term availability of recreational facilities.

### **Cumulative Impacts**

The incremental effects of Alternative 1 when considered with the effects of past, present, and reasonably foreseeable future projects would result in potential **minor, short-term adverse cumulative impacts** on hunting and other recreational activities within the ROI. Construction of Alternative 1 and past, present, and reasonably foreseeable future projects would reduce the availability of recreational areas, including up to 14 training compartments used for hunting and other existing recreational areas that would be disturbed by construction events. Cumulative impacts from closures and reduced access would be temporary, however, and only last for the duration of construction and maintenance activities. In the long-term, both Alternative 1 and past, present, and future actions would improve overall recreational facilities in the ROI. New paved trails under Alternative 1 as well as trail improvements under the Hub and Housing District ADP would increase connectivity and accessibility to recreational and hunting areas, resulting in potential **minor to moderate, long-term beneficial cumulative impacts**.

#### **4.6.3.2 Air Quality**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

Development of past, present, and reasonably foreseeable future projects would result in minor impacts on air quality due to emission increases from construction and operational activities. A minor increase in emissions during construction and/or operation of these projects is not expected to contribute significant adverse effects to overall air quality in the regional airshed, as the region is in attainment for ambient air quality standards and the GADNR-EPD requires permits for stationary sources of air pollution, including major and minor sources. All projects must certify compliance with applicable requirements of GADNR-EPD standards and would be in attainment with the SIP. Actions that require air permits would comply with State air quality standards, while actions that do not require air permits generally would not contribute to adverse air quality impacts. Project proponents would be responsible for complying with local and regional air quality standards.

### **Cumulative Impacts**

There would be potential **minor, short- and long-term adverse cumulative effects** on air quality in the ROI from the incremental effects of Alternative 1 when considered with impacts from past, present, and reasonably foreseeable future projects in the ROI. Construction activities would

generate temporary emissions, while long-term activities, such as vehicular use on unpaved roads under Alternative 1, changes in traffic patterns, and maintenance activities, would also contribute to an increase in emissions in the ROI. Individual past, present, and reasonably foreseeable future projects would not generate emissions at a level that would change the attainment status of the region or exceed *de minimis* thresholds and would be in compliance with applicable laws regulating air quality standards, as noted above. Thus, Alternative 1's contribution of emissions would not threaten the attainment status of the region, have a noticeable GHG impact, or lead to a violation of any Federal, State, or local air regulation.

#### 4.6.3.3 Noise

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

Projects considered in this cumulative effects analysis would cause negligible impacts on noise from temporary construction activities. Noise would result from equipment use for site grading, vegetation removal, and grubbing. Sensitive noise receptors, such as healthcare facilities, religious institutions, and residences, are present in the ROI and could be affected by construction noise.

Construction noise is typically considered a minor annoyance due to its temporary nature, and most of the projects would be developed on existing, disturbed land, or replaced in kind, minimizing construction efforts and any resultant sound. In addition, noise impacts from construction equipment are generally limited to a 0.25-mile radius as noise attenuates quickly in the ambient environment. Adverse noise impacts from construction activities would be temporary and typically minimized to the greatest extent practicable with adherence to standard noise minimization measures.

Long-term negligible noise impacts may occur from extended weapons training under the Infantry OSUT Extension project and open field training environments under the Artillery Firing Points Expansion/Maintenance of Open Field Training Environment project from new noise on the Installation. Noise Zones from small arms firing are generally contained to training lands on-Post, while firing large caliber weapons and detonating military explosives typically occur within compatible noise-sensitive land uses; however, sensitive noise receptors may still experience elevated noise levels although below regulatory limits (Fort Benning, 2019c).

### **Cumulative Impacts**

Potential **negligible, short-term adverse cumulative impacts** on noise would occur from construction of Alternative 1. Construction noise tends to dominate a soundscape; these activities generate the highest noise levels from the use of multiple trucks, jackhammers, backhoes, and other equipment. Cumulatively, however, these noise levels are not expected to exceed regulatory thresholds as construction of Alternative 1 and past, present, and reasonably foreseeable future projects would likely be staggered and would not occur in close proximity to each other or to sensitive noise receptors (Figure 4.5-1). The resulting combined noise would not be significant.

Operation and maintenance of Alternative 1 would result in potential **negligible, long-term adverse cumulative impacts** on noise when taken into consideration with past, present, and reasonably foreseeable future projects (particularly, firing and training drills, such as the Infantry OSUT Extension project). Cumulative noise impacts would not exceed the significance threshold. Noise produced by HOMMTA operation and maintenance would be consistent with, and generally masked by, other noise on the Installation over the HOMMTA's operational life. No sensitive receptors or off-Post areas would be affected by Alternative 1.

#### **4.6.3.4 Soils and Topography**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

As the Proposed Action would not affect topography, no cumulative impacts would result. Therefore, topography is not evaluated in this analysis. Like Alternative 1, construction of past, present, and reasonably foreseeable future projects would disturb soils during excavation and fill work. The process of excavating native soils for development typically results in a loss of soil structure and a mixing of horizons. While clean soils are often placed back into the excavated areas as fill, the mixing of the soils results in a long-term loss of productivity due to changes in soil texture and ability to store nutrients or water (National Academy of Sciences, 1993). Construction activities could also cause increased erosion and sediment runoff.

In the long term, there would be minor adverse impacts on soils resulting from new impervious surfaces in the ROI. These surfaces would increase the potential for soil erosion. Project designs would incorporate LID measures, comply with EISA Section 438, and comply with NPDES

permitting requirements, further reducing the potential for soils to be transported offsite in surface runoff.

### **Cumulative Impacts**

Implementation of Alternative 1 in conjunction with past, present, and reasonably foreseeable future projects would result in potential **minor to moderate, short-term adverse cumulative impacts** on soils. While Alternative 1 would cause soil disturbance, erosion, and compaction from construction of tank trails, upgrade of roads, development of water crossings and support facilities, and use of heavy construction equipment, it would not contribute to significant cumulative degradation of soils in the ROI as a whole, when taken into consideration with past, present, and reasonably foreseeable future projects. With implementation of project-specific minimization measures, the resulting cumulative impacts on soils would be minor to moderate. In the long term, the improved 1-mile road under Alternative 1, in addition to new impervious surfaces from past, present, and reasonably foreseeable future projects (e.g., up to 750,000 sf of new construction under the Sandhill District ADP), would increase local runoff and the risk of erosion in the ROI. The amount of impervious surface proposed under Alternative 1, however, would be small compared to the remaining pervious land in the ROI. Similarly, soil disturbance from operation and maintenance of Alternative 1 would be controlled with EPMs and RCMs, and would contribute to potential **minor to moderate, long-term cumulative adverse impacts** to soils in the ROI.

#### **4.6.3.5 Water Resources**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

As groundwater and floodplains would not be affected by the Proposed Action or would be subject to only negligible adverse impacts, no cumulative impacts would result. Therefore, discussion of groundwater and floodplains is not carried forward for detailed analysis.

New development would increase impervious surface areas in the ROI. Increased impervious surface area could increase localized storm surge flooding, generate non-point source pollution, and alter downstream water quality of the Chattahoochee River Basin and WMUs. Projects that may require stream crossings would also cause adverse impacts on water quality from disturbing stream banks and increasing sedimentation and turbidity. Federal projects are required to comply with Section 438 of the EISA to implement LID measures or green infrastructure practices. LID

emphasizes conservation and use of on-site natural features to protect water quality and manage rainfall at the source. LID is accomplished through sequenced implementation of runoff prevention strategies, runoff mitigation strategies, and treatment controls to remove pollutants; such efforts may include use of porous pavements, green roofs, and bioretention basins.

Construction sites would be sources of soil and sediment disturbance, which may contribute to runoff and sedimentation into downstream surface waters and wetlands. As a result, water temperature, sediment and nutrient runoff, and runoff velocity/volume could increase, degrading the integrity of water resources. Stormwater management controls would help to reduce erosion and sediment transport, as well as compliance with a CWA Section 404 permit and Section 401 Water Quality Certification to reduce the potential for long-term adverse impacts on areas downstream. Project proponents would conduct activities in accordance with the GADNR-EPD's Municipal Separate Storm Sewer System (MS4) permit to control stormwater pollution discharges to receiving waterbodies. Under the MS4 permit, project proponents are required to implement NPDES requirements and develop stormwater management programs to enforce stormwater control measures, and consequently minimize or avoid downstream sedimentation impacts.

### **Cumulative Impacts**

Under Alternative 1, there would be potential **minor, short- and long-term adverse cumulative impacts** on water resources.

Past, present, and reasonably foreseeable future projects, such as transportation improvement projects, may require water crossings. Similarly, Alternative 1 would require stream crossings for the construction of new culverts and replacement of stream crossing sites with bridges. Alternative 1's additional impact would contribute to collective impacts and result in potential **minor, short-term adverse cumulative impacts** on surface waters and wetlands from the loss of small stream segments, stream buffers, and disturbance to streams in the ROI. Adherence to CWA Section 404 permitting requirements and NPDES permit requirements under Alternative 1 and reasonably foreseeable future projects, as well as EPMs and RCMs proposed as part of the Proposed Action would help to alleviate and reduce adverse cumulative impacts on surface waters and wetlands.

Construction of Alternative 1 would require vegetation removal on approximately 3,200 acres of forested land, which would increase sedimentation and turbidity from a substantial disturbance of

land and loosened soils. As a result, Alternative 1's impact to surface water and water quality would contribute to collective impacts from past, present, and reasonably foreseeable future projects in the ROI. Water temperature, sediment and nutrient runoff, and runoff water velocity/volume would collectively increase in waterbodies within the ROI from construction of Alternative 1 and nearby Sandhill District ADP projects and Harmony Church District ADP projects. The conversion of permeable surface area into impervious surface would also cause additional runoff into streams during rain events. In addition, construction activities would increase the risk of accidental discharge of hazardous materials and waste. With implementation of NPDES permit requirements and associated BMPs, as well as adherence to Installation management plans, potential short-term cumulative impacts on stormwater management and water quality degradation would be properly controlled and, therefore, maintained at **minor adverse levels**.

In the long-term, operation and maintenance of Alternative 1 and past, present, and reasonably foreseeable future projects, such as the nearby OSUT Extension project, would disturb soils and vegetation and potentially result in adverse impacts to water resources in the ROI. Water resources impacts from the Proposed Action would be controlled as described in Section 3.6.3, resulting in minor long-term impacts. Other military activities in the ROI would disturb and compact soils, making them more susceptible to erosion and sedimentation. With proper management and compliance, including implementation of the EPMs and RCMs associated with the Proposed Action, long-term cumulative impacts on water resources, therefore, would be maintained at **minor adverse levels**.

#### **4.6.3.6 Biological Resources**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

Past, present, and reasonably foreseeable future projects in the ROI would disturb biological resources. Construction activities would require vegetation and tree removal, resulting in the loss of plant communities and vegetation resources. Construction, demolition, grading, excavation, and trenching would also disturb soils and cause erosion, which would potentially degrade habitat for aquatic species within receiving waterbodies; however, project proponents are expected to conduct activities in accordance with NPDES construction, CWA Section 404, and Section 401 Water Quality Certification requirements to enforce stormwater control measures and limit downstream



sedimentation impacts. Vegetation removal would also reduce the amount of shrubs, trees, and cover available to wildlife as suitable habitat.

In addition, construction noise and dust would disturb nearby wildlife, although impacts would be localized to the immediate vicinity. Minor disruptions to natural behaviors (e.g., foraging and breeding) may occur during firing and training activities in open field environments. Mobile individuals would likely move to other more suitable habitats during construction activities. To minimize or avoid impacts to threatened and endangered species, Federal activities on the Installation must comply with the ESA, as well as Installation-specific management plans (e.g., the INRMP). As the majority of past, present, and reasonably foreseeable future projects would occur on previously disturbed and developed land, and much of the proposed development would take place in kind, wildlife disturbance would be minimal.

### **Cumulative Impacts**

Incremental impacts of Alternative 1, taken into consideration with past, present, and reasonably foreseeable future projects, would result in potential **negligible to minor, short- and long-term adverse cumulative impacts** on vegetation communities in the ROI from removal of existing forest and maintenance of heavy maneuver areas as periodically disturbed herbaceous vegetation. Vegetation communities would also experience long-term change in habitat and species composition, as well as effects from soil erosion and sedimentation due to ground disturbance. An increased risk in the spread of invasive species would occur as well from movement of construction equipment, vehicles, and personnel during operation and maintenance activities. Potential **significant, long-term adverse cumulative impacts** are likely to occur on UEAs in the southern portion of Alternative 1 from operation and maintenance of the Proposed Action and the nearby OSUT Extension project. While the cumulative amount of UEAs that would be affected is unknown, actions in these areas would likely cause permanent degradation as UEAs have rare ecological characteristics and ecological integrity.

Alternative 1 would also contribute to potential **moderate, long-term adverse cumulative impacts** on wildlife due to loss of forested habitat in the ROI. Wildlife species, however, would be expected to relocate to available suitable habitats nearby. Taken into consideration with other past, present, and reasonably foreseeable future projects, implementation of Alternative 1 would

also result in an overall change in habitat availability. Species with specific habitat requirements and limited habitat availability (e.g., forest-dependent species) would be expected to relocate over time, while more generalist species tolerant of disturbed habitat would increase, resulting in a change in species composition.

There would also be potential **minor to moderate, short- and long-term adverse cumulative impacts** on wildlife and special status species from construction disturbance. Alternative 1 and other actions, such as the Artillery Firing Points Expansion/Maintenance of Open Field Training Environment project, would generate noise and dust, potentially interfering with natural behaviors of terrestrial wildlife and special status species. In addition, vegetation removal under Alternative 1 would directly take 11 active RCW clusters and disturb gopher tortoise burrows. Vegetation removal from past, present, and reasonably foreseeable future projects would also reduce the amount of available suitable habitat for special status species in the ROI; less mobile species could potentially suffer direct mortality. Alternative 1 impacts would be minimized through implementation of EPMs and RCMs, project-specific minimization measures, and continued adherence to the Installation's INRMP.

Cumulative effects on surface water and water quality from stormwater runoff and sedimentation would result in cumulative effects on aquatic habitats. Alternative 1, when considering past, present, and reasonably foreseeable future projects, would result in potential **minor, short- and long-term adverse cumulative impacts** on aquatic wildlife from construction activities inadvertently increasing water temperature and sediment and nutrient runoff, causing degradation in overall water quality and aquatic habitat. Stream crossings would also cause a loss of aquatic habitat and in-water construction disturbance. Mobile individuals would be expected to relocate to other waterways, and the amount of permanently impacted streams would be small relative to the total amount of streams in the ROI. With implementation of proper soil and water quality management as described in Section 3.5 and Section 3.6, the Proposed Action's cumulative contribution on aquatic environments would be minimized to the extent practicable.

#### 4.6.3.7 Cultural Resources

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

As the Proposed Action would have no effect on above-ground resources under any of the Action Alternatives, no cumulative effects would occur; therefore, above-ground historic resources are not evaluated in this analysis.

Construction of past, present, and reasonably foreseeable future projects have the potential to cause minor adverse impacts on archaeological resources and unanticipated discoveries during excavation activities. Per Section 106 requirements, consultation on any Federal action is required to determine: (1) cultural resources in the APE prior to approval; and (2) a resolution or avoidance of any potential adverse impacts. Therefore, activities that are required to comply with Section 106 (e.g., all Fort Benning projects) would include a construction monitoring plan and other mitigation measures designed to avoid or minimize impacts on archaeological resources. In addition, if impacts are unavoidable, recovery of the resources or other feasible mitigation would occur prior to construction. No long-term impacts on archaeological resources are anticipated from operation of past, present, and reasonably foreseeable future projects.

##### **Cumulative Impacts**

Alternative 1 and past, present, and reasonably foreseeable future projects would require heavy equipment to remove trees and grade terrain that could disturb archaeological deposits, alter archaeological features, remove archaeological materials, and mix artifacts. The 13 NRHP-eligible archaeological sites identified within Alternative 1 would be avoided or fully mitigated in compliance with Section 106 of the NHPA, thereby resulting in no adverse effects. Also, these same resources would not be impacted by past, present, and reasonably foreseeable future projects as none of these projects would occur at the Alternative 1 site (see Figure 4.5-1). Past, present, and reasonably foreseeable future projects, however, could potentially affect other archaeological resources on the Installation that have not been identified for this cumulative analysis. In compliance with Section 106 of the NHPA, all undertakings at Fort Benning are subject to review by the CRM and must follow the procedures outlined in the ICRMP with the goal of avoiding and minimizing adverse effects. Potential cumulative impacts on archaeological resources, therefore, would be **minor and adverse**.

Alternative 1 could affect two NRHP-eligible and two unassessed historic cemeteries during construction and operation. Past, present, and reasonably foreseeable future projects are not likely to affect these same cemeteries as these projects do not occur in the vicinity; however, impacts to other cemeteries in the ROI could occur during construction. Significant cumulative impacts would be avoided through implementation of appropriate buffers, signage, and long-term preservation. With compliance to Section 106 and adherence to the ICRMP, resulting potential cumulative impacts from Alternative 1 on cemeteries would be **negligible**.

The potential for inadvertent cultural discoveries while conducting ground-disturbing activities (i.e., during construction, operation, and maintenance) on Alternative 1 and past, present, and reasonably foreseeable future projects introduces the possibility of cumulative adverse impacts. Alternative 1 and other actions would adhere to the inadvertent discovery process specified in the ICRMP, minimizing the potential for significant adverse impacts on previously unknown cultural resources. Therefore, potential cumulative impacts on cultural resources inadvertently discovered would be **minor and adverse**.

#### 4.6.3.8 Socioeconomics

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

Construction of reasonably foreseeable future projects would result in short-term adverse impacts to surrounding businesses and communities from a temporary increase in dust, noise, and traffic congestion. While these interruptions could interfere with business operations and affect patrons, they would be localized, periodic, and short-term. Construction would also benefit the local economy, employment, income, housing, and taxes and revenue due to project-related spending, job generation, and construction workforces generating sales and using taxes at local and State levels.

In the long term, there would be a collective but limited increase in job creation from new employment opportunities. There would also be some fluctuations in personnel from the Infantry OSUT Extension, which would extend the residency of Soldiers from 14 weeks to 22 weeks. While there may be a slight temporary increase in personnel, overall there would be no net change in personnel at the Installation; therefore, no change in, and therefore **no cumulative impacts** on, demand for goods and services or housing availability in the long term is anticipated.

### **Cumulative Impacts**

Alternative 1, when considering these other projects, would have potential **minor, short-term, beneficial cumulative impacts** on socioeconomic conditions in the ROI. The Proposed Action and past, present, and reasonably foreseeable future projects requiring construction would create temporary jobs and earnings to local workers during the construction period. Cumulative benefits would result from expenditure of wages earned by the collective construction workforce.

In the long term, maintenance of Alternative 1 would provide new jobs (31 job-years in the first year and 27 job-years in each subsequent year); it is anticipated that new personnel would also be required to staff some new facilities under the ADPs. Alternative 1 would contribute to a potential **minor, long-term, beneficial cumulative impact** on job creation, earnings, and increased revenue in the ROI. There would be no adverse cumulative impacts on socioeconomic conditions under Alternative 1. Under Alternative 1, there would be no direct or indirect impacts on EJ communities; therefore, no cumulative impacts on EJ from this alternative would occur.

#### **4.6.3.9 Infrastructure**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

###### *Utilities*

Construction of past, present, and reasonably foreseeable future projects may cause brief interruptions to utility lines from adding, removing, or modifying existing systems. Construction activities would also require the use of electrical and water services, temporarily increasing demand and usage. As no substantial changes to population in the ROI are expected, there would be no long-term impacts on utility usage. In addition, the development proposed for the ROI is consistent with other uses, facilities, and development in the vicinity and is not anticipated to result in a durable or permanent degradation of utility services.

###### *Transportation*

Construction of past, present, and reasonably foreseeable future projects could have short-term adverse impacts on transportation if projects are in close proximity to one another. There would be an increase in construction vehicles on local roads that would add to existing traffic. Construction of the Fort Benning ADPs could require large workforces commuting to and from construction sites, potentially causing traffic delays and interference with public parking availability. In

addition, transportation improvement projects would exacerbate congestion in the short-term by requiring road closures and street realignments during widening, resurfacing, and repair efforts. Construction projects occurring in the same time and place would result in temporary adverse impacts on transportation and traffic in the ROI that would cease once construction has ended.

Conversely over the long-term, proposed transportation improvements would benefit traffic conditions by increasing capacity and alleviating congestion. Under the Hub and Housing District ADP, for example, a transit hub near the I-185 access control point is proposed to provide congestion relief at the Fort Benning gate and provide alternative access for those entering Fort Benning. Past, present, and future projects would also improve connectivity in the ROI. The Main Post District ADP would construct bicycle lanes and sidewalks along major streets, while the Harmony Church District ADP would update bicycle and pedestrian networks to connect to the greater Installation network and provide alternate modes of transportation.

### **Cumulative Impacts**

#### *Utilities*

Under Alternative 1, approximately 4 miles of electric lines would be buried underground, which would result in brief interruptions to electrical service. Past, present, and reasonably foreseeable future projects in the ROI may also require utility installations or modifications, but these projects would likely affect different electrical lines. Therefore, there would be **no cumulative impacts** on the existing utility system and network in the ROI. Fort Benning actions, including the Proposed Action and past, present, and future projects, would coordinate internal activities to ensure that temporary interruptions do not disrupt or significantly adversely affect the Installation mission. No long-term adverse cumulative impacts would be expected. In addition, there would be no cumulative impacts to the telecommunications network or overall utility demand.

#### *Transportation*

Alternative 1, when considering past, present, and reasonably foreseeable future projects, would result in potential **negligible to minor, short-term adverse cumulative impacts** on traffic and transportation in the ROI. Construction-related vehicle use would generate an increase in traffic, while temporary road closures and detours would result in increased congestion. Given the location of Alternative 1 and other past, present, and reasonably foreseeable future projects, it is unlikely

for the same roadways to be significantly affected; however, localized congestion could lead to deterioration in overall traffic conditions in the ROI. These impacts would be temporary and cease once construction has been completed. Further, roadways within and near the Alternative 1 boundary have over 90 percent capacity available.

In the long-term, Alternative 1 and past, present, and reasonably foreseeable future projects would result in potential **minor, beneficial cumulative impacts** from new and upgraded roads, improved access, and better connectivity in the ROI.

#### **4.6.3.10 Hazardous and Toxic Materials and Waste**

##### **Impacts of Past, Present, and Reasonably Foreseeable Future Projects**

The primary adverse impacts of past, present, and reasonably foreseeable future projects on hazardous materials and waste include potential discharge, spills, and contamination during construction efforts, as well as encounters with unexpected hazardous materials. Any construction activities requiring ground disturbance could expose previously unknown sources of hazardous materials. Solid waste generation would also increase temporarily during construction activities. To minimize adverse impacts, it is expected that solid waste would be recycled in part, and that hazardous waste and other solid waste would be disposed of properly and in adherence to applicable laws and regulations. Proper permitting and compliance would be in place to prevent exposure and the spread of any identified contamination; thus, potential short- and long-term adverse impacts would be minor.

In the long term, any Federal actions that use or generate hazardous materials or waste would be regulated by USEPA and/or the State, and adhere to applicable requirements of RCRA, OSHA, CERCLA, USDOT, and other laws. Past, present, and reasonably foreseeable future actions at Fort Benning would adhere to these requirements in addition to Installation guidelines (e.g., the Installation HWMP).

##### **Cumulative Impacts**

Under Alternative 1, construction of tank trails, upgrade of roads, and development of water crossings and support facilities would involve use of vehicles and heavy equipment that would require storage and use of fuels, used oil, petroleum products, and other potential contaminants in areas where these materials are not currently being used. Construction activities would temporarily



generate moderate amounts of solid waste. These incremental effects under Alternative 1 when taken into consideration with effects of past, present, and reasonably foreseeable future projects would result in potential **minor, short-term adverse cumulative impacts** on hazardous material use and waste generation in the ROI.

During operation and maintenance of Alternative 1 and other activities, spills could occur due to tactical vehicle and equipment failures. In addition, training and maintenance activities would require the use of vehicles and refueling exercises, thus involving storage and use of fuels, oils, petroleum products, and other hazardous substances. Taken into consideration with the potential long-term use and generation of hazardous materials and waste from operation of past, present, and reasonably foreseeable future projects, Alternative 1 would result in potential **minor, long-term adverse cumulative impacts** on hazardous materials and waste. Implementation of management plans and procedures under Alternative 1 would further minimize or avoid adverse cumulative impacts and risks to humans and the environment.

#### **4.6.4 Cumulative Impacts under Alternative 2**

This section evaluates the potential cumulative impacts resulting from the incremental effects of Alternative 2 when considering impacts from past, present, and reasonably foreseeable future projects. Impacts from past, present, and reasonably foreseeable future projects would be the same as discussed under Alternative 1 (see Section 4.6.3).

##### **4.6.4.1 Land Use (Recreation)**

Cumulative impacts to land use and recreation under Alternative 2 would be similar to cumulative impacts discussed under Alternative 1 (see Section 4.6.3.1). Alternative 2 would have potential **short- and long-term, minor adverse and long-term, minor to moderate, beneficial cumulative impacts** on recreation in the ROI. Construction of Alternative 2 and past, present, and reasonably foreseeable future projects would reduce the availability of recreational areas used for hunting. Compared to Alternatives 1 and 3, adverse cumulative impacts on recreation under Alternative 2 would be less due to the smaller size of Alternative 2 and the lower recreational use of training compartments associated with Alternative 2. In the long-term, Alternative 2 and past, present, and future actions would improve recreational accessibility on-Post due to the construction of 13 miles of new trails under Alternative 2 and trail improvement projects proposed by the ADPs.

#### 4.6.4.2 Air Quality

Cumulative impacts on air quality from construction and operation of Alternative 2 in conjunction with past, present, and reasonably foreseeable future activities would be similar to those impacts identified under Alternative 1 (see Section 4.6.3.2), resulting in potential **short- and long-term, minor adverse direct cumulative effects** from construction, operation, and maintenance. Compared to Alternative 3 (see Section 4.6.5.2), Alternative 2 is not located near off-Post sensitive receptors that would experience adverse air quality effects.

Individual past, present, and reasonably foreseeable future projects would not generate emissions at a level that would change the attainment status of the region or exceed *de minimis* thresholds while in compliance with applicable laws regulating air quality standards. Thus, Alternative 2's contribution of emissions would not threaten the attainment status of the region, have a noticeable GHG impact, or lead to a violation of any Federal, State, or local air regulation.

#### 4.6.4.3 Noise

Cumulative impacts on the noise environment from implementation of Alternative 2 would be similar to impacts under Alternative 1 (see Section 4.6.3.3), although impacts may be slightly *less* as Alternative 2 is smaller than Alternative 1. Although the Alternative 2 footprint is near Fort Benning's southern boundary, it is not within 1,500 feet of any noise sensitive receptors that would be impacted by construction noise. In conjunction with other on-Post actions nearby such as the planned Harmony Church District ADP projects, Alternative 2 would result in potential **negligible cumulative impacts** from temporary construction activities. The areas inside the Fort Benning boundary that would be impacted currently experience noise levels from other military activities, such as large-caliber fire and military explosives. While the proposed HOMMTA would generate additional noise, the cumulative noise levels would be consistent with current conditions.

#### 4.6.4.4 Soils and Topography

Under Alternative 2, cumulative impacts to soils and topography would be similar to cumulative impacts under Alternative 1 (see Section 4.6.3.4). Construction of Alternative 2 and past, present, and reasonably foreseeable future projects would result in potential **short-term, negligible to moderate adverse direct cumulative impacts** on soils from vegetation removal, soil compaction, and increased erosion and stormwater runoff during construction of Alternative 2 and past, present,

and reasonably foreseeable future projects. As less ground disturbance would be required under Alternative 2 than Alternative 1, cumulative impacts would likely occur to a *lesser* degree.

#### 4.6.4.5 Water Resources

Overall, Alternative 2 would result in similar potential **short- and long-term, adverse cumulative impacts** on water resources as Alternative 1 (see Section 4.6.3.5). These cumulative impacts would be maintained at **minor levels** with implementation of project-specific minimization measures and permit compliance, as well as EPMs proposed under Alternative 2. The incremental effects of Alternative 2 when considered with past, present, and reasonably foreseeable future projects would increase sedimentation and turbidity resulting from ground-disturbing activities. The conversion of permeable surface area into impervious surface would also cause additional nutrient and sediment runoff into streams during rain events. In addition, disturbance from water crossings would affect stream banks, streams, and wetlands. Due to the greater potential for soil erosion and sedimentation/water quality effects, including drainage of Alternative 2 into adjacent off-Post lands, the potential cumulative impacts under Alternative 2 would be *greater* than Alternatives 1 and 3.

#### 4.6.4.6 Biological Resources

Overall, Alternative 2 would result in potential **short- and long-term, adverse cumulative impacts** on biological resources like Alternative 1 (see Section 4.6.3.6), which would vary from **minor to significant levels**. Specifically, construction, operation, and maintenance of Alternative 2 would have similar potential to cumulatively impact vegetation communities in the ROI from vegetation removal; contribute to the disturbance of wildlife and the loss of suitable habitat for wildlife species, including the Federally listed RCW and gopher tortoise; and increase stormwater runoff and sedimentation resulting in disturbance to aquatic species and habitats. These impacts, however, would generally be *less* than those anticipated under Alternative 1 due to the smaller size of Alternative 2. Potentially significant cumulative impacts to biological resources under Alternative 2 include:

- Potential **significant adverse cumulative impacts** on UEAs. Like Alternative 1, construction, operation, and maintenance of Alternative 2 would affect the ecological characteristics and integrity of UEAs in the ROI, along with development of nearby past,

present, and reasonably foreseeable future projects. Alternative 2 would have a *greater* significant cumulative impact on UEAs due to the size and location of UEAs relative to the Alternative site.

Implementation of EPMs and RCMs, as well as mitigation measures proposed under Alternative 2 would minimize Alternative 2's contribution to adverse cumulative impacts on biological resources to the greatest extent practicable.

#### 4.6.4.7 Cultural Resources

Alternative 2 would have the potential to impact fewer archaeological and historic resources than Alternative 1 (see Section 4.6.3.7). As such, cumulative impacts would be slightly *less*. Alternative 2 and past, present, and reasonably foreseeable future projects would result in potential **long-term, minor adverse cumulative impacts** on archaeological resources in the ROI from construction disturbance or removal. The implementation of EPMs and RCMs would minimize Alternative 2's contribution to cumulative impacts on historic cemeteries, resulting in potential **short-term, negligible adverse cumulative impacts**. There would also be potential **short-term, minor adverse direct cumulative impacts** on inadvertent cultural discoveries during construction activities. Alternative 2 and other on-Post actions would adhere to the inadvertent discovery process specified in the ICRMP, as well as comply with NHPA Section 106 regulations, to minimize or avoid the potential for significant adverse impacts on historic properties.

#### 4.6.4.8 Socioeconomics

Like Alternative 1 (see Section 4.6.3.8), potential **short- and long-term, minor, beneficial cumulative impacts** would occur to socioeconomic conditions from created jobs and projected earnings under Alternative 2 and other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts on EJ under Alternative 2 would be *similar to* Alternative 1 as sensitive off-Post receptors, including residences with low-income populations, are located over 0.5 mile from the Alternative 2 boundary. Potential cumulative impacts from on-Post generated noise or emissions, therefore, would be **negligible** on EJ communities.

#### 4.6.4.9 Infrastructure

##### *Utilities*

Cumulative impacts on utilities under Alternative 2 would differ from impacts under Alternative 1 (see Section 4.6.3.9) as there would be no changes to the electrical system and the communications tower would remain in-place; thus, there would be **no cumulative impacts** on the existing utility system and network in the ROI.

##### *Transportation*

Construction of Alternative 2 and past, present, and reasonably foreseeable future projects would result in *similar* potential **short-term, negligible to minor adverse cumulative impacts** as Alternative 1. Given the proximity of Alternative 2 to other on-Post actions, it is unlikely that the same roads would be closed or affected. However, localized detours and closures could contribute toward a general deterioration in traffic conditions on the Installation and potentially off-Post. These impacts would be temporary, however, and cease once construction has been completed. In the long term, the transportation network in the ROI would experience potential **minor, beneficial cumulative impacts** from the addition of improved roads and a trail network under Alternative 2, as well as other transportation improvements from past, present, and reasonably foreseeable future projects.

#### 4.6.4.10 Hazardous and Toxic Materials and Waste

As Alternative 2 drains to nearby off-Post lands, the potential for cumulative impacts from accidental release of hazardous waste and materials would be *greater* than Alternative 1 (see Section 4.6.3.10). The Harmony Church District ADP projects and the Artillery Firing Points Expansion project are within 2 miles of Alternative 2 and could potentially interact with the Proposed Action. Given the distance between reasonably foreseeable future projects and Alternative 2, the resulting potential cumulative effect on hazardous waste and materials would be **minor, adverse**, and minimized to the extent practicable through compliance with EPMs, RCMs, and Installation management plans implemented in association with the Proposed Action.

### 4.6.5 Cumulative Impacts under Alternative 3

This section evaluates the potential cumulative impacts resulting from the incremental effects of Alternative 3 when considering impacts from past, present, and reasonably foreseeable future

projects. Impacts from past, present, and reasonably foreseeable future projects would be the same as discussed under Alternative 1.

#### 4.6.5.1 Land Use (Recreation)

Overall, Alternative 3 would result in potential **minor, short-term adverse cumulative impacts** on recreation, *similar to* Alternatives 1 and 2 (see Sections 4.6.3.1 and 4.6.4.1). Construction of Alternative 3 and past, present, and reasonably foreseeable future projects would reduce the availability of recreational areas used for hunting. Cumulative impacts from closures of and reduced access to hunting areas would be temporary, however, and only last for the duration of construction and maintenance activities. While fewer training compartments would be impacted under Alternative 3, the area currently experiences more recreational use than both Alternatives 1 and 2; therefore, potential cumulative impacts on recreation under Alternative 3 would be slightly *greater* in the short-term but would still be **minor and adverse**.

In the long-term, Alternative 3 and past, present, and future actions would improve overall recreational facilities in the ROI. The construction of 10 miles of new paved trails under Alternative 3 as well as trail improvements from reasonably foreseeable future projects would increase connectivity and accessibility to recreational and hunting areas in the ROI, resulting in potential **minor to moderate, long-term beneficial cumulative impacts**, *similar to* Alternatives 1 and 2.

#### 4.6.5.2 Air Quality

Cumulative impacts on air quality from implementation of Alternative 3 would be *greater* than Alternatives 1 and 2 (see Sections 4.6.3.2 and 4.6.4.2). Alternative 3 would result in potential **minor to moderate, short- and long-term adverse cumulative impacts** on air quality. As Alternative 3 is smaller than Alternatives 1 or 2, it would result in more concentrated areas of emissions. In addition, given its proximity to 12 off-Post sensitive receptors, Alternative 3 would have a *greater* potential for fugitive dust emissions to travel off-Post and affect these areas when taken into consideration with the nearby Artillery Firing Points Expansion project. Cumulative air quality impacts, however, are not anticipated to exceed the significance threshold nor threaten the attainment status of the region.

#### 4.6.5.3 Noise

Cumulative impacts on noise from implementation of Alternative 3 would be *greater* than Alternatives 1 and 2 (see Sections 4.6.3.33 and 4.6.4.3). Alternative 3 would result in potential **minor to moderate, short- and long-term adverse cumulative impacts** on noise due to the proximity of 12 off-Post sensitive receptors near the Alternative 3 site. While Alternative 3 in conjunction with the nearby Artillery Firing Points Expansion project would produce construction and training noise that may travel off-Post and be experienced by sensitive noise receptors, any resulting cumulative impacts would not exceed **moderate adverse** levels. Artillery firing points and heavy maneuver training produce different types of noise that are not additive in nature.

#### 4.6.5.4 Soils and Topography

Cumulative impacts on soils and topography under Alternative 3 would be similar to those discussed under Alternatives 1 and 2 (see Sections 4.6.3.4 and 4.6.4.4), as Alternative 3 would contribute similar incremental effects. Since Alternative 3 is smaller in size than Alternatives 1 or 2, cumulative impacts would likely occur to a *lesser* degree due to less direct disturbance. Alternative 3 would result in potential **short- and long-term, negligible to moderate adverse cumulative impacts** on soils from soil disturbance and compaction, resulting in increased erosion and sedimentation.

#### 4.6.5.5 Water Resources

Overall, Alternative 3 would result in *similar* potential **short- and long-term, adverse cumulative effects** on water resources as Alternatives 1 and 2 (see Sections 4.6.3.5 and 4.6.4.5), all of which would be maintained at **minor levels** with implementation of project-specific minimization measures and permit compliance, as well as EPMs proposed under Alternative 3. The incremental effects of Alternative 3 when considered with past, present, and reasonably foreseeable future projects would increase sedimentation and turbidity resulting from ground-disturbing activities. The conversion of permeable surface area into impervious surface would also cause additional nutrient and sediment runoff into streams during rain events. In addition, disturbance from water crossings would affect stream banks, streams, and wetlands. Due to the greater potential for soil erosion and sedimentation/water quality effects to the impaired Little Pine Knot Creek from direct drainage of Alternative 3 and nearby past, present, and reasonably foreseeable future projects, the



potential cumulative impact on water resources under Alternative 3 would be *greater* than Alternatives 1 or 2.

#### 4.6.5.6 Biological Resources

Alternative 3 would result in potential short- and long-term, adverse cumulative impacts on biological resources *similar to* Alternatives 1 and 2 (see Sections 4.6.3.6 and 4.6.4.6), which would vary from **minor to significant levels**. Specifically, construction, operation, and maintenance of Alternative 3 would have similar potential to cumulatively impact vegetation communities in the ROI from vegetation removal; contribute to the disturbance of wildlife and the loss of suitable habitat for wildlife species, including the RCW and gopher tortoise; and increase stormwater runoff and sedimentation resulting in disturbance to aquatic species and habitats. These impacts, however, would generally be *less* than those anticipated under Alternatives 1 and 2, as Alternative 3 is the smallest site. Potentially significant cumulative impacts to biological resources under Alternative 3 include:

- Potential **significant adverse cumulative impacts** on UEAs. *Similar to* Alternatives 1 and 2, construction, operation, and maintenance of Alternative 3 would affect the ecological characteristics and integrity of UEAs in the ROI, especially the Pine Knot Creek Blackwater UEA. Development of nearby past, present, and reasonably foreseeable future projects could have additional adverse impacts on these same UEAs. Of the three Alternatives, Alternative 3 would have the *greatest* cumulative impact on UEAs due to the size and location of UEAs relative to the location of Alternative 3.

Implementation of project-specific RCMs and associated minimization measures, as well as EPMS and mitigation measures proposed under Alternative 3, would minimize Alternative 3's contribution to adverse cumulative impacts on biological resources to the greatest extent practicable.

#### 4.6.5.7 Cultural Resources

Cumulative impacts on cultural resources under Alternative 3 would be *similar to* impacts under Alternatives 1 and 2 (see Sections 4.6.3.7 and 4.6.4.7). The primary differences in cumulative impacts between Alternative 3 and Alternatives 1 and 2 include:

- Potential **long-term, minor adverse cumulative impacts** on archaeological sites in the ROI from direct construction disturbance, as Alternative 3 would have the potential to impact more archaeological sites than Alternatives 1 and 2.
- **No cumulative impacts** on cemeteries as none would be impacted by Alternative 3.

There would also be potential **short-term, minor adverse cumulative impacts** on inadvertent cultural discoveries during construction of Alternative 3, similar to Alternatives 1 and 2. Alternative 3 and other reasonably foreseeable future projects would adhere to the inadvertent discovery process specified in the ICRMP, as well as comply with NHPA Section 106 regulations to minimize or avoid the potential for adverse impacts on historic properties to the extent practicable.

#### 4.6.5.8 Socioeconomics

*Similar to* Alternatives 1 and 2, potential **short- and long-term, minor, beneficial cumulative impacts** would occur to socioeconomic conditions from created jobs and projected earnings under Alternative 3 and other past, present, and reasonably foreseeable future projects in the ROI (see Sections 4.6.3.8 and 4.6.4.8). Cumulative impacts on EJ under Alternative 3 would be *greater than* Alternatives 1 and 2:

- The 12 sensitive receptors near Alternative 3 are low-income populations that would likely experience elevated noise levels and increased fugitive dust emissions from the Proposed Action. While it is unknown whether future projects would disproportionately impact the same low-income populations as Alternative 3, project-specific NEPA analyses for all reasonably foreseeable future projects are expected to minimize or avoid EJ impacts to the extent practicable. Alternative 3 would result in potential **short-term, minor to moderate adverse cumulative impacts** on EJ communities.

#### 4.6.5.9 Infrastructure

##### *Utilities*

Cumulative impacts on utilities under Alternative 3 would be *greater than* cumulative impacts under Alternative 2 (see Section 4.6.4.9) and *similar to* cumulative impacts under Alternative 1 (see Section 4.6.3.9) as construction of Alternative 3 would require the burial of electrical

infrastructure; there would be no changes to the telecommunications network. Nearby past, present, and reasonably foreseeable future projects may also require utility installations or modifications, but these would likely occur on different electrical lines. Therefore, there would be **no cumulative impacts** on the existing utility system and network in the ROI.

### *Transportation*

*Similar to* Alternatives 1 and 2 (see Sections 4.6.3.9 and 4.6.4.9), Alternative 3 would result in potential **short-term, negligible to minor adverse cumulative impacts** on transportation from construction-related vehicle use, temporary road closures, and detours. These impacts would be temporary, however, and cease once construction has been completed. In the long term, the transportation network in the ROI would experience potential **minor, beneficial cumulative impacts** from the addition of improved roads and a trail network under Alternative 3, as well as other transportation improvement past, present, and reasonably foreseeable future projects.

#### **4.6.5.10 Hazardous and Toxic Materials and Waste**

Under Alternative 3, cumulative impacts to hazardous materials would generally be the *same as* cumulative impacts under Alternative 1 (see Section 4.6.3.10) and *less than* Alternative 2 (Section 4.6.4.10). Potential **short-term, minor adverse cumulative effects** would occur from increased hazardous materials use and hazardous and solid waste generation during construction of Alternative 3 and past, present, and reasonably foreseeable future projects. Potential **long-term, minor adverse cumulative impacts** would result from potential use of hazardous materials and generation of hazardous waste during operation and maintenance activities.

### **4.7 Summary of Cumulative Impacts**

Overall, the Action Alternatives and past, present, and reasonably foreseeable future projects would result in *similar* cumulative impacts, as all Action Alternatives would contribute similar incremental effects. Potential **minor to moderate cumulative impacts** would occur primarily from any overlapping construction activities. Since Alternative 3 is smaller than Alternatives 1 and 2, there would be slight differences in the magnitude of incremental impacts; cumulative impacts under Alternative 3 are likely to be slightly *less* than the other two Alternatives, in general. In addition, Alternatives 2 and 3 occur near the Installation boundary, with Alternative 3 located

proximal to sensitive receptors, likely increasing its cumulative impact off-Post to EJ communities in the form of dust and noise emissions.

**Potentially significant adverse cumulative impacts** on biological resources, specifically UEAs, would occur under all Action Alternatives. For all Action Alternatives, adverse cumulative impacts would be minimized or avoided to the extent practicable with adherence to applicable Federal, State, and local requirements and Installation-specific plans. The EPMs and RCMs incorporated into the Proposed Action under each of the Action Alternatives would serve to minimize the project-specific contribution to adverse cumulative effects.

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## 5.0 Conclusions and Other Related Disclosures

In accordance with Section 102 of NEPA (42 USC § 4332(C)(i, ii, iv, and v)), this section discusses: the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity of the Proposed Action; the irreversible and irretrievable commitments of resources associated with implementation of the Proposed Action; and the potential significant and non-significant impacts of the Proposed Action.

Potential impacts are summarized and compared across the Alternatives in Table 5.5-1 to provide a “clear basis of choice” for the decision-maker. Potential significant adverse impacts on biological resources (i.e., specifically on UEAs) would occur under any of the Action Alternatives, although these potential impacts could be mitigated to less-than-significant levels; such mitigation could compromise training objectives. Identified mitigation measures, including those to further reduce less-than-significant adverse impacts, are summarized in Table 5.5-2.

### 5.1 Relationship Between Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

This analysis focuses on the “trade off” between environmental impacts and Proposed Action outcomes. The Proposed Action would serve to train Soldiers more effectively to required Army standards at Fort Benning. In turn, this would help ensure, or “maintain and enhance,” our national security, including winning our nation’s wars, allowing for the continued success, prosperity, and long-term productivity of the US.

To achieve this outcome, environmental resources would be used and impacted at Fort Benning during the life of the Proposed Action. Up to 3,200 acres of generally forest vegetation would be converted to disturbed understory and herbaceous vegetation that would be regularly subjected to further disturbance through maneuver training, and up to 5.9 acres of wetlands and 3,200 LF of streams would be directly filled or converted to create suitable water crossings for vehicles. Important cultural resources sites could be displaced, habitat for Federal-listed species would be removed, incidental take of up to 11 RCW clusters (Federal-listed species) could occur, and relocation of up to approximately 328 gopher tortoises (Federal candidate species) could occur.

During construction, operation, and maintenance, soil disturbance and erosion, downslope sedimentation and consequent impacts to water quality, temporary traffic impacts, reductions to

some recreational land use, increases in the local noise environment, increases in air quality emissions, and ongoing disturbances to wildlife could occur. Alternative 3 could result in adverse impacts to EJ communities.

Conversely, the Proposed Action would create up to 276 short-term job-years (with estimated direct earnings over \$17.7 million) and 27 long-term job-years (with \$2.1 million per year for maintenance), as well as result in increased spending in the local area to buy materials and support construction and maintenance workers. The Proposed Action would also produce other benefits as shown in Table 5.5-1. Adverse impacts, with the exception of impacts to onsite UEAs, would all remain at negligible, minor, or moderate levels, with implementation of the EPMs and RCMs incorporated into the Proposed Action as set forth in Section 2.1.1.

Construction is expected to begin in 2025 and extend over a 2- to 3-year period; as such, construction-related effects generally would be temporary, but vegetation removal and infrastructure construction would have long-term effects. Training would occur on the proposed HOMMTA for at least the next approximately 40 years (see Section 2.1.2), and would continue to produce environmental impacts that would be maintained at non-significant levels through implementation of EPMs, RCMs, mitigation measures, and current Installation resource management plans.

After construction is completed, the Proposed Action would not significantly affect off-Post areas; the only potential off-Post impacts would be from noise (Alternative 3 only) and air quality (Alternatives 2 and 3; fugitive dust emissions), including resultant impacts to off-Post EJ communities (Alternative 3 only).

Due to the nature of the Proposed Action, following completion of HOMMTA use, the lasting effects of the Proposed Action on the environment would be minimal. Improved roads, bridges, and utilities would be expected to be maintained. The maneuver-related soil damage to the site, however, would not be expected to prohibit natural re-establishment of vegetation; the site would be expected to return to native climax plant communities similar to those currently on the Installation, unless the site was re-purposed for another use. Therefore, long-term productivity of the environment itself would not be significantly compromised by the Proposed Action.



## **5.2 Irreversible and Irretrievable Commitment of Resources**

Irreversible and irretrievable commitments of resources refer to the Proposed Action's permanent use of, or impacts to, resources. Construction, road improvements, stream crossing installation, vegetation removal, and use and maintenance of a new HOMMTA would consume electricity, hydrocarbon fuels, and water. Construction, erosion control measures, and road improvements would use construction materials, such as concrete, quarried stone, and asphalt. Construction and road materials would be recycled to the extent practicable; however, some irreversible resource loss would result. The hydrocarbon-based energy required to conduct these activities or to procure the finished materials would also be lost.

Land and natural resources (e.g., flora and fauna) would be converted or displaced by the Army for construction and training activities. Vegetation and wildlife habitat could be re-established in the Action Alternatives once the HOMMTA is no longer used for training activities. These areas could be revegetated and restored, or the Army could allow natural succession to occur, once maneuver use of the land is no longer needed. For example, with proper management, mature pine trees suitable for RCWs would require 30 years to grow into foraging habitat and 60 years to mature into nesting habitat. Nevertheless, the existing land and natural resources would be irreversibly committed for military training use.

Finally, removal of NRHP-eligible cultural resources from their original locations through the NHPA Section 106 mitigation process could be considered an irreversible commitment. These resources, however, would be documented and preserved, and would further contribute to the body of human knowledge about our past.

## **5.3 Impacts Found Not to be Significant**

With the exception of UEAs, a subset of biological resources (under all Alternatives), all VECs would experience less-than-significant (i.e., negligible, minor, or moderate) adverse or beneficial impacts from construction, operation, and/or maintenance of either Alternatives 1, 2, or 3. The No Action Alternative would also be expected to have no or less-than-significant, adverse impacts on all VECs except Socioeconomics, which would have minor beneficial impacts. Impacts anticipated under each Action Alternative and the No Action Alternative are summarized in Table 5.5-1.

#### **5.4 Significant and Unavoidable Adverse Impacts**

Implementation of the Proposed Action would result in potential significant adverse impacts to UEAs, a subset of biological resources, although the degree of impact would differ between the Alternatives, as shown in Table 5.5-1 and discussed in Section 3.7.2. These significant adverse impacts could be avoided under Alternative 1 or 2 if identified mitigation measures are implemented, but would be unavoidable under Alternative 3.

#### **5.5 Mitigation Identified**

The Proposed Action includes the EPMs and RCMs set forth in Section 2.1.1 of the EIS. These measures are incorporated into the Proposed Action to reduce environmental effects through “mitigation by design.” These measures are *not* considered mitigation measures in this EIS as they are proactive measures that would reduce effects by incorporation under any Action Alternative.

For VECs that could still be adversely impacted even with implementation of the EPMs and RCMs, the Army identified additional mitigation measures that could be implemented to further reduce these impacts, where feasible.

Mitigation was identified in accordance with the CEQ NEPA Regulation (40 CFR 1508.20) and the Army NEPA Regulation to either: (1) Avoid the impact altogether by not taking a certain action or parts of an action; (2) Minimize the impacts by limiting the degree or magnitude of the action and its implementation; (3) Rectify the impact by repairing, rehabilitating, or restoring the affected environment; (4) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and/or (5) Compensate for the impact by replacing or providing substitute resources or environments.

Table 5.5-2 summarizes identified mitigation measures by Action Alternative. These are specific measures that would be implemented in addition to the EPMs and RCMs identified in Section 2.1.1. The specific mitigation measures that would be implemented will be identified, as appropriate, in the ROD. A Draft Mitigation and Monitoring Plan is included in Appendix J.

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation)</b>	Long-term, <u>minor adverse</u> impacts on recreation from continued training at the GHMTA.	Direct: Long-term, <u>moderate adverse</u> impacts on recreational use from reduced availability of up to 14 training compartments (13,277 acres) during construction, operation, and maintenance.	<i>Direct: Long-term, <u>minor adverse</u> impacts on recreational use from reduced availability of up to three training compartments (4,870 acres) during construction, operation, and maintenance.</i>	Direct: Long-term, minor adverse impacts on recreational use from reduced availability of up to three training compartments (3,726 acres), which currently experience the highest recreational use, during construction and training.
		Direct: Long-term, <u>negligible adverse</u> effect on hunting quality from changes in species composition in training compartments.		
		Direct: Long-term, <u>negligible to minor</u> adverse impact on hunting suitability, including fishing, from habitat conversion.		
		Direct: Long-term, <u>negligible beneficial</u> impact on recreational site access from new infrastructure and trails.	<b>Direct: Long-term, <u>minor beneficial</u> impact on recreational site access from construction of 13 miles of new infrastructure and trails.</b>	Direct: Long-term, <u>minor beneficial</u> impact on recreational site access from construction of <u>10 miles</u> of new infrastructure and trails.
		Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>14 training compartments</u> .	Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>3 training compartments</u> .	Indirect: Long-term, <u>minor adverse</u> impacts on recreation outside the proposed HOMMTA from increased hunting stress due to reduced access to <u>3 training compartments</u> .

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
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Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation) (cont.)</b>	(see above)	<b>Indirect: Long-term, <u>minor adverse impacts on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.</u></b>	Indirect: Long-term, <u>minor adverse impacts on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.</u>	<i>Indirect: Long-term, <u>minor adverse impacts on hunting suitability outside the proposed HOMMTA from construction, operation, and maintenance disturbance.</u></i>
<b>Air Quality</b>	Long-term, <u>negligible to minor adverse impacts on air quality from existing conditions in the Action Alternatives and the GHMTA.</u>	Direct: Short-term, <u>minor adverse impacts on emissions from use of construction equipment and vehicles.</u>	<i>Direct: Short-term, <u>minor adverse impacts on emissions from use of construction equipment and vehicles.</u></i>	Direct: Short-term, <u>moderate adverse impacts on emissions from use of construction equipment and vehicles and the proximity of down-wind sensitive receptors.</u>
		Direct: Long-term, <u>minor adverse impacts on emissions from heavy off-road maneuver training on 3,200 acres of maneuver land and 25 miles of unpaved roads.</u>	<i>Direct: Long-term, <u>minor adverse impacts on emissions from heavy off-road maneuver training on 2,700 acres of open maneuver land and 21 miles of unpaved roads.</u></i>	Direct: Long-term, <u>moderate adverse impacts on emissions from heavy off-road maneuver training on 1,500 acres of open maneuver land and 10 miles of unpaved roads, and the proximity of down-wind sensitive receptors.</u>
		<i>Direct: Long-term, <u>minor adverse impacts on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.</u></i>	Direct: Long-term, <u>minor adverse impacts on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.</u>	<b>Direct: Long-term, <u>minor adverse impacts on emissions from use of maintenance equipment and vehicles, and reduced emissions from prescribed burns.</u></b>

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Air Quality (cont.)</b>	(see above)	Indirect: Short- and long-term, <u>minor adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action.	<b>Indirect: Short- and long-term, <u>minor adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action.</b>	Indirect: Short- and long-term, <u>moderate adverse</u> effects on air quality from emissions traveling offsite during construction, operation, and maintenance of the Proposed Action due to the proximity of down-wind, off-Post receptors.
<b>Noise</b>	Long-term, <u>minor to moderate adverse</u> impacts on noise in areas within 1,400 feet of the GHMTA from continued heavy maneuver training.	Direct: Short-term, <u>negligible adverse</u> impacts due to construction noise experienced on site from use of cranes, concrete trucks, diesel generators, and heavy construction vehicles.		Direct: Short-term, <u>minor adverse</u> impacts due to construction noise experienced by sensitive noise receptors within 1,400 feet of construction equipment and vehicles.
	Long-term, <u>negligible to minor adverse</u> impacts on noise at the Installation from current activities.	Direct: Long-term, <u>negligible adverse</u> impacts from intermittent noise generated by military vehicle use during training activities.		Direct: Long-term, <u>minor to moderate adverse</u> impacts on sensitive noise receptors within 1,400 feet of intermittent noise generated by military vehicle use during training.
		Direct: Long-term, <u>negligible adverse</u> impacts from intermittent noise generated by maintenance activities.		Direct: Long-term, <u>minor adverse</u> impacts on sensitive noise receptors within 1,400 feet from intermittent noise generated by maintenance activities.

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3	
<b>Noise (cont.)</b>	(see above)	Indirect: Long-term <u>reduction to minor adverse levels</u> of noise impacts within 1,400 feet of the GHMTA from reduced training activity.			
<b>Soils and Topography</b>	Long-term, <u>minor adverse</u> impacts on soils from continued disturbance and use of the GHMTA.	Direct: Short-term, <u>minor to moderate adverse</u> impacts on soils from construction disturbance of <u>1,056 acres of moderately erodible soils</u> and 1 acre of highly erodible soils.	<b>Direct: Short-term, <u>minor to moderate adverse impacts on soils from construction disturbance of 1,530 acres of moderately erodible soils and 63 acres of highly erodible soils.</u></b>	Direct: Short-term, <u>minor adverse</u> impacts on soils from construction disturbance of <u>215 acres of moderately erodible soils</u> and 1 acre of highly erodible soils.	
		<b>Direct: Short-term, <u>negligible to minor adverse impacts on soils from soil compaction during construction.</u></b>	Direct: Short-term, <u>negligible to minor adverse</u> impacts on soils from soil compaction during construction.	<i>Direct: Short-term, <u>negligible to minor adverse impacts on soils from soil compaction during construction.</u></i>	
		<i>Direct: Long-term, <u>minor to moderate adverse impacts on soils from disturbance and compaction during heavy maneuver training.</u></i>	Direct: Long-term, <u>moderate adverse</u> impacts on soils from disturbance and compaction during heavy maneuver training.	<b>Direct: Long-term, <u>moderate adverse impacts on soils from disturbance and compaction during heavy maneuver training.</u></b>	
		<i>Direct: Long-term, <u>negligible adverse impacts on erosion and runoff from new impervious surface.</u></i>	<b>Direct: Long-term, <u>negligible adverse impacts on erosion and runoff from new impervious surface.</u></b>	Direct: Long-term, <u>negligible adverse</u> impacts on erosion and runoff from new impervious surface.	
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts on soils in the GHMTA from a reduced training load.			

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
Orange = Moderate adverse impact	<i>Italicized impacts</i> = lower impact among the Alternatives with same impact determination

VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Soils and Topography (cont.)</b>	(see above)	<i>Indirect: Short- and long-term, <u>minor adverse impacts on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.</u></i>	Indirect: Short- and long-term, <u>minor adverse impacts on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.</u>	<b>Indirect: Short- and long-term, <u>minor adverse impacts on soils from construction, operation, and maintenance activities that could result in increased air and water quality effects outside the proposed HOMMTA.</u></b>
<b>Water Resources</b>	Long-term, <u>minor adverse impacts on water resources in the GHMTA from continued off-road heavy maneuver training.</u>	<b>Direct: Short-term, <u>minor adverse impacts on 3.4 acres of wetlands, 1,500 LF of streams, and 2.1 acres of regulated stream buffer during construction.</u></b>	Direct: Short-term, <u>minor adverse impacts on 4.1 acres of wetlands, 1,600 LF of streams, and 5 acres of regulated stream buffer during construction.</u>	<i>Direct: Short-term, <u>minor adverse impacts on 12.5 acres of wetlands, 1,350 LF of streams, and 3.3 acres of regulated stream buffer during construction.</u></i>
		<b>Direct: Long-term, <u>minor adverse impacts on 5.9 acres of wetlands, 3,200 LF of streams, and 4.2 acres of regulated stream buffer from construction.</u></b>	Direct: Long-term, <u>minor adverse impacts on 2.0 acres of wetlands, 1,600 LF of streams, and 2.6 acres of regulated stream buffer from construction.</u>	<i>Direct: Long-term, <u>minor adverse impacts on 6.3 acres of wetlands, 1,350 LF of streams, and 1.7 acres of regulated stream buffer from construction.</u></i>
		<i>Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u></i>	Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u>	<b>Direct: Short- and long-term, <u>minor adverse impacts on water quality from increased runoff, sedimentation, and accidental release during construction, operation, and maintenance.</u></b>

**Table 5.5-1: Comparative Analysis of Impacts Between the Alternatives**

**Key:**

Green = Beneficial impact	Red = Significant adverse impact
Yellow = Negligible to minor adverse impact	<b>Bolded impacts</b> = greater impact among the Alternatives with same impact determination
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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Water Resources (cont.)</b>	Long-term, <u>negligible adverse</u> impacts on water resources from continuation of current activities in the Action Alternative locations.	Direct: Short-term, <u>minor adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.	<i>Direct: Short-term, <u>negligible adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.</i>	<b>Direct: Short-term, <u>minor adverse</u> impacts on an impaired stream from increased runoff and sedimentation during construction.</b>
		Direct: Short- and long-term, <u>negligible adverse</u> impacts on floodplains from vegetation removal and training in <u>44 acres of 100-year floodplains</u> .	<i>Direct: Short- and long-term, <u>negligible adverse</u> impacts on floodplains from vegetation removal and training in <u>17 acres of 100-year floodplains</u>.</i>	No impacts on floodplains.
		Indirect: Short- and long-term, <u>negligible adverse</u> impacts on downstream water resources from sedimentation during construction, operation, and maintenance activities.		
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts on water resources at the GHMTA from a reduced training load.		
<b>Biological Resources</b>	Long-term, <u>minor adverse</u> impacts on existing vegetation, non-special status fish and wildlife, and bald eagles from continued operation at the GHMTA.	<b>Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~3,200 acres of vegetation</u>.</b>	Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~2,700 acres of vegetation</u> .	<i>Direct: Short- and long-term, <u>moderate adverse</u> impacts on vegetation communities from conversion of <u>~1,500 acres of vegetation</u>.</i>
		<i>Direct: Long-term, <u>significant adverse</u> impact on UEAs from direct disturbance and permanent degradation of approximately <u>101 acres</u>.</i>	Direct: Long-term, <u>significant adverse</u> impact on UEAs from direct disturbance and permanent degradation of approximately <u>184 acres</u> .	<b>Direct: Long-term, <u>significant adverse</u> impact on UEAs from direct disturbance and permanent degradation of approximately <u>438 acres</u>.</b>



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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	(see above)	<b>Direct: Short- and long-term, <u>minor adverse impacts on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.</u></b>	Direct: Short- and long-term, <u>minor adverse impacts</u> on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.	<i>Direct: Short- and long-term, <u>minor adverse impacts on wildlife from land disturbance, displacement, and potential loss of life during construction, operation, and maintenance.</u></i>
		<i>Direct: Long-term, <u>moderate adverse impact on wildlife from change in species composition following construction.</u></i>	Direct: Long-term, <u>moderate adverse impact</u> on wildlife from change in species composition following construction.	<b>Direct: Long-term, <u>moderate adverse impact on wildlife from change in species composition following construction.</u></b>
		<b>Direct: Short- and long-term, <u>minor adverse impact on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.</u></b>	<i>Direct: Short- and long-term, <u>minor adverse impact on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.</u></i>	Direct: Short- and long-term, <u>minor adverse impact</u> on fish and aquatic organisms due to construction disturbance resulting in water quality degradation.
		Direct: Long-term, <u>moderate adverse impacts</u> on Federal-listed and candidate species from take of <u>11 active RCW clusters and disturbance of less than 328 active gopher tortoise burrows.</u>	<i>Direct: Long-term, <u>moderate adverse impacts on Federal-listed and Candidate species from take of 2 RCW clusters and disturbance of 85 active gopher tortoise burrows.</u></i>	<b>Direct: Long-term, <u>moderate adverse impacts on Federal-listed and Candidate species from take of 12 RCW clusters and disturbance of 174 active gopher tortoise burrows.</u></b>

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	(see above)	<b>Direct: Short- and long-term, moderate adverse impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.</b>	Direct: Short- and long-term, <u>moderate adverse</u> impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.	<i>Direct: Short- and long-term, moderate adverse impacts on special status (non-Federal-listed) species from temporary construction displacement or mortality.</i>
		<b>Direct: Short- and long-term, minor adverse effects on migratory birds from construction disturbance.</b>	Direct: Short- and long-term, <u>minor adverse</u> effects on migratory birds from construction disturbance.	<i>Direct: Short- and long-term, minor adverse effects on migratory birds from construction disturbance.</i>
		Direct: Short- and long-term, <u>minor adverse</u> effects on bald eagles from construction disturbance.	<i>Direct: Short- and long-term, minor adverse effects on bald eagles from construction disturbance.</i>	No impacts on bald eagles.
		<b>Indirect: Short- and long-term, negligible to minor adverse effect on offsite vegetation from construction, operation, and maintenance disturbance.</b>	Indirect: Short- and long-term, <u>negligible to minor adverse</u> effect on offsite vegetation from construction, operation, and maintenance disturbance.	<i>Indirect: Short- and long-term, negligible to minor adverse effect on offsite vegetation from construction, operation, and maintenance disturbance.</i>
		<b>Indirect: Long-term, negligible adverse impact on vegetation from potential changes in the fire regime.</b>	Indirect: Long-term, <u>negligible adverse</u> impact on vegetation from potential changes in the fire regime.	<i>Indirect: Long-term, negligible adverse impact on vegetation from potential changes in the fire regime.</i>

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
Biological Resources (cont.)	(see above)	<b>Indirect: Long-term, <u>minor</u> adverse impacts on vegetation from spread of invasive species.</b>	Indirect: Long-term, <u>minor</u> adverse impacts on vegetation from spread of invasive species.	<i>Indirect: Long-term, <u>minor</u> adverse impacts on vegetation from spread of invasive species.</i>
		<b>Indirect: Short- and long-term, <u>negligible</u> adverse effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.</b>	Indirect: Short- and long-term, <u>negligible</u> adverse effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.	<i>Indirect: Short- and long-term, <u>negligible</u> adverse effects on UEAs offsite from soil erosion and sedimentation during construction and operation/maintenance activities.</i>
		<b>Indirect: Short- and long-term, <u>minor</u> adverse effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.</b>	Indirect: Short- and long-term, <u>minor</u> adverse effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.	<i>Indirect: Short- and long-term, <u>minor</u> adverse effects to offsite fish and wildlife from soil erosion and downstream sedimentation into offsite areas.</i>
Cultural Resources	No impacts.	Direct: Long-term, <u>minor</u> adverse impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.	<i>Direct: Long-term, <u>minor</u> adverse impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.</i>	<b>Direct: Long-term, <u>minor</u> adverse impacts on cultural resources knowledge repository from anticipated excavation (i.e., data recovery mitigation) of archaeological sites.</b>
		<b>Direct: Long-term, <u>negligible</u> adverse impacts on <u>four</u> cemeteries from noise during construction, operation, and maintenance activities.</b>	Direct: Long-term, <u>negligible</u> adverse impacts on <u>two</u> cemeteries from noise during construction, operation, and maintenance activities.	No impacts on cemeteries.

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Cultural Resources (cont.)</b>	(see above)	Direct: Long-term, <u>negligible</u> adverse impacts on potential existing populations of a plant important to Tribes.		
		Direct: Short- and long-term, <u>minor to moderate</u> adverse impacts on up to 1 PTRCI from nearby disturbance during construction, operation, and maintenance.		
		Direct: Long-term, <u>minor</u> adverse impacts on inadvertent cultural discoveries.		
<b>Socioeconomics</b>	Long-term, <u>minor beneficial</u> impacts from continued expenditures and jobs associated with the GHMTA.	<i>Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 245 direct job-years and projected combined direct earnings of over \$15.7 million during construction.</i>	<b>Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 276 direct job-years and project combined earnings of \$17.7 million during construction.</b>	Direct: Short-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 253 direct job-years and projected combined direct earnings of \$16.2 million during construction.
		Direct: Long-term, <u>minor beneficial</u> impact on job creation, earnings, and economic impact from creation of 31 job-years and \$2.4 million projected earnings during the first year of maintenance, and 27 job-years and \$2.1 million in earnings during subsequent years of maintenance.		
		<i>Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (211 job-years) and projected combined indirect earnings of over \$8.9 million during construction.</i>	<b>Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (238 job-years) and projected combined indirect earnings of \$10.1 million during construction.</b>	Indirect: Short-term, <u>minor beneficial</u> impact on the economy from indirect employment (219 job-years) and projected combined indirect earnings of over \$9.2 million during construction.
		Indirect: Long-term, <u>minor beneficial</u> impact on the economy from the creation of 21 job-years in the first year of maintenance and 17 job-years annually thereafter.		

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Socioeconomics (cont.)</b>	(see above)	No impacts on EJ.	Indirect: Short- and long-term, <u>negligible adverse</u> impacts on EJ from spread of airborne fugitive dust to low-income residences located over 0.5 mile from the Installation boundary during construction, operation, and maintenance.	Indirect: Short- and long-term, <u>minor to moderate adverse</u> impacts on EJ from increased noise levels and spread of airborne fugitive dust to 11 off-Post residences near the Installation boundary during construction, operation, and maintenance.
<b>Infrastructure</b>	Long-term, <u>negligible adverse</u> impacts on traffic and transportation near the GHMTA from continued heavy maneuver training activities.	Direct: Short-term, <u>minor adverse</u> impacts on utilities from electric service disruption during connection transfer.	No impacts on utilities.	Direct: Short-term, <u>minor adverse</u> impacts on utilities from electric service disruption during connection transfer.
		Direct: Long-term, <u>minor beneficial</u> impacts to electrical system integrity from burying utility lines.	No impacts on utilities.	Direct: Long-term, <u>minor beneficial</u> impacts to electrical system integrity from burying utility lines
		Direct: Short-term, <u>minor adverse</u> impacts on roadways from road closures and traffic disruption during construction.	<i>Direct: Short-term, <u>minor adverse</u> impacts on roadways from road closures and traffic disruption during construction in a low-trafficked ROI.</i>	Direct: Short-term, <u>minor adverse</u> impacts on roadways from road closures and traffic disruption during construction.
		<i>Direct: Long-term, <u>minor beneficial</u> impacts from 2 miles of improved roads and 15 new tank crossing locations.</i>	<b>Long-term, <u>minor beneficial</u> impacts from 9 miles of improved roads and 13 miles of new trails.</b>	Long-term, <u>minor beneficial</u> impacts from 8 miles of improved roads and 10 miles of new trails.

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Infrastructure (cont.)</b>	(see above)	Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.	<i>Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.</i>	Direct: Long-term, <u>minor adverse</u> impacts on light and heavy vehicle usage and traffic in the ROI during operation and maintenance.
		Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.	<i>Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.</i>	Direct and Indirect: Long-term, <u>minor adverse</u> impacts on traffic flow on the Installation.
		Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.	<i>Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.</i>	Indirect: Short- and long-term, <u>negligible adverse</u> impacts on roadways leading to the Installation from commuting workers during construction and maintenance.
<b>Hazardous and Toxic Materials and Waste</b>	Long-term, <u>minor adverse</u> impacts on HTMW use, potential release, and disposal at the GHMTA.	Direct: Short- and long-term, <u>minor adverse</u> impacts from use, storage, disposal, and transport of HTMW, including potential spills, during construction, operation, and maintenance activities.		
		Direct: Short- and long-term, <u>minor adverse</u> impacts from inadvertent discovery of existing contamination during construction, operation, and maintenance activities.		

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VEC	No Action Alternative	Alternative 1	Alternative 2	Alternative 3
<b>Hazardous and Toxic Materials and Waste (cont.)</b>	(see above)	Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction activities, operation, and maintenance.	<b>Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction, operation, and maintenance activities due to drainage to off-Post lands.</b>	Indirect: Short- and long-term, <u>minor adverse</u> impacts from potential down-gradient release of HTMW during construction, operation, and maintenance activities.
		Indirect: Long-term <u>reduction in existing minor adverse</u> impacts from reduced use of hazardous materials at the GHMTA.		

**Table 5.5-2: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Land Use (Recreation)</b>	<ul style="list-style-type: none"> <li>Re-delineate the boundaries of training compartments that are partially included within the proposed HOMMTA to align more closely with the boundary of the HOMMTA.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Air Quality</b>	None.	None.	None.	None.
<b>Noise</b>	None.	None.	None.	<ul style="list-style-type: none"> <li>Maintain a vegetated buffer along the eastern boundary of Alternative 3 such that there is a distance of at least 800 feet between the noise-sensitive receptors and the nearest likely construction, operation, and maintenance activities associated with the Proposed Action.</li> <li>Through the JLUS or ACUB programs, reduce further incompatible development within approximately 1,400 feet of the eastern Fort Benning boundary within the noise ROI.</li> </ul>



**Table 5.5-2: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Soils</b>	<ul style="list-style-type: none"> <li>Plan construction activities to occur in a manner that reduces the potential for erosion, such as by minimizing the amount of time that soil is exposed (i.e., through revegetation measures), minimizing disturbance of moderately or highly erodible soils, lightly wetting disturbed areas to reduce dust, and/or conducting vegetation removal and land disturbance activities during times of the year with generally lower amounts of precipitation to reduce the risk of erosion.</li> <li>Implement stormwater/water quality mitigation measures described in Section 3.6.3 to help maintain indirect effects to offsite areas at negligible to minor levels.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>Maintain surface water buffers from heavy maneuver training activities that exceed the 25- to 100-foot widths anticipated as part of the Proposed Action, depending on site-specific resources and conditions.</li> <li>Implement proactive, long-term erosion control measures in areas where sedimentation is most likely (in addition to the ITAM program).</li> <li>Plan “rest and rehabilitation” periods, when feasible, and utilize “smart” scheduling to minimize impacts from multiple, sequential training events.</li> <li>Avoid conducting off-road heavy maneuver training, except when necessary, during or immediately following inclement weather when potential sedimentation impacts are most likely.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 1 when feasible.</li> </ul>	<ul style="list-style-type: none"> <li>Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 2 when feasible.</li> </ul>	See “Applicable to All Action Alternatives” column.

**Table 5.5-2: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
Biological Resources	<ul style="list-style-type: none"> <li>• Re-vegetate disturbed soils with plant species on Fort Benning’s approved plant list, to the extent feasible, in order to reduce the adverse impacts of vegetation removal.</li> <li>• Where practical, use erosion control materials that are biodegradable and/or mobile to reduce their longevity in the environment. Remove erosion control measures following construction when not needed for long-term soil stabilization.</li> <li>• Implement the mitigation measures identified for Soils and Topography in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on vegetation.</li> <li>• Implement the mitigation measures identified for Soils and Topography identified in Section 3.5.3 to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on aquatic habitats.</li> <li>• Implement the mitigation measures identified for Water Resources in Section 3.6.3 to minimize impacts to aquatic habitats and the species that inhabit these areas.</li> <li>• Avoid construction within 200 feet of clusters during RCW (Federal-listed endangered species) nesting season (April through July).</li> <li>• If gopher tortoises are located during construction or maintenance of the proposed HOMMTA, avoid them to the extent feasible; if avoidance is not feasible, then relocate them in accordance with the Management Guidelines for the Gopher Tortoise on Army Installations and Fort Benning’s INRMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 5.9 acres of the Upatoi Bluffs UEA and 94.9 acres of the Depression Ponds UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. <u>This mitigation measure would reduce potential significant impacts on UEAs to negligible or minor levels.</u></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 184.0 acres of the Prosperity Church Oak-Hickory Forest UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. <u>This mitigation measure would reduce potential significant impacts on UEAs to negligible or minor levels.</u></li> </ul>	<ul style="list-style-type: none"> <li>• Avoid and mark as “off-limits” approximately 0.6 acre of the Arkansas Oak Rock Hills UEA and 34.1 acres of Pine Knot Creek Blackwater UEA during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur. This mitigation measure would reduce potential significant impacts on these two UEAs to negligible or minor levels; potential avoidance of the Slopes of Northern Affinities UEA (652.8 acres) would likely not be possible, and the <u>UEA would still be significantly and adversely impacted</u> by the Proposed Action given the size and location of this UEA relative to the proposed off-road maneuver areas.</li> </ul>

**Table 5.5-2: Summary of Identified Mitigation Measures\***

VEC	Mitigation Measures			
	Applicable to All Action Alternatives	Alternative 1	Alternative 2	Alternative 3
<b>Biological Resources (cont.)</b>	<ul style="list-style-type: none"> <li>If State-listed wildlife or plant species are located during the construction or maintenance of the proposed HOMMTA, avoid or relocate these species to the extent feasible.</li> <li>Avoid construction within the nesting season of migratory birds (generally April to August, including spring and summer), if feasible.</li> </ul>	(see above)	(see above)	(see above)
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>Establish a 50-foot buffer from all vehicle, digging, or other disturbance around NRHP-eligible archaeological site footprints (including, as applicable, the PTRCI) in the field prior to HOMMTA construction by installing Seibert Stake reflectors, along with “Sensitive Area” signage, at 45-foot intervals. Existing vegetation would be retained within these buffers as barriers to vehicle traffic, and boulders would be emplaced at 6-foot intervals, where needed, to supplement vegetative barriers.</li> <li>Monitor NRHP-eligible archaeological sites and, as applicable, the PTRCI routinely throughout the HOMMTA’s lifecycle.</li> </ul>	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.	See “Applicable to All Action Alternatives” column.
<b>Socioeconomics</b>	None.	None.	None.	<ul style="list-style-type: none"> <li>Implement the mitigation measures identified for Noise to further reduce anticipated noise impacts to off-Post EJ communities adjacent to Alternative 3.</li> </ul>
<b>Infrastructure</b>	None.	None.	None.	None.
<b>Hazardous and Toxic Materials and Waste</b>	None.	None.	None.	None.

\* This table only includes mitigation measures that the Army may implement to further reduce identified adverse impacts; EPMs and RCMs included as part of the Proposed Action are discussed separately in Section 2.1.1 and Table 2.1-1.

## 5.6 Conclusions and Recommendations

Alternative 1 is the Army's Preferred Alternative because it would provide an optimal size and configuration sufficient to enable high-quality heavy off-road mounted maneuver training, best achieving the purpose of and need for the Proposed Action. Alternative 1's central location within the Installation would provide better training opportunities and reduce potential off-Post environmental impacts.

This FEIS reflects the Army's environmental impact analysis for the Proposed Action based on its extensive review of the best available data, ongoing public outreach and consideration of comments received on the DEIS, and consultation/coordination with Federal, State, and local agencies, and Tribes. Based on this analysis, and no sooner than 30 days following the publication of the NOA for this FEIS in the *Federal Register*, the Army will prepare a ROD that announces its decision concerning the Selected Alternative, be it an Action Alternative or the No Action Alternative. The ROD will also identify the Environmentally Preferred Alternative, identify the reasons for selecting the Selected Alternative, and identify the mitigation measures the Army will implement, as applicable, for the Selected Alternative.

## 6.0 References

- AECOM. (2018a). *Fort Benning HOMMTA Phase II Archaeological Evaluations of 36 Sites: Research Design*.
- AECOM. (2018b). *Fort Benning HOMMTA Phase II Archaeological Evaluations of Seven Cemeteries: Research Design*.
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- AECOM. (2020a, March 27). Aquatic Resource Delineation Review Request: Fort Benning Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) Project, Fort Benning, Georgia.
- AECOM. (2020b). *Fort Benning Heavy Off-Road Mounted Maneuver Training Area Final Phase II Archaeological Evaluations of 31 Sites: Volume I*.
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## **7.0 List of Preparers**

### **7.1 Fort Benning**

#### **John Brown, NEPA Program Manager, Fort Benning**

Scott Brosch, G3/DPTMS XO, Fort Benning

Rusty Bufford, IGI&S Program Manager

CPT Nicholas Cianciolo, Operations Officer

PJ Doughty, NEPA Real Estate Documentation, Fort Benning

Michael Ecks, Cultural Resources Monitor, Fort Benning

Tracy Ferring, NEPA Analyst, Fort Benning

Ron Hobgood, Cultural Resources Manager, Fort Benning

Britt Horton, NEPA Analyst, Fort Benning

COL William Lindner, Armor School Deputy Commandant

Tim Marston, Lead Wildlife Biologist – RCW, Fort Benning

Sherman Miller, Master Planner, Fort Benning

James Parker, Natural Resources Management Branch Chief, Fort Benning

George Steuber, Deputy Garrison Commander

Mark Thornton, Wildlife Biologist – T&E, Fort Benning

Kirk Ticknor, EMD Chief, Fort Benning

Linda Veenstra, Environmental Attorney, OSJA, Fort Benning

Brian Waldrep, Lead Forester, Fort Benning

Brent Widener, Planning and Support Branch Chief, Fort Benning

### **7.2 USACE Savannah District**

James Waldo PG, Project Manager

Sararina Keisler, Technical Manager

### 7.3 Consultants – AECOM

**Table 7.3-1: AECOM Contributors to HOMMTA EIS**

Name	Education	EIS Role	Years of Experience	Professional Disciplines/Background
Barta, Anneliesa	MBA, Finance, Fordham University, 1992	Land Use (Recreation); Socioeconomics	34	NEPA; Socioeconomics, Environmental Justice, and Land Use
Benton, Charles	BS, Biological Sciences/Environmental Science, State University of New York at Binghamton, 1996	Water Resources	24	NEPA (Biological Resources); Wetlands, T&E species
Boose, Brian W., CEP	BS, Biological Sciences/Ecology, University of California, Davis, 1990	Program Management; Senior Technical Advisor; Senior QA/QC	32	NEPA; experienced in all technical VECs analyses and in conducting cumulative effect analyses
Busam, Michael, AWB®	BS, Environmental Science and Policy – Wildlife, University of Maryland College Park, 2014	Project Manager	5	NEPA; biological resources
Cassedy, Daniel, RPA	PhD, Anthropology, State University of New York at Binghamton, 1992	Cultural Resources Manager	40	Cultural Resources
Dover, Robert, PG	BS, Geology, Beloit College, 1983; MS Geology, University of North Carolina – Chapel Hill, 1985	Soils and Topography; HTMW	34	Senior NEPA Project Manager, experienced in analysis of geology, soils, water resources, air resources, HTMW, and global climate change.
Jacobs, Alma, PE	BS, Civil Engineering, Southern Polytechnic State University, 2003	Water Resources	17	Level II Erosion and Sediment Control Designer; Experience in design of erosion control for large projects; Experience with local and Federal permitting related to land disturbance.
Johnson, Ron	MS, Biological Sciences, Illinois State University, 1983	Biological Resources QA/QC	33	NEPA; Biological Resources, Rare and Endangered Species

<b>Name</b>	<b>Education</b>	<b>EIS Role</b>	<b>Years of Experience</b>	<b>Professional Disciplines/Background</b>
Knatt, Christian D.	BS, Biological Sciences/Environmental Science, University of Georgia in Athens, 2010	Water Resources	4	NEPA (Biological Resources); Migratory Birds, T&E Species
Komendantov, Andrew	BS, Economics, George Mason University, 2012	Socioeconomic Impacts – Economic Multiplier Analysis	7	Economic Analysis
Liguori, Stephanie, CNRP	BS, Environmental Science, Delaware Valley University, 2010	Air Quality	7	NEPA, Air Quality
Minichino, Brian	BS, Chemistry, Virginia Polytechnic Institute and State University, 2008	Noise; Air Quality QA/QC	12	NEPA; noise, air quality, transportation/traffic, and waste management impact analysis
Neal, Larry	BA, Biology, Emory & Henry College, 1972; MS, Oceanography, Old Dominion University, 1976	Biological Resources	47	NEPA; environmental impact assessment, natural resources management
Norris, Brian	BS, Economics, Florida State University, 2013; MS, Geography, Florida State University, 2018	Creation of Maps and Figures; Spatial Data Analysis	5	GIS
Prakash, Jagadish, AICP	Masters in City and Regional Planning (MCRP), Rutgers University, 2002	Socioeconomics	17	NEPA; Socioeconomics, Environmental Justice, Land Use, Recreational Resources, Secondary and Cumulative Impacts
Robertson, Michael	BS, Crop and Soil Environmental Science, Virginia Polytechnic Institute and State University, 1999; MA, Environmental Studies, University of Newcastle-upon-Tyne, 2005	Water Resources	16	Environmental Planning and Impact Assessment

<b>Name</b>	<b>Education</b>	<b>EIS Role</b>	<b>Years of Experience</b>	<b>Professional Disciplines/Background</b>
Seibel, Scott K., RPA	BA, Archaeological Studies, University of Texas at Austin, 1996; MS, Archaeomaterials, University of Sheffield, 1997	Cultural Resources	22	NEPA, NHPA, Archaeology, Cultural Resources
Sherrod, Ted, PE, CPESC, CPSWQ, CPMSM	BS, MS, Biological & Agricultural Engineering, North Carolina State University, 1982, 2007	Water Resources QA/QC	38	Construction and Post-Construction Stormwater Management; Water Quality Monitoring and Assessment
Stone, Betsy, CHMM, STS	BS, Dual Major, Biology and Chemistry, State University College of New York at Cortland, 1979	Hazardous Materials QA/QC	40	NEPA; Environmental Reviews for HUD Compliance, Environmental Baseline Surveys to Support an Environmental Condition of Property
Strickling, Hayden, EI	MS, Civil Engineering, North Carolina State University, 2017	Stormwater Management Modeling and Analysis	3	Environmental Engineering
Warf, Jennifer	MS, Environmental Studies, Miami University, 2003; BA, Zoology, College of Charelston, 1999	Senior Technical Advisor; Senior QA/QC	19	NEPA; experienced in all VEC analyses and in conducting cumulative effect analyses
Wu, Charlene	BS, Environmental Science and Policy – Wildlife, University of Maryland College Park, 2011; MEM, Master of Environmental Management, Duke University, 2015	Cumulative Effects Analysis; Administrative Record	7	NEPA; biological resources; urban wildlife conservation

## 8.0 Distribution List

### I. ELECTED AND APPOINTED GOVERNMENT OFFICIALS

Mayor B. H. "Skip" Henderson III Office of the Mayor 100 East 10th Street, Sixth Floor Government Center Tower Columbus, GA 31901	Laura Bernstein Chattahoochee County Manager 215 McNaughton Street Cusseta, GA 31805	Mayor Eddie N. Lowe Municipal Building, 3rd Floor 601 12th Street Phenix City, AL 36867
Randall Dowling Harris County Manager  P.O. Box 365 Hamilton, GA 31811	Carol Ison Talbot County Manager  P.O. Box 155 Talbotton, GA 31827	Tony Kennedy Webster County Board of Commissioners Chair 6622 Cass Street Preston, GA 31824
Mac Moyer Stewart County Manager P.O. Box 157 Lumpkin, GA 31815	George Neal Jr. Marion County Commissioner 100 East Burkhalter Avenue Buena Vista, GA 31803	LeAnn Horne Russell County Administrator 1000 Broad Street Phenix City, AL 36867
Bill English Lee County Commission Chairman P.O. Box 666 Opelika, AL 36803	Mayor Gary Fuller City of Opelika 204 South 7th Street Opelika, AL 36803	Jerry "Pops" Barnes District 1 Councilor 3720 Hawaii Way Columbus, GA 31906
Glenn Davis District 2 Councilor P.O. Box 1505 Columbus, GA 31808	Bruce Huff District 3 Councilor 4304 Moline Avenue Columbus, GA 31907	Valerie Thompson District 4 Councilor 5862 Blueridge Drive Columbus, GA 31907
Charmaine Crabb District 5 Councilor 3237 Maricopa Drive Columbus, GA 31907	Gary Allen District 6 Councilor 8494 Liberty Hall Drive Midland, GA 31820	Evelyn "Mimi" Woodson District 7 Councilor 2931 Avondale Road Columbus, GA 31903
Walker Garrett District 8 Councilor 2904 College Drive Columbus, GA 31906	Judy Thomas District 9 At Large Councilor 6170 Cape Cod Court Columbus, GA 31904	John House District 10 At Large Councilor 7618 Eagle Drive Midland, GA 31820

Randy Price State Senator, District 13 11 South Union Street, Suite 733 Montgomery, AL 36104	Bruce Thompson State Senator, District 14 302-B Coverdell Legislative Office Building Atlanta, GA 30334	Ed Harbison State Senator, District 15 431 State Capitol Atlanta, GA 30334
Tom Whatley State Senator, District 27 11 South Union Street, Suite 734 Montgomery, AL 36130	Bill Beasley State Senator, District 28 11 South Union Street, Suite 737 Montgomery, AL 36130	Randy Robertson State Senator, District 29 305-A Coverdell Legislative Office Building Atlanta, GA 30334
Debbie Wood State Representative, District 38 11 South Union Street, Suite 527-C Montgomery, AL 36104	Joe Lovvorn State Representative, District 79 11 South Union Street, Suite 522-A Montgomery, AL 36130	Ed Oliver State Representative, District 81 11 South Union Street, Suite 410-B Montgomery, AL 36104
Pebblin Warren State Representative, District 82 11 South Union Street, Suite 517-B Montgomery, AL 36130	Jeremy Gray State Representative, District 83 11 South Union Street, Suite 530 Montgomery, AL 36104	Berry Forte State Representative, District 84 11 South Union Street, Suite 540-D Montgomery, AL 36130
Susan Holmes State Representative, District 129 P.O. Box 151 Monticello, GA 31064	David Knight State Representative, District 130 1003 East College Street Griffin, GA 30224	Ken Pullin State Representative, District 131 P.O. Box 295 Zebulon, GA 30295
Robert Trammell State Representative, District 132 128 North Main Street Luthersville, GA 30251	Vance Smith State Representative, District 133 P.O. Box 171 Pine Mountain, GA 31822	Senator Doug Jones Federal Court House 1 Church Street, Suite 500-B Montgomery, AL 36104
Sanford D. Bishop, Jr. U.S. House of Representatives, Georgia – 2nd District 18 Ninth Street, Suite 201 Columbus, GA 31901	Drew Ferguson U.S. House of Representatives, Georgia – 3rd District 1032 Longworth HOB Washington, DC 20515	Hank Johnson U.S. House of Representatives, Georgia – 4th District 2240 Rayburn HOB Washington, DC 20515
John Lewis U.S. House of Representatives, Georgia – 5th District 300 Cannon HOB Washington, DC 20515	Lucy McBath U.S. House of Representatives, Georgia – 6th District 1513 Longworth HOB Washington, DC 20515	Rob Woodall U.S. House of Representatives, Georgia – 7th District 1724 Longworth HOB Washington, DC 20515



Austin Scott U.S. House of Representatives, Georgia – 8th District 2417 Rayburn HOB Washington, DC 20515	Doug Collins U.S. House of Representatives, Georgia – 9th District 1504 Longworth HOB Washington, DC 20515	Jody Hice U.S. House of Representatives, Georgia – 10th District 409 Cannon HOB Washington, DC 20515
Barry Loudermilk U.S. House of Representatives, Georgia – 11th District 422 Cannon HOB Washington, DC 20515	Rick Allen U.S. House of Representatives, Georgia – 12th District 2400 Rayburn HOB Washington, DC 20515	David Scott U.S. House of Representatives, Georgia – 13th District 225 Cannon HOB Washington, DC 20515
Earl "Buddy" Carter U.S. House of Representatives, Georgia – 1st District 2432 Rayburn HOB Washington, DC 20515	Martha Roby U.S. House of Representatives, Alabama – 2nd District 504 Cannon HOB Washington, DC 20515	Mike Rogers U.S. House of Representatives, Alabama – 3rd District 2184 Rayburn HOB Washington, DC 20515
Senator Richard Shelby 304 Russell Senate Office Building Washington, DC 20510	Senator Kelly Loeffler 131 Russell Senate Office Building Washington, DC 20510	Senator David Perdue 455 Russell Senate Office Building Washington, DC 20510
Tom Graves U.S. House of Representatives, Georgia - 14th District 2078 Rayburn HOB Washington, D.C. 20515	Brian P. Kemp Office of the Governor 206 Washington Street, 111 State Capitol Atlanta, GA 30334	State Capitol 600 Dexter Avenue Montgomery, AL 36104

**II. LOCAL and REGIONAL ADMINISTRATORS, FEDERAL AGENCIES, or COMMISSIONS WITH REGULATORY INTEREST IN FORT BENNING.**

John Doresky, Supervisory Biologist U.S. Fish & Wildlife Service, West Georgia Sub Office P.O. Box 52560 Fort Benning, GA 31905	Will McDearman, Regional Red- cockaded Woodpecker Coordinator U.S. Fish & Wildlife Service, Mississippi Field Office 6578 Dogwood View Parkway, Suite A Jackson, MS 39213	Bob Martin, Vice Chair Georgia Soil and Water Conservation Commission, Region 5 4310 Lexington Road Athens, GA 30605
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Lee Anne Wofford, Deputy SHPO Alabama Historic Commission 468 South Perry Street Montgomery, AL 36130	Richard E. Dunn, Director GADNR-EPD 2 Martin Luther King Jr. Drive Suite 1456 East Tower Atlanta, GA 30334	James A. Capp, Branch Chief GADNR, Watershed Protection 2 Martin Luther King Jr. Drive Suite 1152 East Tower Atlanta, GA 30334
Jeff Cown, Director GADNR, State Parks & Historic Sites 2600 Hwy 155, SW Stockbridge, GA 30281	Dr. David Crass, Director GADNR, Historic Preservation 2610 GA Hwy 155, SW Stockbridge, GA 30281	Rusty Garrison, Director GADNR, Wildlife Resources 2067 U.S. Hwy 278 SE Social Circle, GA 30025
Karen Hays, Branch Chief GADNR, Air Protection 4244 International Parkway, Suite 120  Atlanta, GA 30354	Jane Hendricks, Program Manager GADNR, Hazardous Waste Mgmt. 2 Martin Luther King Jr. Drive SE, Suite 1154 Atlanta, GA 30334	Chuck Mueller, Branch Chief GADNR, Land Protection Branch 2 Martin Luther King Jr Drive, SE Suite 1054 East Floyd Tower Atlanta, GA 30334
Larry Gissentanna, DoD and Federal Facilities Project Manager U.S. EPA Region IV, NEPA Program Office Sam Nunn Atlanta Federal Center 61 Forsyth Street SW Atlanta, GA 30303	Mark Nuhfer U.S. EPA Region IV, Watershed Program Sam Nunn Atlanta Federal Center 61 Forsyth Street SW Atlanta, GA 30303	Jazmond Carter, District Conservationist USDA NRCS Buena Vista Service Center 111 Baker Street, Suite D Buena Vista, GA 31803
Michaela E. Noble, Director USDOI, Office of Environmental Policy & Compliance 1849 C Street NW (MS 2462) Washington, DC 20240	Ken Arney, Regional Forester USDA Forest Service, Southern Region 1720 Peachtree Road, NW Atlanta, GA 30309	Rick Jones, Planning Director Columbus Planning Department  420 10th Street Columbus, GA 31901
Natural Resources Conservation  Columbus/Muscogee County  100 10th Street, 6th Floor Columbus, GA 31901	Lance R. LeFleur, Director Alabama Department of Environmental Management P.O. Box 301463 Montgomery, AL 36130-1463	Christopher Blankenship, Commissioner Department of Conservation & Natural Resources  64 North Union Street Montgomery, AL 36130
Savannah District USACE ATTN: CESAS-RD 100 West Oglethorpe Ave Savannah, GA 31401-3604	Holly Ross, Project Manager USACE 1104 N. Westover Blvd, Suite 9 Albany, GA 31707	

**III. CITIZEN ADVISORY GROUPS and LOCAL INTEREST GROUPS OR PERSONS**

Jon McKee, President Chattahoochee Nature Center P.O. Box 769769 Roswell, GA 30076	Michele Dunham Georgia Forestry Association P.O. Box 1217 Forsyth, GA 31029-1217	Ted Terry, Chapter Director Sierra Club, Georgia Chapter 743 E. College Avenue, Suite B Decatur, GA 30030
Daymond Hughes, President The Wildlife Society, Georgia Chapter 425 Barlow Place, Suite 200 Bethesda, MD 20814	Jennifer Gilbert, President Georgia Women Flyfishers 828 Burton Ridge Drive Loganville, GA 30052	Audubon Society of Columbus 6000 Chrisbin Drive Columbus, GA 31909
Kevin McKinstry, Chair Georgia Wildlife Federation 11600 Hazelbrand Road Covington, GA 30014	Larry Lewis, President Georgia Bass Federation 3810 Birchwood Court Cumming, Ga. 30041	Deron Davis, State Director The Nature Conservancy in Georgia 100 Peachtree St NW, Suite 2250 Atlanta, GA 30303
Seth Cook, President  The Wildlife Society, University of Georgia Student Chapter Warnell School of Forestry and Natural Resources, University of Georgia 180 E. Green St Athens, GA 30602	Brian Anderson, President and CEO  Greater Columbus Georgia Chamber of Commerce 1200 6th Avenue  Columbus, GA 31902	Jamie Rappaport Clark, President and CEO  Defenders of Wildlife National HQ  1130 17th Street NW  Washington, DC 20036
Gil Rogers, Director Southern Environmental Law Center Ten 10th Street NW, Suite 1050  Atlanta, GA 30309	Jason Ulseth, Riverkeeper Chattahoochee Riverkeeper 3 Puritan Mill, 916 Joseph E Lowery Blvd., NW  Atlanta, GA 30318	Jim Timmons, Interim President The Georgia Conservancy 230 Peachtree Street NW, Suite 1250  Atlanta, GA 30303
Mike Wilson, President Georgia Trappers Association  9969 GA Hwy 102 W Mitchell, GA 30820	Marianne Richter, Director The Columbus Museum  1251 Wynnton Road Columbus, GA 31906	Mark McDonald, President and CEO The Georgia Trust for Historic Preservation  1516 Peachtree Street NW Atlanta, GA 30309
Dennis Beson, President East Alabama Chamber of Commerce 1107 Broad Street Phenix City, AL 36867	Robert E. Patterson, Chattahoochee County Historical Association P.O. Box 116 Richland, GA 31825	Tommy Wilkinson Private Address

**IV. Tribal**

Mr. Bryant J. Celestine  
Tribal Historic Preservation Officer  
Alabama-Coushatta Tribe of Texas  
571 State Park Road 56  
Livingston, TX 77351

Ms. Janice Lowe  
Tribal Historic Preservation Officer  
Alabama-Quassarte Tribal Town  
P.O. Box 187  
Wetumka, OK 74883

Ms. Elizabeth Toombs  
Special Projects Manager  
Cherokee Nation  
P.O. Box 948  
Tahlequah, OK 74464

Ms. Karen Brunso  
Tribal Historic Preservation Officer  
The Chickasaw Nation  
P.O. Box 1548  
Ada, OK 74820-1548

Mr. Russell Townsend  
Tribal Historic Preservation Officer  
Eastern Band of Cherokee Indians  
P.O. Box 455  
Cherokee, NC 28719

Mr. David Cook  
Tribal Historic Preservation Officer  
Kialegee Tribal Town  
P.O. Box 332  
Wetumka, OK 74883

Mr. Kenneth H. Carleton  
Tribal Historic Preservation Officer  
Mississippi Band of Choctaw Indians  
P.O. Box 6010  
Choctaw, MS 39350

Ms. Corain Lowe-Zepeda  
Historic Preservation Manager  
The Muscogee (Creek) Nation  
580 Box 580  
Okmulgee, OK 74447

Mr. Larry Haikey  
Tribal Historic Preservation Officer  
Poarch Band of Creek Indians  
5811 Jack Springs Rd  
Atmore, AL 36502

Mr. David Franks  
Tribal Historic Preservation Officer  
The Seminole Nation of Oklahoma  
P.O. Box 1498  
Wewoka, OK 74884

Dr. Paul Backhouse  
Tribal Historic Preservation Officer  
Seminole Tribe of Florida  
30290 Josie Billie HWY, PMB  
1004  
Clewiston, FL 33440

Mr. Galen Cloud  
Tribal Historic Preservation Officer  
Thlopthlocco Tribal Town  
P.O. Box 188  
Okemah, OK 74859

Ms. Whitney Warrior  
Tribal Historic Preservation Officer  
United Keetoowah Band of Cherokee  
Indians  
P.O. Box 746  
Tahlequah, OK 74465

**VI. LOCAL NEWS, MEDIA and LIBRARIES**

WRBL TV 3 (CBS)  
Attn: Legal  
1350 13th Avenue  
Columbus, GA 31901

WTVM TV 9 (ABC)  
Attn: Legal  
1909 Wynnton Road  
Columbus, GA 31994

WXTX TV 54 (FOX)  
Attn: Legal  
6524 Buena Vista Road  
Columbus, GA 31994

WKN (99.3 FM) Attn: Legal 1820 Wynnton Road Columbus, GA 31906	WGSY (100 FM) Attn: Legal 1501 13th Avenue Columbus, GA 31901	WOKS (1340 AM) & WFXE (105 FM) Attn: Legal 2203 Wynnton Road Columbus, GA 31906
WDAK (540 AM) & WSTH (106 FM) Attn: Legal 1501 13th Avenue Columbus, GA 31901	WVRK (98 FM) Attn: Legal 1501 13th Avenue Columbus, GA 31901	Columbus Ledger-Enquirer 17 West 12th St Columbus, GA 31901
The Journal  71 Webb Lane Buena Vista, GA 31803	Benning News  Fort Benning Public Affairs Office 1 Karker St, McGinnis-Wickam Hall, Suite W-141 Fort Benning, GA 31905	Stewart Webster Journal Patriot-Citizen  P.O. Box 250 Richland, GA 31825
Family and Morale Welfare and Recreation Library 7611 Sightseeing Road, Building 2784 Fort Benning, GA 31905	Columbus Public Library 3000 Macon Rd Columbus, GA 31906	Phenix City – Russell County Public Library 1501 17th Avenue Phenix City, AL 36867
Marion County Library  123 East 5th Avenue Buena Vista, GA 31803	Cusseta-Chattahoochee Public Library 262 Broad St Cusseta, GA 31805	

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## 9.0 Acronyms and Abbreviations

AADT	Annual Average Daily Traffic	CO	Carbon Monoxide
AAP	Army Alternate Procedures	CO <sub>2</sub>	Carbon Dioxide
ABOLC	Armor Basic Officer Leader Course	CRM	Cultural Resources Management
ACHP	Advisory Council on Historic Preservation	CWA	Clean Water Act
ACM	Asbestos-Containing Material	dB	Decibel
ACS	American Community Survey	dBA	A-weighted Decibel
ACUB	Army Compatible Use Buffer	dBc	C-weighted Decibel
ADNL	A-weighted Day-Night Average (Sound) Level	dBp	Peak Level (Noise)
ADP	Area Development Plan	DEIS	Draft Environmental Impact Statement
AHPA	Archaeological and Historic Preservation Act	DMPRC	Digital Multi-Purpose Range Complex
AIRFA	American Indian Religious Freedom Act	DNL	Day-Night (Sound) Level
AMP	Asbestos Management Plan	DoD	Department of Defense
AMSL	above mean sea level	DoDI	Department of Defense Instruction
APE	Area of Potential Effects	DSTE	Direct Support to Training Event
AR	Army Regulation	EIA	Energy Information Administration
ARDR	Aquatic Resource Delineation Review	EIS	Environmental Impact Statement
ARPA	Archaeological Resources Protection Act	EISA	Energy Independence and Security Act
AST	Above Ground Storage Tank	EJ	Environmental Justice
BA	Biological Assessment	EMC	Electric Membership Corporation
BAGEPA	Bald and Golden Eagle Protection Act	EMD	Environmental Management Division
BCC	Birds of Conservation Concern	EO	Executive Order
BEA	Bureau of Economic Analysis	EPD	Environmental Protection Division
BMP	Best Management Practice	EPM	Environmental Protection Measure
BO	Biological Opinion	ESA	Endangered Species Act
BRAC	Base Realignment and Closure	ESMC	Endangered Species Management Component
CAA	Clean Air Act	ESPCP	Erosion, Sedimentation, and Pollution Control Plan
CCA	Candidate Conservation Agreement	ETEA	Enhanced Training Environmental Assessment
CDNL	C-weighted Day-Night Average (Sound) Level	FEIS	Final Environmental Impact Statement
CEQ	Council on Environmental Quality	FEMA	Federal Emergency Management Agency
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
CFR	Code of Federal Regulations	FIRM	Flood Insurance Rate Map
cm	centimeter	FR	Federal Register
		FY	Fiscal Year

GADNR	Georgia Department of Natural Resources	LID	Low Impact Development
GDOT	Georgia Department of Transportation	LMP	Lead Management Plan
GHG	Greenhouse Gas	LOD	Limit of Disturbance
GHMTA	Good Hope Maneuver Training Area	LOS	Level of Service
GPC	Georgia Power Corporation	LRC	Logistics Readiness Center
HAP	Hazardous Air Pollutant	LRR	Land Resource Region
HCM	Highway Capacity Manual	LUPZ	Land Use Planning Zone
HEMTT	Heavy Expanded Mobility Tactical Truck	MBTA	Migratory Bird Treaty Act
HET	Heavy Equipment Transport	MCoE	Maneuver Center of Excellence
HMCP	Hazardous Material Control Point	MILCON	Military Construction
HMMWV	High Mobility Multipurpose Wheeled Vehicle	MLRA	Major Land Resource Area
HOMMTA	Heavy Off-Road Mounted Maneuver Area	mm	millimeter
HPC	Historic Properties Component	MOUT	Military Operations on Urban Terrain
HPD	Historic Preservation Division	MRF	Material Recovery Facility
HTMW	Hazardous and Toxic Materials and Waste	MS-4	Municipal Separate Storm Sewer System
HWMP	Hazardous Waste Management Plan	MSA	Metropolitan Statistical Area
Hz	Hertz	N/A	Not Applicable
IAP	Installation Action Plan	NAAQS	National Ambient Air Quality Standards
ICRMP	Integrated Cultural Resources Management Plan	NAGPRA	Native American Graves Protection and Repatriation Act
ICUZ	Installation Compatible Use Zone	NEPA	National Environmental Policy Act
INRMP	Integrated Natural Resources Plan	NHPA	National Historic Preservation Act
IPaC	Information for Planning and Consultation	NMFS	National Marine Fisheries Service
IPMP	Integrated Pest Management Plan	NMMTA	Northern Mounted Maneuver Training Area
IRP	Installation Restoration Program	NO <sub>2</sub>	Nitrogen Dioxide
ISCP	Installation Spill Contingency Plan	NOA	Notice of Availability
ISWMP	Integrated Solid Waste Management Plan	NOI	Notice of Intent
ITAM	Integrated Training Area Management	NO <sub>x</sub>	Nitrogen Oxides
JD	Jurisdictional Determination	NPDES	National Pollutant Discharge Elimination System
JLUS	Joint Land Use Survey	NRCS	Natural Resources Conservation Service
km	kilometer	NRHP	National Register of Historic Places
LAAF	Lawson Army Airfield	O <sub>3</sub>	Ozone
LBP	Lead Based Paint	OCGA	Official Code of Georgia Annotated
L <sub>eq</sub>	Equivalent Continuous Level	OSHA	Occupational Safety and Health Administration
LF	Linear Feet	OSUT	One Station Unit Training
		PAO	Public Affairs Office
		Pb	Lead



PBG	Potential Breeding Group	TRADOC	Army Training and Doctrine Command
PCB	Polychlorinated Biphenyl		
PEM	Palustrine Emergent	TTB	Tactical Training Base
PFO	Palustrine-Forested	UEA	Unique Ecological Area
PFOA	Perfluorooctanoic Acid	UFC	Unified Facilities Criteria
PFOS	Perfluorooctane Sulfonate	US	United States
PM <sub>10</sub>	Particulate Matter; 10 micrometers or less in diameter	USACE	US Army Corps of Engineers
		USAPHC	US Army Public Health Center
PM <sub>2.5</sub>	Particulate Matter; 2.5 micrometers or less in diameter	USC	US Code
		USDA	US Department of Agriculture
POL	Petroleum, Oil, and Lubricant	USDOT	US Department of Transportation
PSS	Palustrine-Scrub-Shrub	USEPA	US Environmental Protection Agency
PTRCI	Property of Traditional Religious and Cultural Importance		
		USFWS	US Fish and Wildlife Service
RCM	Regulatory Compliance Measure	USGS	US Geological Survey
RCRA	Resource Conservation and Recovery Act	UST	Underground Storage Tank
		VEC	Valued Environmental Component
RCW	Red-cockaded woodpecker	VOC	Volatile Organic Compound
RIMS II	Regional Input-Output Modeling System	WMU	Watershed Management Unit
		WOUS	Waters of the US
ROD	Record of Decision	µg/m <sup>3</sup>	Micrograms per cubic meter
ROI	Region of Influence		
RONA	Record of Non-Applicability		
ROW	Right-of-Way		
RTLA	Range and Training Land Assessment		
SCP	Soil Conservation Program		
SDZ	Surface Danger Zone		
SF	Square Feet		
SHPO	State Historic Preservation Officer		
SIP	State Implementation Plan		
SMC	Species Management Component		
SMP	Smoke Management Plan		
SMS	Standard for Managed Stability		
SMTA	Southern Maneuver Training Area		
SO <sub>2</sub>	Sulfur Dioxide		
SOI	Secretary of the Interior		
SOP	Standard Operating Procedure		
SPCC	Spill Prevention, Control, and Countermeasure		
SR	State Route		
T&E	Threatened and Endangered		
TLEP	Training Land Expansion Program		
TMDL	Total Maximum Daily Load		
TNC	The Nature Conservancy		

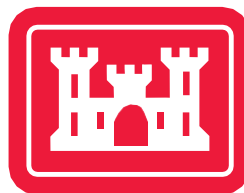
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**APPENDICES**  
**ENVIRONMENTAL IMPACT STATEMENT**  
**FINAL**

October 2020



# Fort Benning Heavy Off-Road Mounted Maneuver Training Area



United States Army Corps of Engineers – Savannah District  
100 West Oglethorpe Avenue, Savannah, Georgia 31401

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## **Appendix A: Agency, Organization, and Public Correspondence**

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## EXAMPLE

DEPARTMENT OF THE ARMY  
INSTALLATION MANAGEMENT COMMAND  
SOUTHEAST REGION  
GARRISON COMMAND  
35 RIDGWAY LOOP, ROOM 385  
FORT BENNING, GEORGIA 31905

REPLY TO  
ATTENTION OF

February 11, 2019

Office of the Garrison Commander

Dear Sir/Madam,

You are cordially invited to attend an **agency-specific scoping meeting** where Army representatives will be available to obtain your input and to answer questions regarding the proposed development of a Heavy Off-Road Mounted Maneuver Area on Fort Benning. The Army published the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) to analyze impacts associated with the proposal in the Federal Register on February 11, 2019. That NOI is attached for further information.

**On February 26, 2019 at the Columbus Consolidated Government Annex, there will be a special scoping session for regulators from 3:00 p.m. to 4:00 p.m. ET.** We would appreciate and welcome your attendance at that regulatory session.

If you are interested to stay for the public scoping meeting on this same topic, or if your schedule does not allow attendance at the regulatory session, we welcome you at the public scoping meeting that will be held later the same day in the same venue, from 6:00 p.m. to 8:00 p.m. ET.

For both meetings, Army representatives will be available to receive your input on the Proposed Action, alternatives, relevant issues, and environmental resource areas of concern, as well as to answer any questions you may have. Your participation will assist Army representatives in identifying issues/concerns associated with the Proposed Action, defining the scope of analysis for the EIS, and identifying reasonable alternatives and potential mitigation actions. Army representatives, displays, and informational material will be available at both meetings.

You are invited to provide written comments at any time during the scoping period from February 11, 2019 to March 12, 2019. The point of contact for these scoping meetings is Mr. John Brown, Fort Benning Environmental Management Division, at (706) 545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

Sincerely,

Clinton W. Cox  
Colonel, US Army  
Garrison Commander

**Attachment: Notice of Intent**



REPLY TO  
ATTENTION OF

## EXAMPLE

DEPARTMENT OF THE ARMY  
INSTALLATION MANAGEMENT COMMAND  
SOUTHEAST REGION  
GARRISON COMMAND  
35 RIDGWAY LOOP, ROOM 385  
FORT BENNING, GEORGIA 31905

February 11, 2019

Office of the Garrison Commander

Dear Sir/Madam,

You are cordially invited to attend a public **scoping meeting** where Army representatives will be available to obtain your input and answer questions regarding the proposed development of a Heavy Off-Road Mounted Maneuver Area on Fort Benning. The Army published the Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) to analyze impacts associated with the proposal in the Federal Register on February 11, 2019. That NOI is attached for further information.

**On February 26, 2019 at the Columbus Consolidated Government Annex, the Army will hold the public scoping meeting from 6:00 p.m. to 8:00 p.m. ET.** We would appreciate and welcome your attendance at the public scoping meeting.

The public scoping meeting will include an initial briefing concerning the proposal, followed by an open house. During the open house portion, Army representatives will be available to discuss the proposal. Display materials, topic-specific stations, and informational handouts will be available to further explain the process and proposal.

The public is also asked to provide input on the Proposed Action, alternatives, relevant issues, and environmental resource areas of concern for inclusion into the EIS. Your participation will assist Army representatives in identifying issues/concerns associated with the Proposed Action, defining the scope of analysis for the EIS, and identifying reasonable alternatives and potential mitigation actions.

A court recorder will be available to record comments from those wishing to provide them orally at the meeting. In addition, all can provide written comments at any time during the scoping period. Comments must be postmarked no later than March 12, 2019 for consideration at this scoping stage. The point of contact for this public scoping meeting is Mr. John Brown, Fort Benning Environmental Management Division, at (706) 545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

Sincerely,

Clinton W. Cox  
Colonel, US Army  
Garrison Commander

**Attachment: Notice of Intent**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

**MAR 06 2019**

Department of The Army  
Fort Benning Environmental Management Division  
Attn: NEPA Program Manager  
Mr. John Brown  
6650 Meloy Drive, Building 6, Rm 309  
Fort Benning, Georgia 31905

Re: Scoping/ Notice of Intent for an Environmental Impact Statement (EIS) for the  
Development of a Heavy Off-Road Mounted Maneuver Training Area at Fort Benning, Georgia

Dear Mr. Brown:

The U.S. Environmental Protection Agency, Region 4 NEPA Program Office is in receipt of the scoping document on the proposed preparation of an EIS for developing a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) within Fort Benning's training area. Under the proposed project, the EPA understands that the Proposed Action is to provide Fort Benning with a HOMMTA consistent with the current training requirements of the Maneuver Center of Excellence (MCoE) and Fort Benning's tenant units. The EPA also understands that the Proposed Action is needed to address the lack of sufficient contiguous off-road maneuver area to meet training requirements for heavy armor vehicle (tracked and wheeled) off-road maneuver training at Fort Benning. The U.S. Army indicates that a lack of maneuver space has recently become more problematic since the Army's training strategy has changed and requires a more dispersed approach to movement and maneuver. The EPA further understands that Fort Benning will analyze the No Action Alternative and three distinct location alternatives on Fort Benning. The following alternatives proposed for analysis have been initially determined to be feasible and to meet the purpose of and need for the Proposed Action:

- Northern Mounted Maneuver Training Area (NMMTA) Alternative: This alternative includes approximately 4,723 acres and is located adjacent to and east of the current Northern Maneuver Training Area (NMTA) and west of the nearby Digital Multi-Purpose Range Complex (DMPRC).
- Red Diamond Alternative: This alternative includes approximately 3,743 acres and is located south of the Southern Maneuver Training Area (SMTA) on the Installation's southern boundary.
- Eastern Boundary Alternative: This alternative includes approximately 2,405 acres and is located between the Kilo duded impact area and the Installation's eastern boundary.

The EPA's preliminary concerns at this time can be summarized to include the following areas and the appropriate NEPA Document should address these major issues, i.e.; cumulative effects of other projects, air quality, water quality, wetlands and streams (i.e. special flood hazard zone), and also any jurisdictional waters and permitting authority held by the U.S Army Corps of Engineers. Additionally, the U.S. Army should consider National Pollutant Discharge Elimination System (NPDES) permit modifications that might be required with the Georgia Environmental Protection Division. Any

necessary temporary or permanent construction plans should include implementable measures to prevent erosion and sediment runoff from the project sites both during and after construction.


Please keep the local community and government informed and involved throughout the project process by having community meetings and updating the community through local and social media outlets, as appropriate. The U.S. EPA, Region 4 appreciates the opportunity to review and comment on this document and looks forward to working with Fort Benning on this Proposed Action.

The EPA requests to have at least 2 hard copies of the Draft and Final EIS, with an electronic version, i.e. website, CD/DVD. Please forward all hard/ electronic copies to:

U.S. Environmental Protection Agency - Region 4  
Sam Nunn Atlanta Federal Center  
Attn: NEPA Program Office  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Thank you for the opportunity to comment. If you have any questions, please contact Mr. Larry Gissentanna, NEPA Program Office, DoD and Federal Facilities Project Manager, at (404) 562-8248 or by e-mail at [gissentanna.larry@eap.gov](mailto:gissentanna.larry@eap.gov).

Sincerely,

A handwritten signature in dark ink, appearing to read "Chris A. Militscher", with a long horizontal flourish extending to the right.

Christopher A. Militscher  
Chief, NEPA Program Office  
Resource Conservation and Restoration Division



# Heavy Off-Road Mounted Maneuver Training Area Environmental Impact Statement



## Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) Environmental Impact Statement (EIS); Fort Benning, Georgia

Public Meeting • February 26, 2019

All comments become part of the public record. The Army will consider each comment when preparing the EIS. The EIS may include Commenters' names, but it will not include any personal contact information.

### 1. Your information:

Name: Holly Ross  
Title: Senior Project Manager, Biologist  
Agency/Organization: US Army Corps of Engineers  
Street Address: 1104 N. Westover Blvd Suite 9  
City, State, Zip: Albany GA 31707  
Email address: holly.a.ross@usace.army.mil

Please check the box and provide a mailing address if you would like to be notified when the Draft EIS is published.

### 2. Please print your comments and place in the box on the comment table.

Mitigation Options for Stream + Wetland Impacts: Stream + wetland mitigation will need calculated according to the Savannah District Regulatory 2018 Mitigation SOP (or current version). With wetland credits being limited in this watershed, the applicant should consider on or off site mitigation options, including development of a private Mitigation Bank. Potential bank sites preferred by the Corps would include headwaters streams w/ adjacent wetlands + treat an area with a holistic restoration approach. Creating a mitigation bank takes time and should start during this initial timeline if this will be the route taken to address mitigation.

Heavy Off-Road Mounted Maneuver Training Area  
Environmental Impact Statement



Comment Form (continued)

ESA: Corps can use ESA coordination completed in the EIS to issue the 404 authorization. If Biological Opinion is issued by FWS, Corps can use that in our permit authorization.

completed in the EIS

Tribal + 106: The Corps can utilize the Tribal + 106 coordination completed if it encompasses what we need in order to issue the 404 authorization. Tribal Coordination will be required for 404.  
Time of Year Restrictions on movements in sensitive areas - Will training timings be managed to avoid wetland + stream maneuverers during the wettest parts/times of the year? Will there be any reoccurring wetland or stream impacts outside of crossing locations?

Comments must be received or postmarked by March 12, 2019

Comments may be mailed to:  
Fort Benning Environmental Management Division  
Attn: John Brown, NEPA Program Manager  
6650 Meloy Drive, Building 6, Room 309, Fort Benning, Georgia 31905-5122  
john.e.brown12.civ@mail.mil





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**NOTICE OF INTENT AND PUBLIC SCOPING MEETING  
FOR THE ENVIRONMENTAL INVESTIGATIVE STUDY**

**AT FORT BENNING**

**HEAVY OFF-ROAD MOUNTED MANEUVER TRAINING AREA**

**FEBRUARY 26, 2019**

**6:00 P.M.**

**COLUMBUS MUSCOGEE CONSOLIDATED GOVERNMENT ANNEX  
420 EAST TENTH STREET  
COLUMBUS, GEORGIA**



**DEPOSITION AND TRIAL**



**(800) 528-3335**

**NAEGELIUSA.COM**

1           **NOTICE OF INTENT AND PUBLIC SCOPING MEETING**  
2                   **FOR THE ENVIRONMENTAL INVESTIGATIVE STUDY**  
3                           **AT FORT BENNING**  
4           **HEAVY OFF-ROAD MOUNTED MANEUVER TRAINING AREA**  
5                   **FEBRUARY 26, 2019**  
6                           **6:00 P.M.**

7  
8           **MS. GWANDA PLACE:** I'm the secretary of  
9 the Chattahoochee County Historic Preservation  
10 Society in Cusseta. And the society has concerns  
11 about anything done on Fort Benning because Fort  
12 Benning took over 80 percent of our county, and all  
13 of these towns and all of those things, you know,  
14 none of those buildings are left. But anyway, what  
15 we're really concerned with now is the cemeteries.  
16 And we just want to preserve the cemeteries because  
17 part of that is Chattahoochee County, and the  
18 information on the headstones is invaluable to  
19 genealogists and to people and family members, of  
20 course, and everything. So many of the stones have  
21 been broken, have been lost. Trees fall on them.  
22 Nobody fixes them. My husband and I have been  
23 working out there for about five years repairing  
24 headstones that were broken. We can't keep doing  
25 that. We've got to find a way to perpetuate it.



1 But that is our main concern is the preservation of  
2 the cemeteries. There's nothing else, I guess, to  
3 preserve out there because they already tore the  
4 buildings down and everything, but any information  
5 on the history of Chattahoochee County we're  
6 interested in.

7 **MS. DEBORAH ALEXANDER-GIOELLO:** Well, I was  
8 just interested on what impact any of these would  
9 have on the family cemeteries, how they would  
10 protect them and also just curious to know when they  
11 decide what area they're going to use, what are they  
12 doing to protect the wetlands and other of the  
13 environmental -- sensitive environmental areas.

14 **MR. DELBERT JOHNSON:** On the cemeteries  
15 that are going to be affected, what are their names  
16 and what are their locations?

17  
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19  
20  
21  
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24  
25

1 CERTIFICATE

2  
3 STATE OF ALABAMA

4 TALLADEGA COUNTY

5  
6 I, the undersigned, a CSR, RPR, CRR and Notary  
7 Public of the State of Alabama at Large, hereby  
8 certify that the proceedings in the herein matter  
9 were taken at the time and place therein stated;  
10 that the proceedings were reported by me, court  
11 reporter and disinterested person, and were  
12 thereafter transcribed by means of computer-aided  
13 transcription; that the foregoing is a complete  
14 and true record of said witness.

15  
16 I further certify that I am not of counsel or  
17 attorney for either or any of the parties in the  
18 foregoing proceedings and caption named, or in  
19 any way interested in the outcome of the cause  
20 named in said caption.

21  
22 IN WITNESS WHEREOF set my hand and affixed my  
23 seal this 4th day of March, 2019.

24  
25  


Mitzi Smith, ACCR# 117, RPR, CRR  
Notary Public State of Alabama

My Commission Expires: August 16, 2022

2	2:15	<b>GWANDA</b> 2:8	N
<b>2018</b> 2:5	<b>concerns</b> 2:10	H	<b>Nobody</b> 2:22
<b>26</b> 2:5	<b>county</b> 2:9	<b>headstones</b>	<b>none</b> 2:14
6	2:12 2:17	2:18 2:24	<b>nothing</b> 3:2
<b>6:00</b> 2:6	3:5	<b>HEAVY</b> 2:4	<b>NOTICE</b> 2:1
8	<b>course</b> 2:20	<b>Historic</b> 2:9	O
<b>80</b> 2:12	<b>curious</b> 3:10	<b>history</b> 3:5	<b>OFF-ROAD</b> 2:4
A	<b>Cusseta</b> 2:10	<b>husband</b> 2:22	P
<b>affected</b> 3:15	D	I	<b>P.M</b> 2:6
<b>ALEXANDER-</b>	<b>DEBORAH</b> 3:7	<b>I'm</b> 2:8	<b>people</b> 2:19
<b>GIOELLO</b> 3:7	<b>decide</b> 3:11	<b>impact</b> 3:8	<b>percent</b> 2:12
<b>already</b> 3:3	<b>DELBERT</b> 3:14	<b>information</b>	<b>perpetuate</b>
<b>anything</b> 2:11	<b>done</b> 2:11	2:18 3:4	2:25
<b>anyway</b> 2:14	E	<b>INTENT</b> 2:1	<b>preservation</b>
<b>area</b> 2:4 3:11	<b>else</b> 3:2	<b>interested</b>	2:9 3:1
<b>areas</b> 3:13	<b>environmental</b>	3:6 3:8	<b>preserve</b> 2:16
B	2:2 3:13	<b>invaluable</b>	3:3
<b>Benning</b> 2:3	3:13	2:18	<b>protect</b>
2:11 2:12	<b>everything</b>	<b>INVESTIGATIVE</b>	3:10 3:12
<b>broken</b> 2:21	2:20 3:4	2:2	<b>PUBLIC</b> 2:1
2:24	F	J	R
<b>buildings</b>	<b>fall</b> 2:21	<b>JOHNSON</b> 3:14	<b>really</b> 2:15
2:14 3:4	<b>family</b> 2:19	L	<b>repairing</b>
C	3:9	<b>locations</b>	2:23
<b>cemeteries</b>	<b>FEBRUARY</b> 2:5	3:16	S
2:15 2:16	<b>five</b> 2:23	<b>lost</b> 2:21	<b>SCOPING</b> 2:1
3:2 3:9	<b>fixes</b> 2:22	M	<b>secretary</b> 2:8
3:14	<b>Fort</b> 2:3 2:11	<b>main</b> 3:1	<b>sensitive</b>
<b>Chattahoochee</b>	2:11	<b>MANEUVER</b> 2:4	3:13
2:9 2:17	G	<b>MEETING</b> 2:1	<b>society</b>
3:5	<b>genealogists</b>	<b>members</b> 2:19	2:10 2:10
<b>concern</b> 3:1	2:19	<b>MOUNTED</b> 2:4	<b>stones</b> 2:20
<b>concerned</b>	<b>guess</b> 3:2		

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T

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**There's** 3:2

**they're** 3:11

**tore** 3:3

**towns** 2:13

**TRAINING** 2:4

**Trees** 2:21

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W

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**we're** 2:15

3:5

**wetlands** 3:12

**We've** 2:25

**working** 2:23

From: [REDACTED]  
Sent: Monday, March 18, 2019 5:29 PM  
To: Brown, John E CIV USARMY IMCOM ATLANTIC (US) <[john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil)>  
Subject: Re: [Non-DoD Source] Comments for EIS (UNCLASSIFIED)

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

---

Mr. Brown,

The members of the Chattahoochee County Historic Preservation Society, Inc. (CCHPS) wish to voice their concern for the cemeteries that may be impacted by development, operation, and maintenance of a Heavy Off-Road Mounted Maneuver Training Area on Fort Benning.

Since most of Chattahoochee County was Muscogee County until this county was formed in 1854, the private cemeteries on the Fort Benning Reservation, both in Chattahoochee, and Muscogee Counties contain graves of Chattahoochee County residents back at least to the early 1800s. They also contain a lot of graves of veterans dating back to the Revolution.

The graves, with the information on the markers and memorials, as well as their location, are an important part of the history of this county and its residents. They are an important cultural resource to genealogists, historians, archeologists, etc.

These cemeteries have not been treated as well as they could have been, and a lot of markers have been damaged or destroyed. Four members of this historic society, along with a few volunteers, including military personnel volunteers have worked in numerous of the cemeteries, photographing, cleaning, restoring headstones, and raising awareness of them for over five years.

Respectively,  
Gwanda Place  
Secretary, CCHPS  
[REDACTED]

26 February 2019

Mr. John Brown  
Ft. Benning Directorate of Public Works  
Environmental Management Division  
Bldg. 6, Room 310  
Ft. Benning, GA31905

Dear Mr. Brown:

Thank you for the opportunity to participate in the scoping meeting for the EIS for the Heavy Off-Road Mounted Maneuver Training Area. I represent the Chattahoochee County Historical Association. We are primarily interested in what detrimental effect the building and utilization of the suggested training area would have on the old family and church cemeteries and gravesites that exist on the reservation. We would appreciate your answers to the following questions. Thank you.

1. In all literature, handouts I have seen to date, there is no mention of existing family, public, or church cemeteries that are presently located on any of the three areas under consideration. Will You tell us how many and which cemeteries are located on each area under consideration?
2. Will the existing grave sites be moved out of the selected area for protection?
3. If not moved from the existing area, how will the cemeteries/grave sites be protected from maneuvering vehicles, excavation for road work, water barriers, and other destructive activity?
4. It is my understanding that civilian descendents of people buried in remote cemeteries on post can make arrangements thru post authorities to visit the graves of their ancestors. Will we still be allowed to visit cemeteries that are located in training areas?
5. There are DOD Instructions and Directives and Army Regulations that require military post management to take certain levels of care of existing cemeteries/monuments that existed on post when the military acquired the land from civilian communities. Will those regulations still apply to cemeteries encompassed by training areas?
6. Will existing cemeteries, monuments, historical sites be a consideration in site selection for the training area?
7. Of the 182,000 acres at Ft. Benning, how many acres are unusable for training/military purposes because of red cockaded woodpecker infestation and planting of colonies?

Thank you for your response. You may email the answers to me at [REDACTED] or mail to me at [REDACTED]. Thank you.

Sincerely yours,



Robert E. Patterson

# Heavy Off-Road Mounted Maneuver Training Area Environmental Impact Statement



## Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) Environmental Impact Statement (EIS); Fort Benning, Georgia Public Meeting • February 26, 2019

All comments become part of the public record. The Army will consider each comment when preparing the EIS. The EIS may include Commenters' names, but it will not include any personal contact information.

### 1. Your information:

Name: Tommy Wilkinson

Title: \_\_\_\_\_

Agency/Organization: \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Email address: \_\_\_\_\_

Please check the box and provide a mailing address if you would like to be notified when the Draft EIS is published.

### 2. Please print your comments and place in the box on the comment table.

I Don't Accept that Adequate notification procedure has been performed. More Public input would be acceptable before money is spent on a study. Where are surrounding towns and counties served with your intent? Your operations affect all of us in a 25-30 mile radius. The area publicly described stated 2400 acres but upon closer examining presentation you possibly impact 3700 hundred or 4700 acres. All of these areas have wetlands that would be impacted. Georgia is already up to its neck with water struggles as it is. Even Florida complains about water

Heavy Off-Road Mounted Maneuver Training Area  
Environmental Impact Statement



Comment Form (continued)

ISSUES AND IMPACTS FROM OUR AREA:

There was not one word of mention about chemical contamination associated with operating in and around these wetlands. Not one word mentioned about dust and other pollutants that would be in the air from multiple vehicles training. This pollution blows which ever way the wind blows. This operation with adversely effect Columbus Phoenix City and the surrounding area. In closing, I would much rather see dollars spent to correct your noise problems that you created in our community and surrounding areas during the last BRAC process. Our brave troops so much deserve to have adequate training areas to remain the best Army in the world. God Bless America

Comments must be received or postmarked by March 12, 2019

Comments may be mailed to:

Fort Benning Environmental Management Division

Attn: John Brown, NEPA Program Manager

6650 Meloy Drive, Building 6, Room 309, Fort Benning, Georgia 31905-5122

[john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil)

For more information, visit the project website at [www.benning.army.mil](http://www.benning.army.mil)



From: Archie, Ernest V CIV USARMY IMCOM (USA)  
Sent: Thursday, February 28, 2019 3:46 PM  
To: Ticknor, Kirk W CIV USARMY IMCOM ATLANTIC (US) <[REDACTED]>; Marston, Timothy G CIV USARMY (US) <[REDACTED]>; Hudson, Stephen J CIV (USA) <[REDACTED]>; Slembariski, Christopher M CTR USARMY (USA) <[REDACTED]>  
Cc: Moore, Mark E CIV USARMY ID-TRAINING (US) <[REDACTED]>; Stout, Patrick W CIV USARMY ID-TRAINING (US) <[REDACTED]>  
Subject: Town hall meeting for environmental study (UNCLASSIFIED)  
Importance: High

CLASSIFICATION: UNCLASSIFIED

I received a call from Ms Wanda Place who was at the meeting this week . A statement was made about the Blue birds houses inside the cemeteries on the installation . She's requesting information on who installed them and the purpose for them. Anyone have this information or point me in the right directions

Ernest V. Archie  
Range Safety Officer  
Range Division, DPTMS

[REDACTED]  
[REDACTED]  
Fort Benning, GA 31905  
Comm: [REDACTED]  
DSN: [REDACTED]  
Cell: [REDACTED]  
Email: [REDACTED]

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REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Office of the Garrison Commander

Dear Sir/Madam:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information.

Due to the COVID-19 pandemic and associated social distancing, Fort Benning is doing the following to maximize your participation in our decision-making process:

a. We have developed a "Virtual Public Meeting Room" on-line at the following link, <https://fortbenning.consultation.ai/> where you can now view relevant information in a similar format as you would at an in-person event. Display materials, topic-specific stations, and informational handouts are available to further explain the process and proposal; materials are downloadable from that website, including the Draft EIS. Comments can also be posted on the website discretely. The website will be active throughout the 45-day public review period of the Draft EIS. Materials are also available online at <https://www.benning.army.mil>.

b. We will be hosting a live, call-in public meeting for two hours, from 6:00 PM to 8:00 PM EST on June 30, 2020. To attend that virtual public meeting, please call 1-877-369-5230 and enter Access Code: 0625977## at that time to register your verbal comments. These meeting data are also on the website. At this virtual public meeting, Army representatives will be available to provide information on the Draft EIS, including the Proposed Action, Alternatives, and environmental impact analysis. The meeting will be recorded.

c. In addition, all interested persons can provide written comments at any time during the 45-day public comment period, which extends from May 29, 2020 to July 13, 2020. Comments must be postmarked no later than July 13, 2020 for consideration in the Final EIS.

The point of contact for this activity is Mr. John Brown, Fort Benning Environmental Management Division, at 706-545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil). Should you not have internet access or wish hard copies or CDs of any posted data, please contact Mr. Brown at your convenience.

Sincerely,

Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosure



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 4  
ATLANTA FEDERAL CENTER  
61 FORSYTH STREET  
ATLANTA, GEORGIA 30303-8960

July 13, 2020

Department of the Army  
Fort Benning Environmental Management Division  
Attn: NEPA Program Manager, Mr. John Brown  
6650 Meloy Drive, Building 6, Room 309  
Fort Benning, Georgia 31905

Re: EPA Comments on the Draft Environmental Impact Statement for the Heavy Off-Road Mounted Maneuver Training Area at Fort Benning, Georgia. CEQ#: 20200110

Dear Mr. Brown:

The U.S. Environmental Protection Agency has reviewed the U.S. Army Draft Environmental Impact Statement (DEIS) for the Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) at Fort Benning in accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act and Section 309 of the Clean Air Act. The purpose of the proposed action is to support the construction, operation, and maintenance of a HOMMTA within the current boundaries of Fort Benning. According to the DEIS, the Army's training strategy has changed and requires a more dispersed approach to off-road armor vehicle movement and maneuver. The EPA understands that the Proposed Action provides Fort Benning with a HOMMTA consistent with the current training requirements of the Maneuver Center of Excellence (MCoE) and Fort Benning's tenant units.

The DEIS examines a No Action Alternative and three Action Alternatives (varied locations) within the installation. The Action Alternatives are summarized as follows:

- Alternative 1/Northern Mounted Maneuver Training Area Alternative (Preferred Alternative): This alternative includes approximately 4,724 acres and is located adjacent to and east of the current Northern Maneuver Training Area and west of the nearby Digital Multi-Purpose Range Complex.
- Alternative 2/Red Diamond Alternative: This alternative includes approximately 3,744 acres and is located south of the Southern Maneuver Training Area on the Installation's southern boundary. This area does not contain any existing ranges but is used as the primary land navigation test course.
- Alternative 3/Eastern Boundary Alternative: This alternative includes approximately 2,405 acres and is located between the northern duded impact area and the Installation's eastern boundary. This area does not contain any existing ranges or designated training areas for any specific training activities.

On March 6, 2019, the EPA provided scoping comments on a notice of intent for the proposed project. Topics included air quality, water quality, wetlands and streams, and cumulative effects of other

projects. Additionally, the EPA suggested that a National Pollutant Discharge Elimination System permit modification may be required from the Georgia Environmental Protection Division and that any necessary temporary or permanent construction plans should include implementable measures to prevent erosion and sediment runoff from the proposed project both during and after construction.

The EPA appreciates Fort Benning's effort to address our scoping comments and identify appropriate best management practices including the Integrated Training Area Management program to address soil erosion and/or other environmental impacts of HOMMTA. Based on our review of the DEIS, appropriate alternatives were considered and analyzed that are supportive of the MCoE meeting training requirements and accomplishing heavy armor vehicle off-road maneuver training using a minimum of 2,400 additional contiguous acres. The EPA recognizes that the mitigation measures included in Table 5.5-2 are designed to reduce potential adverse effects of the Proposed Action. We recommend that the final environmental impact statement and the record of decision detail the mitigation measures the U.S. Army will implement for the selected alternative.

The EPA appreciates the opportunity to review and comment on the DEIS. If you have any questions regarding our comments, please contact Mr. Larry Gissentanna, NEPA Section, at (404) 562-8248 or by email at [gissentanna.larry@epa.gov](mailto:gissentanna.larry@epa.gov).

Sincerely,

Mark J. Fite  
Director  
Strategic Programs Office



HISTORIC PRESERVATION DIVISION

MARK WILLIAMS  
COMMISSIONER

DR. DAVID CRASS  
DIVISION DIRECTOR

July 10, 2020

Craig Taylor  
Director of Public Works  
IMCOM Directorate - Training  
1 Karker Street, McGinnis-Wickham Hall  
Fort Benning, Georgia 31905-5000  
**Attn: John Brown**

**RE: Fort Benning: Heavy Off-Road Mounted Maneuver Training Area (HOMMTA)  
Chattahoochee and Muscogee Counties, Georgia  
HP-181207-007**

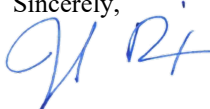
Dear Mr. Taylor:

The Historic Preservation Division (HPD) has reviewed the draft reports entitled, *Environmental Impact Statement, Fort Benning Off-Road Mounted Maneuver Training Area* (May 2020; EIS), *Phase II Archaeological Evaluations of 31 Sites: Volumes I-III* (April 2020), and *Phase II Archaeological Evaluations of Five Cemeteries* (April 2020). Our comments are offered to assist the US Department of the Army and Fort Benning in complying with the provisions of Section 106 of the National Historic Preservation Act (NHPA).

Based on the information contained in the reports regarding archaeological sites, HPD concurs that archaeological sites FS-1, FS-11, FS-12, 9ME1154, 9CE109, 9CE1168, 9CE1186, 9CE1193, 9CE1198, 9CE1919, 9CE1218(B), 9CE1263, 9CE1966, 9CE1972, 9CE1975, and 9CE2072 are not eligible for listing in the National Register of Historic Places (NRHP). Additionally, HPD concurs that the cemeteries CEM24 (9ME643), CEM25 (Ginn-Pate Family Cemetery), CEM39 (9CE191), and CEM 40 (Prosperity Church Cemetery) are not eligible for listing in the NRHP, under Criterion D. Furthermore, HPD concurs that archaeological sites FS-2-3, FS-4, FS-5, FS-6, FS-7, FS-8, FS-9, 9CE104, 9CE117, 9CE976, 9CE1174, 9CE1792, 9CE1921, 9CE2524, 9CE1215, 9CE1216, 9CE1218(A)/9CE1220, 9CE1226, 9CE1233, 9CE1251, 9CE1254/9CE1259, 9CE1814, and 9CE1978 and cemetery CEM60 (9ME509) are eligible for listing in the NRHP. However, due to site 9CE1974 not being fully delineated, it is HPD's opinion that the eligibility of the site is unknown for listing in the NRHP, but that the portion of the site within the proposed alternative/COA lacks data potential and integrity. HPD recommends revising existing or submitting new site forms to the Georgia Archaeological Site Files, as needed.

Regarding historic resources, HPD would like to note that while the EIS indicates that no historic resources are within the proposed project's area of potential effect (APE), there is no discussion of background research, previous surveys, and/or methods in order for our office to concur. Additionally, without this noted information, it is unclear whether visual impacts have been considered for the APE surrounding the project area(s). Furthermore, HPD is unable to comment on the eligibility of the five (5) cemeteries under Criteria A, B, or C, without additional information.

We look forward to working with you as this project continues. Please refer to project number **HP-181207-007** in any future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact me at [jennifer.dixon@dnr.ga.gov](mailto:jennifer.dixon@dnr.ga.gov) or (770) 389-7851.

Sincerely,  


Jennifer Dixon, MHP, LEED Green Associate  
Program Manager  
Environmental Review & Preservation Planning



ENVIRONMENTAL PROTECTION DIVISION

**Richard E. Dunn, Director**

**Watershed Protection Branch**

7 Martin Luther King, Jr. Drive  
Suite 450  
Atlanta, Georgia 30334  
404-463-1511

July 13, 2020

Mr. John Brown  
NEPA Program Manager  
6650 Meloy Drive  
Building 6, Room 309  
Fort Benning, Georgia 31905-5122

Re: Heavy Off-Road Mounted Maneuver Training Area

Dear Mr. Brown:

The Georgia Environmental Protection Division Wetland Unit has reviewed the May 29, 2020 Draft EIS for the Heavy Off-Road Mounted Maneuver Training Area project (HOMMTA). As proposed, the Army needs at minimum a 2,400 contiguous acre site to accomplish the goals of the training area. This project includes three alternative site locations within Fort Benning, including a no action alternative, and according to the Draft EIS the Army is proposing alternative one as the least environmentally damaging practicable alternative. Alternative one totals 4,724 acres, including 3,200 acres suitable for the HOMMTA, and has temporary and permanent impacts to wetlands, streams and buffers. Temporary impacts equate to 12.9 acres of wetland, 2,200 linear feet of stream and 3.9 acres of stream buffer, and permanent impacts will be 6.5 acres of wetland, 2,200 linear feet of stream, and 2.1 acres of stream buffer. We would request the applicant to please accept our following comments for the HOMMTA.

-Proper adherence to (Corps') 401(b)(1) sequencing procedures for avoidance & minimization of construction footprints in wetlands/streams on-site. Establish necessary drainageway crossings at the narrowest possible points and avoid such crossings at sizeable wetland zones vs. localized flowing streams

-Proper use of E&S control measures and BMPs during project construction and subsequent operation. This may include appropriately bottomless culverted, free-span bridged or at-grade hardened/reinforced crossings of streams, in order to minimize ongoing operational erosion/sedimentation disturbance and input to streams where military vehicle crossings would be necessary as part of the fundamental operation concept of this military training area.

-Particular attention regarding land use history assessment and possible associated physical (soil) sampling as to address issue of any possible hazardous materials as contaminants on construction and operational footprints of proposed project.

-Since this project is proposed to disturb one acre or more, it will require coverage under the General NPDES Permit for Storm Water Discharges Associated with Construction Activity. Part 4 of the Permit requires the submittal of the Erosion, Sedimentation and Pollution Control Plan to EPD's Watershed Protection Branch. A plan review/state waters review will determine if a stream buffer variance is needed for the project. Information and applicable forms for the stream buffer variance and the NPDES construction general permit can be found on our website at <http://epd.georgia.gov/>

Thank you for the opportunity to provide comments on this proposed project. If you have any questions please contact Stephen Wiedl with the Wetland Unit or Michael Berry with the Erosion and Sedimentation Unit at (404) 463-1511.

Thank You,

A handwritten signature in blue ink, appearing to read "Bradley Smith", is centered on the page. The signature is written in a cursive style with a light blue background behind it.

Bradley Smith  
Wetland Unit





MARK WILLIAMS  
COMMISSIONER

RUSTY GARRISON  
DIRECTOR

July 10, 2020

John Brown  
Fort Benning  
Environmental Management Division

**Subject: Environmental Review of Draft EIS for Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) at Fort Benning.**

Dear Mr. Brown:

This is in response to a public notice dated May 29, 2020. The Wildlife Conservation Section, Wildlife Resources Division, Georgia Department of Natural Resources has the following recommendations.

Federally listed species have been documented near the proposed project. To minimize potential impacts to federally listed species, we recommend consultation with the United States Fish and Wildlife Service. Please email [GAES\\_Assistance@fws.gov](mailto:GAES_Assistance@fws.gov) for additional information.

State protected species have been documented near the proposed project. For information about these species, including survey recommendations, please visit our webpage at <http://georgiawildlife.com/conservation/species-of-concern#rare-locations>. We recommend that surveys for species of conservation concern be completed within the area of the selected alternative prior to the initiation of activities.

Gopher tortoises may be present on site. We recommend that burrows be marked before logging or other activities begin. Contractors should be notified of the presence of gopher tortoises. Heavy equipment should be kept at least 10 feet away from burrow entrances, and contractors should be asked to be diligent in watching for tortoises on roads as they enter and exit the site. A tortoise relocation plan may be deemed necessary. Please contact Marylou Moore [Marylou.Moore@dnr.ga.gov](mailto:Marylou.Moore@dnr.ga.gov) for recommendations related to relocation of gopher tortoises.

The bald eagle no longer is listed under the Endangered Species Act, but remains under Federal protection under the Bald and Golden Eagle Protection Act. The BGEPA prohibits the take, possession, sale, purchase, or barter of these birds, alive or dead, including any part, nest, or egg, unless allowed by permit. The Act's prohibitions would include harvest of an active nest, even if the birds are not present, or nest disturbance during the nesting period.



The Fish and Wildlife Service released federal guidelines in 2007 that were designed to minimize the impact of human activities on eagles. These guidelines define inner and outer buffer zones centered on eagle nest trees and provide recommendations concerning types of activities, such as tree clearing, that can or cannot safely be conducted within these buffer zones during the nesting or non-nesting seasons.

(<https://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf>).

No harvesting of timber within active clusters of Red Cockaded Woodpeckers should occur from April-July. Use of heavy equipment should be prohibited within 50 feet of cavity trees. Please consider reasonable precautions to avoid damaging cavity trees. For additional guidance on protections for the Red Cockaded Woodpecker, please consult with the United States Fish and Wildlife Service.

Please be aware that the type of erosion control material used during logging or other construction activities can impact wildlife. We strongly recommend using natural, biodegradable materials such as 'jute' or 'coir'. Mesh strands should be movable, as opposed to fixed. Use of plastic fencing frequently leads to wildlife entrapment and death.

#### **Disclaimer:**

For more specific species location information, please provide our office with shapefiles for the Preferred Alternative. The data collected by the Wildlife Conservation Section comes from a variety of sources, including museum and herbarium records, literature, and reports from individuals and organizations, as well as field surveys by our staff biologists. In most cases the information is not the result of a recent on-site survey by our staff. Many areas of Georgia have never been surveyed thoroughly. Therefore, the Wildlife Conservation Section can only occasionally provide definitive information on the presence or absence of rare species on a given site. Our files are updated constantly as new information is received. **Thus, information provided by our program represents the existing data in our files at the time of the request and should not be considered a final statement on the species or area under consideration.**

If you know of populations of highest priority species that are not in our database, please fill out the appropriate data collection form and send it to our office. Forms can be obtained through our web site (<http://georgiawildlife.com/conservation/species-of-concern#rare-locations>) or by contacting our office. If we can be of further assistance, please let us know.



Laci Pattavina, Wildlife Biologist, Environmental Reviews  
laci.pattavina@dnr.ga.gov, (706) 557-3228

### **Data Available on the Wildlife Conservation Section Website**

- Georgia protected plant and animal profiles are available on our website. These accounts cover basics like descriptions and life history, as well as threats, management recommendations and conservation status. Visit <http://georgiawildlife.com/conservation/species-of-concern#rare-locations>.
- Rare species and natural community information can be viewed by Quarter Quad, County and HUC8 Watershed. To access this information, please visit our GA Rare Species and Natural Community Information page at: <http://georgiabiodiversity.org/>
- Downloadable files of rare species and natural community data by quarter quad and county are also available. They can be downloaded from: <http://georgiabiodiversity.org/natels/natural-element-locations.html>

**Fort Benning Heavy Off-Road Mounted Maneuver Training Area  
Draft Environmental Impact Statement (DEIS) Public Comment Period - May 29, 2020 - July 13, 2020  
Comments Received via Virtual (Online) Public Meeting Room**

Comment Number	Commenter Name	Commenter Agency/Organization (if applicable)	Comment
1	Karen Fenoglietto	Phillips Ferguson Associates	Very impressive work.

PUBLIC MEETING FOR THE DRAFT ENVIRONMENTAL  
IMPACT STATEMENT FOR THE PROPOSED HEAVY OFF-ROAD  
MOUNTED MANEUVER TRAINING AREA AT FORT BENNING

+ + + + +

AECOM

+ + + + +

JUNE 30, 2020

+ + + + +

WITH

BRENT WIDENER, U.S. ARMY

KELLY STOLL, AECOM

CHRISTIAN CORPUZ, AT&T OPERATOR

+ + + + +

This transcript was produced from audio  
provided by AECOM.

C-O-N-T-E-N-T-S

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Agenda and General Information

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1 P-R-O-C-E-E-D-I-N-G-S

2 (6:02 p.m.)

3 MR. CORPUZ: Welcome. And thank you  
4 for joining today's Fort Benning HOMMTA meeting.  
5 Please note that all lines will be muted until  
6 the comment portion of the call. We will provide  
7 you instructions on how to make your comments at  
8 that time.

9 With that, I'll turn this call over to  
10 Kelly Stoll. Kelly, please go ahead.

11 MS. STOLL: Thank you. Welcome  
12 everybody to our public meeting regarding the  
13 draft environmental study for the Army's proposed  
14 HOMMTA or Heavy Off-road Mounted Maneuver Training  
15 Area at Fort Benning. We're happy to have  
16 everyone here with us tonight. As Christian  
17 mentioned, my name is Kelly Stoll and I'm with  
18 AECOM. And I'll be tonight's facilitator.

19 AECOM is contracted with the Army to  
20 conduct the Environmental Impact Assessment for  
21 the project. Tonight, I have with me, Mr. Brent  
22 Widener who is the Chief of Planning and Support -

1 - the Chief of the Planning Support Branch at  
2 Fort Benning.

3 As many of you know, we may have met  
4 last March at an in-person meeting in Columbus.  
5 However, this year due to events that we are all  
6 aware of, we've had to change the way we do our  
7 meetings. We hope you've had a chance to view  
8 our virtual meeting room with the posters, fact  
9 sheets, video, and a copy of the draft document.

10 We've tried very hard to replicate  
11 what you would normally see in an in-person  
12 meeting. However, if you don't have internet  
13 access or are having difficulties, we invite you  
14 to contact Mr. John Brown. His number is 706-  
15 545-7549. And he's in the office between 9:00  
16 and 4:00 p.m. And he'll be able to help you get  
17 you information that you need to review.

18 A little bit of tonight's agenda, I'll  
19 go over the rest of the meeting format and the  
20 process. Brent will have a short discussion of  
21 the project. And then we'll open it up for your  
22 comments.

1           We want to make sure that everyone is  
2 aware that this call is being recorded. And that  
3 your information could be captured within the  
4 final document. Any of that information could be  
5 publicly disclosed and it would be searchable and  
6 included in the final document. This applies to  
7 information you may provide during this meeting,  
8 over the telephone calls, by email, or in writing.  
9 If you prefer not to be identified by name, then  
10 we ask you to submit an anonymous comment by email  
11 or regular postal mail. Also ,if preferred, you  
12 may also provide your email address or contact  
13 information.

14           Each of our attendees will be afforded  
15 three minutes to provide their comments this  
16 evening. When it's your turn to comment, you'll  
17 be informed that you've been taken off mute and  
18 asked to provide your comment. I will provide a  
19 time check at the 2-1/2 minute mark. Once all  
20 people are finished commenting, we'll provide  
21 some closing remarks. And with that, I will turn  
22 it over to Brent.



1                   MR. WIDENER: Thank you, Kelly. Good  
2 evening, everyone. My name is Brent Widener. As  
3 Kelly said, I'm the Planning and Support Branch  
4 Chief here in the Environmental Division at Fort  
5 Benning, and I on behalf of the Army thank you  
6 for joining us tonight. We're looking forward to  
7 receiving your comments on the data we provided.  
8 Your comments and all other input we receive will  
9 be carefully considered by the Army as we conduct  
10 our decision making concerning this proposal.

11                   Before we receive your comments  
12 tonight, I'd like to provide a summary of the  
13 proposed HOMMTA project and the findings of our  
14 environmental study.

15                   The environmental study is called the  
16 Draft Environmental Impact Statement or Draft  
17 EIS. There's posters and fact sheets about the  
18 proposed HOMMTA and a draft EIS itself available  
19 on our virtual public meeting site. If you've  
20 got a pen and you have not found those sites yet,  
21 I'd encourage you to grab it and write these  
22 down. The web address for the virtual public

1 meeting site is  
2 <https://fortbenning.consultation.ai>. Again,  
3 <https://fortbenning.consultation.ai>.

4 Fort Benning has also created a HOMMTA  
5 web page with those same posters and fact sheets,  
6 as well as other important HOMMTA notices and  
7 documents. The web address for that site is  
8 [www.benning.army.mil](http://www.benning.army.mil). Again, [www.benning.army.mil](http://www.benning.army.mil).

9 Again, as Ms. Stoll identified, if you  
10 don't have internet access, please contact Mr.  
11 John Brown. And we'll provide you his contact  
12 information again later in the meeting. He will  
13 be able to provide you the same data that's  
14 available online by mail to ensure you can review  
15 data and provide your valuable input.

16 This meeting is a key part of a 45-day  
17 public comment period on the HOMMTA Draft EIS.  
18 That comment period started 29 May and will end  
19 on 13 July. We ask that you please provide your  
20 comments before 13 July, either verbally today  
21 during our meeting or via the project website, by  
22 email to Mr. John Brown, or in a letter

1 postmarked by 13 July.

2 Collectively, environmental  
3 regulators, Native American tribes, community  
4 members, and all others that may be interested in  
5 the proposed HOMMTA are invited to review the  
6 Draft EIS and provide comments during this  
7 meeting or submit written comments through the  
8 mechanisms we've discussed so far. Details for  
9 submitting comments can be found on the HOMMTA  
10 website, as well as within the newspaper and  
11 federal register notices that have been published  
12 by the Army.

13 If you don't have access to these  
14 sources, please contact Mr. John Brown by phone.  
15 Again if you have a pen, please write this number  
16 down. His phone number is 706-545-7549. Again,  
17 706-545-7549. And he's available between the  
18 hours of 9:00 a.m. and 4:00 p.m. Eastern Standard  
19 Time on regular federal business days and can  
20 provide you the information you need.

21 The next thing I want to cover tonight  
22 is the HOMMTA purpose. So, Fort Benning is the

1 home of the Maneuver Center of Excellence, which  
2 includes both the Armor School and the Infantry  
3 School. Our units here need to train as they  
4 fight. This includes using tanks and support  
5 vehicles on the Armor's only existing heavy off-  
6 road mounted maneuver training area at Fort  
7 Benning known as the Good Hope Maneuver Training  
8 Area or GHMTA.

9 But the GHMTA does not provide enough  
10 contiguous off-road training area and does not  
11 meet current training requirements. To meet this  
12 need, the Army is proposing to establish a heavy  
13 off-road mounted maneuver training area of at  
14 least 2,400 continuous training acres on Fort  
15 Benning. The HOMMTA would be entirely within the  
16 Fort Benning boundary and would not involve any  
17 increases in soldiers at Fort Benning.

18 Additionally, no tank firing would  
19 occur on the proposed HOMMTA. Live rounds would  
20 not be used. And residents would not hear any  
21 increase in noise from Fort Benning if the Army  
22 chooses to implement either Alternative 1,

1 Alternative 2, or the No Action Alternative.  
2 Should the Army choose to implement Alternative  
3 3, increased noise from this alternative would  
4 affect approximately 11 residences and a church  
5 to the east of Fort Benning. These data are  
6 presented in the Draft EIS and on the virtual  
7 public meeting site posters.

8 Before making any decision about this  
9 proposal, the Army is studying the potential  
10 environmental and socioeconomic impacts of the  
11 proposed HOMMTA which are documented in the Draft  
12 EIS that is now available for your review and  
13 comment. We are considering these potential  
14 impacts and possible mitigation measures in our  
15 decision making process.

16 We are also considering your input on  
17 our analysis to further inform our decision  
18 making. As such, we're inviting public comments  
19 on this study and that is the purpose of today's  
20 meeting and the 45-day public comment period on  
21 the Draft EIS.

22 The next thing I want to cover relates

1 to the HOMMTA purpose -- I'm sorry -- provide you  
2 an overview of what's in the Draft Environmental  
3 Impact Statement. So, the Army prepared the  
4 HOMMTA Draft EIS to determine the different  
5 potential environmental impacts associated with  
6 three potential HOMMTA alternatives on Fort  
7 Benning. As well as an action of -- as well as  
8 an alternative of no action, which would be not  
9 implementing the proposal.

10 This analysis allows for a comparison  
11 of the potential environmental impacts across  
12 these alternatives. The first alternative,  
13 Alternative 1, includes approximately 4,724 acres  
14 in the middle of Fort Benning. The second  
15 alternative, Alternative 2, includes  
16 approximately 3,744 acres in the south central  
17 portion of Fort Benning. Alternative 3 includes  
18 approximately 2,405 acres adjacent to the eastern  
19 boundary of Fort Benning. And the no-action  
20 alternative analyzes what would happen if the  
21 proposal is not implemented and we continue to  
22 train as we are training on Fort Benning without

1 any additional changes.

2 We are considering each option  
3 thoroughly, all things considered, and have not  
4 made any decision at this point. We very much  
5 welcome your input on each alternative, as well  
6 as our Environmental Impact Analysis of each  
7 alternative. This will help inform our ultimate  
8 decision making on this proposal.

9 To be completely transparent and as  
10 identified in the Draft EIS, Alternative 1 is  
11 currently the Army's preferred alternative.  
12 Alternative 1 would provide the optimal size and  
13 configuration to enable us to conduct the highest  
14 quality heavy off-road mounted maneuver training  
15 area on Fort Benning allowing us to achieve our  
16 training mission. We studied a wide range of  
17 environmental resources and topics in the Draft  
18 EIS for each of these alternatives and we studied  
19 all equally.

20 You can find the entire Draft EIS on  
21 Fort Benning's website, as well as the virtual  
22 public meeting website. If you don't have

1 internet access, again please let us know by  
2 contacting Mr. John Brown who will provide you  
3 with the documents in a format that is best for  
4 you.

5 I'm going to briefly touch now on the  
6 potential impacts that are of larger magnitude or  
7 of most concern to the public based on what was  
8 shared with us during the public scoping process  
9 last year. Rest assured, what you shared with us  
10 during that public scoping process was heard loud  
11 and clear. And is addressed in the Draft EIS.

12 Again, the Draft EIS provides an in-  
13 depth analysis of potential impacts on all  
14 relevant topics including from the construction,  
15 operation, and maintenance of the proposed  
16 HOMMTA. Based on our analysis in the Draft EIS,  
17 potentially significant adverse impacts could  
18 occur to the following five resources.

19 The first resource would be unique  
20 ecological areas or UEAs, which are a subset of  
21 biological resources. UEAs are areas the Army  
22 takes special note of due to their unique



1 biological characteristics. UEAs are management  
2 units established at the discretion of the Army  
3 and they are not regulated under federal or state  
4 law.

5 The second resource with potentially  
6 significant adverse impacts would be federally  
7 listed threatened and endangered species  
8 including the red-cockaded woodpecker. The Army  
9 has addressed potential impacts to these species  
10 in the Draft EIS and has also prepared a HOMMTA  
11 biological assessment. The Army is currently  
12 consulting with U.S. Fish and Wildlife Service on  
13 the biological assessment. And that biological  
14 assessment is also available on Fort Benning's  
15 website for your review.

16 The third resource with potentially  
17 significant adverse impacts is cultural  
18 resources, including historic cemeteries. As  
19 part of the HOMMTA proposal, the Army included  
20 100-foot buffers around all historic cemeteries  
21 in each of the proposed HOMMTA alternatives.  
22 These buffers would stay in place throughout

1 proposed construction and operation of the  
2 selected alternative. As a mitigation measure,  
3 we are also considering buffers for potentially  
4 significant archeological resources where impacts  
5 cannot be fully mitigated.

6 The fourth resource with potentially  
7 significant adverse impacts is soils. Due to the  
8 highly erodible soils on Fort Benning, soil  
9 erosion and sedimentation is a concern within  
10 each alternative. With regulatory compliance  
11 measures and environmental protection measures  
12 added to the project, potential adverse impacts  
13 for all actions would be minor to moderate.

14 And finally, the fifth resource with  
15 potentially significant adverse impacts are  
16 wetlands and waters of the U.S. Our proposal  
17 would unavoidably adversely impact these  
18 resources and/or 100-year flood plains. We  
19 conducted an on-site delineation, designed the  
20 proposal to avoid impacts to these resources to  
21 the maximum extent possible. And prepared a  
22 finding of no practical alternatives as part of

1 the Draft EIS.

2 As analyzed and presumed in the Draft  
3 EIS, impacts to all other resource areas would be  
4 less than significant adverse, or beneficial.  
5 Potential mitigation measures on top of those  
6 that are already required by regulation or  
7 voluntarily added to the proposal by the Army are  
8 identified in the Draft EIS.

9 Having said all that, the bottom line  
10 is that we want to know what you, the public,  
11 thinks about the Draft EIS and this proposal,  
12 including its potential impacts on our  
13 environment -- an environment that we all share.  
14 The Army will absolutely consider your comments  
15 in our decision making process. Your comments  
16 will be included in the final EIS. And  
17 considered fully prior to the Army making a  
18 decision and codifying that decision in a Record  
19 of Decision or ROD.

20 As Kelly mentioned earlier, as we move  
21 into the commenting period of this meeting, the  
22 operator will open each of your lines one at a

1 time by taking you off of mute. You will each  
2 have three minutes to relay your comment and be  
3 provided a time check at two minutes and 30  
4 seconds. And with that, let me say thank you for  
5 your participation and let's get started.

6 MR. CORPUZ: All right. And just to  
7 confirm, do we just want to open up the lines of  
8 our attendees or do we want them to raise their  
9 hands?

10 MR. WIDENER: Let's have them raise  
11 their hands and bring them off mute individually  
12 one at a time.

13 MR. CORPUZ: No worries. Ladies and  
14 gentlemen, as we move to this portion of the  
15 event, if you do want to make a comment, please  
16 press #2 or #2 on your telephone keypad. Again,  
17 if you want to make a comment, please press #2 or  
18 #2 on your telephone keypad. All right, we don't  
19 see anyone yet wanting to make any comment. But  
20 I just want to remind our audience, if you do  
21 want to make a comment, please press #2 or #2 on  
22 your telephone keypad.

1 All right, it looks like we have  
2 somebody on the line. Let me open up the line.  
3 All right, please go ahead.

4 MR. TICKNOR: This is Kirk Ticknor  
5 just testing to make sure the public can make a  
6 comment, otherwise no comment. Thank you.

7  
8 MR. WIDENER: We heard you loud and  
9 clear. Thank you for your comment.

10 MR. CORPUZ: All right, just as a  
11 reminder for everyone. If you want to make a  
12 comment, please press #2 or #2 on your telephone  
13 keypad. All right, we still don't see anybody  
14 with any comments. I just want to remind  
15 everyone, if you wish to make a comment, please  
16 press #2 or #2 on your telephone keypad.

17 All right, just a reminder for our  
18 audience here, if you do want to make a comment,  
19 please press #2 or #2 on your telephone keypad.  
20 I still don't see anyone wanting to make a  
21 comment, but I just want to remind everyone if  
22 you do wish to make a comment, please press #2 or

1 #2 on your telephone keypad.

2 MR. WIDENER: Hey everyone, it's  
3 Brent Widener again. We're going to leave the  
4 line open for comments for about another minute.  
5 And if we don't have any, we will move on with  
6 our closing remarks.

7 MS. STOLL: Okay, since we have no  
8 more comments, I'm going to provide our closing  
9 remarks. And I want to sincerely thank everyone  
10 for taking time out of their evening to join us  
11 and participate in this event. If you haven't  
12 done so already, as Brent mentioned, comments are  
13 due by the 13th of July, which is when the  
14 comment period ends. Directions on doing that  
15 can be found on our website, which is  
16 [www.benning.army.mil](http://www.benning.army.mil). And again that's  
17 [www.benning.army.mil](http://www.benning.army.mil).

18 If you don't have internet access and  
19 have only -- haven't been able to find any  
20 documents online, contact Mr. John Brown by  
21 phone. His number is 706-545-7549 and he's in  
22 the office between 9:00 and 4:00. And he'll be

1 able to provide you the information in a format  
2 that you can review.

3 After the 45-day comment period  
4 concludes, the Army will consider the comments  
5 and publish a final EIS. At this point, we  
6 anticipate the final EIS being published in late  
7 2020 or early 2021. Using the same methods, we  
8 used for the Draft EIS, we'll let folks know when  
9 the final EIS is available for review. For  
10 updates on the EIS and other documents and  
11 notices, please visit again the Fort Benning  
12 website at [www.benning.army.mil](http://www.benning.army.mil). And thank you  
13 for your time and comments. This concludes our  
14 call.

15 (Whereupon, the above-entitled matter  
16 went off the record at 6:23 p.m.)

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**706-545-7549** 8:16,17  
19:21

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**8**

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**9**

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**9:00** 4:15 8:18 19:22

C E R T I F I C A T E

MATTER: Draft EIS Public Meeting

DATE: 06-30-20

I hereby certify that the attached transcription of pages 1 to 25 inclusive are to the best of my belief and ability a true, accurate, and complete record of the above referenced proceedings as contained on the provided audio recording.

*Neal R Gross*

**NEAL R. GROSS**

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

## **Appendix B: Public Scoping Report**

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***FINAL***

**FORT BENNING HEAVY OFF-ROAD  
MOUNTED MANEUVER TRAINING  
AREA**

**ENVIRONMENTAL IMPACT STATEMENT**

**SCOPING REPORT**



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*Prepared For:*

**United States Army Corps of Engineers - Savannah District**  
100 West Oglethorpe Avenue  
Savannah, Georgia 31401

**8 April 2019**

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**Appendix E:** Scoping Meeting Materials

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## List of Acronyms and Abbreviations

CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
HOMMTA	Heavy Off-Road Mounted Maneuver Training Area
MCoE	Maneuver Center of Excellence
NEPA	National Environmental Policy Act
NOI	Notice of Intent
US	United States
USACE	US Army Corps of Engineers
USEPA	US Environmental Protection Agency
USC	US Code

## 1.0 Introduction

This Scoping Report documents the United States (US) Army’s Environmental Impact Statement (EIS) scoping process conducted for the proposed Heavy Off-Road Mounted Maneuver Training Area (HOMMTA; the Proposed Action) at Fort Benning, Georgia. This scoping process was conducted in accordance with the National Environmental Policy Act (NEPA; 42 US Code [USC] §§ 4321 et seq.), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), and the Army NEPA Regulation (32 CFR Part 651). The public scoping period formally began with the Army’s publication of a Notice of Intent (NOI) to prepare the EIS in the *Federal Register* on 11 February 2019.

## 2.0 Project Background

The purpose of the proposed HOMMTA is to enable the Army to meet the requirements of Army Training Circular 25-8 and Maneuver Center of Excellence (MCoE) requirements at Fort Benning for an off-road mounted maneuver training area containing a minimum of 2,400 additional contiguous acres, although more area would provide better training opportunities. The proposed HOMMTA, which would be between 2,400 and 4,700 acres in size based on the proposed alternatives, is needed to address the lack of a sufficient contiguous area to meet off-road maneuver training requirements for heavy armor vehicles at Fort Benning.

## 3.0 Scoping Process

The 30-day public scoping period, required by NEPA regulations, served to inform potential stakeholders about the Proposed Action early in the environmental review process. It provided an opportunity for interested parties to learn about the project and to provide input on the Proposed Action, proposed alternatives, issues of concern, and proposed methods of analysis.

### 3.1 Notice of Intent

The Army published a NOI to prepare the EIS in the *Federal Register* on 11 February 2019, which initiated the 30-day public scoping period. The formal public scoping period concluded on 12 March 2019. The NOI informed the public about the Proposed Action and the Army’s intent to prepare an EIS, invited the public to attend a public scoping meeting on 26 February 2019,

and solicited public comments for consideration in establishing the scope and content of the EIS. A copy of the NOI is provided in **Appendix A**.

## **3.2 Public Outreach**

Following the publication of the NOI, the Army conducted public outreach through five primary methods, as described in the following subsections.

### **3.2.1 HOMMTA Webpage**

The Army established an informational webpage<sup>1</sup> about the Proposed Action. This informational page included a copy of the NOI, a list of 21 frequently asked questions and answers, a heavy off-road mounted maneuver training video, and contact information. Further, the Army posted a banner on the Fort Benning Home Page that linked to the HOMMTA webpage.

### **3.2.2 Community Notice, Information for Members of Congress, and Memorandum for Correspondents**

The Fort Benning Community Notice, Information for Members of Congress, and Memorandum for Correspondents are included in **Appendix B**. The Fort Benning Public Affairs Office sent the Fort Benning Community Notice concerning this matter to all local media outlets, including newspapers and television stations, on 8 February 2019 via e-mail.

### **3.2.3 Newspaper Advertisements**

The Army published a display advertisement in two local newspapers of general circulation near Fort Benning. The advertisement was published in the *Ledger Enquirer*, based in Columbus, Georgia, on 12 February 2019, and in *The Journal*, based in Buena Vista, Georgia, on 13 February 2019. These advertisements briefly described the Proposed Action, announced the 30-day public scoping period, solicited public input, and invited the public to attend the public scoping meeting. A copy of the newspaper advertisement and affidavits of publication are included in **Appendix C**.

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<sup>1</sup> <https://www.benning.army.mil/Garrison/DPW/EMD/HOMMTA/index.html>

### 3.2.4 Mailed Notices

The Army mailed scoping letters on 11 February 2019 to 140 potential stakeholders<sup>2</sup>, including Federal, State, and local agencies; elected officials; Native American Tribal governments; non-governmental organizations; and other entities that have expressed interest in Fort Benning actions previously. The Army sent separate letters to regulatory agencies, Native American Tribal governments, and non-regulatory stakeholders. Each letter announced the public scoping period, included a copy of the NOI, and invited interested parties to attend either an Agency-specific scoping meeting (i.e., for regulatory agencies and Tribal governments) or the public scoping meeting, as appropriate. An example of each type of the three letters and the full distribution list are included in **Appendix D**.

### 3.2.5 Scoping Meetings

The Army held two scoping meetings on 26 February 2019. The meetings took place at the Columbus Consolidated Government Annex, 420 10<sup>th</sup> Street, Columbus, Georgia 31901.

The first meeting occurred from 3:00 to 5:00 pm ET, and was catered toward regulatory agencies and other governmental organizations. Eight individuals attended this Agency-specific scoping meeting, representing the following governmental entities: the US Army Corps of Engineers (USACE); the City of Columbus, Georgia; the US Environmental Protection Agency (USEPA); and the Georgia Environmental Protection Division. One representative from a local television station also attended this meeting.

The second meeting occurred from 6:00 to 8:00 pm ET, and was open to the public. Six additional individuals (i.e., not represented in the eight attendees, above) attended the second meeting, including representatives from the City of Columbus, Chattahoochee County Planning and Zoning Commission, Chattahoochee County Historic Preservation Society, and Chattahoochee County Historical Association. The sign-in sheet from each meeting is provided in **Appendix E**.

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<sup>2</sup> Letters addressed to the Georgia Women Flyfishers, WXTX TV 54, and WOKS & WFXE were returned as undeliverable; efforts will be made to identify current addresses, if applicable.

The content and structure of the two meetings were identical. Each meeting began with a brief (i.e., approximately 15-minute) presentation by COL Lindner, Deputy Commandant of the Army's Armor School (aka, MCoE), that described the Proposed Action, its purpose and need, and the alternatives currently under consideration.

Following this presentation, the meeting transitioned to an open house format where attendees were invited to peruse five stations around the room that provided more information on the following topics: the NEPA process; the MCoE; cultural resources at Fort Benning; natural resources at Fort Benning; and other environmental resources at Fort Benning. These stations contained poster boards and were staffed by representatives from both Fort Benning and AECOM, Fort Benning's NEPA consultant, to provide institutional knowledge of the Installation as well as expertise in each subject area. Ten (10) related fact sheets were also provided to attendees at each meeting. The PowerPoint presentation and copies of the posters and fact sheets presented at the meetings are included in **Appendix E**.

Finally, the Army provided two methods for attendees to provide comment. Comment cards were available for attendees to submit written comments, and a court reporter was present at the public scoping meeting to transcribe verbal comments. Comments received are discussed in detail in **Section 4.0**, below.

#### **4.0 Scoping Comments Received**

The Army received comments from eight unique commenters<sup>3</sup>, including the USACE, USEPA, Chattahoochee County Historical Association, Chattahoochee County Historic Preservation Society, and three members of the public. The primary topics discussed in the scoping comments are presented in **Table 1**. All comments received are included in **Appendix F**.

Cultural resources, specifically the existing cemeteries at Fort Benning, were the most common topic of interest noted in the comments. Generally, cultural resources comments reflected an interest in cemeteries, including asking which cemeteries could be impacted, how the proposed HOMMTA could adversely affect cemeteries, how the Army would protect existing cemeteries

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<sup>3</sup> Although there were only seven unique commenters, some commenters addressed more than one topic in their comments.

from impacts, and whether cemeteries would still be available for family members to visit if the Proposed Action was implemented. These substantive comments will be specifically addressed in the Cultural Resources impact analysis in the EIS, including both existing conditions and anticipated effects.

**Table 1: Topics of Interest Among Scoping Commenters**

<b>Topics of Interest</b>	<b>Federal Agency Commenters</b>	<b>Private/Public Organization Commenters</b>	<b>Private Citizen Commenters</b>	<b>Total Commenters</b>
<b>Cultural Resources</b>		2	2	<b>4</b>
<b>Water Resources</b>	1		2	<b>3</b>
<b>Public Outreach</b>	1		1	<b>2</b>
<b>Scope of EIS</b>	1			<b>1</b>
<b>Biological Resources</b>		1		<b>1</b>
<b>Air Quality</b>			1	<b>1</b>
<b>Noise</b>			1	<b>1</b>

Another common topic of interest in the comments was water resources, including wetlands. The USACE provided information regarding stream and wetland mitigation options, noted that consultation completed during the NEPA process for biological resources (e.g., with US Fish and Wildlife Service regarding endangered species) and cultural resources (e.g., with Native American Tribes) would suffice for those requirements of the Clean Water Act Section 404 permit, inquired whether time-of-year restrictions would be implemented during proposed HOMMTA training, and inquired if there would be any recurring impacts outside the proposed water crossing locations. Additionally, two private citizens inquired as to the potential impacts on water resources and what would be done to protect them. These substantive comments will be specifically addressed in the Water Resources and Stormwater Management/Water Quality impact analyses in the EIS, including both existing conditions and anticipated effects.

The remaining topics of interest noted in the comments included the following:

- The USEPA listed several items to be addressed within the scope of the EIS, including cumulative effects; air quality; and water quality, wetlands/streams, and National

Pollutant Discharge Elimination System permits. Each of these topics will be analyzed and discussed in the EIS. The USEPA further encouraged Fort Benning to keep the local community and government informed and involved throughout this NEPA process. These substantive comments will be addressed in appropriate EIS sections.

- A representative from the Chattahoochee County Historical Association inquired as to how many acres of Fort Benning are training-limited due to presence of the red-cockaded woodpecker. This substantive comment will be discussed in the Biological Resources section of the EIS.
- A citizen questioned the adequacy of Fort Benning’s public outreach/notification process, identified concerns regarding potential air quality impacts associated with dust and other pollutants generated by the Proposed Action, and expressed displeasure regarding existing noise impacts on the local community. Potential air quality and noise impacts will both be analyzed in the EIS, and Fort Benning will continue to update the community on the status of the NEPA process for this Proposed Action.

## 5.0 Conclusion

The Army plans to address each of these substantive comments in the EIS. None of the received comments would trigger any analyses beyond those already planned, changes in the Proposed Action or considered alternatives, or additional issues or concerns to be addressed in the EIS. The Army is conducting detailed field investigations and analyses concerning cultural resources, water resources, and biological resources; these data will be included in the EIS.

Therefore, after conducting thorough internal scoping and the 30-day public scoping period, the Army has identified the **Scope of Statement** (i.e., per 32 CFR Part 651.51(d)<sup>4</sup>) to include the following resource areas: *land use and recreation, air quality, noise, geology/topography/soils, stormwater management/water quality, water resources, biological resources, cultural resources, socioeconomics, transportation, utilities, hazardous materials, and cumulative effects*. The EIS will detail the existing conditions of each of these resource areas as they relate to the Proposed

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<sup>4</sup> “Scope of Statement” per 32 CFR Part 651.51(d) requires this report to summarize the substantive issues and concerns that should be evaluated in the EIS as raised through the scoping process.



Action, and will thoroughly analyze the potential impacts that the HOMMTA could have on each resource area under each of the three Action Alternatives, as well as the No Action Alternative.

The NEPA process will also include consultation with relevant Federal and State agencies to identify measures to reduce potential impacts and ensure that proper permitting procedures are followed if the proposed HOMMTA is constructed.

No new alternatives or suggestions for changes to the existing proposed alternatives were identified during the public scoping process. Therefore, the Army will proceed with analysis of the three Action Alternatives and the No Action Alternative developed prior to the scoping period.

Any comments received after the close of the 30-day public scoping period will be addressed in the EIS, as appropriate and depending upon when they are received.

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## **Appendix C: Record of Non-Applicability (RONA) For Clean Air Act Conformity**

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# RECORD OF NON-APPLICABILITY (RONA) FOR CLEAN AIR ACT CONFORMITY

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## 1.0 Introduction

The United States Environmental Protection Agency’s *Determining Conformity of General Federal Actions to State or Federal Implementation Plans; Final Rule* (40 Code of Federal Regulations (CFR) 51 and 93) provides guidance to Federal agencies on how to meet Clean Air Act Conformity Determination requirements.

The General Conformity Rule requires Federal actions or federally funded actions planned to occur in a non-attainment or maintenance area to be reviewed prior to their implementation to ensure that the actions would not interfere with a state’s plans to meet or maintain the National Ambient Air Quality Standards (NAAQS). It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan before the action is taken (40 CFR 51.850(a)).

Federal actions may be exempt from a formal Conformity Determination if:

- (1) the action occurs in an attainment area for all criteria pollutants;
- (2) the action fits within one of the exemption categories (e.g., rulemaking and policy development and issuance; routine, recurring material and personnel transportation; actions that conduct or carry out a conforming program such as prescribed burning actions that are consistent with a conforming land management plan) (40 CFR §93.153(c)); or
- (3) the action’s emissions would not exceed designated *de minimis* levels for criteria pollutants (40 CFR §93.153(b)). The exemption categories apply to actions that would result in no emission increase or an increase in emission that is clearly *de minimis*.

## 2.0 Proposed Action

Action Proponent: United States Army

Location: Fort Benning is an approximately 182,000-acre Installation located in west-central Georgia and east-central Alabama.

Proposed Action Name: Environmental Impact Statement (EIS) for Fort Benning Heavy Off-Road Mounted Maneuver Training Area (HOMMTA)

Proposed Action: The Army proposes to construct, operate, and maintain a HOMMTA of at least 2,400 contiguous acres within the current boundaries of Fort Benning to support off-road armor vehicle training maneuvers. Currently, the only training area at Fort Benning suitable for heavy off-road mounted maneuver training is the Good Hope Maneuver Training Area (GHMTA); however, the existing GHMTA landscape contains slopes, streams, wetlands, and other limitations that cannot support the increasing maneuver training requirements for the Maneuver Center of Excellence (MCoE) and Fort Benning's tenant units. The Proposed Action would provide a training area to meet existing training needs; it would not result in additional Soldiers, traffic, or any training off of the Installation. The proposed training area would support the MCoE in its mission to train the maneuver forces of the Army, and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing Fort Benning a contiguous HOMMTA large enough to conduct realistic training.

Based on screening criteria described in Section 2.0 of the EIS, the Army carried forward three Action Alternatives and a No Action Alternative for detailed analysis within the EIS. Each Alternative is briefly discussed below; further discussion of these Alternatives is provided in Section 2.4 of the EIS.

- **No Action Alternative** – The Army would not construct and operate a new HOMMTA at Fort Benning, and would continue to operate under current conditions. The MCoE and Fort Benning tenant units would continue to conduct required training at the GHMTA to the extent possible.
- **Alternative 1 (Preferred Alternative): Northern Mounted Maneuver Training Area (NMMTA) Alternative** – A HOMMTA would be located adjacent to and east of the current Northern Maneuver Training Area and west of and in close proximity to the Digital Multi-Purpose Range Complex. Alternative 1 includes approximately 4,724 acres, and would provide approximately 6.5 kilometers (km) between platoon assembly areas. Approximately 3,200 acres suitable for heavy mounted maneuver trainings would be converted from primarily overstory forest to primarily disturbed understory and herbaceous vegetation.

Further site improvements (e.g., construction of new trails, water crossings, etc.) are described in the EIS.

- **Alternative 2: Red Diamond Alternative** – A HOMMTA would be located south of the Southern Maneuver Training Area near the Installation’s southern boundary. Alternative 2 includes approximately 3,744 acres, and would provide approximately 5.0 km between platoon assembly areas. Approximately 2,700 acres suitable for heavy mounted maneuver trainings would be converted from primarily overstory forest to primarily disturbed understory and herbaceous vegetation. Further site improvements are described in the EIS.
- **Alternative 3: Eastern Boundary Alternative** – A HOMMTA would be located between the northern duded impact area and the Installation’s eastern boundary. Alternative 3 includes approximately 2,405 acres, and would provide approximately 3.5 km between platoon assembly areas. Approximately 1,500 acres suitable for mounted maneuvers would be converted from primarily overstory forest to primarily disturbed understory and herbaceous vegetation. Further site improvements are described in the EIS.

Emissions Summary: The Proposed Action would be located in Chattahoochee and Muscogee Counties, Georgia. These counties are both located in the Columbus, Georgia-Alabama metropolitan statistical area (MSA) (OMB Bulletin No. 18-04). This MSA consists of 7 counties in Alabama and Georgia, all of which are in attainment with criteria pollutants, except for parts of Muscogee County, Georgia, which are maintenance areas for lead. As identified by the US Environmental Protection Agency<sup>1</sup> and the *Federal Register*<sup>2</sup>, the part of Muscogee County that is in maintenance for lead includes: “That portion of the county which includes a circle with a radius of 2.3 kilometers with the GNB, Inc., lead smelting and battery production facility in the center.” GNB, Inc., now Exide Technologies, is located at 3639 Joy Road, Columbus, Georgia. This facility is approximately 5 km from Fort Benning’s boundary. Therefore, Fort Benning is not included in this designated lead maintenance area. Because Fort Benning is in attainment areas for all criteria pollutants, a General Conformity Analysis is not necessary. Details on the existing Fort Benning regional and local air quality environment are provided in Section 3.3.1 of the EIS.

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<sup>1</sup> US Environmental Protection Agency. 2019, April 30. Lead (1978) Maintenance Area (Redesignated from Nonattainment) Partial County Descriptions. <https://www3.epa.gov/airquality/greenbook/lmp.html>.

<sup>2</sup> 64 Federal Register 17551, 11 June 1999.

In general, Proposed Action activities would result in short-term and long-term, direct and indirect, minor adverse effects on air quality. Short-term emissions during HOMMTA construction would be generated by, but not limited to: handling, storage, and transport of excavated and removed materials, including potential slash burning; operation of heavy-duty, diesel-powered trucks and construction equipment; and operation of workers' commute vehicles. Short-term emissions would be temporary and occur during the 2- to 3-year construction period. Long-term emissions during HOMMTA operations would be generated by, but not limited to: operation of armor and support vehicles during training events; use of unpaved areas/roads; and operation of diesel-powered machinery during maintenance activities. Long-term emissions would be intermittent (i.e., would only occur during training activities, scheduled training sessions, and maintenance activities that require motorized vehicle use) and generally consistent with existing conditions. Long-term emissions would not occur at an appreciable or significant level. Therefore, emissions from Proposed Action activities would not be expected to change the attainment status of the region or lead to a violation of any Federal, State, or local air regulations. It is unlikely that short- and long-term emissions under the Proposed Action would exceed NAAQS, *de minimis*, or major source thresholds. Proposed Action emissions would not contribute significantly or noticeably to existing Fort Benning, State, or other regional emissions. Details of the anticipated air quality impacts are provided in Section 3.3.2 of the EIS.

No mitigation measures related to air quality would be required for the Proposed Action. Best Management Practices (BMPs) would be implemented as part of the Proposed Action to further reduce minor adverse air quality impacts and ensure compliance with applicable Federal, State, and local regulations; see Table 2.1-1 in the EIS. Air Quality BMPs include, but are not limited to: spraying of water on any unpaved roads or stockpiles to limit fugitive dust emissions; use of ultra-low sulfur diesel as a fuel source where appropriate to minimize sulfur dioxide emissions; and implementing control measures on heavy construction equipment and vehicles.

In summary, the Army is exempt from preparing a Conformity Determination because the Proposed Action area is in attainment for all criteria pollutants.

Affected Air Basins: **Chattahoochee and Muscogee Counties, Georgia**

Date RONA prepared: **January 29, 2020**



### 3.0 Proposed Action Exemption

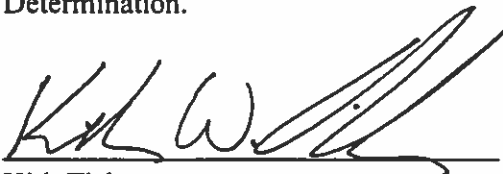
The Proposed Action is located within attainment areas; therefore, the Proposed Action is exempt from the General Conformity Rule. Moreover, the potential emissions under the Proposed Action are less than emission thresholds and would not threaten the attainment status of the region. The activities could result in minor to moderate adverse effects on air quality, but are not expected to change designation of the area with respect to NAAQS. Therefore, the Proposed Action is exempt from a formal Conformity Determination.

### 4.0 Attainment Area Status and Emission Evaluation Conclusion

Because Fort Benning is in attainment areas for all criteria pollutants, the Army concludes that the conformity requirements do not apply to the Proposed Action. Proposed Action activities would comply with applicable rules and regulations, and appropriate BMPs from Georgia Rule 391-3-1, Air Quality Control would be implemented. Proposed Action emissions would not contribute significantly to existing Fort Benning, State, or other regional emissions. Therefore, there would be no significant effects to air quality and no change in the designation of the area with respect to NAAQS. The Army concludes that further formal Conformity Determination procedures are not required, resulting in this RONA.

### 5.0 RONA Approval

To the best of my knowledge, the information presented in this RONA is correct and accurate. I concur with the finding that the Proposed Action does not require a formal Conformity Determination.



Kirk Ticknor

10/5/20  
Date

Chief, Environmental Management Division  
United States Army, Fort Benning

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**Appendix D: USAPHC Memoranda for Record: Proposed Fort Benning  
Heavy Off-Road Mounted Maneuver Training Area**

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DEPARTMENT OF THE ARMY  
US ARMY PUBLIC HEALTH CENTER  
BUILDING 5158  
8252 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND MARYLAND 21010-5403

MCHB-PH-WMG

27 March 2019

MEMORANDUM FOR RECORD

SUBJECT: PROPOSED FORT BENNING HEAVY OFF-ROAD MOUNTED  
MANEUVER TRAINING AREA

1. General. Fort Benning proposes to develop, operate, and maintain a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) to meet existing training needs. The HOMMTA would be used to support mounted and dismounted training; no live-fire training would occur. Training would use various types of heavy armor vehicle (tracked and wheeled) including but not limited to M1 tanks, Stryker tanks, and armored personnel carriers. Additional support vehicles such as HMMWVs would transverse the area.
2. Locations. Three alternatives are under consideration. Alternative 1 is sited in the north-central area, 3.5 miles from the closest boundary. Alternative 2 is located the southern portion of Fort Benning. The majority of the Alternative 2 area is 1,400 feet from the southern boundary, with an exception of one small section which is 800 feet from the boundary. However, where Alternative 2 is within 800 feet of the boundary, there are no residences in close proximity. Alternative 3 is adjacent to the eastern boundary. Within 800 feet of the eastern boundary there are approximately a dozen homes. The closest home is approximately 200 feet from the boundary (near the intersection of Appaloosa Road and County Line Road).
3. Construction Noise. Individual pieces of construction equipment typically generate noise levels of 80 to 90 A-weighted decibels (dBA) at a distance of 50 feet. With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 1,000 feet from construction sites seldom experience significant levels of construction noise. Given the temporary nature of proposed construction activities and the limited amount of noise that construction equipment would generate, this impact would be considered less than significant.

SUBJECT: PROPOSED FORT BENNING HEAVY OFF-ROAD MOUNTED  
MANEUVER TRAINING AREA

4. Operational Noise. The M1 Tank would be the loudest vehicle operating in the HOMMTA. Based on measurements conducted at Lima, Ohio; maximum M1 Tank noise levels range from 70-78 dBA at 120 meters (~400 feet). For a point source (i.e. tank), the inverse square law states that 6 dB of attenuation is achieved for each doubling of distance. Therefore, at 800 feet the maximum levels would be approximately 66 dBA and may be audible. At 1,400 feet, the tank noise would decay to below 60 dBA and would likely be unnoticeable to neighbors.

5. Conclusion. The proposed HOMMTA would not generate a significant impact to the noise environment at Fort Benning. However, if Alternative 3 is selected, vehicle activity occurring near the boundary may be audible at the residences adjacent to Fort Benning. The tank noise exposure may vary loudness to these residences depending upon how close the trail is to the boundary.

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Date: 2019.03.27 13:47:33 -04'00'

CATHERINE STEWART  
Branch Chief  
Environmental Noise



DEPARTMENT OF THE ARMY  
US ARMY PUBLIC HEALTH CENTER  
BUILDING 5158  
8252 BLACKHAWK ROAD  
ABERDEEN PROVING GROUND MARYLAND 21010-5403

MCHB-PH-WMG

24 July 2019

MEMORANDUM FOR RECORD

SUBJECT: PROPOSED FORT BENNING HEAVY OFF-ROAD MOUNTED  
MANEUVER TRAINING AREA: HELICOPTER AND SIMULATOR/PYROTECHNIC  
NOISE

1. Reference. Fort Benning Installation Compatible Use Zone (ICUZ) Study. April 2019.
2. General. Fort Benning proposes to develop, operate, and maintain a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) to meet existing training needs. In addition to various types of vehicles (tracked and wheeled) in the HOMMTA, training may include UH-60 helicopter flights and simulator/pyrotechnic activity.
3. Locations. Three alternatives are under consideration. Alternative 1 is sited in the north-central area, 3.5 miles from the closest boundary. Alternative 2 is located the southern portion of Fort Benning. The majority of the Alternative 2 area is 1,400 feet from the southern boundary, with an exception of one small section which is 800 feet from the boundary. However, where Alternative 2 is within 800 feet of the boundary, there are no residences in close proximity. Alternative 3 is adjacent to the eastern boundary. Within 800 feet of the eastern boundary there are approximately a dozen homes. The closest home is approximately 200 feet from the boundary (near the intersection of Appaloosa Road and County Line Road).
4. Simulator Noise. Simulator noise levels vary depending on the type (i.e., artillery, ground burst, grenade, Improvised Explosive Device) but typically, the variation will be limited to a few decibels. At distances closer than 200 meters, levels could exceed 130 dB Peak (high complaint risk). Under neutral weather conditions, the risk of complaints will be low beyond 500 meters, as the Peak level would not exceed 115 decibel (dB) Peak. Under unfavorable weather conditions, such as during a temperature inversion, or when there is a steady wind blowing in the direction of the receiver, the distance to a 115 dB Peak level increases to approximately 800 meters (Source: Fort Benning 2019 ICUZ Table 4-8).

SUBJECT: PROPOSED FORT BENNING HEAVY OFF-ROAD MOUNTED  
MANEUVER TRAINING AREA: HELICOPTER AND SIMULATOR/PYROTECHNIC  
NOISE

5. Helicopter Overflight Noise. The UH-60 helicopter flights supporting the HOMMTA would use in the orange and brown routes. This activity is an existing operation and would occur at the same altitudes as currently flown (1,500 feet (Mean Sea Level [~1,200 feet Above Ground Level] or lower). As discussed in the ICUZ, although UH-60 flights occurring within ¼ mile of noise-sensitive receivers have the potential to generate annoyance, the limited number of overflights would not generate a Noise Zone or have a significant impact on the noise environment (Source: Fort Benning 2019 ICUZ Tables 5-2, 5-4 and 5-5).

6. Conclusion. The proposed HOMMTA would not generate a significant impact to the noise environment at Fort Benning. However, if Alternative 3 is selected simulator/pyrotechnic activity occurring near the boundary may be audible at the residences adjacent to Fort Benning. The simulator noise exposure may vary loudness to these residences depending upon how close the trail is to the boundary.

7. Recommendation. If Alternative 3 is selected, notify the community adjacent to the eastern boundary of the training and projected timeline of use. Additionally, to lower the risk of noise complaints, ensure that simulators are not used within 200 meters of the nearest residence.

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Environmental Noise



**Appendix E: Finding of No Practicable Alternative (FONPA) for Construction  
in Wetlands and 100-Year Floodplains**

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## **FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA) FOR CONSTRUCTION IN WETLANDS AND 100-YEAR FLOODPLAINS**

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### **1.0 Introduction**

Fort Benning is an approximately 182,000-acre installation located in west-central Georgia and east-central Alabama. Fort Benning plays a pivotal role in supporting the Army’s overarching mission. As the Army’s Maneuver Center of Excellence (MCoE), the home of the Army’s Armor and Infantry Schools, Fort Benning must support the institutional training of Infantry and Armor Soldiers and leaders. The institutional training conducted at Fort Benning provides Army leaders with the opportunity to respond to a wide variety of situations that they can expect to encounter on the modern battlefield. Fort Benning is also home to several deployable units that conduct off-road mounted maneuver training, including the 1st Security Force Assistance Brigade, Task Force 1-28 Infantry, and elements of the 75th Ranger Regiment.

The Army proposes to develop, operate, and maintain a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) of at least 2,400 contiguous acres within the current boundaries of Fort Benning to support off-road armor vehicle maneuver (i.e., the Proposed Action). The proposed training area would support the MCoE in its mission to train the maneuver forces of the Army, and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing Fort Benning a contiguous HOMMTA large enough to conduct realistic training. The HOMMTA also supports the Army training strategy, which has changed to “cross-domain movement and maneuver.” This training strategy requires additional land to conduct appropriate training to prepare Soldiers for potential threats. The steady increase of lethality, range, and rate of fire of modern weapons enables enemies to inflict mass destruction on closely clustered targets, requiring Army forces to operate in a dispersed manner and adjust tactics accordingly. The HOMMTA will enable Fort Benning to meet these requirements.

The Army determined that elements of the Proposed Action must be located within portions of the 100-year floodplain and wetlands on Fort Benning. Under Executive Order (EO) 11988, *Floodplain Management*, the head of a Federal agency must find that there is no practicable alternative to development within the 100-year floodplain. Under EO 11990, *Protection of*

*Wetlands*, Federal agencies must avoid undertaking new construction located in wetlands unless the head of the agency finds that there is no practicable alternative to such construction. Further, the Army must take all practicable measures to minimize harm to or within the floodplain and all practicable measures to minimize harm to wetlands.

This finding incorporates the analysis and conclusions of the *Final Environmental Impact Statement for the Fort Benning Heavy Off-Road Mounted Maneuver Training Area (Draft EIS)*. It was made available with the Draft Environmental Impact Statement (EIS) for public comment to meet the public notice requirements of both EOs. The Army received no comments on the Draft FONPA.

## **2.0 Notice of Floodplain and Wetland Involvement**

EO 11988 requires Federal agencies to determine whether a proposed action would occur within a floodplain and to avoid floodplains to the maximum extent possible when there is a practicable alternative. The 100-year floodplain is defined as an area adjacent to a water body that has a 1 percent or greater chance of inundation in any given year. The Army has determined that construction, operation, and maintenance of the proposed HOMMTA would occur in the 100-year floodplain on Fort Benning.

EO 11990 requires that each Federal agency, to the extent permitted by law, “shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds: (1) that there is no practicable alternative to such construction; and, (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use.” The term “wetlands” means “those areas that are inundated by surface or ground water with a frequency sufficient to support and under normal circumstances do or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction.”

Potential impacts from the HOMMTA Action Alternatives could affect both floodplains and wetlands, as discussed below.

Publication in the *Federal Register* of the *Notice of Availability (NOA)* for the *Draft EIS* commenced a 45-day public review period and announced the virtual public meeting for the *Draft*

*EIS*. The notice also stated that the 45-day public comment period applied to comments on the *Draft FONPA*. Comments on the *Draft FONPA* were also accepted at the virtual public meeting for the *Draft EIS*.

### **3.0 Description of the Proposed Action and Discussion of Alternatives**

The HOMMTA would include contiguous training area suitable for force-on-force training for up to approximately 24 vehicles at one time, with support vehicles in the area, allowing for training consistent with the Army’s cross-domain movement and maneuver training strategy. This strategy requires dispersed operation of maneuver units over a larger contiguous training space than Fort Benning currently provides. The HOMMTA needs to be at least 2,400 acres in size. Training land development would primarily include vegetation removal and the construction of tank trails, culverted water crossings, and road upgrades, as well as burying existing overhead utilities.

#### **3.1 Alternatives Selection Criteria**

The practicability of a given Alternative is evaluated by considering pertinent factors such as community welfare, environmental impact, and feasibility in light of the overall project purpose and need. The Army developed screening criteria to assess whether an Alternative would meet its purpose and need and, therefore, could be considered reasonable. The criteria, described in Section 2.2 of the *EIS*, included compatibility with existing training, adequate size, maneuverability, cost, efficiency of proposed training, and ability to implement the Alternative without additional Direct Support to Training Event personnel. Application of these criteria resulted in identification of three reasonable Action Alternative locations on Fort Benning.

#### **3.2 Reasonable Alternatives Subject to Further Analysis**

##### **3.2.1 No Action Alternative**

Under the No Action Alternative, the Army would not construct and operate a new HOMMTA at Fort Benning, and would continue to operate under current conditions. Shortfalls in training area size and type, as identified in the *EIS*’s purpose and need, would not be addressed. The No Action Alternative did not meet the screening criteria developed by the Army, but was retained to provide a comparative baseline against which to analyze the effects of the Action Alternatives, as required under the Council on Environmental Quality National Environmental Policy Act (NEPA)

Regulation (40 Code of Federal Regulations [CFR] 1502.14(d)). The No Action Alternative reflects the status quo and serves as a benchmark against which the effects of the Proposed Action can be evaluated. Because it does not meet the purpose and need for the Proposed Action, this Alternative is not “practicable” within the meaning of EOs 11988 and 11990.

### **3.2.2 Alternative 1 (Preferred Alternative): Northern Mounted Maneuver Training Area (NMMTA) Alternative**

The NMMTA Alternative, or Alternative 1, includes approximately 4,724 acres. Construction of the 27 water crossings, 2 bridge sites, and other infrastructure within Alternative 1 would permanently and adversely impact approximately 5.9 acres of wetlands. During construction, an additional approximately 3.4 acres of wetlands would be temporarily affected within the construction limits of disturbance. While approximately 63 acres of floodplains would have forest vegetation removed to support mounted maneuver training, there would be no infrastructure construction or other actions that would reduce floodwater storage capacity or conveyance in any 100-year floodplains. No effects to water quality would be anticipated beyond Fort Benning’s boundary. The construction of Alternative 1 would not result in an increased flood risk to life or property located downstream.

### **3.2.3 Alternative 2: Red Diamond Alternative**

The Red Diamond Alternative, or Alternative 2, includes approximately 3,744 acres. Construction of the proposed 13 miles of trails, 9 miles of roads, 19 water crossings, and two 1-acre concrete Heavy Equipment Transport (HET) drop-off pads within Alternative 2 would permanently impact approximately 2.0 acres of wetlands. During construction, an additional approximately 4.1 acres of wetlands would be temporarily affected within the construction limits of disturbance. This Alternative would result in vegetation removal and off-road maneuver training within approximately 72 acres of 100-year floodplains. In the long-term, no permanent structures would occur within the floodplain; Alternative 2 would not divert or impede flood water flows or diminish the storage capacity of the affected floodplains.

### **3.2.4 Alternative 3: Eastern Boundary Alternative**

The Eastern Boundary Alternative, or Alternative 3, includes approximately 2,405 acres. Construction of the proposed 10 miles of trails, 8 miles of improved roads, 25 water crossings, two

1-acre concrete HET drop-off pads, and 2 miles of underground utilities within Alternative 3 would permanently impact approximately 6.3 acres of wetlands. During construction, an additional approximately 12.5 acres of wetlands would be temporarily affected within the construction limits of disturbance. This Alternative would have no effect on 100-year floodplains as no 100-year floodplains are present within the Alternative.

### **3.3 Impacts and Mitigation Measures**

EO 11988 states that if the only practicable alternative requires siting in a floodplain, the agency shall, prior to taking action, design or modify its action to minimize potential harm to or within the floodplain.

EO 11990 requires that the proposed action include “all practicable measures to minimize harm to wetland[s].” Prior to implementing projects impacting wetlands, the construction contractor would obtain coverage under applicable permits issued by the US Army Corps of Engineers (USACE) in accordance with the Clean Water Act. Adherence to avoidance, mitigation, and compensation requirements specified in the permits would be required. These include all practicable measures available and minimization of permanent impacts on wetlands to ensure that such impacts remain less than significant.

All three Action Alternatives include environmental protection measures (EPMs; i.e., common environmentally sensitive construction practices and implementation of existing Fort Benning resource management plans) and regulatory compliance measures (RCMs; e.g., appropriate permitting under the Clean Water Act). Construction activities would be planned, to the extent practicable, in a manner that reduces the potential for erosion to occur, such as by minimizing the amount of time that soil is exposed (i.e., through revegetation measures), minimizing disturbance of moderately or highly erodible soils, lightly wetting disturbed areas to reduce dust, and/or conducting vegetation removal and land disturbance activities during times of the year with generally lower amounts of precipitation. The Army would restore compacted soils (e.g., via regrading) and revegetate disturbed areas with grasses following construction, to the extent feasible. The Fort Benning Integrated Training Area Management program requires monitoring and repair of eroded areas and maintenance of sustainable training lands. Prioritizing the monitoring, rehabilitation, and maintenance of sites having erosion problems has been

demonstrated to minimize and control soil loss and erosion from historic and current training activities at Fort Benning, including in the Good Hope Maneuver Training Area, where heavy maneuver training also occurs.

For each of the Action Alternatives, the Army would obtain Clean Water Act Section 404/401 permits from USACE Savannah District and the State of Georgia once final design is completed and prior to construction. The permitting process would prescribe measures that avoid and/or minimize impacts during construction. When impacts cannot be avoided or minimized to acceptable levels, this permitting process would result in compensatory mitigation for resource loss or degradation, such as purchase of mitigation bank credits or In-Lieu Fee program credits, creation of an on- or offsite wetland mitigation bank, or other measures agreed upon by the Army with the USACE. In the long term, the placement of water crossings would not constitute a permanent diversion or impediment to water flowing through the affected areas. That is, the natural function benefits of the retained streams and wetlands would remain intact post-construction. As Fort Benning proposes to install appropriately sized and placed culverts sufficient to convey existing stream flows (as developed during the engineering design phase), long-term changes to flows would not occur.

Taken together, these measures would avoid or minimize the loss of and impacts to the floodplains and wetland resources of Fort Benning. These measures represent all practicable measures to minimize harm to floodplains and wetlands.

#### **4.0 Public Comments**

The Army received no public comments on the Draft FONPA.

#### **5.0 Finding**

All three of the reasonable Action Alternatives are located in areas with floodplains, wetlands, or a combination of the two. Complete avoidance of floodplains and wetlands through project design was not feasible. As such, the Army has determined there are no practicable alternatives to siting the HOMMTA in areas with floodplains, wetlands, or both.



Following a thorough evaluation of alternate plans that would satisfy the purpose and need of the Proposed Action, I find that there is no practicable alternative that would site the Proposed Action completely outside of floodplains and wetlands. Therefore, the Army will ensure that all practicable measures to minimize impacts to and within the floodplain environment and to minimize harm to wetlands will be incorporated into the Proposed Action.

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Date

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Deputy Assistant Secretary of the Army  
Installations, Housing & Partnerships

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## **Appendix F: Fort Benning Heavy Off-Road Mounted Maneuver Training Area Final Biological Assessment and US Fish and Wildlife Service Biological Opinion**

The HOMMTA Biological Assessment was provided in Appendix F for the HOMMTA Draft EIS and is incorporated by reference into this Final EIS.

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# Biological Opinion

## Fort Benning's Heavy Off-Road Mounted Maneuver Training Area

FWS Log #: 2020-F-1232



Prepared by:

U.S. Fish and Wildlife Service  
Ecological Services - West Georgia Sub-Office  
Columbus, Georgia 31995

A handwritten signature in blue ink that reads "Donald W. Imm".

27 July 2020

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Donald Imm, Field Supervisor  
Ecological Services  
U.S. Fish and Wildlife Service, Athens, Field Office

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Date

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## CONSULTATION HISTORY

This section lists key events and correspondence during the course of this consultation. A complete administrative record of this consultation is on file in the Service's West Georgia Ecological Services Sub-Office located on Fort Benning Army Installation.

### **August 15, 2019**

- Army initiated early coordination meeting with the U.S. Fish and Wildlife Service regarding Fort Benning's proposed Heavy Off-Road Mounted Maneuver Training Area.

### **February 02, 2020**

- Fort Benning provided the U.S. Fish and Wildlife Service (Service) a letter of request to enter into formal consultation for their project; Fort Benning's Heavy Off-Road Mounted Maneuver Training Area on the red-cockaded woodpecker (*Picoides borealis*).

### **February 02, 2020**

- Service provided Fort Benning with a letter (**FWS Log #:** 2018-F-1232) to initiate formal consultation. The Service letter acknowledged the receipt of Fort Benning's letter to formally consult, recognized the proposed Action and Action Components, and provided Fort Benning with the consultation closing date of July 02, 2020.

# BIOLOGICAL OPINION

## 1. INTRODUCTION

A biological opinion (BO) is the document that states the findings of the U.S. Fish and Wildlife Service (Service) required under section 7 of the Endangered Species Act of 1973, as amended (ESA), as to whether a Federal action is likely to:

- jeopardize the continued existence of species listed as endangered or threatened; or
- result in the destruction or adverse modification of designated critical habitat.

The Federal action addressed in this BO is the Fort Benning Army Installation's (Ft. Benning/Installation/Army) proposed *Fort Benning Heavy Off-Road Mounted Maneuver Training Area* (the Action). This BO considers the effects of the Action on the red-cockaded woodpecker.

Additionally, the Service recognizes from the Installation's Biological Assessment (BA), the efforts to conserve and protect the gopher tortoise (*Gopherus polyphemus*). The gopher tortoise is federally listed as Threatened across the western portion of its range. This area extends west from the Tombigbee and Mobile Rivers in Alabama across Mississippi and into southeastern Louisiana. Fort Benning, however, is located within the eastern portion of the gopher tortoise range. Notwithstanding, on July 26, 2011, the Service released its determination regarding inclusion of gopher tortoises on the Federal endangered species list in the eastern portion of its range, with the finding that listing is warranted, but precluded by other, higher priorities. The Service classified the tortoise as one of nearly 250 "candidate" species, which Federal officials can protect by encouraging voluntary help from property owners. The gopher tortoise is also listed as Threatened by the State of Georgia.

In 2008, the Army finalized its "Management Guidelines for the Gopher Tortoise on Army Installations." The purpose of the guidelines is to establish baseline management standards. Fort Benning has implemented a new population monitoring program for gopher tortoises on the Installation in accordance with these management guidelines. Fort Benning also has developed a Gopher Tortoise Management Plan that describes the Installation's conservations goals, management prescriptions, survey and monitoring protocols, and translocation procedures (Thornton 2011).

For this consultation, the Service recommends that the Installation follow the plans and procedures described in the Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) BA, the Army Gopher Tortoise Management Guidelines and the Fort Benning Integrated Natural Resources Management Plan to identify and remove gopher tortoises from areas that are subject to vegetation removal or ground disturbance (Fort Benning 2011). Prior to any tree/vegetation removal (e.g., timber harvesting), Fort Benning would perform site-specific gopher tortoise surveys. If an active burrow is located, the tortoise would be trapped and translocated to suitable habitat outside of the Action Area, and the burrow would be collapsed. Any translocations would be undertaken in close coordination with the Army's Gopher Tortoise Team and Georgia's Nongame Program (Fort Benning 2011). Prior to implementation of the Action, the Army



suggested in their BA, that they may consider use of the gopher tortoise crediting program as described in the 2017 document, *Framework Programmatic Conference Opinion, Department of Defense Gopher Tortoise Conservation and Crediting Strategy*. This process may include tortoise relocations to Army Compatible Use Buffer (ACUB) properties as a means to offset any adverse impacts to the gopher tortoise. If, the Installation chooses to initiate this process during the consultation, the Service is committed to supporting the effort.

The Service recognizes the Action does not affect designated critical habitat; therefore, this BO does not address critical habitat.

From the BA, the Installation determined that the Action will have no effect on; (1) the aquatic herb, little amphianthus/Threatened (*Amphianthus pusillus*) as there are no known occurrences on Ft. Benning, (2) the perennial herb, Georgia rockcress/Threatened (*Arabis georgiana*) with no known occurrences or habitat in the Action Area, (3) the annual herb Harperella/Endangered (*Ptilimnium nodosum*) with no known occurrences on the Installation, (4) the colonial shrub, Michaux's sumac/Endangered (*Rhus michauxii*) which there are no known occurrences on Ft. Benning, (5) the mat-forming perennial herb, fringed campion/Endangered (*Silene polypetala*) with no known occurrences on the Installation, the perennial herb relict trillium/Endangered (*Trillium reliquum*), which does not occur in the Action Area, (6) the freshwater mussel purple bankclimber/Threatened (*Elliptoideus sloatianus*) which there are no known occurrences on the Installation, (7) the freshwater mussel shinyrayed pocketbook/Endangered (*Hamiota subangulata*) of which there are no known occurrences on Ft. Benning, (8) the freshwater mussel gulf moccasinshell (*Medionidus penicillatus*) which is not known to occur on the Installation, (9) the freshwater mussel oval pigtoe/E (*Pleurobema pyriforme*) not known to occur on Ft. Benning, and (10) the wading bird wood stork/Threatened (*Myrceria americana*) which there are no foraging or nesting habitats in the Action Area.

The Service concurs with the Installation's no affect determination for the species listed above. This fulfills the Army's responsibilities for the Action under §7(a)(2) of the ESA for these ten species and critical habitats (when designated). We do not address further these species and critical habitats in this BO.

### **BO Analytical Framework**

A BO that concludes a proposed Federal action is *not* likely to *jeopardize the continued existence* of listed species and is *not* likely to result in the *destruction or adverse modification* of critical habitat fulfills the Federal agency's responsibilities under §7(a)(2) of the ESA.

“Jeopardize the continued existence means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species” (50 CFR §402.02). “Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species” (50 CFR §402.02).

The Service determines in a BO whether we expect an action to satisfy these definitions using the best available, relevant data, in the following analytical framework (see 50 CFR §402.02 for the regulatory definitions of *action*, *action area*, *environmental baseline*, *effects of the action*, and *cumulative effects*).

- a. *Proposed Action*. Review the proposed Federal action and describe the environmental changes its implementation would cause, which defines the action area.
- b. *Status*. Review and describe the current range-wide status of the species or critical habitat.
- c. *Environmental Baseline*. Describe the condition of the species or critical habitat in the action area, without the consequences to the listed species caused by the action. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early consultation, and the impacts of State or private actions which are contemporaneous with the consultation.
- d. *Effects of the Action*. Predict all consequences to species or critical habitat caused by the action, including the consequences of other activities caused by the action, which are reasonably certain to occur. Activities caused by the action would not occur but for the action. Effects of the action may occur later in time and may include consequences that occur outside the action area.
- e. *Cumulative Effects*. Predict all consequences to listed species or critical habitat caused by future non-Federal activities that are reasonably certain to occur within the action area.
- f. *Conclusion*. Add the effects of the action and cumulative effects to the environmental baseline, and in light of the status of the species, formulate the Service's opinion as to whether the action is likely to jeopardize species or adversely modify critical habitat.

## **2. ACTION**

The Army proposes to construct, operate, and maintain a HOMMTA at Fort Benning to support off-road mounted maneuver. The training area would support the Maneuver Center of Excellence (MCoE) in its mission to train the maneuver forces of the Army and would increase the total amount of heavy off-road maneuver training area on Fort Benning, providing the Installation with a contiguous HOMMTA large enough to conduct realistic training in accordance with current Army training requirements. The Action would not result in additional Soldiers on-Post, or any training off of the Installation. The Installation also suggests the other site improvement activities caused by the Action includes; (1) Thirty-four culverted water crossings, (2) One-mile of new paved armor vehicle trails, (3) Two miles of improvements on Buena Vista Road, (4) Two training area bridges, and (5) Four miles of aerial three-phase power lines to be buried underground; hardening of the existing fiber optics cable at the 15 tank crossing points on 2<sup>nd</sup> Armored Division Road and Lorraine Road.

### **2.1. HOMMTA Construction**

The Installation's BA reports that construction, or initial site preparation, of the HOMMTA would likely take between 2 and 3 years. The first stage of HOMMTA construction would be

vegetation removal. Based on the final HOMMTA design, the Army would sell (i.e., to a contractor) merchantable timber to remove trees (e.g., through a timber harvest) from the specific portions of the HOMMTA where heavy maneuver would occur. A contractor would also grub stumps and remove slash and other remaining vegetation in accordance with conventional procedures. This may include burning of slash or remaining vegetation in accordance with applicable Federal and State laws and regulations, including Georgia Air Rules. Throughout the vegetation removal process, Fort Benning reports the contractor would minimize environmental impacts by implementing National Pollutant Discharge Elimination System (NPDES) Best Management Practices (BMPs) and relevant permitting.

Additionally, during the construction phase, areas proposed for off-road maneuver activities would be designed to minimize adverse impacts to streams, wetlands, and other areas with sensitive environmental resources. Steep slopes, including those greater than 20 percent, and other areas not suitable for heavy maneuver would not be disturbed. A conceptual design for the HOMMTA considers areas where trees and other vegetation would not be removed during construction. Existing vegetation would likely be retained within cemeteries and a 100-foot buffer around them; wetlands and streams and a minimum 25-foot buffer around these features; and slopes greater than 20 percent. The Army communicates in the BA that the areas of retained vegetation will be determined more precisely during their formal design process.

Once the vegetation removal stage is complete, the Army or its contractors would grade some slopes; install erosion control measures; upgrade roads to have a minimum 10-inch concrete surface to support armor vehicle traffic; harden or bury utilities within their existing rights-of-way (except where they cross streams, wetlands, or regulated stream buffers - in these locations, utilities would remain unmodified or be directionally bored beneath these resources); clearly mark areas that are off-limits to heavy maneuver (e.g., buffers around streams, wetlands, archaeological sites, and cemeteries); and construct water crossings, gravel tank trails, and other necessary infrastructure. The HOMMTA would be designed and built for a minimum lifespan of 40 years in accordance with Department of Defense's (DoD) Unified Facilities Criteria. Throughout HOMMTA construction, the Army and its contractors should implement standard environmental protection measures (EPMs) to reduce potential impacts to environmental resources.

Prior to beginning the construction process, the Army would minimize, as appropriate, potential adverse impacts to threatened and endangered (T&E) species and other environmental resources (e.g., streams and wetlands, significant cultural sites) as determined through associated consultation processes and the NEPA process. This consultation process represents the first step in the Army's efforts to formally engaging with the Service in an effort to identify potential adverse impacts on T&E species.

## **2.2. HOMMTA Training**

During training operations, the HOMMTA would be used to support multiple types of maneuver training. Most notably, the Army reports the HOMMTA would support force-on-force heavy off-road maneuver training for up to 24 vehicles at one time, as well as associated military support vehicles that would be generally restricted to assembly areas.

During these force-on-force exercises, The Installation reports in their BA, three platoons comprised of four armor vehicles each would assemble at each end of the HOMMTA in platoon assembly areas. Platoon assembly areas are approximately 20-acre areas where vehicles assemble and prepare to enter the course. Each set of vehicles would either maneuver towards and target the other, or one side would approach while the other would defend a portion of the HOMMTA. No live-fire training will occur, although the Army would use pyrotechnics, simulators, and blanks commonly used in maneuver training activities to simulate live fire. The Action will be used for both day and night training. Ft. Benning reports that the proposed training activities could occur up to the boundaries of the training area routes.

Fort Benning reports in their BA, the HOMMTA's size and layout would enable Soldiers to train to the Army's new cross-domain movement and maneuver strategy requirements. This strategy requires Soldiers to be able to maneuver in dispersed patterns over a large space. To meet requirements, each avenue of approach in the HOMMTA (i.e., open, off-road areas in which armor vehicles can maneuver towards an adversary) would be several hundred meters wide, and each avenue would allow open maneuver of one or two armor vehicles with supporting dismounted elements (i.e., Soldiers on foot who are training with the mounted elements). Dismounted training activities already occur throughout the area; the Action would not change these activities. As a result, dismounted training would continue to occur on the entire HOMMTA footprint. Additionally, The Installation reports that when not being used for force-on-force training, other units/courses would use the HOMMTA to better learn their vehicles capabilities.

### **2.3. HOMMTA Maintenance**

Fort Benning reports in their BA that maintenance will be conducted through Fort Benning's Integrated Training Area Management (ITAM) program when funding is available, or through other mechanisms. The Installation's reports their ITAM program seeks to optimize sustained use of lands for realistic training by integrating mission requirements with environmental requirements and sound land management practices. To this end, the ITAM program implements management through ongoing monitoring of the land condition in training areas. When land condition concerns are identified, the ITAM program plans and implements both preventative and corrective rehabilitation and maintenance projects, as appropriate. These projects are specifically designed to maintain quality military training lands, minimize long-term costs associated with land rehabilitation or additional land purchase, and ensure compliance with environmental laws and regulations.

Due to the nature of heavy off-road maneuver training, maintenance activities would be largely focused on preventing and addressing soil disturbance and the consequent potential for erosion and sedimentation. The Ft. Benning BA suggests the Army anticipates implementing standard soil stabilization methods, such as vegetative controls and replanting, re-graveling, and regrading/filling ruts, rills, and gullies. The Army would also install and maintain erosion control features, such as stone check and rock filter dams, water bars, sediment traps, turnouts, and similar measures. The Installation reports constructed water crossings would be monitored regularly to ensure they remain in working condition, and that culverts continue to convey surface water flow as designed. These and other maintenance actions, the Installation reports,

would ensure both that the HOMMTA remains useable as a quality training area and that any potential adverse environmental impacts that may develop over time due to operations (e.g., erosion) are minimized to the extent feasible.

## **2.4. Other Activities Caused by the Action**

A BO evaluates all consequences to species or critical habitat caused by the proposed Federal action, including the consequences of other activities caused by the action, that are reasonably certain to occur (see definition of “effects of the action” at 50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities caused by the action (but not part of the action) are reasonably certain to occur. These factors include, but are not limited to:

- (1) past experiences with activities that have resulted from actions that are similar in scope, nature, and magnitude to the action;
- (2) existing plans for the activity; and
- (3) any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the Installation did not describe, and the Service is not aware of, any additional activities caused by the Action that are not included in the previous description of the Action. Therefore, this BO does not address further the topic of “other activities” caused by the Action.

## **2.5. Action Area**

The action area is defined as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 CFR §402.02). Delineating the action area is necessary for the Federal action agency to obtain a list of species and critical habitats that may occur in that area, which necessarily precedes any subsequent analyses of the effects of the action to particular species or critical habitats.

It is practical to treat the action area for a proposed Federal action as the spatial extent of its direct and indirect “modifications to the land, water, or air” (a key phrase from the definition of “action” at 50 CFR §402.02). Indirect modifications include those caused by other activities that would not occur but for the action under consultation. The action area determines any overlap with critical habitat and the physical and biological features therein that we defined as essential to the species’ conservation in the designation final rule. For species, the action area establishes the bounds for an analysis of individuals’ exposure to action-caused changes, but the subsequent consequences of such exposure to those individuals are not necessarily limited to the action area.

The Action Area for this BO includes 3,200 acres located adjacent to and east of the current Northern Maneuver Training Area and west of the Digital Multi-Purpose Range Complex (DMPRC). As identified in the Installation’s BA, the land proposed for development is generally considered undeveloped, however, it sits within a military-use setting with surrounding areas primarily consisting of forestland and existing training facilities. As reported in the BA, this

primarily forested area includes some existing training facilities; that could generally continue with scheduling considerations or be relocated elsewhere on the Installation with no or negligible environmental impacts.

There are lands where off-road heavy maneuver is not planned, such as steep slopes, wetlands/surface waters, cultural resource sites, and associated buffers that would be avoided by mounted forces during training operations. Various construction activities would be required to establish the Action Area. The roughly 3,200 acres suitable for mounted maneuver would be converted from primarily overstory forest to primarily disturbed understory and herbaceous vegetation.

For this consultation, the Action Area only applies to the red-cockaded woodpecker (RCW), as it is the only federally listed species potentially affected by the proposed HOMMTA. The HOMMTA would have no potential effect on Critical Habitat of any federally listed species.

### **3. SOURCES OF CUMULATIVE EFFECTS**

A BO must predict the consequences to species caused by future non-Federal activities within the action area, *i.e.*, cumulative effects. “Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation” (50 CFR §402.02). Additional regulations at 50 CFR §402.17(a) identify factors to consider when determining whether activities are reasonably certain to occur. These factors include but are not limited to existing plans for the activity; and any remaining economic, administrative, and legal requirements necessary for the activity to go forward.

In its request for consultation, the Installation did not describe, and the Service is not aware of, any future non-Federal activities that are reasonably certain to occur within the Action Area. Therefore, we anticipate no cumulative effects that we must consider in formulating our opinion for the Action.

### **4. STATUS OF THE SPECIES**

This section summarizes best available data about the biology and current condition of red-cockaded woodpeckers (*Picoides borealis*) throughout its range that are relevant to formulating an opinion about the Action. The Service published its decision to list red-cockaded woodpeckers as endangered on October 13, 1970 (35 FR 16047).

#### **4.1. Species Description of Red-cockaded Woodpeckers**

The RCW is a small woodpecker, measuring about 7 inches in length, with a wingspan of about 15 inches, and weighing about 1.7 ounces (47 grams; USFWS 2003). Its back is barred with black and white horizontal stripes and is distinguished from other woodpeckers by a black cap and nape that encircle large white cheek patches. Adult males possess a tiny red streak or tuft of feathers, the cockade, in the black cap near each ear and white cheek patch. The small cockade usually is covered by the black crown, except when protruded during excitement, and is not

readily visible except upon close examination or capture. Adult males and females are not readily distinguishable in the field. Juvenile males have a red crown patch until the first molt, which can be distinguished from the black crown of juvenile females (USFWS 2003).

The RCW occurs primarily in pine and pine-hardwood forests of the piedmont and coastal plain of 11 southern/southeastern states, including Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Texas, and Virginia.

## **4.2. Life History of Red-cockaded Woodpeckers**

The RCW is a territorial, non-migratory, cooperative breeding species (Lennartz et al. 1987; Walters et al. 1988a), and the only North American woodpecker that exclusively excavates its cavities for roosting and nesting in living pines. Each group member has its own cavity, although there may be multiple cavities in a cavity tree. The RCW chip bark and maintain resin wells on the bole around the cavity where the fresh flow of sticky resin is a deterrent against predatory snakes (Rudolph et al. 1990) and indicates an active cavity tree. The aggregate of cavity trees, surrounded by a 200-foot, forested buffer, is called a cluster (Walters 1990). Cavities within a cluster may be complete or under construction (starts) and either active, inactive or abandoned. Clusters with one or more active cavity tree are considered as active RCW clusters.

The RCW live in social units called groups. This cooperative unit consists of a single male or a monogamous breeding pair, offspring of the current year, and 0–4 adult helpers (Walters 1990). Helpers typically are male offspring from previous breeding seasons that assist the breeding pair by incubating eggs, feeding the young, excavating cavities, and defending the territory (Ligon 1970, Lennartz et al. 1987, Walters et al. 1988a). Some large populations have instances, although very infrequent, of female helpers (Walters 1990; DeLotelle and Epting 1992; Bowman et al. 1997). Clusters only occupied by a single adult male are classified as single bird groups, while an adult male and female with or without helpers occupying the same cluster is classified as a potential breeding group (PBG).

The RCW is territorial, and each group defends its home range from adjacent groups (Hooper et al. 1982; Ligon 1970). The defended territory includes habitat used for cavity trees and foraging. Red-cockaded woodpeckers feed mostly on a variety of arthropods, particularly ants and wood roaches, by foraging predominately on and under the bark of larger and older living pines (Hooper 1996; Hanula and Franzreb 1998). Males tend to forage in crowns and branches, while females commonly forage on the trunk. Dead and dying pines are important temporary sources of prey, and hardwoods are used occasionally. Group members forage together each day in parts of their territory.

Red-cockaded woodpeckers have large home ranges relative to their body size. The RCW tends to forage within 0.5 miles of their cluster. Red-cockaded woodpecker groups forage within a home range that is highly variable, from as little as 86 acres to as much as 556 acres (Conner et al. 2001; USFWS 2003). Home range size is variable within and between populations, but tends to reflect foraging habitat quantity and quality, boundaries of adjacent RCW territories, and possibly cavity tree resource availability (Conner et al. 2001; USFWS 2003).

Because of the foraging behavior of RCW, a 0.5-mile radius is used to establish survey areas to identify any unknown RCW clusters that may be affected prior to clearing or removing any potential RCW habitat. The 0.5-mile survey area provides a high probability that any unknown clusters will be identified that potentially use habitat within the area to be affected. This is based on RCW foraging ecology and behavior, the limitations of natural cavities to population growth, the ecology of RCW population growth via the formation of new clusters/groups, and relationship of habitat used for foraging within 0.5 miles of a cluster center.

A 0.5-mile radius circle around a cluster center encompassed an average of 91% of the actual home ranges of RCW groups in a North Carolina study (Convery and Walters 2003). Thus, unknown clusters identified by surveys within 0.5 miles of the edge of clearing or construction likely will have the vast majority of their foraging habitat somewhere within this 0.5-mile area.

### **4.3. Population Dynamics of Red-cockaded Woodpeckers**

The RCW is long-lived, with individuals frequently living up to 10 years or longer. For a bird of its size residing in temperate regions, the RCW exhibits exceptionally high survival rates. Survival rates of adult male helpers and breeders generally are about 5 percent higher than that of breeding females. There is distinct geographic variation in survival; survival rates are about 75 percent for males and 70 percent for females in the northern, inland population in the North Carolina Sandhills, about 80 percent and 75 percent respectively in coastal populations in North Carolina, and 86 percent and 80 percent respectively in central Florida. Such an association between increased survival and reduced fecundity is common in animal life histories. Annual variation in adult survival within populations is sufficiently small that it can largely be attributed to random chance rather than changes in environmental conditions (Walters et al. 1988a). This level of variation can have large effects in small populations, however, and it appears that there are occasional poor years in which survival is substantially reduced. Also, some populations are vulnerable to periodic catastrophic mortality due to hurricanes.

Survival during the first year is more prone to underestimation than survival at subsequent ages, due to the greater possibility of dispersal out of the sampling area. Nevertheless, it is quite clear that survival rates are much lower during the first year than thereafter. Overall the mortality pattern is fairly typical of cooperatively breeding avian species. It is characterized by relatively low survival during the first year, especially of dispersers; relatively high survival of breeders and helpers; and senescence at the end of the life span. Compared to non-cooperative species, survival of both juveniles and adults is high, and the life span is long.

Pairs are highly monogamous and about 90 percent of PBGs nest each year during the April to July nesting season. Females usually lay three or four eggs in the cavity of the adult male. The short incubation period lasts approximately 10 days, and eggs hatch asynchronously. Normally, one brood is produced as a result of one or perhaps two nesting attempts involving only two parents. Most groups that attempt nesting fledge young, as nest failure rates are low for a species in the temperate zone. Groups with helpers experience whole brood loss less frequently than breeding groups without helpers. Renesting rates are geographically and annually variable. In good years, up to 30 percent of breeding groups will renest. Productivity of the second nesting is lower. Nest predation, nest desertion, and loss of nest cavities to cavity kleptoparasites appear to



be the primary causes of nest failure. Failure rate is higher during the egg stage than during the nestling stage, which suggests that nest desertion, rather than nest predation or loss of cavities to kleptoparasites, is the major cause of failure (Ricklefs 1969). The relative frequencies of these three causes of nest loss have never been measured directly, however. Nest predation rates may be lower than in other cavity nesters because of the protection provided by the resin barrier around the cavity, which clearly interferes with climbing by snakes (Rudolph et al. 1990).

Subadult/juvenile females from the current year breeding season normally disperse prior to the next breeding season or are driven from the group's territory by the group (see Walters et al. 1988a, for additional sociobiological/cooperative breeding information). Juvenile females remain at their natal territory to assume the breeding vacancy of the female only when the breeding male dies, and the breeding female disperses or dies. Breeding females will disperse, creating a breeding vacancy, when her male offspring inherit the male breeding position (incest avoidance). Dispersing juvenile females move to nearby RCW territories in search of a breeding vacancy. These females either become breeders in a territory, or floaters among more than one territory where they are not associated with a single group.

Juvenile males remain in their natal territory or disperse. Those that remain become helpers or, if the breeding male dies before the next breeding season, breeders. Dispersing juvenile males search for positions as breeders in nearby territories where they become either breeders, helpers, or floaters. Most adult male helpers remain on their natal territory as helpers, where about 15 percent will inherit the territory as a breeding male in any given year. Some adult helpers disperse to other territories becoming breeders, solitary males, helpers, or floaters. However, breeding males are highly territorial, and most will remain even without a breeding female. In contrast, about 10 percent of breeding females will break the pair-bond between breeding seasons and disperse to another territory as a breeder with a different male (Walters 1988; Daniels and Walters 2000).

New groups on new territories arise by two processes, pioneering and budding (Hooper 1983). Pioneering is the occupation of vacant habitat by construction of a new cavity tree cluster, which is rare. Budding is the splitting of a territory, and the cavity tree cluster within it, into two. Budding is common in many other cooperative breeders, and is more common than pioneering in RCW, since the new territory contains cavities from the outset. The available data indicate that budding indeed is more common than pioneering, and that pioneering is quite rare.

Given the preceding description of population dynamics, the key to conserving fully functioning RCW populations is identifying and protecting delineated populations. Larger populations are more resilient. The Draft Species Status Assessment (SSA) for the RCW (USFWS, 2018) defined an RCW demographic population as the aggregation of RCW clusters/territories where a breeding vacancy at any territory is likely to be replaced by RCW from a territory within the delineated population. Because of this definition, dispersal is a critical factor in delineating demographic populations, particularly dispersal to fill breeding vacancies.

RCW dispersal distances and social, environmental, and genetic factors affecting dispersal have been evaluated most extensively by data from long-term studies of a virtually completely banded population in the North Carolina Sandhills and Marine Corps Base Camp Lejeune (e.g. Walters

et al. 1988b, Walters et al. 1992, Daniels and Walters 2000b, Pasinelli and Walters 2002, Pasinelli et al. 2004, Kesler et al. 2010). Overall, median dispersal distances of juvenile males, helper males, juvenile females, and helper females, respective, were 2.94 (1.83), 1.27 (0.79), 3.31 (2.06), and 1.88 (1.17) kilometers (miles) (Kesler et al. 2010). Dispersal events were movements by territorial non-breeders to a new territory where a breeding position was acquired the following breeding season.

The RCW SSA establishes a juvenile female dispersal distance metric to delineate demographic populations. Helper males, when present, commonly acquire the breeding vacancy created by the death of the breeding male. Juvenile females do not replace the breeding female, their mother, on their natal territory. Juvenile females disperse except in rare instances when they remain as nonbreeding helpers. Thus, the continuity of potential breeding pairs at territories is most sensitive to effective dispersal of juvenile females, although the smaller class of floater females may also fill breeding vacancies. Female juvenile RCWs disperse following extraterritorial forays from their natal territory to explore and interact with other groups, with maximum foray distances from six to nine kilometers (Kesler et al. 2010). Juvenile females also are more sensitive to crossing open nonforest gaps (water, fields, etc.) during dispersal. Gaps greater than 150 meters are not absolute barriers during forays, but the probability of crossing diminishes substantially (Walters et al. 2011).

Because forays greater than six kilometers are rare for female juvenile RCWs, RCW demographic populations are delineated as the aggregation of RCW clusters/territories  $\leq$  six kilometers from other nearest neighbor active clusters/territories within the delineated population. This six-kilometer function corresponds with the perceptual distance, derived from the same data, at which juvenile females will compete for or acquire a breeding vacancy in the RCW Decision Support System (DSS) spatially explicit individual-based population simulation model by Walters et al. (2011) and other derived RCW population models (e.g. Bruggeman and Jones 2014).

#### **4.4. Numbers, Reproduction, and Distribution of Red-cockaded Woodpeckers**

Species-wide, the population trend of the RCW is increasing. In 1993/1994, the range-wide population was estimated at 4,694 active clusters; in 2006 it was 6,105. The Service estimated that the number of active clusters reached 7,800 by 2018. Of the 40-primary core, secondary core, and essential support recovery populations, 36 (90 percent) were either stable or increasing based on the average annual growth (number of active clusters) during the most recent 5-year growth period (2002-2007) for which data is available. Only four (10 percent) populations had a declining trend: Central Florida Panhandle Primary Core (-0.1 percent), St. Sebastian River Essential Support (-3.0 percent), Three Lakes Essential Support (-1.7 percent), and Oakmulgee Secondary Core (-4.0 percent). The average annual percent growth of 16 (44 percent) of the 36 stable or increasing recovery populations met or exceeded the 5 percent annual growth objective in the Recovery Plan. Of the 11 recovery units, only the Upper East Gulf Coastal Plain had a net declining 5-year trend due to the declining population in the Oakmulgee Ranger District, Talladega National Forest.

Although some recovery populations are composed of one or more properties (e.g., because the properties are adjacent to one another), most recovery populations (64%) are located on one property/ownership. The RCW Recovery Plan identifies 63 properties involved in recovery: 26 primary core (PC), 14 secondary core (SC) and 23 essential support (ES). At a property level as of 2007, 16 (25 percent) had a net five-year declining trend.

Large recovery populations remain rare. Of the 63 recovery properties, only six (15 percent) exceed 250 active clusters. Sixty-eight percent (10 populations) consist of less than 100 or fewer active clusters, and 43 percent (nine populations) have less than 50 active clusters. The number of active clusters or PBGs on each property and designated recovery population occur at different densities and aggregations in response to the configuration of the property, available habitat, and the location of unsuitable habitat. Red cockaded woodpecker clusters and aggregations within and among properties may or may not actually represent a demographically functional RCW population under current conditions. Furthermore, some populations may remain subdivided at recovery. The extent that PBGs are spatially aggregated will affect population viability and persistence. Comprehensive spatial and GIS assessments of PBG aggregations, fragmentation, and population structure are not available for most properties and populations. However, several trends and patterns are evident. At least 10 of the 40 recovery populations are appreciably fragmented under current and likely future, conditions.

At least four primary core recovery populations are currently subdivided and likely will remain so at recovery. The Central Florida Panhandle Primary Core population, the largest, is comprised of four properties where most RCWs reside in the Apalachicola Ranger District (RD) and Wakulla Ranger District of the Apalachicola National Forest. The Wakulla RD and Apalachicola RD are separated by the Ochlockonee River and private lands, for a distance of least five miles that may limit RCW dispersal (James et al. 1997). Potential breeding groups in the two districts are highly unlikely to be demographically isolated, but demographic function may be compromised. If so, the Central Florida Panhandle Primary Core population at recovery, with at least 1,000 PBGs, may function as one or more subdivided populations. Demographic and environmental stochasticity is not expected to pose any viability risk, but the ability of this recovery population to retain genetic variation will be less than anticipated.

An analysis of 2007 RCW data from 121 properties with RCWs submitting reports via the Annual RCW Report illustrates the status of the species at the property scale for recovery as well as populations not designated for recovery. Although a few large populations exist on individual properties, most (74 percent) property populations are small, much more vulnerable populations of 50 or fewer active clusters.

#### **4.5. Conservation Needs and Threats of Red-cockaded Woodpeckers**

In spite of the relatively small size of most populations, the RCWs conservation needs have been remarkably consistent through time and when applied, the status of RCWs has been steadily improving since the early 1990s. This steady increase can be attributed to various factors, including aggressive prescribed burning programs, artificial cavity provisioning and regional translocation cooperatives and strategies (Costa and DeLotelle 2006).

Primary threats to species viability for RCWs all have the same basic cause: lack of suitable habitat in fire-maintained ecosystems. On public and private lands, the quantity and quality of RCW habitat are greatly affected by past and current fire suppression and detrimental silvicultural practices (Ligon et al. 1986, Baker 1995, Cely and Ferral 1995, Masters et al. 1995, Conner et al. 2001).

Fundamental threats stemming from this lack of suitable habitat include: (1) insufficient numbers of cavities and continuing net loss of cavity trees (Costa and Escano 1989, James 1995, Hardesty et al. 1995), (2) habitat fragmentation and its effects on genetic variation, dispersal and demography (Conner and Rudolph 1991), (3) lack of good quality foraging habitat (Walters et al. 2000, James et al. 2001), and (4) fundamental risks of extinction inherent to critically small populations from random demographic, environmental, genetic, and catastrophic events (Shaffer 1981, 1987).

Red-cockaded woodpecker population size is significantly limited by the availability of cavity trees and suitable, stable clusters. The natural growing season fire regime has been lost due to fire suppression and landscape alterations that have altered the availability of lightning-flammable fine plant litter fuels. In the absence of prescribed fire, fire intolerant hardwoods survive and grow to midstory or higher levels in the forest canopy. Red-cockaded woodpecker's being sensitive to midstory hardwood encroachment, will abandon their cavities and clusters due to hardwood encroachment (Conner and O'Halloran 1987; Costa and Escano, 1989).

## **5. ENVIRONMENTAL BASELINE**

This section is an analysis of the effects of past and ongoing human and natural factors leading to the current status of the red-cockaded woodpecker, its habitat, and ecosystem within the Action Area. The environmental baseline is a "snapshot" of the species' health in the Action Area at the time of the consultation and does not include the effects of the Action under review.

### **5.1. Action Area Numbers, Reproduction, and Distribution of Red-cockaded Woodpeckers**

The Installation contains a large population of RCWs with 396 Potential Breeding Groups (PBGs) that are aggregated uniformly across the Installation. Fort Benning is an RCW Primary Core Recovery Population of the Sandhills Recovery Unit. Recovery Units are geographic subunits of the federally listed species that are necessary to sustain the overall population. The Sandhills Recovery Unit includes Fort Benning and extends across Georgia, South Carolina, and North Carolina, to include populations at Fort Gordon, Fort Jackson, and Fort Bragg, among others. Fort Benning's recovery population goal is 351 PBGs.

This species occurs within the Action Area. Foraging partitions for 16 RCW clusters are completely, mostly, or partially located within the Action Area (see Table 5.1). Fifteen clusters are active with PBGs; one cluster (C06-236) is active with a solitary male. A detailed analysis of the effect of the Action on the RCWs within the Action Area, as described in Section 3.3, is presented in Section 6.1.

## 5.2. Action Area Conservation Needs and Threats

The RCW population on Fort Benning currently exceeds its population recovery goal of 351 PBGs; however, the Installation has chosen to retain some training restrictions (protections) on select groups of RCW clusters. This allows for a number of RCW clusters above the minimum recovery goal to ensure protection even with unknown future project needs or in case of catastrophe. Thirty RCW clusters/PBGs surrounding the area are currently protected and 19 are designated as unprotected. The designation as protected or unprotected is not expected to influence the analysis of effects for construction or management activities. In the final design, the Service and Fort Benning should discuss whether or not any unprotected RCW clusters within the HOMMTA, should continue to be unprotected.

Groups located within the Action Area are principally significant by way of their spatial relationship to groups located in the northeastern section of the Installation. Fort Benning's RCW population in the northeastern quadrant of the Installation have consistently been identified as less dense and less aggregated than the other Habitat Management Units (HMUs). Spatially explicit population modeling, with pattern-oriented dispersal modeling outputs for RCWs, have shown these demographic vulnerabilities without the Action being implemented. By extension, the RCWs occupying the northeast portion of the Installation are significant for natural dispersals to occur on the adjacent ACUB properties.

In the BA, Ft. Benning addresses their concern for habitat contiguity and its relationship to density and distribution of RCW clusters (Conner and Rudolph 1991, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003), and they reveal how these density/aggregations are important at the foraging-partition level as well as at the landscape level. It is known that large clear-cuts (i.e.,  $\geq 25$  acres) are known to negatively affect RCW fitness, dispersal, and foraging behavior, either through direct habitat loss or habitat fragmentation (Conner and Rudolph 1991, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003). Areas of unsuitable RCW habitat can inhibit an individual group's ability to utilize foraging habitat within its partition and may inhibit the ability of RCWs to disperse from their natal territory to vacant breeding niches. Territory isolation by habitat fragmentation decreases the likelihood of clusters being inhabited by PBGs because dispersing females often fail to locate solitary males or find the territories substandard.

Home range "follows" and radio telemetry work conducted by Virginia Polytechnic Institute have indicated that female RCWs of any age are reluctant to cross gaps between 492 and 2,066 feet; male RCWs are not as affected by forest gaps (Walters et al. 2011). Additionally, large introduced forest gaps can cause surrounding stands to become susceptible to wind damage.

Fort Benning studied dispersal of RCWs when developing the 2004 DMPRC Biological Assessment and determined that dispersal distances ranged from 1.2 to 14.1 miles, with an overall mean dispersal distance of 3 miles. Fort Benning analyzed dispersal data in greater detail as part of a non-discretionary term and condition in the 2004 DMPRC BO. The goal was to determine if RCW dispersals would be affected by timber removal, construction, and operation of the DMPRC. The average dispersal distance was determined to be 2.2 miles (compared to the

previously calculated 3 miles) based on a significantly larger set of data collected between 1994 and 2014 (Fort Benning 2018a).

Fort Benning divided its RCW population into four Meta-population Monitoring Units (MMUs), which were developed in 2015 when Fort Benning was analyzing dispersal data for the DMPRC BO Final Report (Fort Benning 2015). The MMUs were delineated using RCW locations and dispersal patterns as well as natural boundaries such as geological features (streams and major drainages) within the Installation boundary. The MMUs were not submitted as part of the 2018 DMPRC BO Final Report; however, Fort Benning currently uses the MMUs for RCW population monitoring and dispersal analysis purposes (Fort Benning 2019a).

The Action would be located within the northern portion of Fort Benning's RCW population on the eastern edge of Meta-population 1 near Meta-populations 2 and 4; dispersal within and between MMUs have been determined by Installation staff (Fort Benning 2015).

As stated previously, the Action Area is approximately 3,200 acres. Assuming that all upland pine stands currently identified as suitable RCW foraging habitat are removed, the Action would convert approximately 3,200 acres of forested lands to open areas. The width of the Action Area from east to west is approximately 1.7 miles (approximately 9,000 feet) in the northern portion, expanding out to 2.1 miles (approximately 11,000 feet) in the middle, and then narrowing to 0.75 mile (approximately 4,000 feet) in the southern portion, which is substantially larger than the forested gaps that RCWs may be expected to cross (i.e., 492 to 2,066 feet). Fort Benning suggests some forested areas would likely remain along steep slopes, streams and wetlands, and associated buffers where mounted maneuver activities could not be conducted. These forested areas would be scattered throughout and may contain hardwood stands, pine/hardwood stands, and pine stands. If left to remain, these forested areas would reduce the width of the open gaps and could provide temporary resting areas if RCWs dispersed or attempted to cross the Action Area.

Stands managed for RCWs, along with other forested areas, also exist to the north, south, and west of the Action Area, which RCWs could use as corridors for dispersal around the proposed HOMMTA. In response to the DMPRC BO from the Service, Fort Benning conducted a monitoring project to track dispersals to and from clusters. This data, collected from September 2004 to July 2014, showed RCWs dispersing throughout the base and even through the DMPRC (Fort Benning 2015). The Installation created a DMPRC post-project dispersal map depicting RCW dispersals. The map shows dispersals with the RCW clusters within the Action Area removed, as well as the dispersal tracks either originating from or ending in those clusters. This shows that there would be dispersal of birds across and around the proposed HOMMTA and may indicate that implementing the Action may hinder more frequent RCW dispersal, but, the Installation projects, is not likely to prevent it altogether.

**Table 5.1. RCW Clusters Completely, Mostly, or Partially within the Project Area**

<b>Cluster</b>	<b>Active</b>	<b>PBG</b>	<b>No of Cavity Trees</b>	<b>Extent Within Action Area</b>
C06-236	Yes	No	7	Partially
C11-234	Yes	Yes	3	Partially
C11-235	Yes	Yes	4	Partially
C12-251	Yes	Yes	4	Completely
C28-264	Yes	Yes	8	Completely
C28-275	Yes	Yes	10	Mostly
N13-39	Yes	Yes	5	Partially
N15-43	Yes	Yes	9	Partially
N15-49	Yes	Yes	10	Partially
N15-50	Yes	Yes	7	Mostly
N16-44	Yes	Yes	12	Mostly
N16-51	Yes	Yes	8	Completely
N16-52	Yes	Yes	12	Completely
N18-59	Yes	Yes	7	Completely
N19-58	Yes	Yes	13	Mostly
N24-60	Yes	Yes	9	Partially

Source: Fort Benning HOMMTA BA, 2020.

## **6. EFFECTS OF THE ACTION**

In a BO for a listed species, the effects of the action are all reasonably certain consequences to the species caused by the action, including the consequences of other activities caused by the action. Activities caused by the action would not occur but for the action. Consequences to species may occur later in time and may occur outside the action area.

We identified and described the activities included in the Action in sections 2.1–2.3. Our analyses of the consequences caused by each of these activities follows. Finally, our effects analysis will not address the HOMMTA Training nor the HOMMTA Maintenance activities, as they were assessed to have no effect on RCWs by the Installation. The rationale of the no effect determination is described below.

Regarding the HOMMTA training activity, the Army states that the use of heavy equipment, simulators, blanks, and pyrotechnics; increased vehicular traffic on infrequently used roads; increased dismounted activities; and other training exercises can have “harassment” impact on resident RCW groups (Delaney et al. 2002, 2004; Hayden et al. 2002; Walters et al. 2005; Perkins 2006). And, they point out correctly, that this is of specific concern if the activity occurs within 200 feet of an active RCW cavity tree, and more so, during the nesting season.

It is commonly known, that disturbance near dusk and dawn around cavity trees can cause RCWs to flush from their cavities; if the disturbance continues or if there is insufficient daylight, the RCWs will open roost. This leaves RCWs unprotected from environmental hazards such as inclement weather and predators. These disturbances can also cause more frequent flushing while incubating eggs and/or reduced brooding and feeding of nestlings, which can cause nest failure or a reduction in the number of young fledged (Delaney et al. 2004, 2011; USFWS 2003).

As described in Section 2, the proposed HOMMTA would be used for both day and night training up to the Action Area boundaries. Therefore, noise from the involved vehicles could affect RCW behaviors, especially during nesting season.

The Army reports that maneuvering of off-road vehicles throughout the HOMMTA and use of blanks and pyrotechnics may cause dust and smoke to fill the air. While smoke and dust may be a form of harassment, these impacts are anticipated to be intermittent, temporary, and dispersed throughout the HOMMTA. Clusters adjacent to the HOMMTA would likely be far enough away from these impacts to not affect them.

To assess potential noise harassment impacts from the Action, RCW GIS data were used to determine the number of cavity trees within 50 feet and 200 feet of proposed HOMMTA activities. Impacts were evaluated as if Action activities would occur up to the Action Area boundary. Clusters were expected to suffer a direct “take” (take, taken, adversely effected) due to harassment if the Action provided a new source of disturbance within 50 feet of a cavity tree (i.e., a newly formed road, trail, or staging area). An indirect take would occur if the Action provides a new source of disturbance between 50 and 200 feet from a cavity tree. Clusters with cavity trees within the Action Area were already considered taken by the Action (see Section 6.1.1) and were not evaluated for potential noise or other harassment impacts.

The nearest cluster outside the Action Area is Cluster N15-49, which would be considered taken due to loss of foraging habitat although its cavity trees would remain. Cluster N15-49’s nearest cavity tree to the Action Area is located 500 feet away and is currently inactive. The nearest active cavity tree in this cluster is located 591 feet from the Action Area boundary. Other active cavity trees in this cluster are more than 1,000 feet from the Action Area boundary. Similarly, Cluster N15-43 would have foraging habitat removed but would retain its cavity trees. Cluster N15-43's cavity trees are all located 586 feet to 1,190 feet from the Action Area boundary. Other RCW clusters that have part of their foraging partition within the Action Area boundary are Clusters C06-236, C11-235, C11-234, and N13-39. These clusters’ cavity trees are all over 1,000 feet from the Action Area boundary and are therefore not affected by the Action.

Cavity trees from all clusters mentioned above are at least 500 feet away from the Action Area boundary. The noise, smoke, and dust from maneuvering and other training activities within the Action Area would not harass or harm nearby RCW cavity trees or RCWs. As such, no take from noise, dust, smoke or other indirect affects would be anticipated; therefore, no additional take would be expected.

The Installation reports the HOMMTA maintenance activities would be conducted through Fort Benning’s Integrated Training Area Management (ITAM) program when funding is available, or



through other mechanisms. Fundamentally, Fort Benning's ITAM program seeks to optimize sustained use of lands for realistic training by integrating mission requirements with environmental requirements and sound land management practices. To this end, the ITAM program implements its management through ongoing monitoring of the land condition in training areas. When land condition concerns are identified, the ITAM program plans and implements both preventative and corrective rehabilitation and maintenance projects, as appropriate. Overall, these projects are specifically designed to maintain quality military training lands, minimize long-term costs associated with land rehabilitation or additional land purchase, and ensure compliance with environmental laws and regulations.

Due to the nature of heavy off-road maneuver training, maintenance activities would be largely focused on preventing and addressing soil disturbance and the consequent potential for erosion and sedimentation. The Army anticipates implementing standard soil stabilization methods, such as vegetative controls and replanting, re-graveling, and regrading/filling ruts, rills, and gullies.

The Army would also install and maintain erosion control features, such as stone check and rock filter dams, water bars, sediment traps, turnouts, and similar measures. Constructed water crossings would be monitored regularly to ensure they remain in working condition, and that culverts continue to convey surface water flow as designed. These and other maintenance actions would ensure both that the HOMMTA remains useable as a quality training area and that any potential adverse environmental impacts that may develop over time due to operations (e.g., erosion) are minimized to the extent feasible.

### **6.1. Effects of HOMMTA Training on Red-cockaded Woodpeckers**

The Army's BA determined that training will have no effect on RCWs, therefore, our effects analysis does not address this activity.

### **6.2. Effects of HOMMTA Maintenance on Red-cockaded Woodpeckers**

The Army's BA determined that maintenance will have no effect on RCWs, therefore, our effects analysis will not address this activity.

### **6.3. Effects of HOMMTA Construction on Red-cockaded Woodpeckers**

#### **Cavity Tree Removal**

While the exact locations for the avenues of approach will not be known until the final design is complete, the Service, during an early coordination meeting, suggested that the analysis should assume: (1) the Action would *remove all* upland pine stands currently identified as suitable RCW foraging habitat within foraging partitions of the 12 RCW clusters within the Action Area, including all RCW cavity trees; and (2) any RCW cavity trees or other habitat that would be retained with implementation of the Action could potentially suffer tree mortality due to construction and training impacts over time. Although the Army does not anticipate clear-cutting the Action Area and that trees retained within buffer areas would not suffer mortality, lacking a final design still leaves the Service assessing the worst-case scenario. The Army states in the BA

they will reinitiate consultation with the Service as appropriate, particularly, if the final design results in any changes to this effects analysis or Army determinations.

Analysis, using worse-case scenario, shows the Action will *eliminate* 35 active and 55 inactive RCW cavity trees (90 cavity trees) from 10 RCW clusters (C12-251, C28-264, C28-275, N18-59, N24-60, N16-52, N16-51, N19-58, N15-50, and N16-44). Therefore, these 10 clusters will be adversely impacted from cavity tree removal.

**Habitat Loss**

Sixteen RCW foraging partitions (clusters) are located entirely, mostly, or partially within the Action Area. Five foraging partitions are located completely within the Action Area (C12-251, C28-264, N16-51, N16-52, N18-59), four foraging partitions are located mostly within the Action Area (i.e., over 50 percent of partition within Action Area; C28-275, N15-50, N16-44, N19-58), and seven foraging partitions are located partially within the Action Area (i.e., less than 50 percent of partition within Action Area; C06-236, C11-234, C11-235, N13-39, N15-43, N15-49, N24-60) (see Tables 5.1, 6.1 and 7.1)

**Table 6.1: Pre- and Post-Foraging Habitat Data for RCW Clusters within the HOMMTA**

Cluster	Pre-Project Suitable Foraging Habitat		Post-Project Suitable Foraging Habitat		Meets SMS Pre-Project (Y or N)	Take (Y or N)
	Acres	BA Pines DBH ≥ 10 (ft <sup>2</sup> )	Acres	BA Pines DBH ≥ 10 (ft <sup>2</sup> )		
C06-236	35.4	1,437	35.4	1,437	No	No
C11-234	47	1,966	47	1,966	No	No
C11-235	78	3,119	78	3,119	Yes	No
C12-251	70	3,713	0	0	No	Yes
C28-264	41	1,774	0	0	No	Yes
C28-275	13	537	6	240	No	Yes
N13-39	25	1,237	25	1,237	No	No
N15-43	133	5,551	107	4,432	Yes	No
N15-49	54	2,124	42	1,653	No	Yes
N15-50	58	3,026	0	0	No	Yes
N16-44	103	4,256	0	0	Yes	Yes
N16-51	43	1,621	0	0	No	Yes
N16-52	64	2,505	0	0	No	Yes
N18-59	64	2,896	0	0	No	Yes
N19-58	128	5428	23	846	Yes	Yes
N24-60	70	3660	5	285	No	Yes

Source: Ft. Benning, HOMMTA BA, 2020.

The 10 clusters taken due to loss of all their cavity trees would also be classified as taken resulting from foraging habitat loss. This leaves no remaining habitat for the five foraging partitions completely within the Action Area. For the four foraging partitions characterized as mostly within the Action Area, not enough RCW habitat would remain to meet the Standard for Managed Stability (SMS) guidelines. Finally, the foraging partition for Cluster N24-60 is only partially within the Action Area. According to Fort Benning's analysis, the habitat that would remain within this cluster would be primarily hardwood forest and not suitable for foraging. This cluster would also be adversely impacted due to loss of foraging habitat below the SMS.

Of the six remaining clusters whose habitat partition is partially within the Action Area, but whose cavity trees are located outside the Action Area, four clusters (Clusters N13-39, C11-234, C11-235, C06-236) do not have any foraging habitat within the Action Area to meet the SMS. The forested habitat for each of these clusters is considered non-foraging habitat; therefore, there would be no adverse impacts to these clusters. Two clusters (N15-43 and N15-49), however, do have suitable foraging habitat partially within the Action Area. This habitat is likely to be removed by the Action. These clusters are analyzed further to determine if they would be taken due to the removal of this foraging habitat.

The Army reports that cluster N15-43 was not monitored in 2019 but contained a PBG from 2010 to 2018, so it was assumed to be active with a PBG in 2019. This cluster has only part of its foraging partition located within the Action Area. Fort Benning analyzed forest stand GIS data to determine if this cluster met the SMS.

The pre-project foraging analysis by the Installation shows Cluster N15-43 has 5,551 ft<sup>2</sup> of pine BA for pine trees  $\geq$  10 inches dbh within the partition. It contained a total of 133 acres of total foraging habitat and contiguous foraging habitat, with 79 acres located within 0.25 mile of the cluster center.

The foraging habitat analysis shows that post-project, Cluster N15-43 would have 4,432 ft<sup>2</sup> of pine BA with 107 acres foraging habitat, 106 acres of which are contiguous. The total acres of foraging habitat within 0.25 mile of the cluster center would be 74 acres. Therefore, this cluster meets the SMS post-project, and would not result in an adverse impact to RCWs due to loss of suitable habitat.

The Army reports cluster N15-49 is an active cluster with a PBG from 2010 to 2019. This cluster's pre-project foraging habitat is only 2,124 ft<sup>2</sup> of pine BA  $\geq$  10 inches dbh, with only 54 acres of total foraging habitat and contiguous foraging habitat. It only has 16 acres of foraging habitat within 0.25 mile of the cluster center. These foraging habitat numbers are significantly below the required SMS.

Post-project foraging analysis shows, Cluster N15-49 has 1,653 ft<sup>2</sup> of pine BA with 42 acres foraging habitat and contiguous foraging habitat. The total acres of foraging habitat within 0.25 mile of the cluster center is 15 acres. Since the post-project foraging habitat numbers are reduced even further below SMS, this cluster is considered adversely impacted from the Action. Effects Analysis yields 11 RCW clusters adversely impacted due to the Action.

In sum, ten adversely impacted clusters are also the same clusters that would be taken due to cavity tree loss, and one cluster (N15-49) is solely impacted by habitat removal.

#### **6.4. Group-Level Analysis Methods for Red-cockaded Woodpeckers**

The distribution and density of RCW clusters on the landscape is a key factor in the overall stability and health of an RCW population. Reducing cluster density causes populations to be more vulnerable to demographic randomness (Crowder et al. 1998, Walters et al. 2002). This potential indirect impact is evaluated under the group- and neighborhood-level analyses as take under the definition of harm.

For group-level analysis, clusters having  $\geq 4.7$  active clusters within 1.25 miles are considered healthy and are given a “dense” designation. Clusters with 2.6 to 4.6 active clusters within 1.25 miles are considered to have “moderate” density. Clusters with  $\leq 2.5$  active clusters within 1.25 miles are considered “sparse” and therefore more vulnerable to abandonment because of lack of emigration/immigration (Conner and Rudolph 1991).

For each cluster analyzed, the number of active clusters within 1.25 miles of its cluster center is calculated. All buffered clusters (i.e., minimum convex polygon of all cavity trees and a 200-foot buffer around them) within 1.25 miles of the impacted clusters center, are included in the cluster density totals.

A 1.25-mile radius buffer is drawn around the center of every active cluster for which post-project density totals can change based on the results of the cluster-level analysis. An active cluster is not counted if it is expected to be taken due to cavity tree loss or loss of foraging habitat that goes below the SMS. Clusters whose densities are reduced from “dense” or “moderate” to “sparse” are considered affected, and therefore, vulnerable to abandonment resulting from tree/vegetation removal.

#### **6.5. Group-Level Analysis Results for Red-cockaded Woodpeckers**

A total of 14 active cluster centers are located within the 1.25-mile radius buffer that would not be taken at the cluster level. All of these clusters, except one (N24-62), retained a post-project group density of either dense or moderate. Cluster N24-62 has a pre-project group density of “sparse” and remains “sparse” post-project. Since the Action does not reduce this cluster’s density, it is not adversely effected.

#### **6.6. Neighborhood-Level Analysis for Red-cockaded Woodpeckers**

The neighborhood analysis evaluates groups not directly impacted by the Action, but which occur adjacent to, or within the dispersal distance of, groups that are directly affected by the Action (USFWS 2005).

A 2.2-mile buffer was drawn around the 12 clusters impacted by the Action (C12-251, C28-264, C28-275, N18-59, N24-60, N19-58, N16-52, N16-51, N15-50, N16-44, N15-43, N15-49). This distance is the average successful dispersal distance based on 21 years of demographic monitoring (1994-2014) by Fort Benning (Fort Benning 2018a). The neighborhood-level

analysis evaluated the density of RCW groups within a 1.25-mile radius of clusters located within the 2.2-mile buffer. If the post-project analysis shows that the group density changed to fewer than 2.5 active RCW groups within a 1.25-mile radius of the impacted cluster (i.e., sparse density), it is considered taken. Clusters already identified as taken by the cluster-level or group-level analyses are not counted in this level of analysis, so as to avoid double counting.

The Installation reported that thirty-eight clusters are located within the 2.2-mile buffer. None of the active RCW clusters would have their density reduced below 2.5 active RCW groups within a 1.25-mile radius of an impacted cluster. Therefore, no additional adverse effects occurred from the neighborhood level analysis.

## **6.7. Habitat Fragmentation analysis for Red-cockaded Woodpeckers**

Habitat contiguity is related to the density and distribution of RCW clusters (Conner and Rudolph 1991, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003), and is important at the foraging level, as well as at the landscape level. Large clear-cuts (i.e.,  $\geq 25$  acres) are known to negatively affect RCW fitness, dispersal, and foraging behavior, either through direct habitat loss or habitat fragmentation (Conner and Rudolph 1991, Ferral 1998, Jackson and Parris 1995, Rudolph and Conner 1994, USFWS 2003). Areas of unsuitable RCW habitat can inhibit an individual group's ability to utilize foraging habitat within its partition and may inhibit the ability of RCWs to disperse from their natal territory to vacant breeding niches. Territory isolation by habitat fragmentation decreases the likelihood of clusters being inhabited by PBGs because dispersing females often fail to locate solitary males or find the territories substandard.

Regional home range "follows" and radio telemetry work conducted by Virginia Polytechnic Institute have indicated that female RCWs of any age are reluctant to cross gaps between 492 and 2,066 feet; while male RCWs are not as affected by forest gaps (Walters et al. 2011). Additionally, large introduced forest gaps can cause surrounding stands to become susceptible to wind damage.

Fort Benning studied dispersal of RCWs when developing the 2004 DMPRC Biological Assessment and determined that dispersal distances ranged from 1.2 to 14.1 miles, with an overall mean dispersal distance of 3 miles. Fort Benning analyzed dispersal data in greater detail as part of a non-discretionary term and condition in the 2004 DMPRC BO. The goal was to determine if RCW dispersals would be affected by timber removal, construction, and operation of the DMPRC. The average dispersal distance was determined to be 2.2 miles (compared to the previously calculated 3 miles) based on a significantly larger set of data collected between 1994 and 2014 (Fort Benning 2018a).

The Installation divided its RCW population into four Meta-population Monitoring Units (MMUs), which were developed in 2015 when they were analyzing dispersal data for the DMPRC BO Final Report (Fort Benning 2015). The MMUs were delineated using RCW locations and dispersal patterns as well as natural boundaries such as geological features (streams and major drainages) within the Installation boundary. The MMUs were not submitted as part of the 2018 DMPRC BO Final Report; however, Fort Benning currently uses the MMUs for RCW population monitoring and dispersal analysis purposes (Fort Benning 2019a).

As described by the Army, the Action is located within the northern portion of Fort Benning's RCW population on the eastern edge of Meta-population 1 near Meta-populations 2 and 4. (Fort Benning 2015).

Assuming that all upland pine stands currently identified as suitable RCW foraging habitat are removed from the Action Area, the Action will convert approximately 3,200 acres of forested lands to open areas. The width of the Action Area from east to west is approximately 1.7 miles (approximately 9,000 feet) in the northern portion, expanding out to 2.1 miles (approximately 11,000 feet) in the middle, and then narrowing to 0.75 mile (approximately 4,000 feet) in the southern portion, which is substantially larger than the forested gaps that RCWs may be expected to cross (i.e., 492 to 2,066 feet). Some forested areas would likely remain within the Action Area along steep slopes, streams and wetlands, and associated buffers where mounted maneuver training could not be conducted. These forested areas are scattered throughout the Action Area and may contain hardwood stands, pine/hardwood stands, and pine stands. These forested areas could reduce the width of the open gaps and could provide temporary resting areas for RCWs dispersing and crossing the Action Area.

Stands managed for RCWs, along with other forested areas, also exist to the north, south, and west of the Action Area, which RCWs could use as corridors for dispersal around the Action Area. In response to the DMPC BO from the Service, Fort Benning conducted a monitoring project to track dispersals to and from clusters. This data, collected from September 2004 to July 2014, showed RCWs dispersing throughout the base and even through the DMPC (Fort Benning 2015). The Installation's post-project dispersal map depicting this dispersal data with the RCW clusters within the Project Area removed, as well as the dispersal tracks either originating from or ending in those clusters. These data infer that there would be dispersal of birds across and around the Action Area, therefore, the Installation submits that "implementing the Action may hinder more frequent RCW dispersal, but is not likely to prevent it altogether". Notwithstanding, this assertion could be further supported if the Installation were to run an RCW Spatially Explicit Population Model (SEPM), which accounts for known dispersal behaviors, by way of Patterned Oriented Modeling.

## **6.8. Population-Level Analysis for Red-cockaded Woodpeckers**

The population-level analysis considers the ability of the Fort Benning RCW population to survive and continue to meet its population goal. Fort Benning is an RCW Primary Core Recovery Population of the Sandhills Recovery Unit (USFWS 2003). Primary Core populations need to maintain at least 350 PBGs to be considered recovered. Fort Benning's recovery goal is 351 PBGs (Fort Benning 2016).

Currently, Fort Benning reports they have enough habitat to support a population goal of 386 managed clusters with the potential to support up to 410 clusters (Fort Benning 2016). Calculating whether a population's recovery goal can be met sometime in the future based on potential project-related impacts in the near-term requires knowledge, or estimates, of the percent of: 1) inactive clusters; 2) solitary male clusters; and 3) captured clusters at the time when the overall habitat-based population goal would likely be achieved (USFWS 2005). Values for these three parameters are subtracted from the total managed clusters (i.e., measured in active clusters), along with estimates of groups that are predicted to be lost due to project-

related impacts, to determine if the required number of PBGs can be achieved in the future (USFWS 2005).

Fort Benning has had a number of Incidental Take Permits (ITPs) for RCWs from previous Installation projects. These adversely impacted clusters (predominantly indirect effects or those that were projected to happen later in time) were then removed from the Installation's PBG total, as a PBG cannot be counted towards the recovery goal if it is under an ITP. Monitoring of RCW activity within these clusters has been performed annually following implementation of the associated projects and has shown that most of the RCW clusters have remained active.

In a letter from the Service dated April 3, 2019, we concurred with Fort Benning's request to remove 54 ITAs from previous BOs (Fort Benning 2019b, USFWS 2019b). The 54 clusters covered under these ITAs were subsequently added back to Fort Benning's total count in April 2019. As of the conclusion of the 2019 RCW breeding season, including annual monitoring, the Installation has reported they have 410 manageable clusters (402 active, 8 inactive), and an estimated total of 396 PBGs (Fort Benning unpublished data). At this time, Fort Benning has achieved/exceeded its population recovery goal objective (USFWS 2019b).

As identified above in Section 6, the Action is anticipated to adversely effect 11 RCW clusters. Assuming no increase or decrease in the RCW population (i.e., that the pre-project status continues without change), this would leave Fort Benning with 385 PBGs and 399 manageable clusters. Ten of the 11 adversely effected clusters would no longer exist due to loss of all cavity trees (C12-251, C28-264, C28-275, N18-59, N24-60, N19-58, N16-52, N16-51, N15-50, N16-44). One of the taken clusters (N15-49) would still be managed per Fort Benning's Integrated Natural Resources Management Plan (Fort Benning 2016). A total of 385 PBGs remains above the Installation's recovery goal of 351 PBGs.

On Fort Benning and at various locations in Georgia, Alabama, South Carolina, and Louisiana, land managers have observed an increasing number of pine stands "declining in function and productivity," a condition that has been termed "pine decline" (Imm et al. 2008). Symptoms are most common in mature loblolly pine and immature, mixed loblolly and shortleaf pine stands; however, symptoms have been reported in longleaf stands as well. A notable decline in forest health has been documented on Fort Benning since 1994 according to data collected using the US Forest Service Forest Inventory and Analysis and Forest Health Monitoring protocols, as well as crown vigor data collected during periodic stand inventories. In addition, the mortality rates of RCW cavity trees have increased significantly since 1994 (Imm et al. 2008). Fort Benning's numbers of active RCW clusters and PBGs has steadily increased since 1997. Even as habitat on the Installation is experiencing some pine decline, Fort Benning has been able to exceed its recovery goal.

## **6.9. Recovery Unit Analysis (Jeopardy Analysis) for Red-cockaded Woodpeckers**

In jeopardy analyses, a species' likelihood of both survival and recovery must be considered (USFWS and NMFS 1998). With RCWs, this determination is made at the Recovery Unit Level (USFWS 2003). Recovery is defined as "improvement in the status of a listed species to the point at which listing is no longer appropriate under the criteria set out in Section 4(a)(1) of the

ESA.” Survival is defined as “the condition in which a species continues to exist into the future while retaining the potential for recovery” (USFWS and NMFS 1998).

Analyses at the cluster, group, neighborhood, and population levels indicate that Fort Benning would be able to sustain its Primary Core Recovery Population goal (i.e., 351 PBGs) with implementation of the Action. With the implementation of the Action, the Sandhills Recovery Unit will retain its ability to support RCW recovery (currently met). As such, the Action is not likely to jeopardize both the survival and recovery of the federally endangered red-cockaded woodpecker.

## 6.10. Cumulative Effects on Red-cockaded Woodpeckers

In section 3, we did not identify any activities that satisfy the regulatory criteria for sources of cumulative effects. Therefore, cumulative effects to red-cockaded woodpeckers are not relevant to formulating our opinion for the Action.

## 7. CONCLUSION

Based on the Installation’s “conceptual design” for the Action, vegetation removal will have adverse effects on 11 RCW clusters. Ten RCW PBGs would be directly impacted through removal of active cavity trees and surrounding RCW foraging habitat; these include clusters C12-251, C28-264, C28-275, N18-59, N19- 58, N16-52, N16-51, N19-58, N15-50, and N16-44. Impacts to these clusters constitute Incidental Takes.

**Table 7.1: Anticipated Adverse Effects Resulting from the Action**

RCW Cluster	Reason for Incidental Take
C12-251	Cluster within the Action Area are likely to be adversely effected due to the removal of cavity trees and reduction of foraging habitat below SMS threshold.
C28-264	
C28-275	
N18-59	
N19-58	
N16-52	
N16-51	
N16-44	
N15-50	
N19-58	
N15-49	Adverse effects are likely to occur due to removal of foraging habitat that will further reduce foraging habitat below the SMS threshold.

Source; Fort Benning HOMMTA, 2020



Removal of RCW foraging habitat within the Action Area would also have a direct impact on one additional active cluster (N15-49) outside the Action Area by reducing the cluster's available foraging habitat from 53 acres to 42 acres. Under existing conditions (i.e., pre-project), this cluster does not meet SMS threshold, and any further pine BA removal would result in an adverse effect. The Installation's analysis suggests no additional adverse effects would occur from additional project related affects.

The group-level analysis assesses the effects for removing this 11 RCW PBGs and anticipates that there would be indirect effects on 2 additional clusters (Clusters C06-itio236 and N24-62), but this does not rise to the level of an anticipated adverse effect. A total of 14 active clusters are located within the 1.25-mile radius that's used for cluster-density analysis. Of these 14 clusters, one cluster (C06-236) would have its group density reduced from dense to moderate. Because the group density is still moderate, this would not be considered an adverse effect. Additionally, cluster N24-62 has a pre-project group density of sparse and would remain sparse post-project. Since the Action would not reduce this cluster's density, it would not be a take. The group density of the remaining 12 clusters within the 1.25- mile radius buffer would not be affected by the Action and would not be taken.

The neighborhood-level analysis evaluates groups not impacted by the Action, but occurs adjacent to, or within the 2.2-mile dispersal distance of, groups that are directly affected by the Action. No impacts are anticipated; therefore, no adverse effects are anticipated at the neighborhood level. In affect adequate dispersal areas surround the Action Area.

The Service recognizes, Fort Benning is a Primary Core Recovery Population within the Sandhills Recovery Unit. The Installation's recovery population goal is 351 PBGs. Currently, there are 396 PBGs on Fort Benning; the on-Post RCW population has been considered recovered since April 2019. The direct and indirect adverse effects of 11 PBGs from implementation of the Action would reduce the Fort Benning population from 396 PBGs to 385 PBGs, which would still be above the Installation's recovery population goal of 351 PBGs. Therefore, the Action may affect, and is likely to adversely affect, 11 RCW PBGs groups.

After reviewing the status of the species, the environmental baseline for the Action Area, the effects of the Action and the cumulative effects, it is the Service's biological opinion that the Action is not likely to jeopardize the continued existence of the **RED-COCKADED WOODPECKER**.

## **8. INCIDENTAL TAKE STATEMENT**

ESA §9(a)(1) and regulations issued under §4(d) prohibit the take of endangered and threatened fish and wildlife species without special exemption. The term take in the ESA means "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (ESA §3(19)). In regulations, the Service further defines:

- "harm" as "an act which actually kills or injures wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife

by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering;” (50 CFR §17.3) and

- “incidental take” as “takings that result from, but are not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant” (50 CFR §402.02).

Under the terms of ESA §7(b)(4) and §7(o)(2), taking that is incidental to a Federal agency action that would not violate ESA §7(a)(2) is not considered prohibited, provided that such taking is in compliance with the terms and conditions of an incidental take statement (ITS).

### 8.1. Amount or Extent of Take

This section specifies the amount or extent of take of listed wildlife species that the Action is reasonably certain to cause, which we estimated in the “Effects of the Action” section(s) of this BO.

Table 8.1 identifies the species, life stage(s), estimated number of PBGs, the form of take anticipated, and the section of the BO that contains the supporting analysis. We describe procedures for monitoring take that occurs during Action implementation for red-cockaded woodpeckers in section 8.4.

**Table 8.1.** Estimates of the amount of take (# of individuals) caused by the Action, by species, life stage, and form of take, collated from the cited BO effects analyses.

Common Name	Life Stage	# of PBGs	Form of Take	BO Effects Analysis Section
Red-cockaded Woodpecker	Adult	11	Harm	6.2

### 8.2. Reasonable and Prudent Measures

The Service believes the reasonable and prudent measures (RPMs) we describe in this section for the red-cockaded woodpecker are necessary or appropriate to minimize the impact, *i.e.*, the amount or extent, of incidental take caused by the Action.

#### Red-Cockaded Woodpecker

**RPM #1. Coordinate with the Service in advance of implementing RCW cavity tree removal.** The Installation has accounted for anticipated adverse effects to RCWs upon the removal of impacted cluster cavity trees. The Army proposes translocation for RCWs effected by cavity tree removal; however, there is no documentation regarding the details of minimizing or reducing the impacts to resident birds occupying the impacted clusters. If the Army determines to implement the Action, the Service should be notified, with appropriate time allocations, so standard translocation planning protocols can be arranged.

**RPM #2. Coordinate with the Service prior to the implementation of vegetation removal/retention.** Vegetation removal/retention, which includes “timber” as defined in the Army’s BA, is critical to basic RCW behaviors and functions; most notably, foraging and dispersing. Once the Installation determines the extent of the vegetation removals, the Installation should confer with the Service prior to implementing the Action.

**RPM #3. Notify the Service when banded hatch year (HY) nestlings, from clusters directly adjacent to the AA boundary, are recaptured or identified in territories other than their natal territory.** Fort Benning should validate RCW HY dispersals from territories directly adjacent to the AA. Validating dispersals will support the assessment and minimization strategies designed to avoid additional adverse impacts.

**RPM #4. Designate all clusters directly adjacent to the AA boundary as “protected”.** Although the Installation reports construction and management activities are not expected to influence the effects (by way of affects analysis) on RCWs, new training regime effects are yet to be realized. Reapplying standard RCW cluster protection measures, that have been in place historically, will aid in minimizing the likelihood of potential adverse effects.

### **8.3. Terms and Conditions**

In order for the exemption from the take prohibitions of §9(a)(1) and of regulations issued under §4(d) of the ESA to apply to the Action, the Installation must comply with the terms and conditions (T&Cs) of this statement, provided below, which carry out the RPMs described in the previous section. These T&Cs are mandatory. As necessary and appropriate to fulfill this responsibility, Ft. Benning must require any permittee, contractor, or grantee to implement these T&Cs through enforceable terms that the Installation includes in the permit, contract, or grant document.

#### **Red-Cockaded Woodpeckers**

**T&C #1. Coordinate with the Service in advance of implementing RCW cavity tree removal (RPM #1).** The Installation shall develop a timeline (projection) for timber and cavity tree removals. In reporting, the month and year in which cavity trees will be removed are most important. The Service will work with the Installation to develop plans for translocating all birds (adults and HY birds if applicable) to potential recipient sites. Timber harvesting, in and around the RCW breeding season (somewhat extended to be between mid-March thru July), is ill advised. The Service’s RCW Recovery Coordinator shall be contacted to develop and implement translocation planning and protocols once timber removal schedules are realized.

**T&C #2. Coordinate with the Service prior to the implementation of vegetation removal/retention (RPM #2).** The Installation shall develop a timber (vegetation) removal plan that fully describes what timber, within the AA, will remain and what timber will be removed. Time of year should be determined and described to account for the RCW breeding season. Staging of equipment, loading/decking area locations, batch

plant(s) (if needed), restoration applications, etc., that are approximate to the adjacent/nearby RCW clusters, should be described. The plan shall be delivered to the Service prior to implementing the removals.

**T&C #3. Notify the Service when banded hatch year (HY) nestlings, from clusters directly adjacent to the AA boundary, are recaptured or identified in territories other than their natal territory (RPM #3).** The Installation shall work in coordination with the Service to identify those clusters described as “adjacent” to the AA. Once determined, the Installation will band adults and HY birds from the sample clusters until the Action has been fully implemented for one full year (i.e., one year of “standard tempo” training throughputs). The Installation shall report to the Service if/when birds from the sample are recaptured in different (or the same) territories.

**T&C #4. Designate all clusters directly adjacent to the AA boundary as “protected” (RPM #4).** The Installation shall work, in coordination with the Service, to identify those clusters described by the Service (i.e., in this BO) as “adjacent” to the AA. Once determined, the Installation will designate each cluster as “protected”, excluding the adjacent clusters currently designated as protected. The Installation shall work with the Service to analyze, after one year of fully implementing the Action, whether or not the protected designation remains prudent (i.e., minimizing the effects of take). The Installation should also inform the Service, as soon as it is known, if any of the adjacent sample clusters change status (active or inactive) during the “minimization period”, which is until the Action has been fully implemented for one full year (i.e., one year of “standard tempo” training throughputs). This minimization period is the parenthetical time frame designed to capture the affects of RCW responses when exposed to the HOMMTA. Ultimately, the Service and the Installation are attempting to validate our minimization strategy.

## **8.4. Monitoring and Reporting Requirements**

In order to monitor the impacts of incidental take, Ft. Benning must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR §402.14(i)(3)). This section provides the specific instructions for such monitoring and reporting (M&R), including procedures for handling and disposing of any individuals of a species actually killed or injured. These M&R requirements are mandatory. We identify whether the Installation, the Applicant, or both are responsible.

As necessary and appropriate to fulfill this responsibility, the Installation must require any permittee, contractor, or grantee to accomplish the M&R through enforceable terms that Ft. Benning includes in the permit, contract, or grant document. Such enforceable terms must include a requirement to immediately or as soon as practical notify the Installation and the Service if the amount or extent of incidental take specified in this ITS is exceeded during Action implementation.

## Red-Cockaded Woodpecker

**M&R #1. Coordinate with the Service in advance of implementing RCW cavity tree removal (RPM #1).** The Installation has accounted for the anticipated adverse effects to RCWs upon removal of impacted cluster cavity trees. The Army proposes translocation for RCWs effected by cavity tree removal; however, there is no documentation regarding the details of minimizing or reducing the impacts to resident birds occupying those impacted clusters. If the Army determines it will implement the Action, the Service should be notified, with appropriate time allocations, so standard translocation planning protocols can be arranged. Once translocation plans are coordinated by the Services' RCW Recovery Coordinator, Standard Operating Procedures for RCW translocations, monitoring and reporting will be implemented.

**M&R #2. Notify the Service when banded hatch year (HY) nestlings, from clusters directly adjacent to the AA boundary, are recaptured or identified in territories other than their natal territory (RPM #3).** Monitoring and reporting for the Action will include, banding all RCWs among the HOMMTA sample group. Standard banding data includes, but is not limited to; age, sex, HY for newborn nestlings, etc. If the HOMMTA sample group of birds are recaptured or identified during the Installation's standard monitoring and banding operations, then Ft. Benning should inform the West Georgia ES Office as soon as practical.

**M&R #3. Designate all clusters directly adjacent to the AA boundary as "protected" (RPM #4).** The Installation will follow the Standard Operating Procedures for designating protected clusters. The process is explicitly defined in the Revised Army-Wide Guidelines for the Management of the RCW on Army Installations. The Installation should follow its Standard Operating Procedures for monitoring and reporting on RCWs. Once completed, the West Georgia ES Office shall be notified as soon as practical.

**M&R#4. Disposition of Dead or Injured Red-cockaded woodpeckers.** Although the Army's proposed action is not anticipated to result in dead or injured RCWs, this provision is included per the Service's policy. For the disposition of dead specimens and for handling injured individuals each time a dead or injured animal is found, the Installation shall:

- For dead animals, preserve at Fort Benning's Natural Resources Management Branch Office (freezer storage). Include all known information about the specimen (e.g., banding combinations, sex, location, if known, cause of death, etc.). Also, Contact the Service's West Georgia ES Office, Fort Benning, Georgia.
- For injured animals, provide guidance for the animal's immediate care, then contact the Services West Georgia ES Office.
- Integrate the documentation and notification requirements for these events with the reporting requirements for monitoring the amount or extent of take related to HOMMTA.

## 9. CONSERVATION RECOMMENDATIONS

§7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by conducting conservation programs for the benefit of endangered and threatened species.

Conservation recommendations are discretionary activities that an action agency may undertake to avoid or minimize the adverse effects of an Action, implement recovery plans, or develop information that is useful for the conservation of listed species. The Service offers the following Conservation Recommendation that is relevant to the listed species addressed in this BO and that we believe is consistent with the authorities of the Army.

- Consider using, or further developing, a Spatially Explicit Population Model to enhance the Army’s analysis for anticipating, avoiding and minimizing adverse effects. The SEPMs (for RCWs in the case) are robust and well suited to predict anticipated effects from Actions. Two functions that give the RCW SEPM enriched predictability, and directly aid in avoiding and minimizing for the effects of take, are Pattern Oriented Modeling (POM) and Landscape Equivalency Analysis (LEA). For this consultation, POM and LEA outputs would further support the assertions that (1) birds “may” cross the gap (i.e. the AA) and (2) “implementing the Action may hinder more frequent RCW dispersal, but is not likely to prevent it altogether”.
- As funding becomes available, consider planting and/or underplanting more longleaf pine to offset declining off-site loblolly and shortleaf pines.

## **10. REINITIATION NOTICE**

Formal consultation for the Action considered in this BO is concluded. Reinitiating consultation is required if the Army retains discretionary involvement or control over the Action (or is authorized by law) when:

- a. the amount or extent of incidental take is exceeded;
- b. new information reveals that the Action may affect listed species or designated critical habitat in a manner or to an extent not considered in this BO;
- c. the Action is modified in a manner that causes effects to listed species or designated critical habitat not considered in this BO; or
- d. a new species is listed, or critical habitat designated that the Action may affect.

In instances where the amount or extent of incidental take is exceeded, the Army is required to immediately request a reinitiation of formal consultation.

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MEMORANDUM FOR RECORD

SUBJECT: HOMMTA Biological Opinion Discussion with USFWS

This MFR serves as an administrative record of the discussion (takeaways) Fort Benning had with the USFWS regarding the May 2020 HOMMTA Biological Opinion (BIOP).

1. Fort Benning identified six clusters to be considered “adjacent” to the HOMMTA footprint in order to address RPM #3 and #4, T&C #3 and #4 and M&R #2 and #3.
2. All RPMs/T&Cs, and M&Rs are acceptable.
3. Fort Benning will continue conducting RCW monitoring as per the 2019 Fort Benning RCW Monitoring Plan. No additional monitoring will be conducted except:
  - a. In the event RCWs from HOMMTA incidental take (IT) clusters are translocated. Translocations will occur in a manner consistent with Standard Operating Procedures (SOP) for RCW translocations, monitoring and reporting; and/or
  - b. As related with efforts to reclaim HOMMTA IT clusters that continue to persist on the landscape as part of Fort Benning’s manageable RCW population (i.e. some IT clusters may not be impacted to the extent anticipated in the initial analysis). Under these conditions, Fort Benning will conduct standard demographic monitoring practices.



United States Department of the Interior



**Fish and Wildlife Service**  
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P.O. Box 52560  
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**July 27, 2020**

Coastal Sub Office  
4980 Wildlife Drive  
Townsend, Georgia 31331

Kirk W. Ticknor, Chief  
Department of the Army  
Installation Management Agency  
5751 Constitution Loop, Suite 500  
Fort Benning Army Installation  
Fort Benning, GA 31905

**Re: FWS Log No. 2020-F-1232**

Dear Kirk Ticknor,

This letter is the U.S. Fish and Wildlife Service's (Service) response to Fort Benning's Memorandum For Record (MFR) that we received on July 21, 2020. In the MFR, Fort Benning provided the Service with monitoring protocols for the federally endangered red-cockaded woodpecker (RCW) that were negotiated between Fort Benning and the Service in early July 2020. The monitoring and reporting requirements that were outlined in the Biological Opinion (BO) for the Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) were required as part of the consultation. We submit the following comments under provisions of the Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531, *et seq.*).

According to the MFR, the Service acknowledges and agrees to the following:

- (1) Fort Benning and the Service identified six clusters to be considered "adjacent" to the HOMMTA footprint in order to address Reasonable and Prudent Measures (RPM) #3 and #4, Terms & Conditions T&C) #3 and #4 and Monitoring & Reporting (M&R) #2 and #3.
- (2) All RPMs/T&Cs, and M&Rs listed in the Final HOMMTA BO have been discussed and are now final.

(3) Fort Benning will continue conducting RCW monitoring as stated in its 2019 Fort Benning RCW Monitoring Plan. No additional monitoring will be required for the HOMMTA consultation except:

a. In the event RCWs from the HOMMTA consultation (i.e. taken groups) involve translocation to a Service approved recipient site, translocation protocols will occur in a manner consistent with the Services' Standard Operating Procedures (SOP) for RCW translocations, monitoring and reporting; and/or

b. As related with efforts to reclaim HOMMTA IT clusters that continue to persist on the landscape as part of Fort Benning's manageable RCW population (i.e. some IT clusters may not be impacted to the extent anticipated in the initial analysis). Under these conditions, Fort Benning will conduct standard demographic monitoring practices.

Based on the information Fort Benning provided in the July 21 MFR regarding the HOMMTA consultation, the Service determination stands, such that the Action, is not likely to adversely affect the RCW. However, if new information becomes available or changes in the project occur that may involve federally listed species, further consultation with the Service will be required.

Your requirements under section 7(a)(2) of the ESA have been fulfilled and based on the information you provided no further action is required.

If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact John Doresky at (706) 544-6030.

Sincerely,



Donald Imm  
Field Supervisor

for:





# United States Department of the Interior



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**July 27, 2020**

Coastal Sub Office  
4980 Wildlife Drive  
Townsend, Georgia 31331

**Re: FWS Log No. 2020-F-1232**

## Memorandum

**To:** Kirk W. Ticknor, Chief, Department of the Army, Installation Management Agency 5751 Constitution Loop, Suite 500. Fort Benning Army Installation Fort Benning, GA 31905

**From:** Donald Imm, Field Supervisor, Georgia Ecological Services, Athens Field Station, U.S. Fish and Wildlife Service, Athens, Georgia

**Subject:** Biological Opinion on the Fort Benning Heavy Off-Road Mounted Maneuver Training Area (File No: 2020-F-1232): Addendum to Consultation History.

This memorandum constitutes the minor amendments made to the May 22, 2020, Biological Opinion (BO) on the Fort Benning Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) (File No: 2020-F-1232), specifically, additions to the HOMMTA's ongoing Consultation History. The Fish and Wildlife Service (Service) has received verbal communication from Mr. Brent Widener, of Fort Benning's Planning and Support Branch, on July 23, 2020, regarding minor changes that were made to the HOMMTA BO but were not reflected in the Consultation History section of the Opinion/Administrative Record. In addition to enhancing the BO Consultation History, the Service has worked with the Installation on planning and monitoring protocols, that were to be determined at a later date as described in the BO and will be reflected in this memorandum.

*The Consultation History from the May 22, 2020 HOMMTA Biological Opinion shows:*

### **August 15, 2019**

- Army initiated early coordination meeting with the U.S. Fish and Wildlife Service regarding Fort Benning's proposed Heavy Off-Road Mounted Maneuver Training Area.

### **February 02, 2020**

- Fort Benning provided the Fish and Wildlife Service (Service) a letter of request to enter into formal consultation for their project; Fort Benning's Heavy Off-Road Mounted Maneuver Training Area on the red-cockaded woodpecker (*Picoides borealis*).

**February 02, 2020**

- Service provided Fort Benning with a letter (**FWS Log #:** 2018-F-1232) to initiate formal consultation. The Service letter acknowledged the receipt of Fort Benning's letter to formally consult, recognized the proposed Action and Action Components, and provided Fort Benning with the consultation closing date of July 02, 2020.

*Additional events and correspondence to be added to the administrative record includes:*

**May 26, 2020**

- Service provided its Final HOMMTA Biological Opinion to Fort Benning.

**June 15, 2020**

- Fort Benning and the Service had a conference call to discuss Fort Benning comments and edits to the Opinion.

**July 17, 2020**

- The Service accepted the comments and edits proposed by the Installation. The minor edits were added to the BO and resent to the Installation.

**July 21, 2020**

- Fort Benning submits a memorandum for record describing monitoring and minimization strategies from the HOMMTA Opinion. As described in the Opinion, these methods were to be negotiated with the Service at a later date.

**July 27, 2020**

- The Service responds back with a letter of concurrence regarding the July 21, 2020 memorandum for record from the Installation.

Your requirements under section 7(a)(2) of the ESA have been fulfilled and based on the information you provided we concur with your finding, and, no further action is required.

If you have any questions or concerns about this consultation or the consultation process in general, please feel free to contact John Doresky at (706) 544-6030.

Sincerely,



for:

Donald Imm  
Field Supervisor



**Appendix G: Army Memorandum for Record: Analysis of Heavy Maneuver  
Vehicle Vibration Effects on Cultural Resources**

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**MEMORANDUM**

<b>Subject</b>	Army Memorandum for Record: Analysis of Heavy Maneuver Vehicle Vibration Effects on Cultural Resources
<b>Date</b>	December 9, 2019
<b>Prepared by</b>	Linda Veenstra, JD Environmental Attorney, OSJA, Fort Benning

This Memorandum for Record addresses potential vibration impacts on cultural resources from the proposed HOMMTA (Proposed Action) due to construction, operation, and maintenance.

**1.0 Potential Vibration Impacts during Construction and Maintenance**

Vibrations transferred through the ground from construction vehicles and equipment are unlikely to cause potential adverse impacts to cemeteries (for Alternatives 1 and 2) and/or any archaeological sites (for Alternatives 1, 2, or 3) on the HOMMTA. The Federal Transportation Administration (FTA) provides vibration comparisons for typical construction equipment over a wide range of soil conditions, although subsurface conditions may cause considerable variation (FTA, 2018). Construction activities such as blasting, pile-driving, demolition, and drilling may cause adverse effects on nearby sensitive receptors. In contrast, construction vehicles that may be used for the HOMMTA, including large bulldozers or loaded trucks, would create substantially less ground-transferred vibration at distances of 25 feet or greater (see Table 7-4 in FTA, 2018).

The 100-foot off-road heavy maneuver buffer around cemeteries and the 50-foot buffer around any archeological sites that would remain in place in the HOMMTA would avoid or reduce any damage to those resources, so that any Action Alternative would have negligible vibration impacts from construction. Maintenance equipment and activities would not exceed those of construction, and so would also have negligible effects.

**2.0 Potential Vibration Impacts during Operation**

The additional long-term heavy maneuver vehicle traffic in any of the HOMMTA Action Alternatives would also be unlikely to cause ground-borne vibration impacts. A research project to measure and assess Department of Defense vehicle impacts on buried archaeological sites discounted potential vibration impacts from military vehicles: “Engineering experience shows that

vibration can increase compaction of granular soils; however, there was no reasonable way to estimate the vibration of the assumed vehicles” (SERDP, 2011).

The FTA and other studies related to mass transit systems often focus on vibration impacts to above-ground historic structures rather than underground archaeological sites, so they have limited usefulness for this analysis.

An example from Fort Benning is a more suitable information source. In the Good Hope Maneuver Training Area, tank routes are about 40 feet away from the Jamestown cemetery (9CE1564) graves. The approximately 2.25-acre cemetery contains grave markers and buried archaeological resources in about 20 percent of the cemetery. A comparison of that area prior to and after extensive heavy maneuver training indicated no adverse impacts from vibrations (Hobgood, 2019). The 100-foot off-road heavy maneuver buffer around cemeteries and the 50-foot buffer around any archaeological sites that would remain in place in the HOMMTA would avoid or reduce any damage to those resources, so that any Action Alternative would have negligible vibration impacts from operations.

### **3.0 References**

FTA. (2018, September). Transit Noise and Vibration Impact Assessment Manual, FTA Report No. 0123. Prepared by John A. Volpe National Transportation Systems Center.

Hobgood, R. (2019, November). Personal communication.

SERDP. (2011, July 11). Application of Magnetic and Geotechnical Methods for Archaeological Site Investigations, SERDP Project RC-1697. Prepared by Pacific Northwest National Laboratory.

## **Appendix H: Economic Multiplier Analysis Results**

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## **MEMORANDUM**

<b>Subject</b>	Economic Multiplier Analysis Results
<b>Date</b>	April 19, 2019
<b>Prepared by</b>	AECOM

### **1.0 Project Background**

The Proposed Action would entail the construction of tank trails, water crossings, utility improvements, and road upgrades. Three Action Alternatives are considered in this analysis.

### **2.0 Methodology**

#### **2.1 RIMS II Multipliers**

The Bureau of Economic Analysis (BEA) Regional Input-Output Modeling System (RIMS II) Series 2013 (updated in 2016) multipliers are used to estimate jobs and earnings effects resulting from the construction of each Action Alternative. The multipliers are constructed to reflect the structure of the economies of the area surrounding Fort Benning. The study area for the analysis (hereafter, Region of Influence [ROI]) is composed of Muscogee, Chattahoochee, Talbot, Marion, and Harris Counties in Georgia, and Russell and Lee Counties in Alabama. RIMS II multipliers measure the total change (direct, indirect, and induced effects) in output, employment, and earnings that results from an incremental change to a particular industry. The RIMS II multipliers used in this report represent the most updated version available at the time this analysis was prepared.

#### **2.2 Construction Jobs and Earnings**

Capital costs were developed for the Proposed Action by Fort Benning and organized by cost categories in 2025 US dollars as shown in Table 1. Water mitigation credits are excluded from the multiplier impact calculations because they are a transfer payment and there is no labor associated with this expenditure. Costs were grouped into construction and professional services categories, which serve as the basis for estimating spending impacts. Contingency was allocated to construction and professional services categories based on each category's share of the total non-contingency costs.

**Table 1: Capital Costs by Alternative (2025\$)**

<b>Cost Category</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>
Construction Costs	\$32,754,000	\$37,591,600	\$34,002,400
Professional Services Costs	\$9,221,500	\$9,714,500	\$9,349,500
Contingency	\$1,905,000	\$2,147,000	\$1,967,000
Water Mitigation Credits	\$630,000	\$480,000	\$405,000
<b>Total</b>	<b>\$44,510,500</b>	<b>\$49,933,100</b>	<b>\$45,723,900</b>
Total Construction Expenditures	\$34,240,495	\$39,297,705	\$35,545,186
Total Professional Services Expenditures	\$9,640,005	\$10,155,395	\$9,773,714

Source: Fort Benning, AECOM, 2019

Total employment and total earnings impacts are estimated; these are the sum of three categories of impacts:

- **Direct effect** – Includes the effects on industries that are directly purchased to build the Proposed Action, including construction.
- **Indirect effect** – Includes the effects on supporting industries that supply goods and services to the direct effect industries. This includes workers in industries that supply equipment parts, steel, concrete, wood, and other raw materials that are needed for the Proposed Action.
- **Induced effect** – Includes the effect of direct and indirect workers spending their income on consumer goods and services such as food, shelter, clothing, recreation, and personal services.

Capital investment for the Proposed Action would create additional jobs and subsequent wages during the construction of the proposed Action Alternatives. Capital expenditures were separated into construction and professional services expenditures, and multipliers for the appropriate industry were applied to the respective costs.

The interpretation of the RIMS II employment multipliers used in the analysis is as follows. The final demand employment multiplier represents the total change in number of jobs that occurs in all industries for each \$1 million of output (in 2016\$) delivered to final demand by the construction industry. For example, based on the multipliers in Table 2, every \$1 million spent on construction



goods and services in the ROI yields 6.6237 direct jobs and 12.2486 jobs in the entire economy. The employment effects are expressed in job-years, which are defined as one job for one person for one year. For example, three job-years are equal to three people doing a job for one year, or one person doing a job for three years.

In addition to the employment effects, the construction of the three Action Alternatives would result in earnings impacts to the ROI for both the construction and professional services industries. The final demand earnings multiplier represents the total dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction industry. For example, based on the multipliers in Table 2, every \$1 delivered to final demand by the construction industry in the ROI yields \$0.3360 of earnings for households employed in the construction industry and \$0.5369 of earnings for households employed in the entire economy.

**Table 2: Employment and Earnings Multipliers for Construction and Professional Services**

Direct / Total	Employment	Earnings
<b>Construction</b>		
Direct	6.6237	0.3360
Total	12.2486	0.5369
<b>Professional Services</b>		
Direct	6.7488	0.4386
Total	12.9476	0.6516

Source: RIMSII

Notes: Final-demand Employment /3/ (number of jobs), Final-demand Earnings /2/ (dollars)

### 2.3 Integrated Training Area Management Impacts

In addition to the construction of the Proposed Action, there would be periodic maintenance as part of the Integrated Training Area Management (ITAM) program, ensuring that the training area is in proper operating condition. The cost of this maintenance in the first year is estimated to be \$3.5 million, with spending going towards equipment rentals, employee salaries, and aggregate purchases. Periodic maintenance in subsequent years would need to be conducted after the initial investment, but the cost is expected to be lower, as shown in Table 3. Maintenance activities are

expected to employ 10 additional people<sup>3</sup>. Multipliers were applied to the individual categories to estimate the total employment and earnings impacts to the overall economy. Table 4 shows the multipliers used for calculating the ITAM impacts.

**Table 3: Integrated Training Area Management Expenditures (2025\$)**

Expenditure	First Year	Subsequent Years
Equipment Rental	\$1,250,000	\$1,250,000
Aggregate Purchases	\$1,250,000	\$500,000
Construction Salaries	\$1,000,000	\$1,000,000
<b>Total</b>	<b>\$3,500,000</b>	<b>\$2,750,000</b>

Source: Fort Benning

**Table 4: Total Employment and Earnings Multipliers for Calculating ITAM Impacts**

Expenditure	Employment	Earnings
Commercial and industrial machinery and equipment rental and leasing (Equipment Rental)	5.4875	0.3202
Mining, except oil and gas (Aggregate Purchase)	6.4366	0.2956
Construction (Construction Salaries)	22.0130	1.5980

Source: RIMSII

The interpretation of the RIMS II employment multipliers used in the analysis of ITAM expenditures is the same as for construction. For example, based on the multipliers in Table 4, every \$1 million spent on equipment rentals in the ROI yields 5.4875 jobs in the entire economy. Likewise, every \$1 delivered to final demand for equipment rentals in the ROI yields \$0.3202 of earnings for households employed in the entire economy.

### 3.0 Results

#### 3.1 Construction Jobs and Earnings

Construction of the Proposed Action would support the local economy through the hiring of construction personnel, renting or purchasing construction equipment, and procurement of construction materials for the duration of the construction period impacting the local labor and

<sup>3</sup> Estimate provided by Fort Benning.

manufacturing markets. During construction, specialized labor from throughout the region would be engaged, leading to an increase in employment for that market. In addition, construction-related goods would be purchased, most of which would come from the region. These activities would provide direct, indirect, and induced effects for the local economy.

The direct economic impacts in terms of jobs and earnings from the construction of the Proposed Action are shown in Table 5 and Table 7. Table 6 and Table 8 show total economic impacts in terms of job and earnings. Both direct and total earnings and jobs impacts are separated into construction jobs and earnings, and professional services jobs and earnings. Jobs are shown in job-years, while earnings are shown in 2025 dollars.

### **3.1.1 Alternative 1**

For the ROI, construction of Alternative 1 would result in employment of 245 direct job-years in construction and professional services industries, and 457 job-years in the ROI's economy as a whole. These jobs would result in direct earnings of over \$15 million and total earnings of over \$24 million, or an average of \$64,200 per job-year for direct employment and \$54,000 per job-year for all employment.

### **3.1.2 Alternative 2**

For the ROI, construction of Alternative 2 would result in employment of 276 direct job-years in construction and professional services industries, and 514 job-years in the ROI's economy as a whole. These jobs would result in direct earnings of over \$17 million and total earnings of over \$27 million, or an average of \$64,000 per job-year for direct employment and \$53,900 per job-year for all employment.

### **3.1.3 Alternative 3**

For the ROI, construction of Alternative 3 would result in employment of 253 direct job-years in construction and professional services industries, and 472 job-years in the ROI's economy as a whole. These jobs would result in direct earnings of over \$16 million and total earnings of over \$25 million, or an average of \$64,200 per job-year for direct employment and \$54,000 per job-year for all employment.

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**Table 5: Direct Construction and Professional Services Employment Impacts**

Alternative	Construction Spending	Deflator	Direct Construction Employment Multiplier	Direct Construction Employment (job-years)	Professional Services Spending	Deflator	Direct Professional Services Employment Multiplier	Direct Professional Services Employment (job-years)	Total Direct Employment (job-years)
Alternative 1	\$34,240,495	0.8400	6.6237	191	\$9,640,005	0.8361	6.7488	54	245
Alternative 2	\$39,297,705	0.8400	6.6237	219	\$10,155,395	0.8361	6.7488	57	276
Alternative 3	\$35,545,186	0.8400	6.6237	198	\$9,773,714	0.8361	6.7488	55	253

Source: AECOM analysis

**Table 6: Total Construction and Professional Services Employment Impacts**

Alternative	Construction Spending	Deflator	Total Construction Employment Multiplier	Total Construction Employment Impact (job-years)	Professional Services Spending	Deflator	Total Professional Services Employment Multiplier	Total Professional Services Employment Impact (job-years)	Total Employment (job-years)
Alternative 1	\$34,240,495	0.8400	12.2486	352	\$9,640,005	0.8361	12.9476	104	457
Alternative 2	\$39,297,705	0.8400	12.2486	404	\$10,155,395	0.8361	12.9476	110	514
Alternative 3	\$35,545,186	0.8400	12.2486	366	\$9,773,714	0.8361	12.9476	106	472

Source: AECOM analysis

**Table 7: Direct Construction and Professional Services Earnings Impacts (2025\$)**

Alternative	Construction Spending	Direct Construction Earnings Multiplier	Direct Construction Earnings	Professional Services Spending	Direct Professional Services Earnings Multiplier	Direct Professional Services Earnings	Total Direct Earnings
Alternative 1	\$34,240,495	0.3360	\$11,504,000	\$9,640,005	0.4386	\$4,228,000	\$15,732,000
Alternative 2	\$39,297,705	0.3360	\$13,203,000	\$10,155,395	0.4386	\$4,454,000	\$17,657,000
Alternative 3	\$35,545,186	0.3360	\$11,943,000	\$9,773,714	0.4386	\$4,286,000	\$16,229,000

Note: Earnings rounded to nearest \$1,000

Source: AECOM analysis

**Table 8: Total Construction and Professional Services Earnings Impacts (2025\$)**

Alternative	Construction Spending	Total Construction Earnings Multiplier	Total Construction Earnings Impact	Professional Services Spending	Total Professional Services Earnings Multiplier	Total Professional Services Earnings Impact	Total Earnings
Alternative 1	\$34,240,495	0.5369	\$18,384,000	\$9,640,005	0.6516	\$6,281,000	\$24,665,000
Alternative 2	\$39,297,705	0.5369	\$21,099,000	\$10,155,395	0.6516	\$6,617,000	\$27,716,000
Alternative 3	\$35,545,186	0.5369	\$19,084,000	\$9,773,714	0.6516	\$6,369,000	\$25,453,000

Note: Earnings rounded to nearest \$1,000

Source: AECOM analysis

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### 3.2 Integrated Training Area Management Impacts

The first-year impact of ITAM activities is shown in Table 9 and Table 10. First-year employment impacts across all industries would total 31 job-years, and earnings impacts would total nearly \$2.4 million.

**Table 9: First Year Employment Impacts of ITAM**

Expenditure	Spending	Deflator	Employment Multiplier	Total Employment (job-years)
Equipment Rental	\$1,250,000	0.8400	5.4875	6
Aggregate Purchase	\$1,250,000	0.8400	6.4366	7
Construction Salaries*	\$1,000,000	0.8400	22.0130	18
<b>Total</b>				<b>31</b>

Note: Multiplier calculated from available information about direct employment and salaries created by ITAM  
Source: AECOM analysis

**Table 10: First Year Earnings Impacts of ITAM (2025\$)**

Expenditure	Construction Spending	Earnings Multiplier	Total Earnings
Equipment Rental	\$1,250,000	0.3202	\$400,000
Aggregate Purchase	\$1,250,000	0.2956	\$370,000
Construction Salaries	\$1,000,000	1.5980	\$1,598,000
<b>Total</b>			<b>\$2,368,000</b>

Note: Earnings rounded to nearest \$1,000  
Source: AECOM analysis

The impact in subsequent years is expected to be less, as there would be less aggregate purchased. Table 11 and Table 12 show the subsequent impacts to the overall economy. Subsequent employment impacts would total 27 job-years and earnings impacts would total \$2.1 million.

**Table 11: Subsequent Employment Impacts of ITAM**

<b>Expenditure</b>	<b>Spending</b>	<b>Deflator</b>	<b>Employment Multiplier</b>	<b>Total Employment (job-years)</b>
Equipment Rental	\$1,250,000	0.8400	5.4875	6
Aggregate Purchase	\$500,000	0.8400	6.4366	3
Construction Salaries*	\$1,000,000	0.8400	22.0130	18
<b>Total</b>				<b>27</b>

Note: Multiplier calculated from available information about direct employment and salaries created by ITAM  
 Source: AECOM analysis

**Table 12: Subsequent Earnings Impacts of ITAM (2025\$)**

<b>Expenditure</b>	<b>Construction Spending</b>	<b>Earnings Multiplier</b>	<b>Total Earnings</b>
Equipment Rental	\$1,250,000	0.3202	\$400,000
Aggregate Purchase	\$500,000	0.2956	\$148,000
Construction Salaries	\$1,000,000	1.5980	\$1,598,000
<b>Total</b>			<b>\$2,146,000</b>

Note: Earnings rounded to nearest \$1,000  
 Source: AECOM analysis



**Appendix I: Fort Benning Heavy Off-Road Mounted Maneuver Training Area  
On-site Traffic Count Results Memorandum**

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# Fort Benning Heavy Off-Road Mounted Maneuver Training Area

## *Final* On-site Traffic Count Results Memorandum

*Prepared For:*  
**United States Army Corps of Engineers - Savannah District**  
100 West Oglethorpe Avenue  
Savannah, Georgia 31401

**21 January 2019**

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## 36 **1. Executive Summary**

37 AECOM completed a traffic count survey on select Fort Benning roads to inform the proposed  
38 Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) development and  
39 Environmental Impact Statement (EIS) impacts analysis. AECOM conducted this survey from  
40 13-21 November 2018 using continuous video recordings at 15 locations distributed throughout  
41 the three HOMMTA alternative locations. Based on the data collected, all of the roadways have  
42 at least 90 percent of their capacity remaining; 11 of 15 roadways have at least 99 percent of  
43 their capacity remaining. Therefore, it is unlikely that activities associated with the proposed  
44 HOMMTA, within any of the three alternatives, would saturate current roadway capacity.  
45 Further, due to the overall low volumes of traffic recorded, diversion of this traffic to nearby  
46 roadways during use of the proposed HOMMTA would be unlikely to have substantial adverse  
47 impacts on the capacity of those roadways.

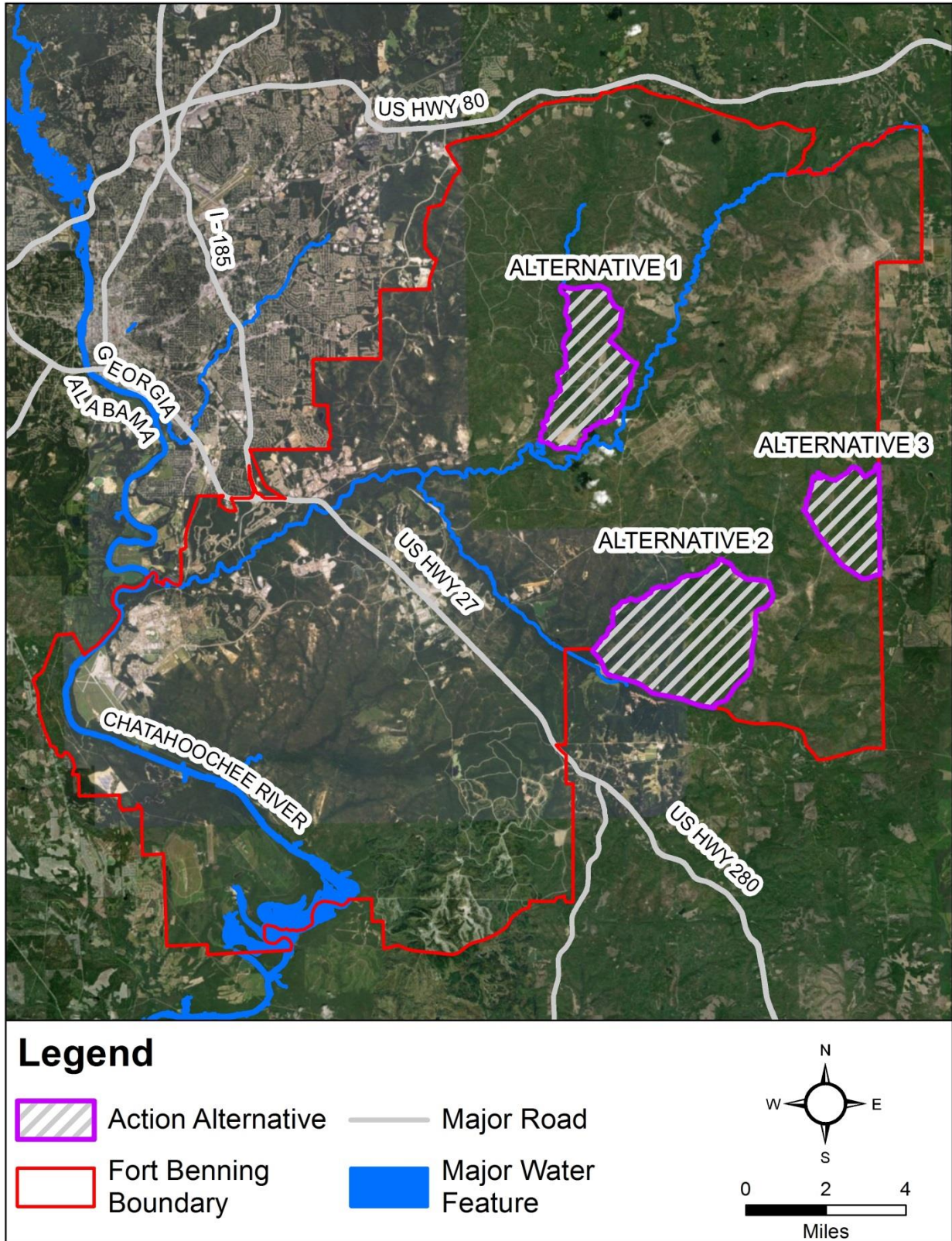
## 48 **2. Introduction**

49 The purpose of this *On-site Traffic Count Results Memorandum* is to establish existing traffic  
50 conditions on roadways within three areas of Fort Benning that represent three potential  
51 locations for development of a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA).  
52 These areas have been named as follows:

- 53 • Alternative 1: Northern Mounted Maneuver Training Area Alternative
- 54 • Alternative 2: Red Diamond Alternative
- 55 • Alternative 3: Eastern Boundary Alternative

56 AECOM collected traffic counts at 15 locations across these three areas using camera-based  
57 manual counts. This report summarizes those counts and compares them to their respective  
58 roadways' theoretical maximum capacity. The potential HOMMTA areas are shown below in  
59 **Figure 1.**





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Figure 1: HOMMTA Alternative Locations at Fort Benning

### 62 3. Count Locations

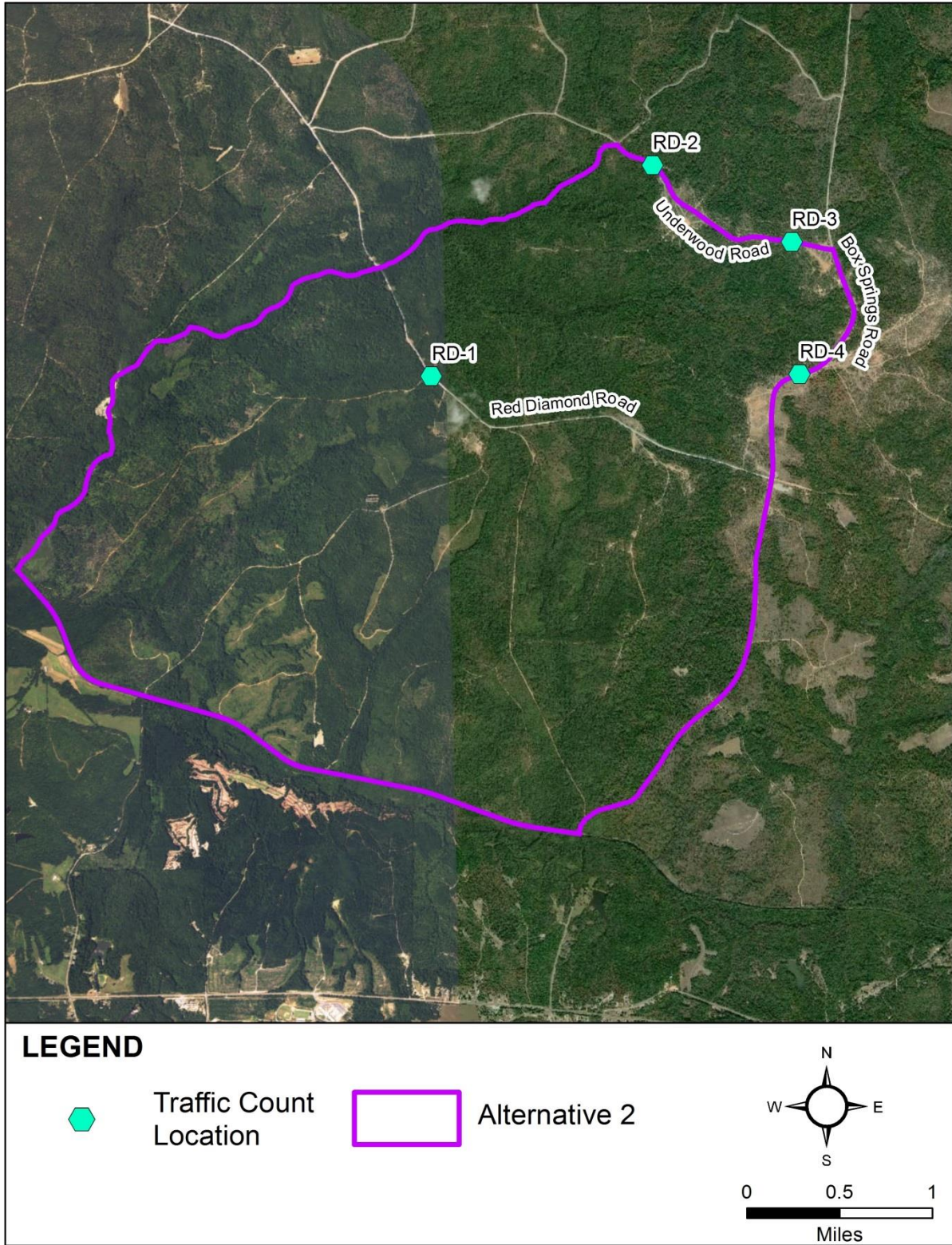
63 AECOM collected traffic counts at 15 locations across the three HOMMTA location alternatives.  
64 AECOM collected counts 24 hours per day for 7 days using video recordings that were  
65 subsequently analyzed manually to determine traffic volumes. Traffic count locations are shown  
66 in **Figure 2**, **Figure 3**, and **Figure 4**. Each traffic count location is designated by the alternative:  
67 Red Diamond (RD), Eastern Boundary (EB), and Northern Boundary (NB).

68 Traffic Count Locations included the following:

- 69 • RD-1 Red Diamond Road
- 70 • RD-2 Western portion of Underwood Road
- 71 • RD-3 Eastern portion of Underwood Road
- 72 • RD-4 Box Springs Road
- 73 • EB-5 Whitson Road
- 74 • EB-6 Eastern portion of SR 103 / Buena Vista Road
- 75 • EB-7 Unnamed Road 1
- 76 • EB-8 Western portion of SR 103 / Buena Vista Road
- 77 • EB-9 Cactus Road
- 78 • NB-10 Lorraine Road
- 79 • NB-11 Unnamed Road 2
- 80 • NB-12 SR 103 / Buena Vista Road
- 81 • NB-13 2<sup>nd</sup> Armored Division Road
- 82 • NB-14 Unnamed Road 3
- 83 • NB-15 Bulls Eye Road

84 AECOM categorized the traffic data collected at each location by vehicle type into three  
85 categories: *Light*, *Heavy*, and *Other*. The *Light* vehicle category consisted of personal vehicles,  
86 Humvees, buses, other soldier transport vehicles, and farm tractors. The *Heavy* vehicle category  
87 consisted of tractor trailers, larger military vehicles, and any vehicles with three or more axles.  
88 Finally, the *Other* category consisted of pedestrians. The raw count data can be found in  
89 **Appendix A**.

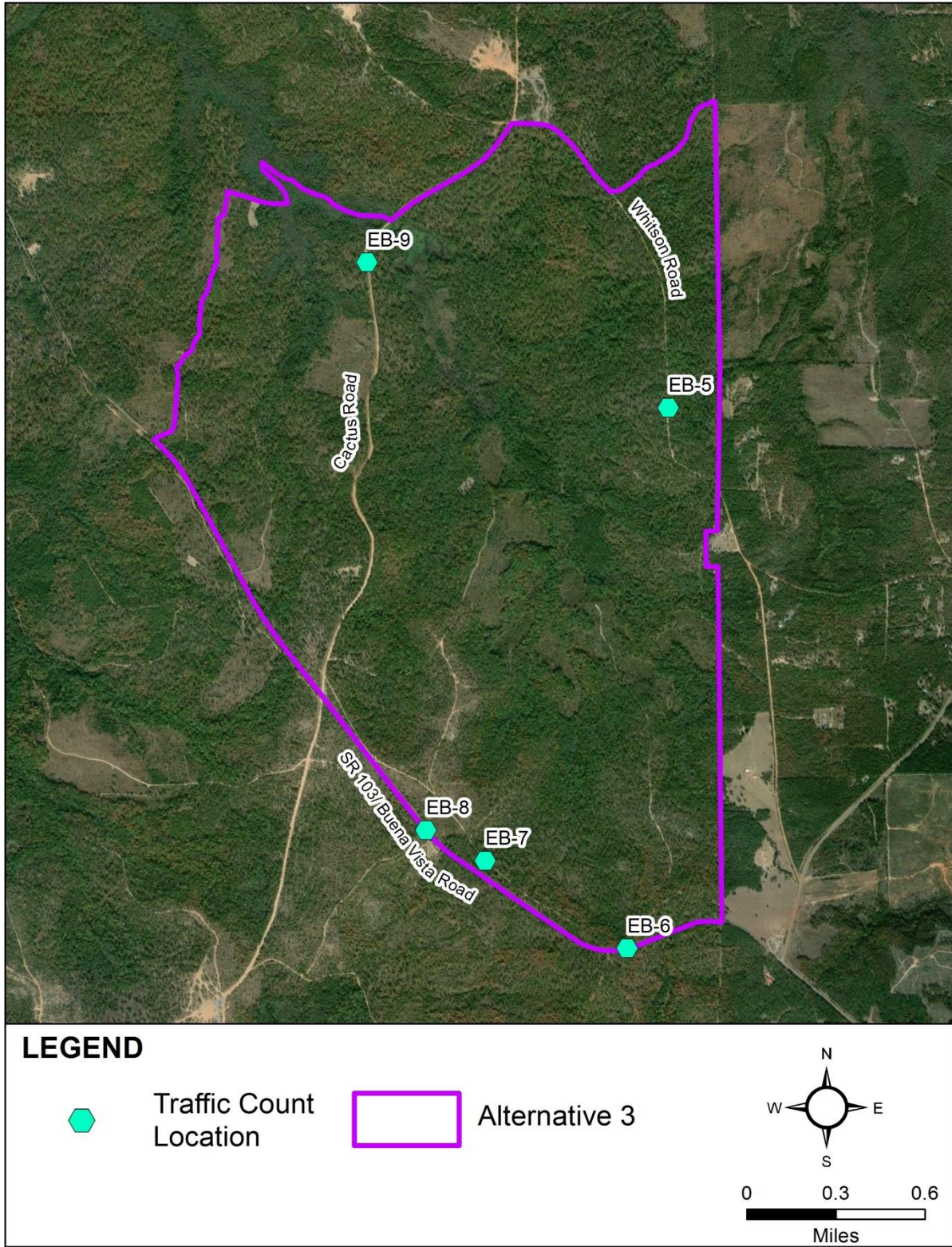




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Figure 2: Red Diamond Alternative Count Locations



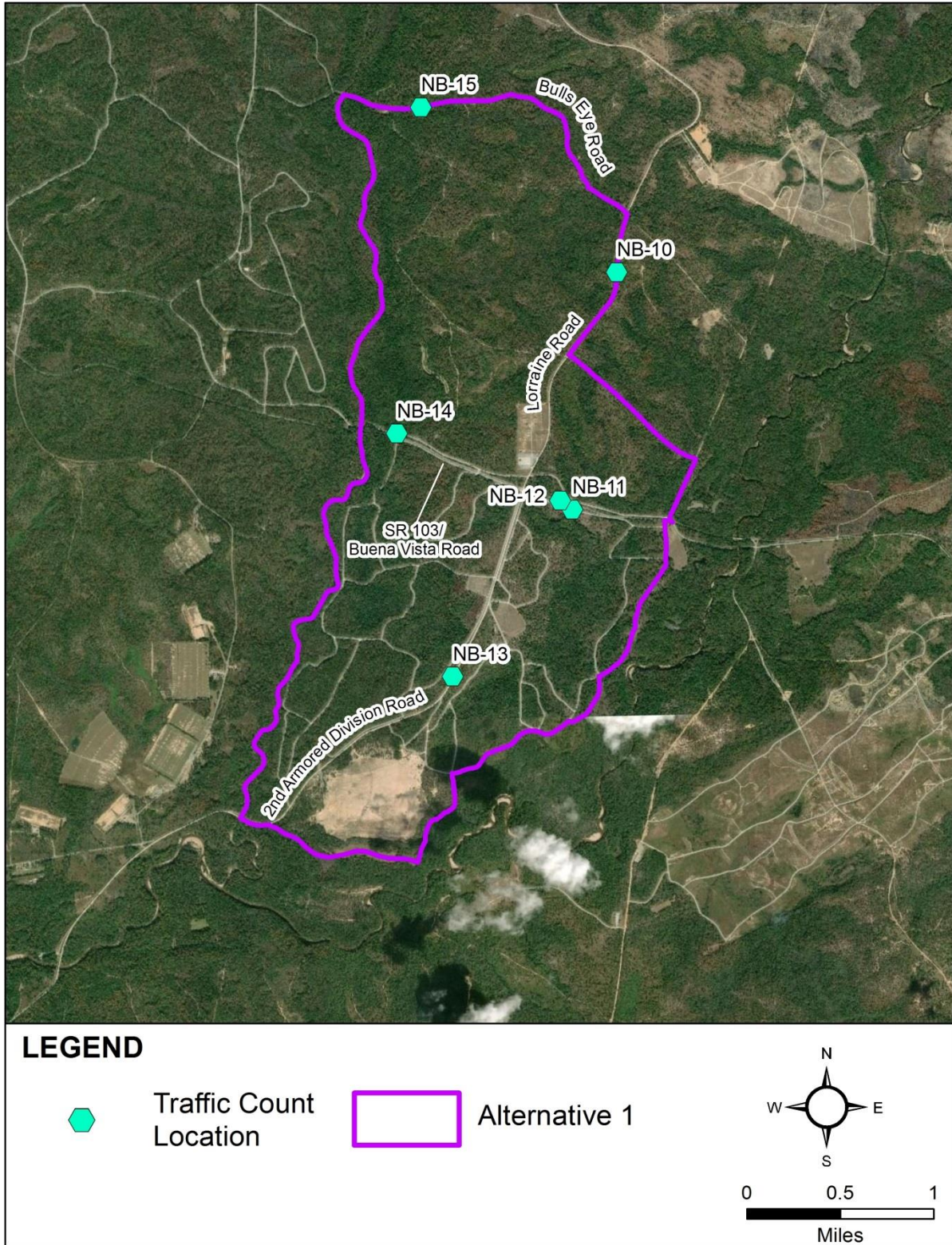


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**Figure 3: Eastern Boundary Alternative Count Locations**





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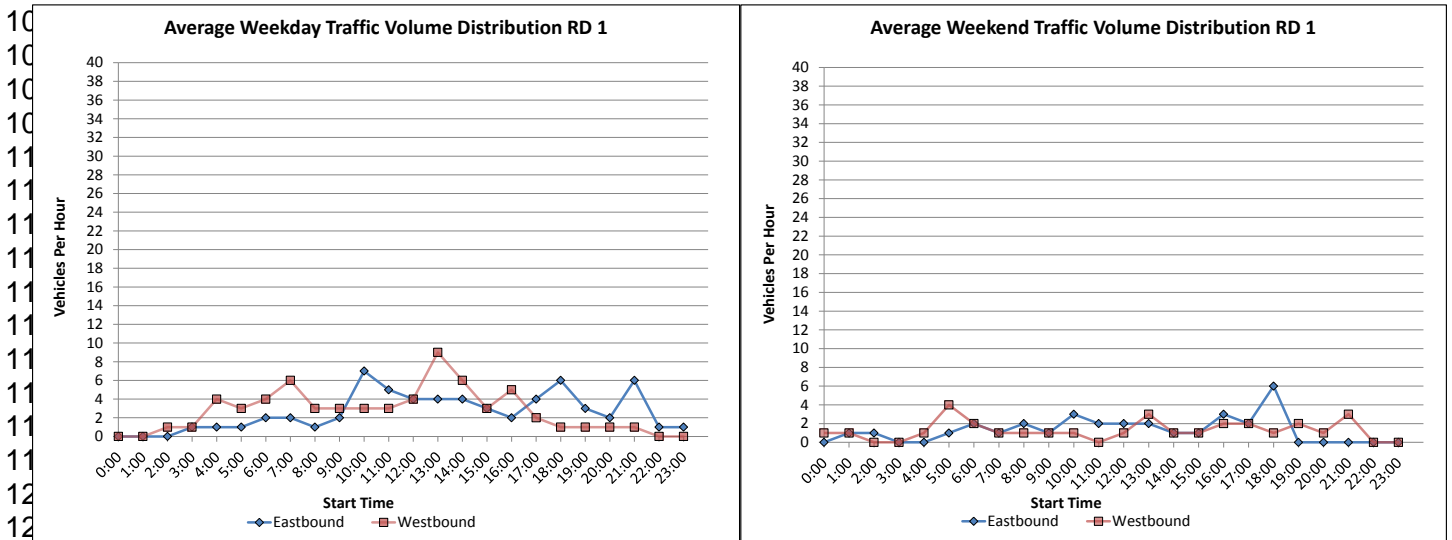
**Figure 4: Northern Mounted Maneuver Training Area Alternative Count Locations**

## 96 **4. Results**

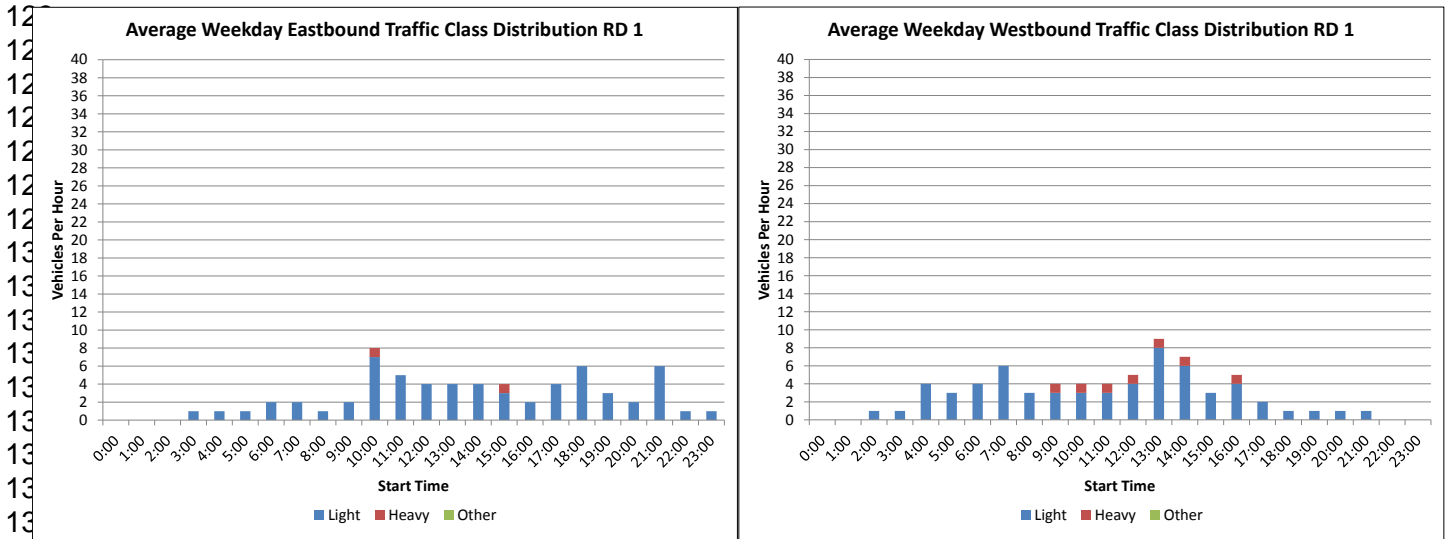
97 This section summarizes the traffic count results for each location, including the respective  
98 location's traffic data with two average traffic distribution plots: one for weekday traffic and one  
99 for weekend traffic. These plots show the vehicles per hour plotted on the y-axis against time  
100 plotted on the x-axis. This conveys when peak traffic occurs at these locations and which  
101 direction the vehicles are travelling. Furthermore, these traffic volume distribution plots are also  
102 broken out into separate plots to show the data's vehicle classification distributions in a bar  
103 graph. Finally, tables are provided to show the average traffic class distributions for weekday and  
104 weekend counts.

105

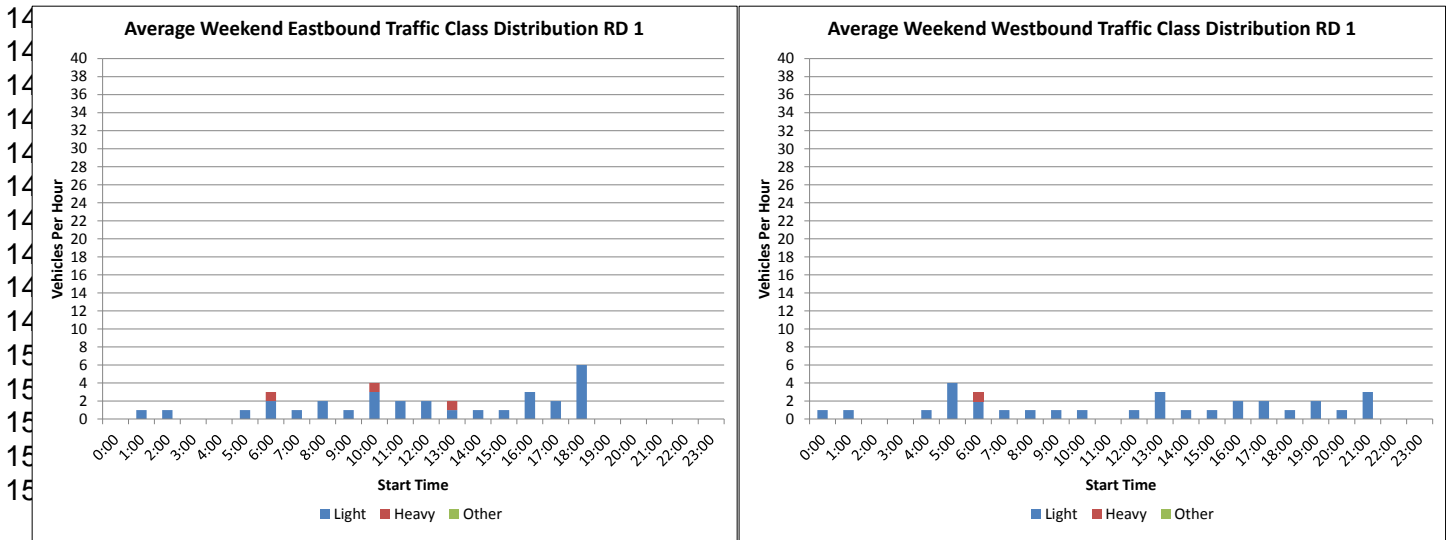
### 4.1 RD – 1: Red Diamond Road



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**Average Weekday Traffic Class Distribution**

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**Average Weekend Traffic Class Distribution**

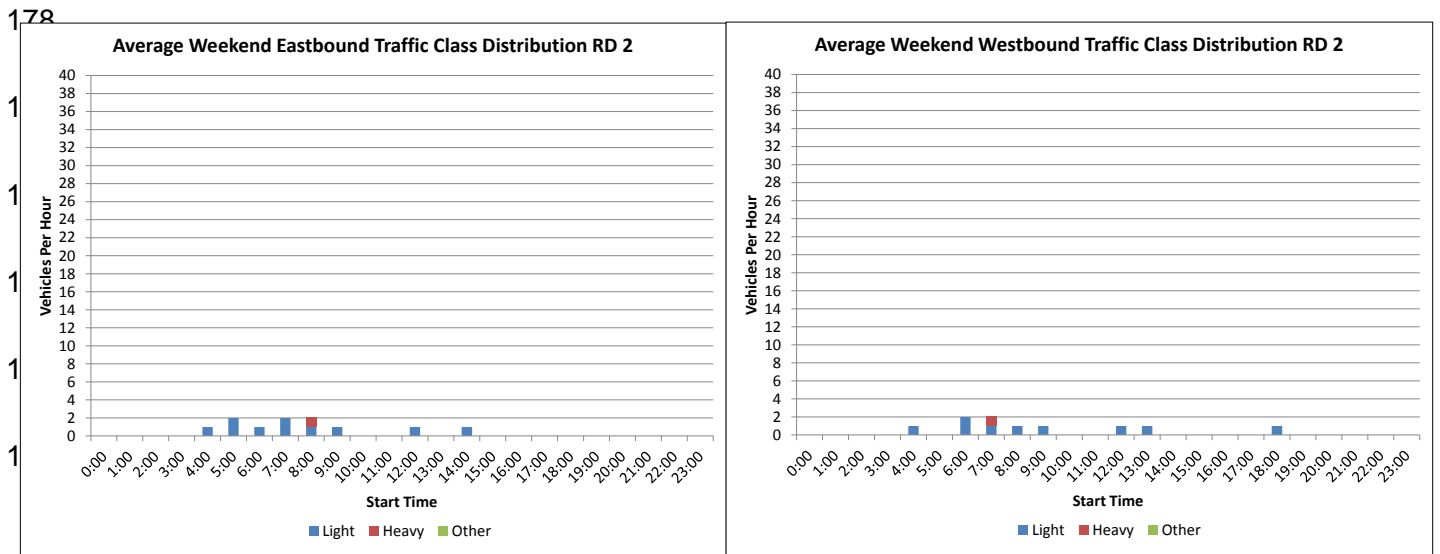
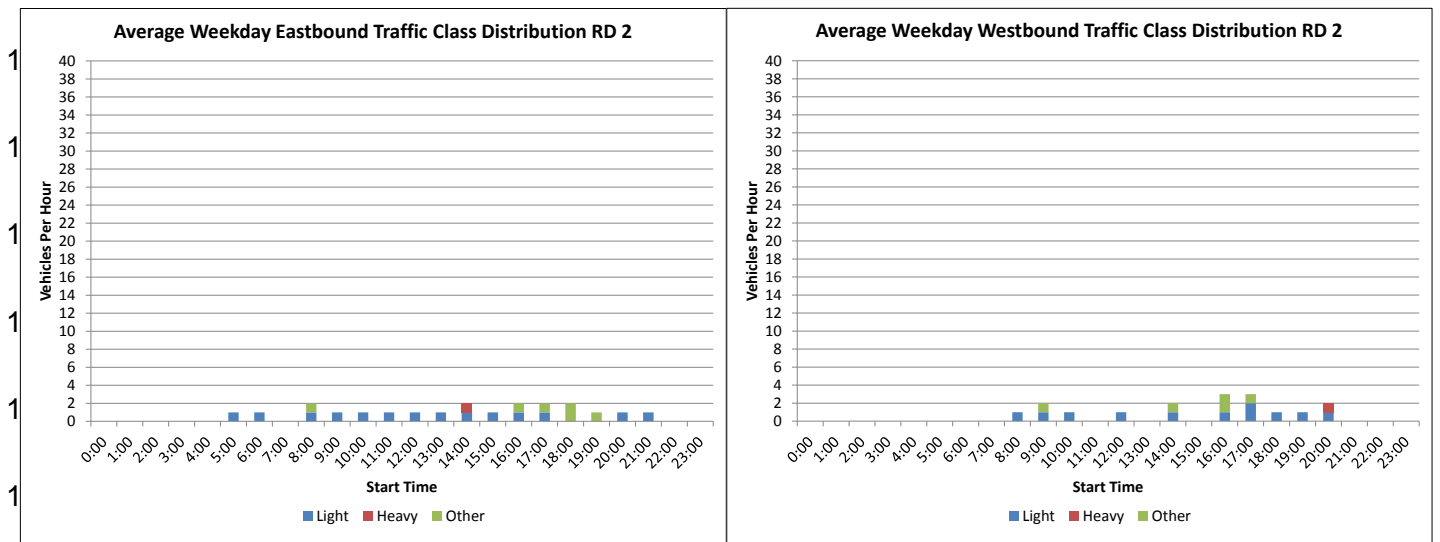
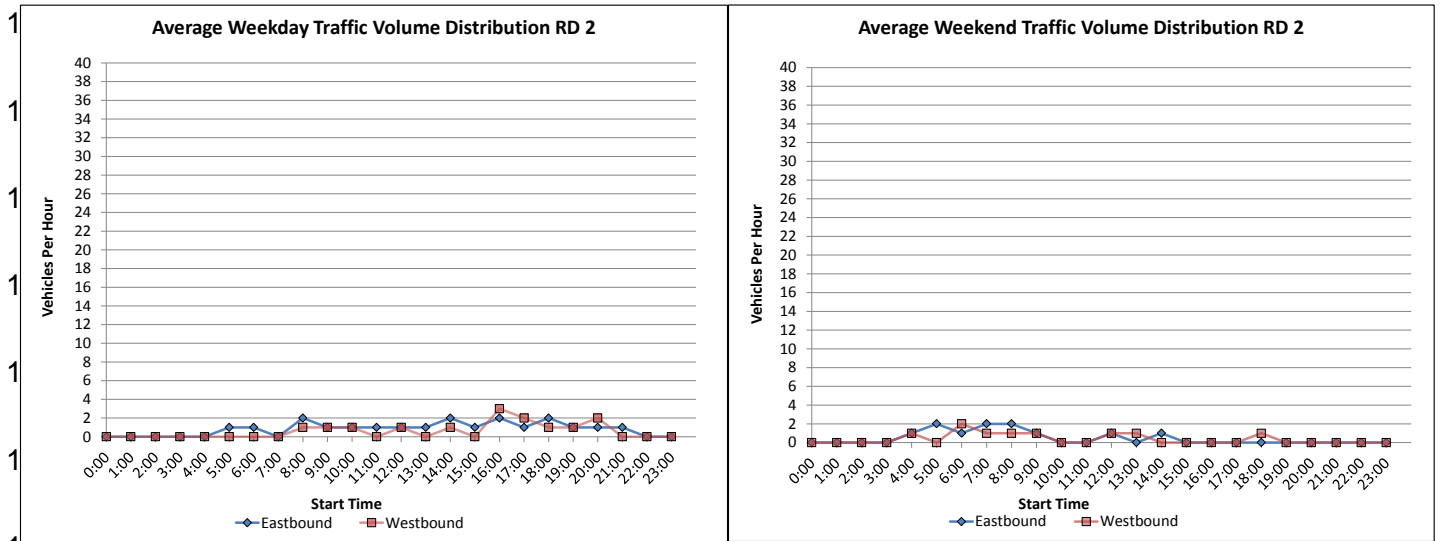
Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	1	0	0	1
3:00	1	0	0	1	0	0	2
4:00	1	0	0	4	0	0	5
5:00	1	0	0	3	0	0	4
6:00	2	0	0	4	0	0	6
7:00	2	0	0	6	0	0	8
8:00	1	0	0	3	0	0	4
9:00	2	0	0	3	1	0	6
10:00	7	1	0	3	1	0	12
11:00	5	0	0	3	1	0	9
12:00	4	0	0	4	1	0	9
13:00	4	0	0	8	1	0	13
14:00	4	0	0	6	1	0	11
15:00	3	1	0	3	0	0	7
16:00	2	0	0	4	1	0	7
17:00	4	0	0	2	0	0	6
18:00	6	0	0	1	0	0	7
19:00	3	0	0	1	0	0	4
20:00	2	0	0	1	0	0	3
21:00	6	0	0	1	0	0	7
22:00	1	0	0	0	0	0	1
23:00	1	0	0	0	0	0	1
<b>Total</b>	<b>62</b>	<b>2</b>	<b>0</b>	<b>62</b>	<b>7</b>	<b>0</b>	<b>133</b>

158  
159

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	1	0	0	1
1:00	1	0	0	1	0	0	2
2:00	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0
4:00	0	0	0	1	0	0	1
5:00	1	0	0	4	0	0	5
6:00	2	1	0	2	1	0	6
7:00	1	0	0	1	0	0	2
8:00	2	0	0	1	0	0	3
9:00	1	0	0	1	0	0	2
10:00	3	1	0	1	0	0	5
11:00	2	0	0	0	0	0	2
12:00	2	0	0	1	0	0	3
13:00	1	1	0	3	0	0	5
14:00	1	0	0	1	0	0	2
15:00	1	0	0	1	0	0	2
16:00	3	0	0	2	0	0	5
17:00	2	0	0	2	0	0	4
18:00	6	0	0	1	0	0	7
19:00	0	0	0	2	0	0	2
20:00	0	0	0	1	0	0	1
21:00	0	0	0	3	0	0	3
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>30</b>	<b>3</b>	<b>0</b>	<b>30</b>	<b>1</b>	<b>0</b>	<b>64</b>

162  
163

164 **4.2 RD – 2: Western portion of Underwood Road**



184

185 **Average Weekday Traffic Class**  
186 **Distribution**

189 **Average Weekend Traffic Class**  
190 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	1	0	0	0	0	0	1
6:00	1	0	0	0	0	0	1
7:00	0	0	0	0	0	0	0
8:00	1	0	1	1	0	0	3
9:00	1	0	0	1	0	1	3
10:00	1	0	0	1	0	0	2
11:00	1	0	0	0	0	0	1
12:00	1	0	0	1	0	0	2
13:00	1	0	0	0	0	0	1
14:00	1	1	0	1	0	1	4
15:00	1	0	0	0	0	0	1
16:00	1	0	1	1	0	2	5
17:00	1	0	1	2	0	1	5
18:00	0	0	2	1	0	0	3
19:00	0	0	1	1	0	0	2
20:00	1	0	0	1	1	0	3
21:00	1	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>14</b>	<b>1</b>	<b>6</b>	<b>11</b>	<b>1</b>	<b>5</b>	<b>38</b>

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	1	0	0	1	0	0	2
5:00	2	0	0	0	0	0	2
6:00	1	0	0	2	0	0	3
7:00	2	0	0	1	1	0	4
8:00	1	1	0	1	0	0	3
9:00	1	0	0	1	0	0	2
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	1	0	0	1	0	0	2
13:00	0	0	0	1	0	0	1
14:00	1	0	0	0	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	1	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>10</b>	<b>1</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>0</b>	<b>21</b>

187

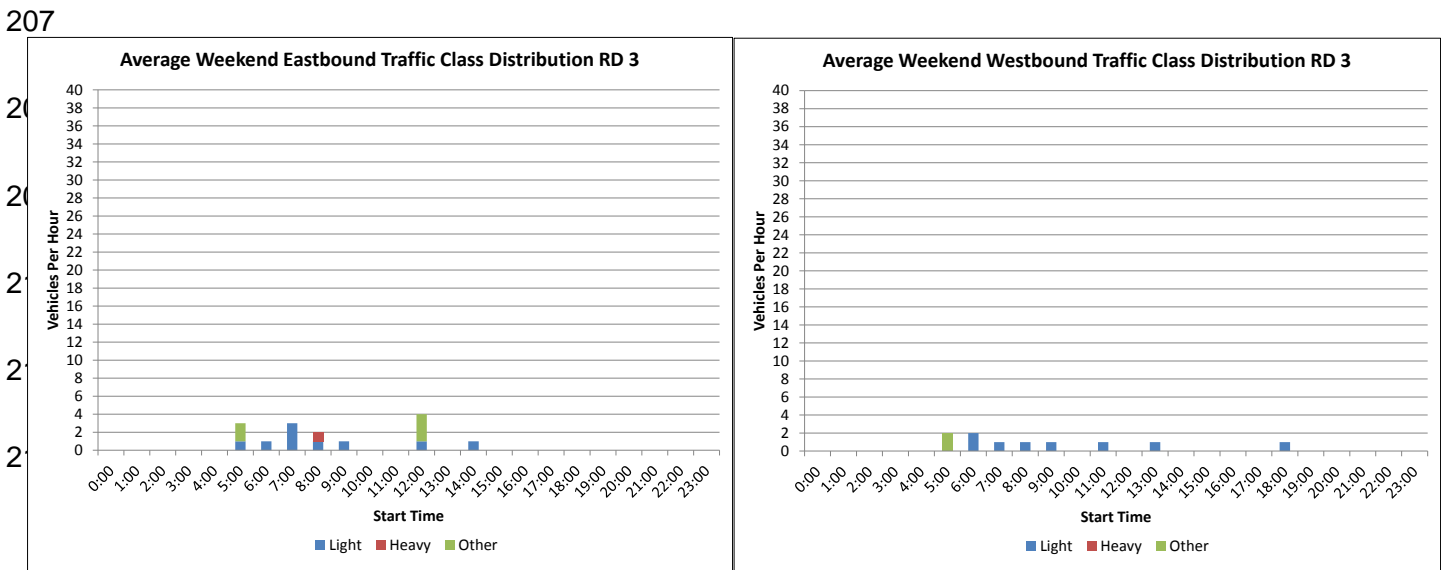
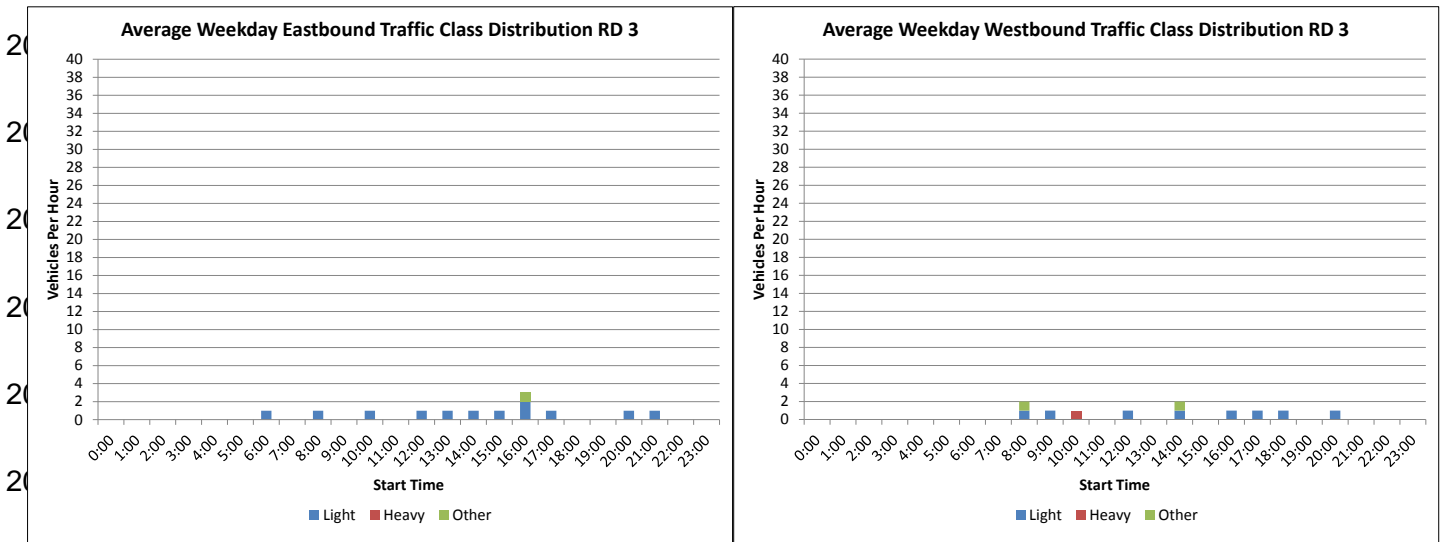
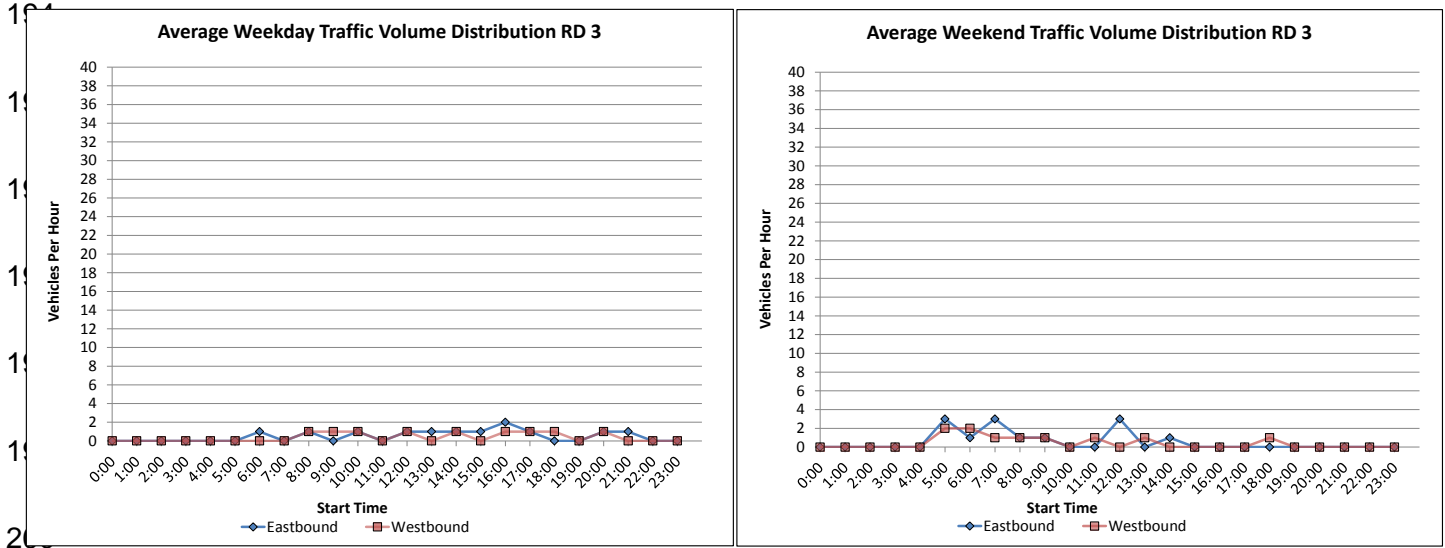
191

188

192



193 **4.3 RD – 3: Eastern portion of Underwood Road**





213

214 **Average Weekday Traffic Class**  
215 **Distribution**

218 **Average Weekend Traffic Class**  
219 **Distribution**

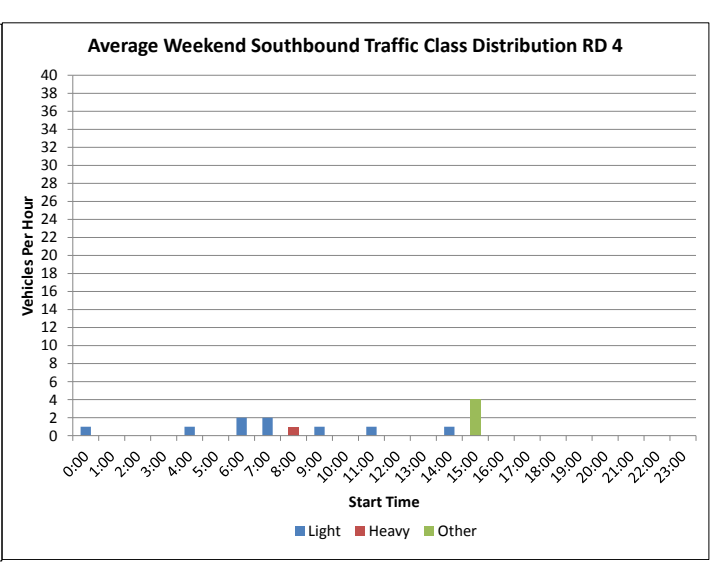
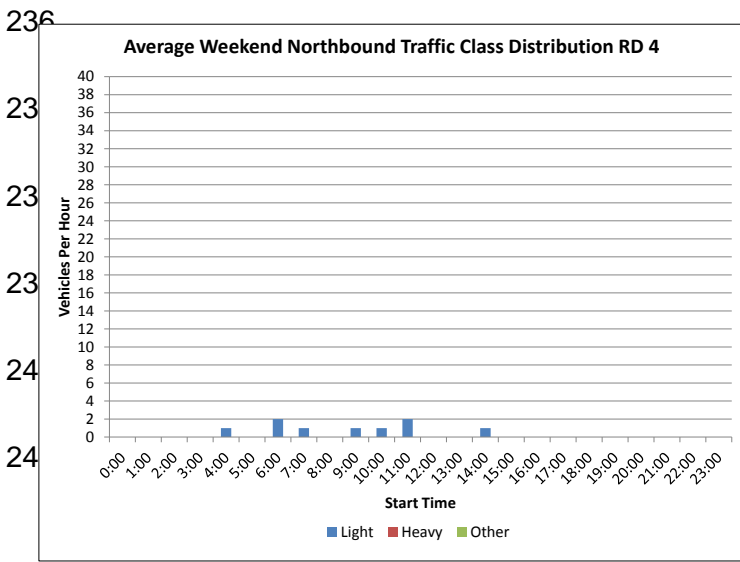
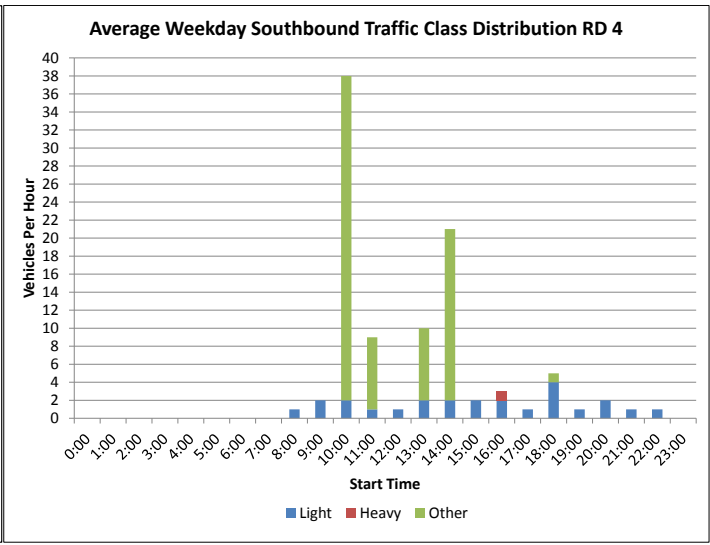
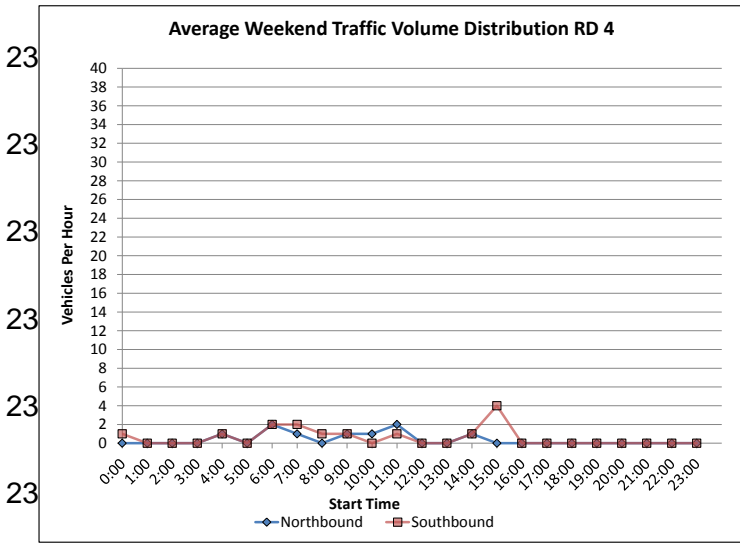
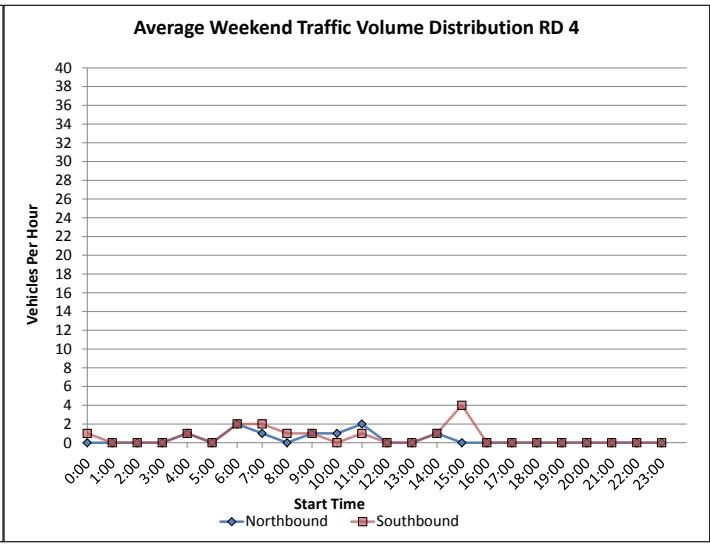
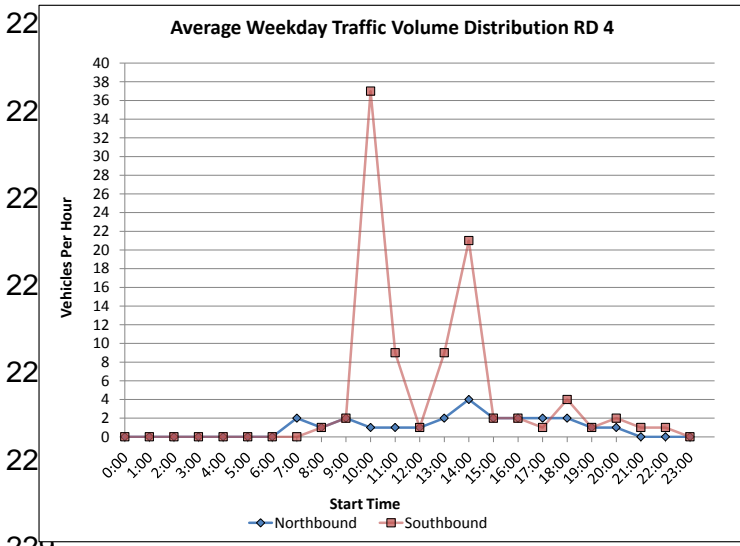
Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	1
7:00	0	0	0	0	0	0	0
8:00	1	0	0	1	0	1	3
9:00	0	0	0	1	0	0	1
10:00	1	0	0	0	1	0	2
11:00	0	0	0	0	0	0	0
12:00	1	0	0	1	0	0	2
13:00	1	0	0	0	0	0	1
14:00	1	0	0	1	0	1	3
15:00	1	0	0	0	0	0	1
16:00	2	0	1	1	0	0	4
17:00	1	0	0	1	0	0	2
18:00	0	0	0	1	0	0	1
19:00	0	0	0	0	0	0	0
20:00	1	0	0	1	0	0	2
21:00	1	0	0	0	0	0	1
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>12</b>	<b>0</b>	<b>1</b>	<b>8</b>	<b>1</b>	<b>2</b>	<b>24</b>

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	1	0	2	0	0	2	5
6:00	1	0	0	2	0	0	3
7:00	3	0	0	1	0	0	4
8:00	1	1	0	1	0	0	3
9:00	1	0	0	1	0	0	2
10:00	0	0	0	0	0	0	0
11:00	0	0	0	1	0	0	1
12:00	1	0	3	0	0	0	4
13:00	0	0	0	1	0	0	1
14:00	1	0	0	0	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	1	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>9</b>	<b>1</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>2</b>	<b>25</b>

216 220

217 221

222 **4.4 RD – 4: Box Springs Road**



242

243 **Average Weekday Traffic Class**  
244 **Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	2	0	0	0	0	0	2
8:00	1	0	0	1	0	0	2
9:00	2	0	0	2	0	0	4
10:00	1	0	0	2	0	36	39
11:00	1	0	0	1	0	8	10
12:00	1	0	0	1	0	0	2
13:00	2	0	0	2	0	8	12
14:00	4	0	0	2	0	19	25
15:00	2	0	0	2	0	0	4
16:00	2	0	0	2	1	0	5
17:00	1	0	1	1	0	0	3
18:00	2	0	0	4	0	1	7
19:00	1	0	0	1	0	0	2
20:00	1	0	0	2	0	0	3
21:00	0	0	0	1	0	0	1
22:00	0	0	0	1	0	0	1
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>23</b>	<b>0</b>	<b>1</b>	<b>25</b>	<b>1</b>	<b>72</b>	<b>122</b>

245

247 **Average Weekend Traffic Class**  
248 **Distribution**

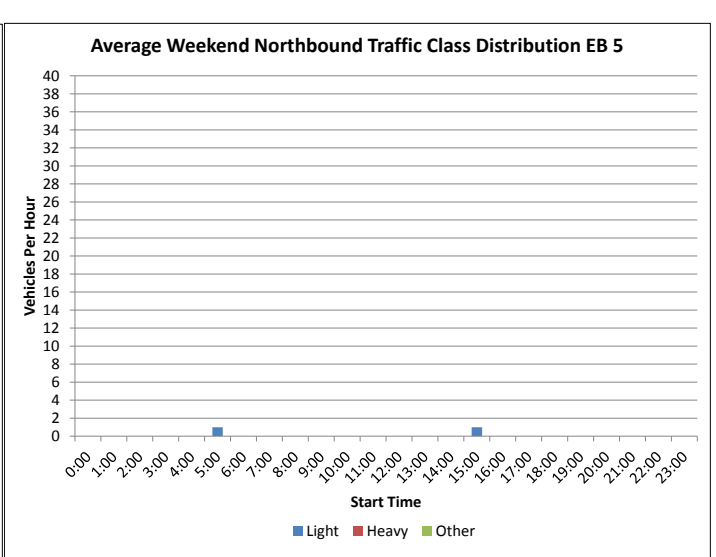
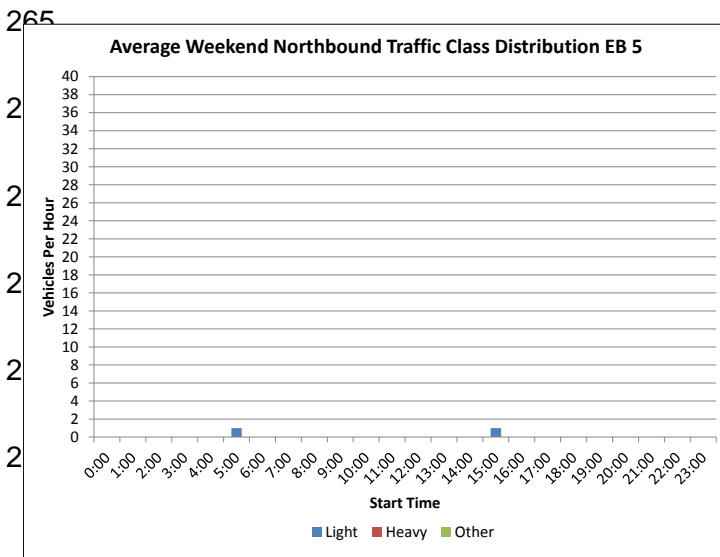
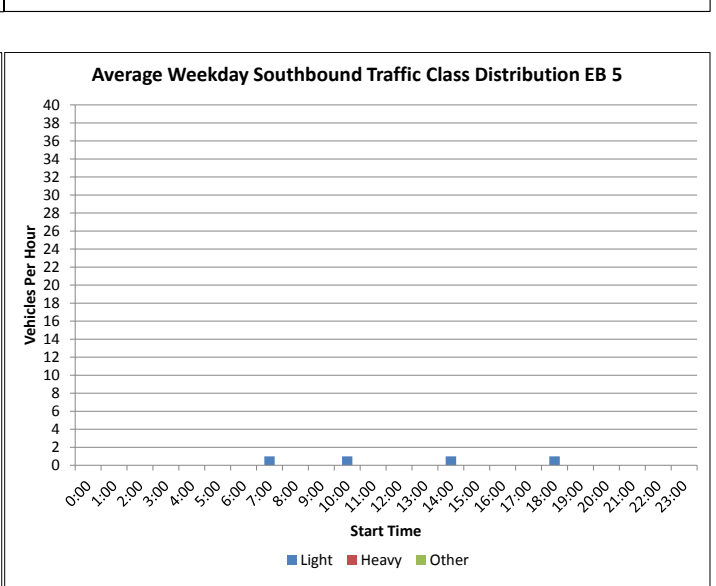
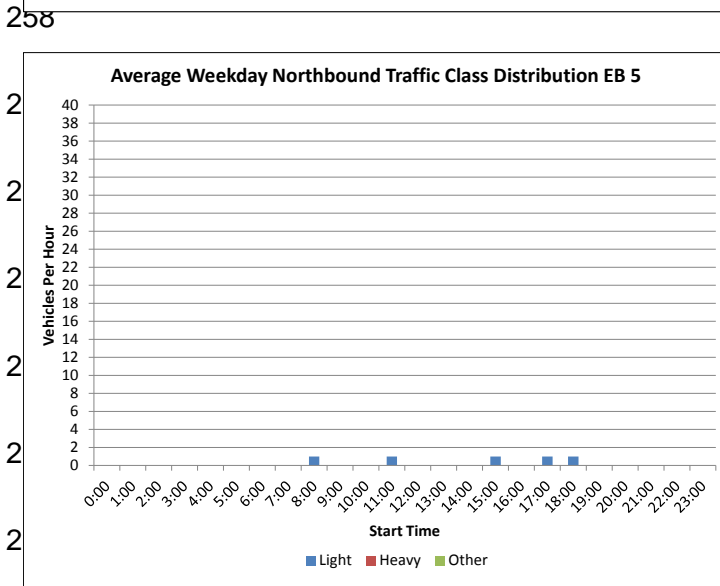
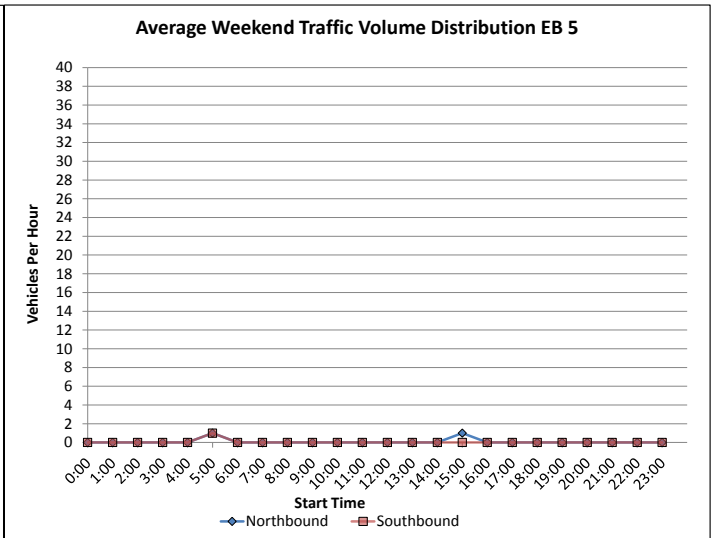
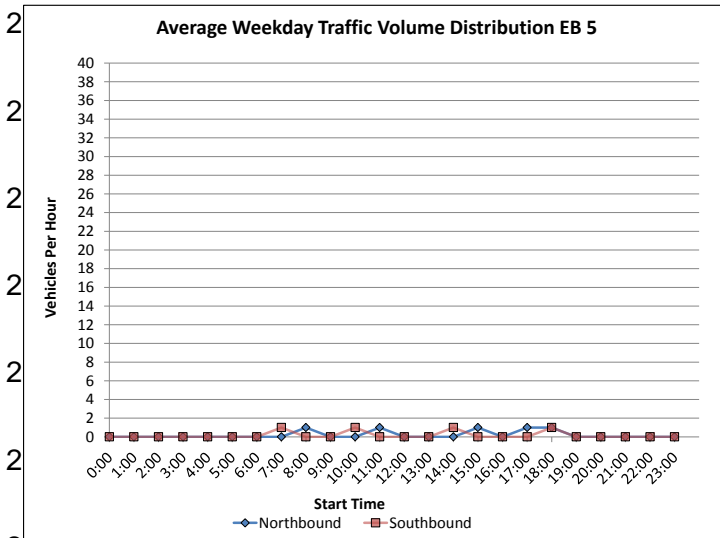
Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	1	0	1
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	1	0	0	1	0	0	2
5:00	0	0	0	0	0	0	0
6:00	2	0	0	2	0	0	4
7:00	1	0	0	2	0	0	3
8:00	0	0	0	0	1	0	1
9:00	1	0	0	1	0	0	2
10:00	1	0	0	0	0	0	1
11:00	2	0	0	1	0	0	3
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	1	0	0	1	0	0	2
15:00	0	0	0	0	0	4	4
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	<b>1</b>	<b>4</b>	<b>23</b>

249

246

250

251 **4.5 EB – 5: Whitson Road**



271

272 **Average Weekday Traffic Class**  
273 **Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	1	0	0	1
8:00	1	0	0	0	0	0	1
9:00	0	0	0	0	0	0	0
10:00	0	0	0	1	0	0	1
11:00	1	0	0	0	0	0	1
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	0	0	0	1	0	0	1
15:00	1	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0
17:00	1	0	0	0	0	0	1
18:00	1	0	0	1	0	0	2
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>9</b>

274

276 **Average Weekend Traffic Class**  
277 **Distribution**

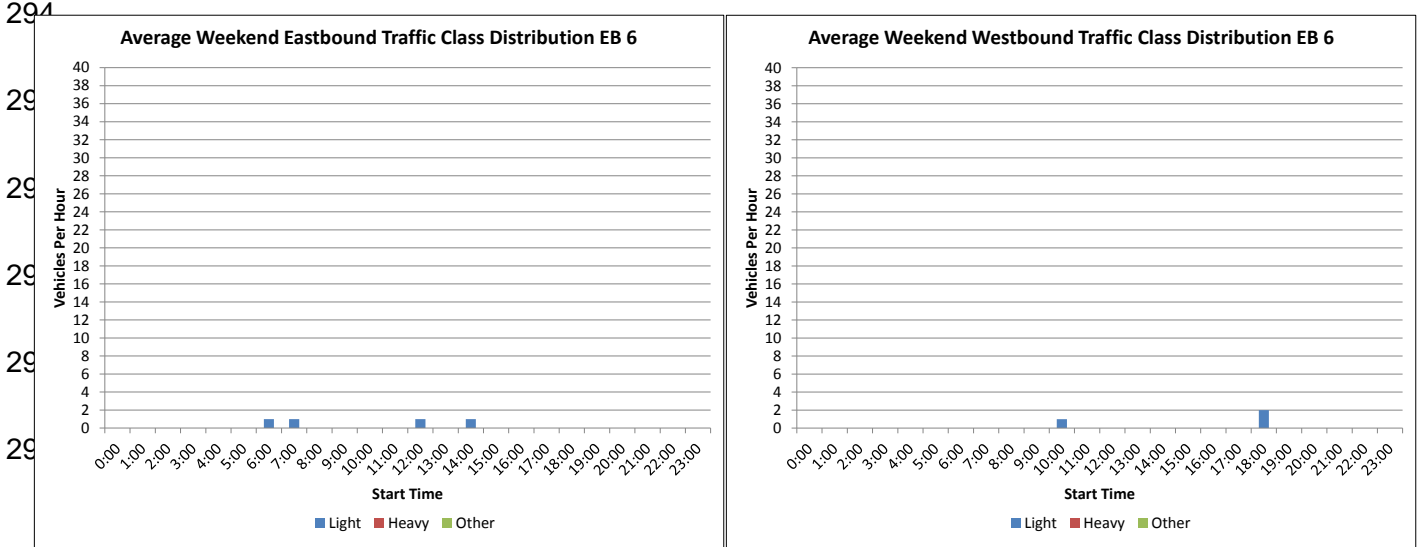
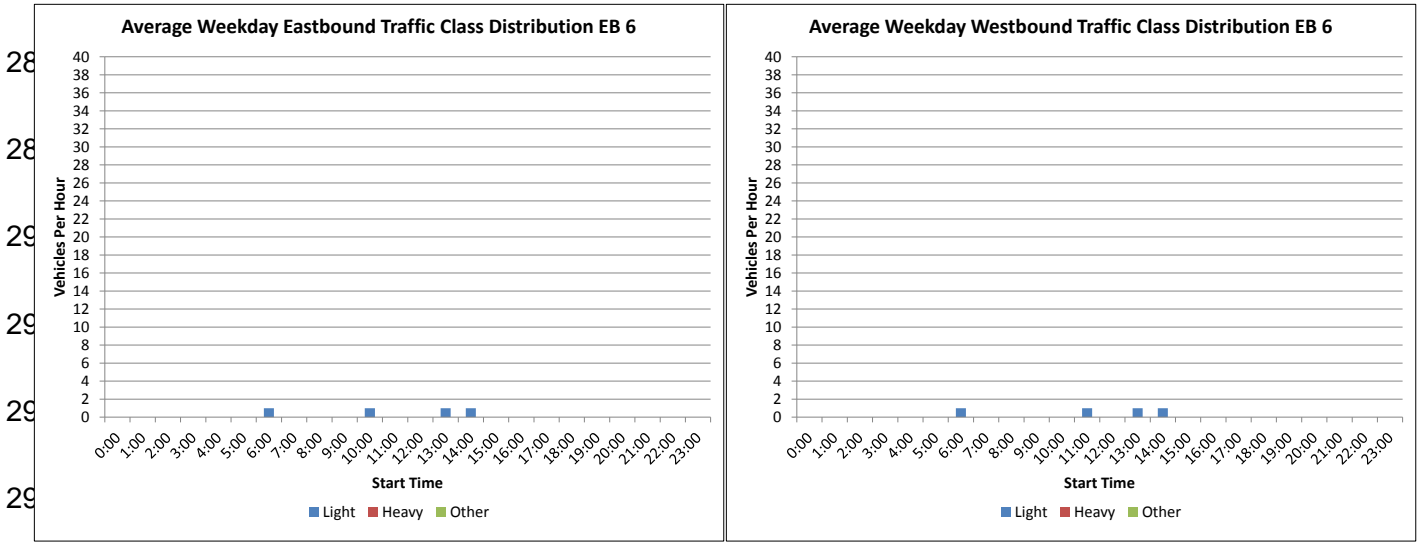
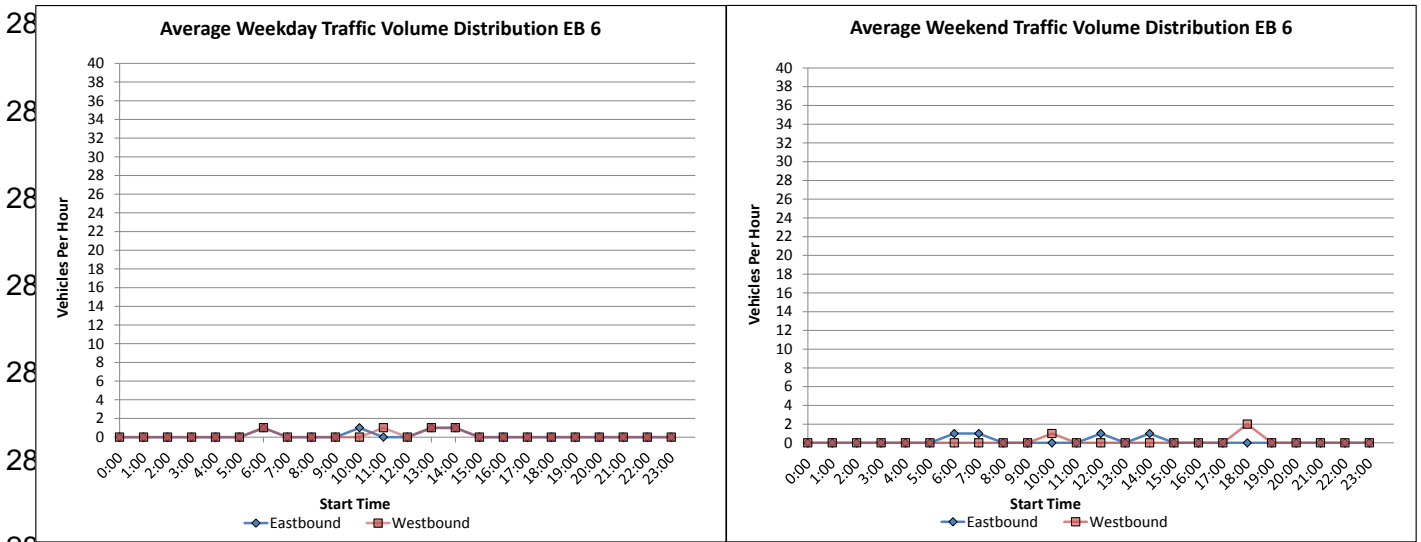
Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	1	0	0	1	0	0	2
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0
15:00	1	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>3</b>

278

275

279

280 **4.6 EB – 6: Eastern portion of SR 103 / Buena Vista Road**



300

301 **Average Weekday Traffic Class**  
302 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	1	0	0	1	0	0	2
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	1	0	0	0	0	0	1
11:00	0	0	0	1	0	0	1
12:00	0	0	0	0	0	0	0
13:00	1	0	0	1	0	0	2
14:00	1	0	0	1	0	0	2
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>

303

305 **Average Weekend Traffic Class**  
306 **Distribution**

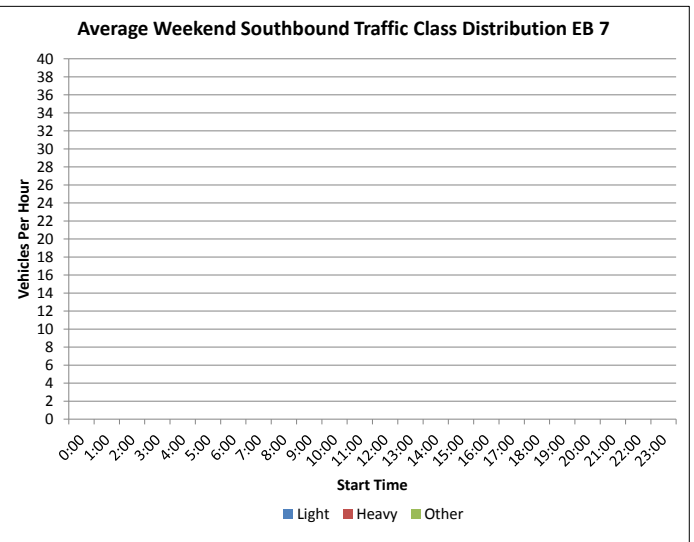
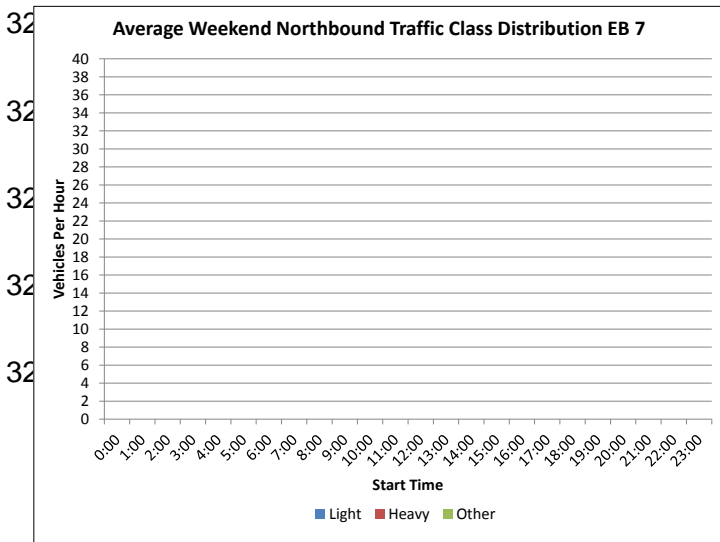
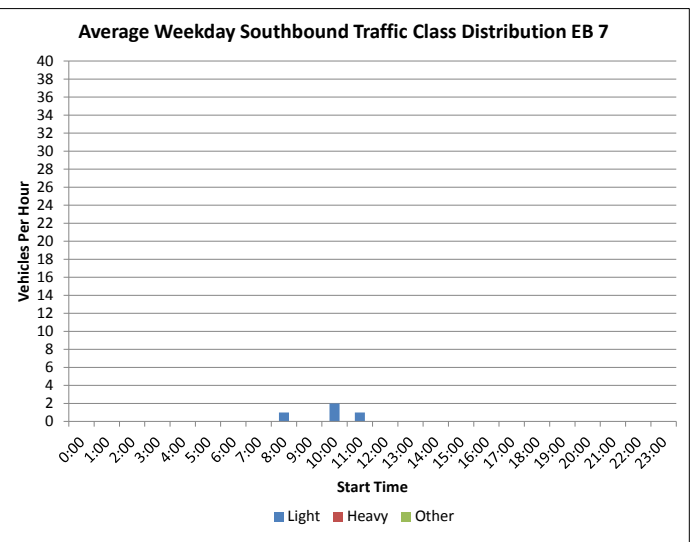
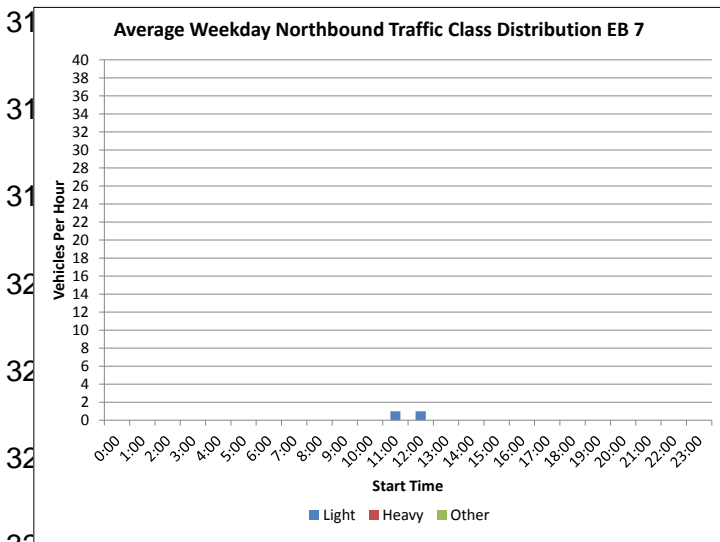
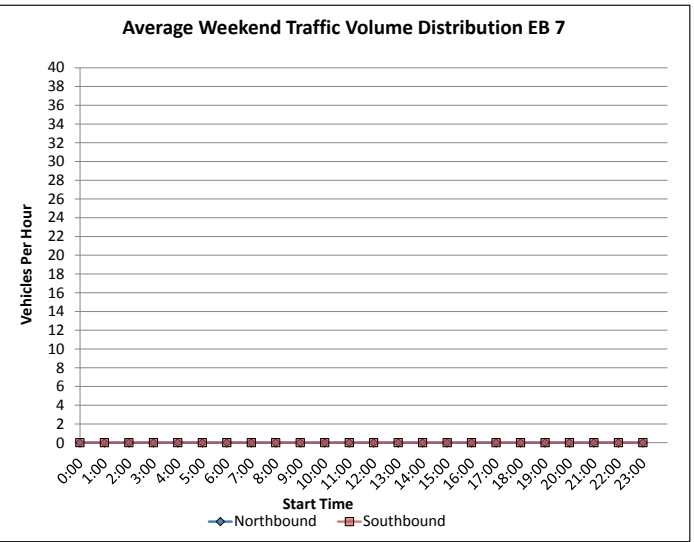
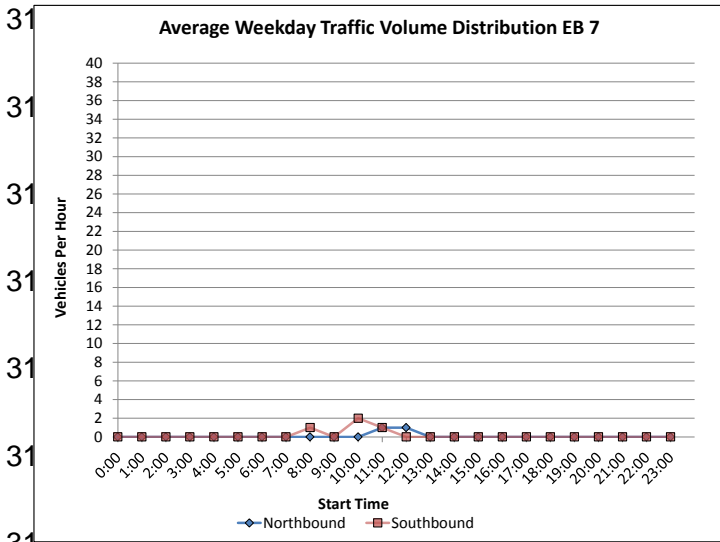
Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	1	0	0	0	0	0	1
7:00	1	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	1	0	0	1
11:00	0	0	0	0	0	0	0
12:00	1	0	0	0	0	0	1
13:00	0	0	0	0	0	0	0
14:00	1	0	0	0	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	2	0	0	2
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>7</b>

307

304

308

309 **4.7 EB – 7: Unnamed Road 1**





329

330 **Average Weekday Traffic Class**  
331 **Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	1	0	0	1
9:00	0	0	0	0	0	0	0
10:00	0	0	0	2	0	0	2
11:00	1	0	0	1	0	0	2
12:00	1	0	0	0	0	0	1
13:00	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>6</b>

332

334 **Average Weekend Traffic Class**  
335 **Distribution**

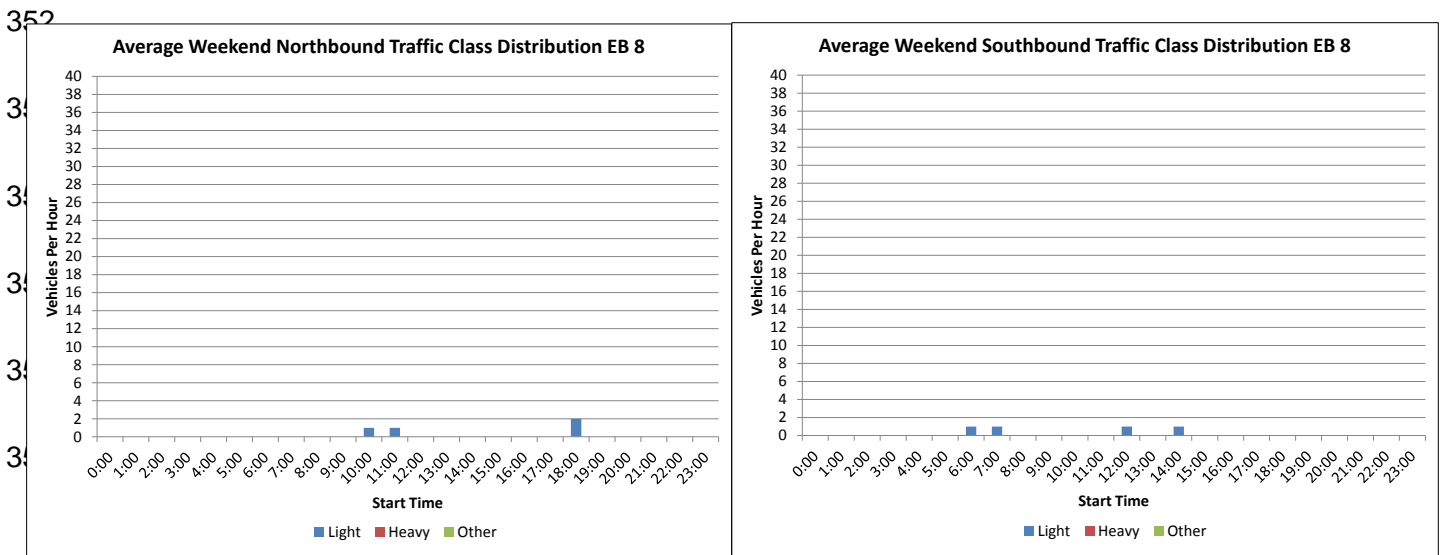
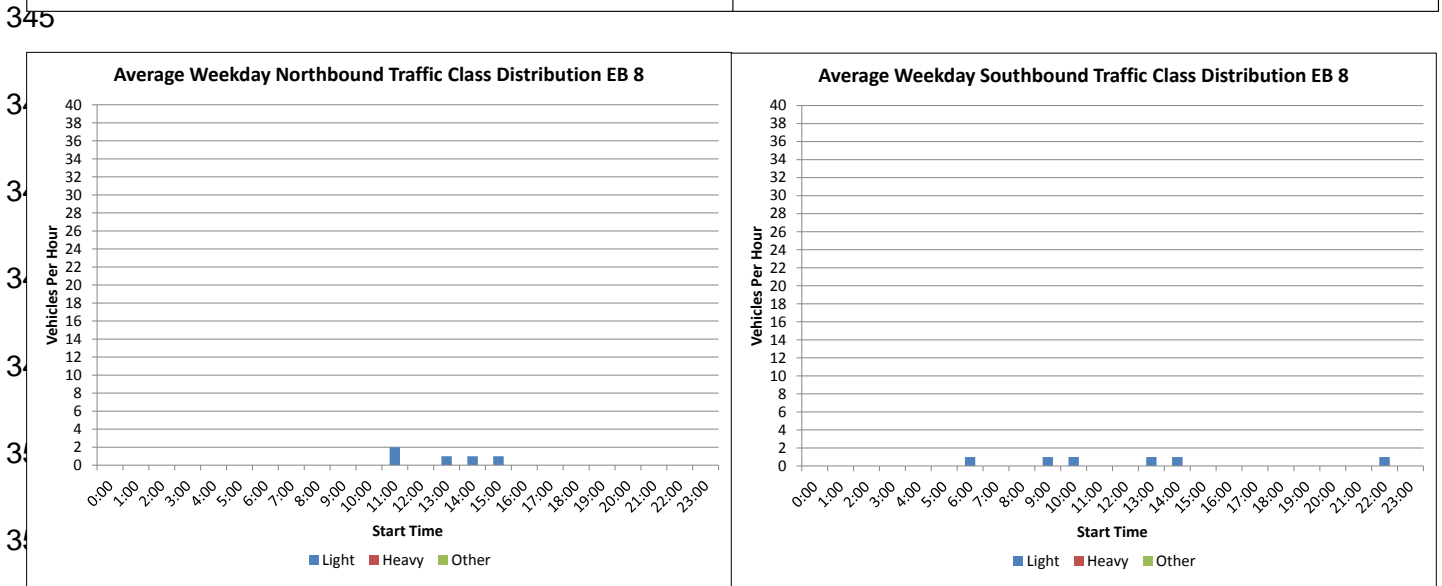
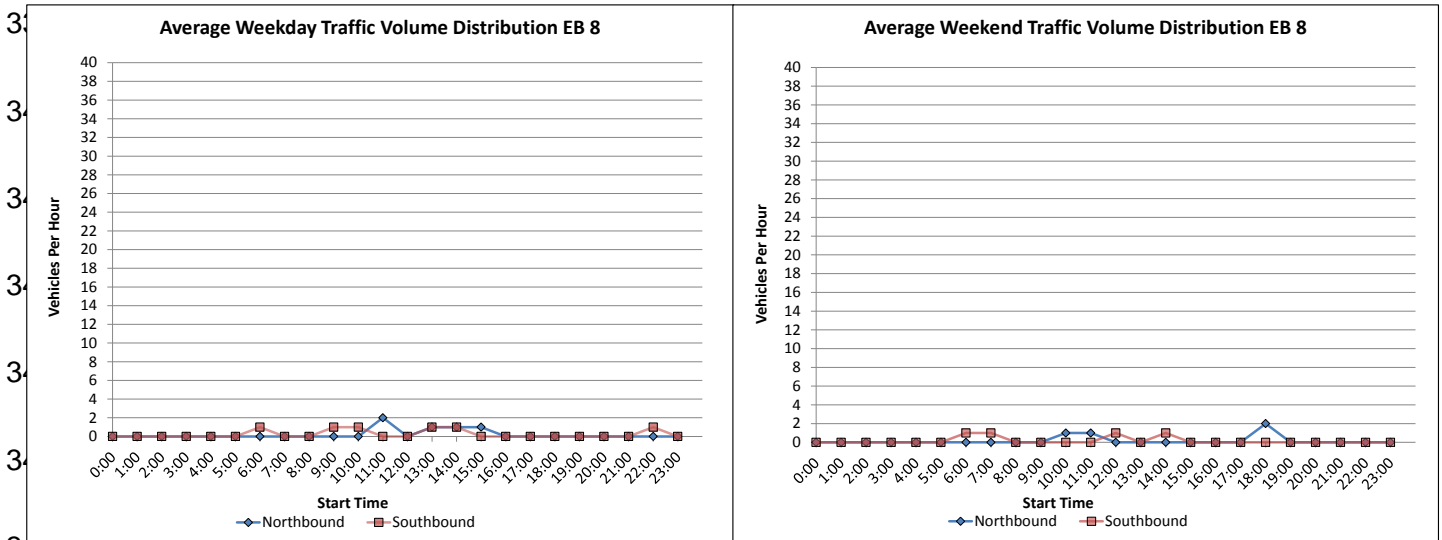
Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

336

333

337

338 **4.8 EB – 8: Western portion of SR 103 / Buena Vista Road**



358

359 **Average Weekday Traffic Class**  
360 **Distribution**

363 **Average Weekend Traffic Class**  
364 **Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	1
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	1	0	0	1
10:00	0	0	0	1	0	0	1
11:00	2	0	0	0	0	0	2
12:00	0	0	0	0	0	0	0
13:00	1	0	0	1	0	0	2
14:00	1	0	0	1	0	0	2
15:00	1	0	0	0	0	0	1
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	1	0	0	1
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>11</b>

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	1
7:00	0	0	0	1	0	0	1
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	1	0	0	0	0	0	1
11:00	1	0	0	0	0	0	1
12:00	0	0	0	1	0	0	1
13:00	0	0	0	0	0	0	0
14:00	0	0	0	1	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	2	0	0	0	0	0	2
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>

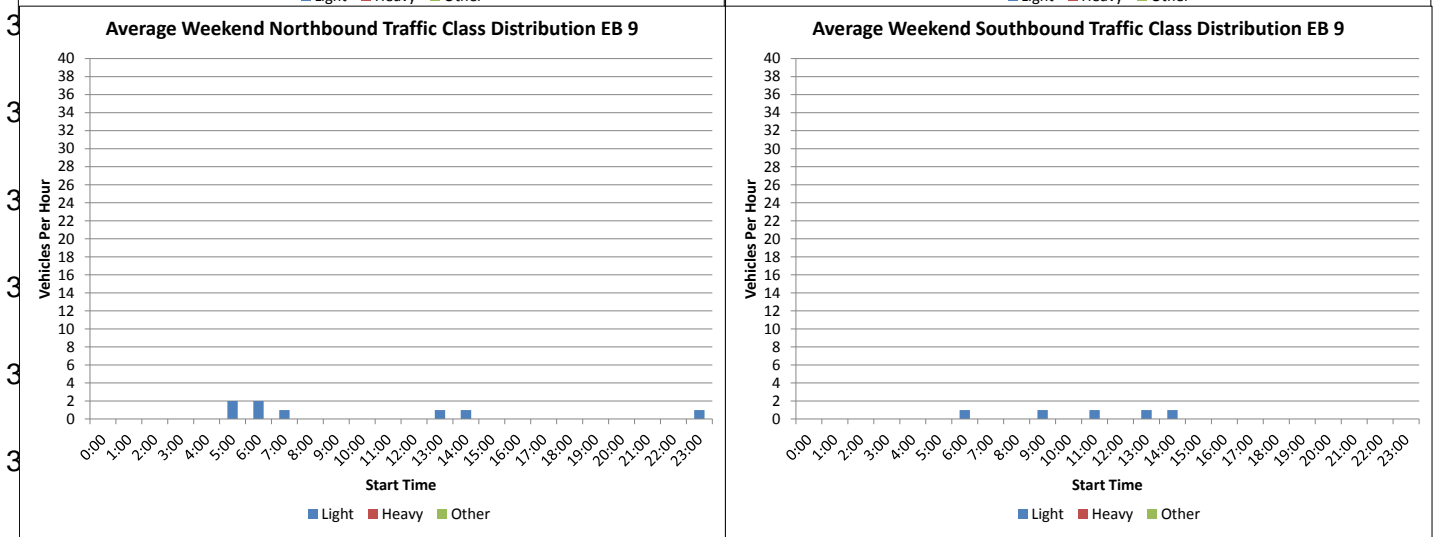
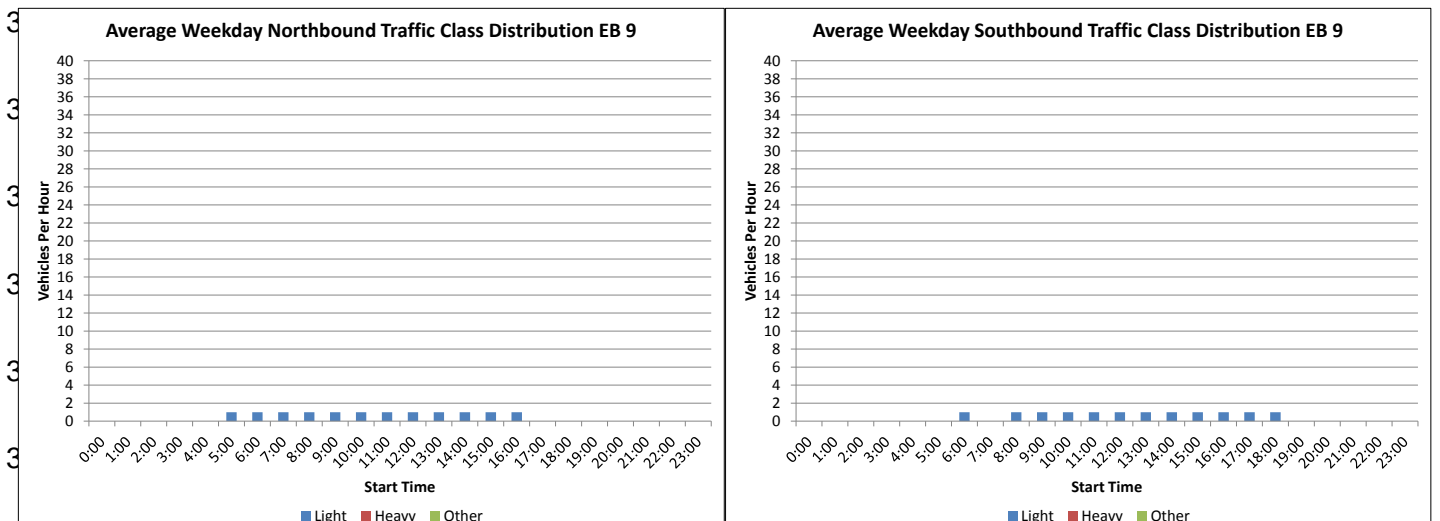
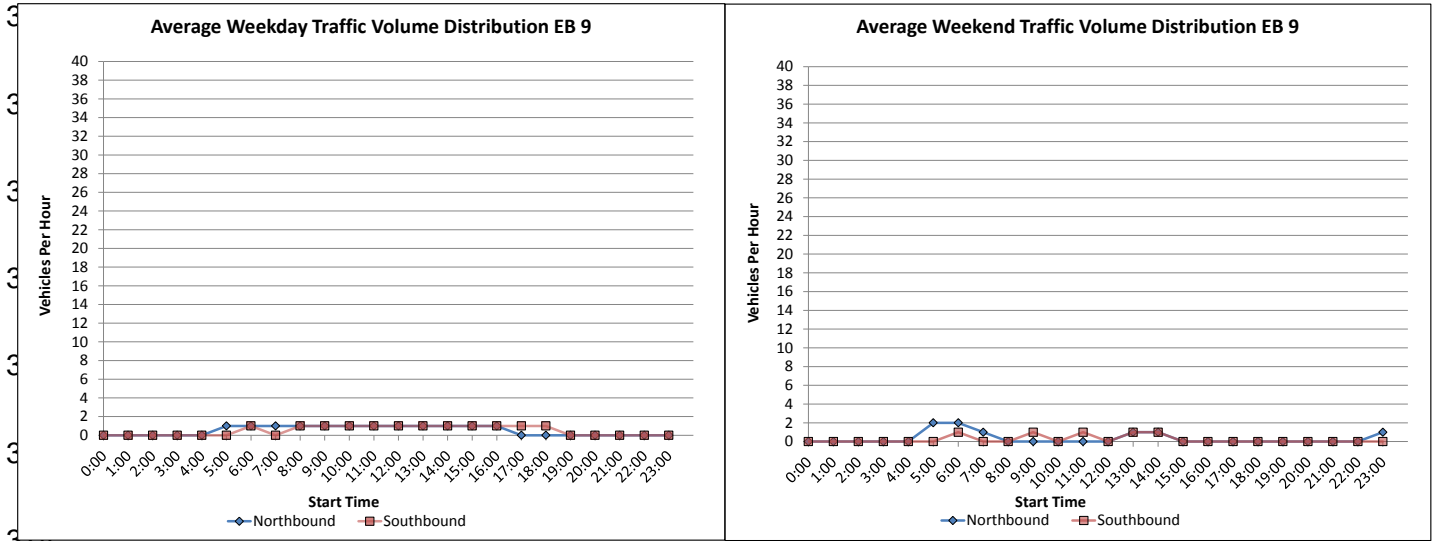
361

365

362

366

367 **4.9 EB – 9: Cactus Road**



387 **Average Weekday Traffic Class**  
388 **Distribution**

391  
392

**Average Weekend Traffic Class**  
**Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	1	0	0	0	0	0	1
6:00	1	0	0	1	0	0	2
7:00	1	0	0	0	0	0	1
8:00	1	0	0	1	0	0	2
9:00	1	0	0	1	0	0	2
10:00	1	0	0	1	0	0	2
11:00	1	0	0	1	0	0	2
12:00	1	0	0	1	0	0	2
13:00	1	0	0	1	0	0	2
14:00	1	0	0	1	0	0	2
15:00	1	0	0	1	0	0	2
16:00	1	0	0	1	0	0	2
17:00	0	0	0	1	0	0	1
18:00	0	0	0	1	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>24</b>

389

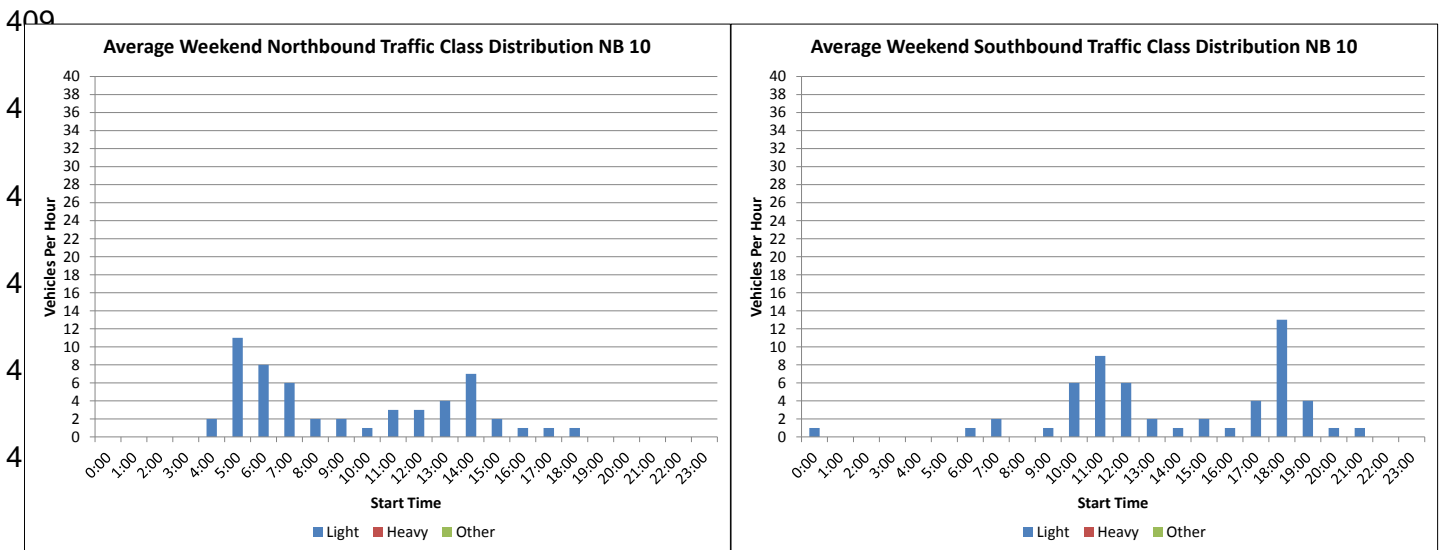
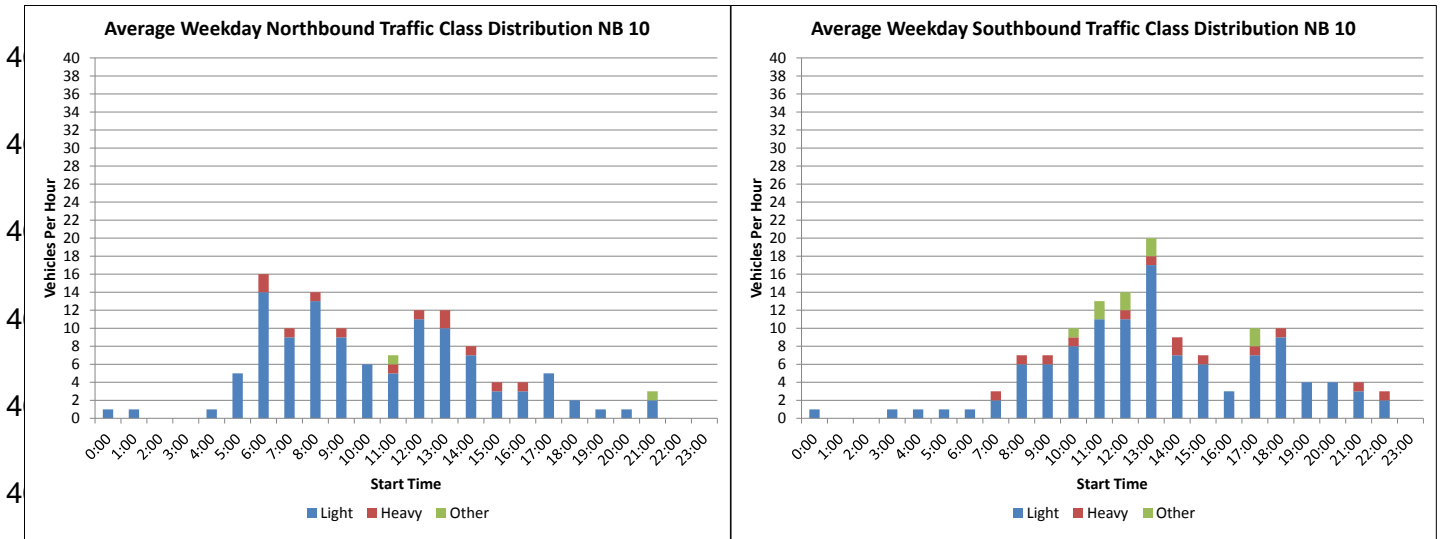
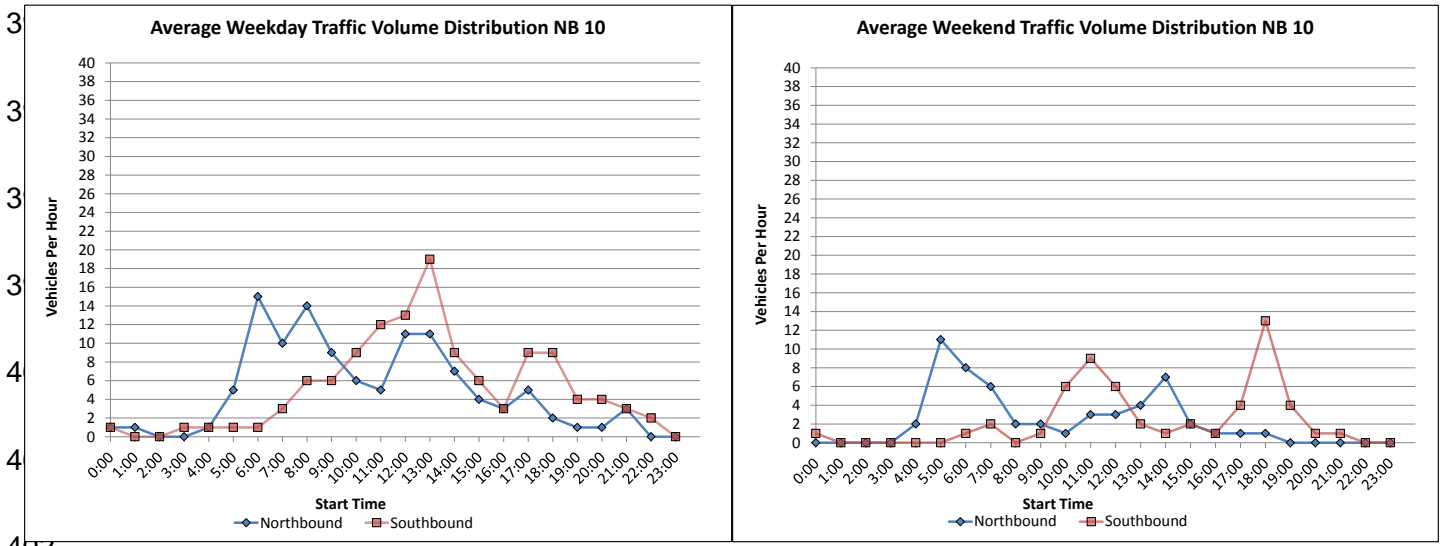
393

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	2	0	0	0	0	0	2
6:00	2	0	0	1	0	0	3
7:00	1	0	0	0	0	0	1
8:00	0	0	0	0	0	0	0
9:00	0	0	0	1	0	0	1
10:00	0	0	0	0	0	0	0
11:00	0	0	0	1	0	0	1
12:00	0	0	0	0	0	0	0
13:00	1	0	0	1	0	0	2
14:00	1	0	0	1	0	0	2
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	1	0	0	0	0	0	1
<b>Total</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>13</b>

390

394

395 **4.10 NB – 10: Lorraine Road**



415

416 **Average Weekday Traffic Class**  
417 **Distribution**

420  
421

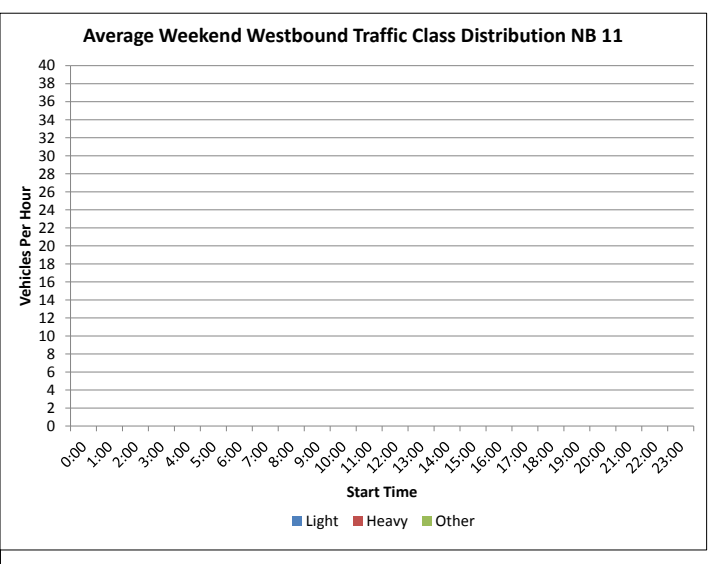
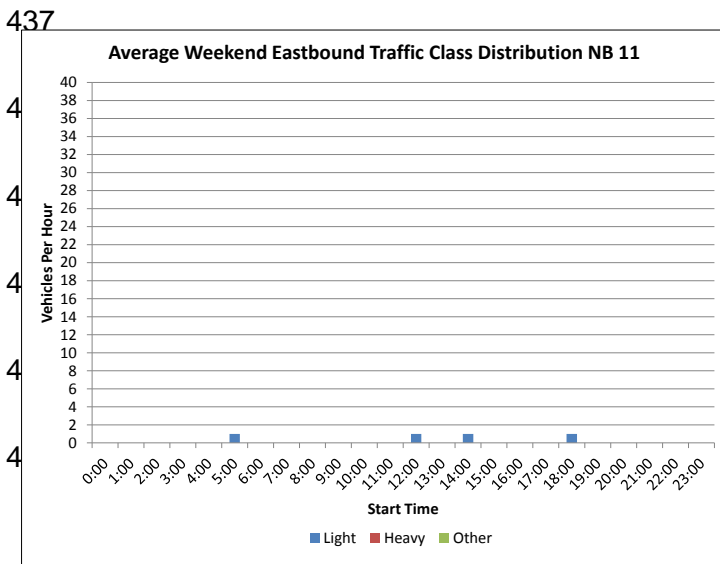
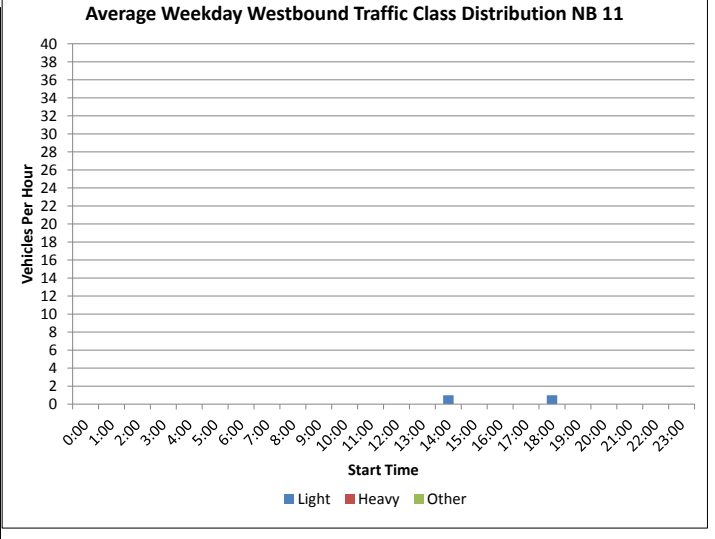
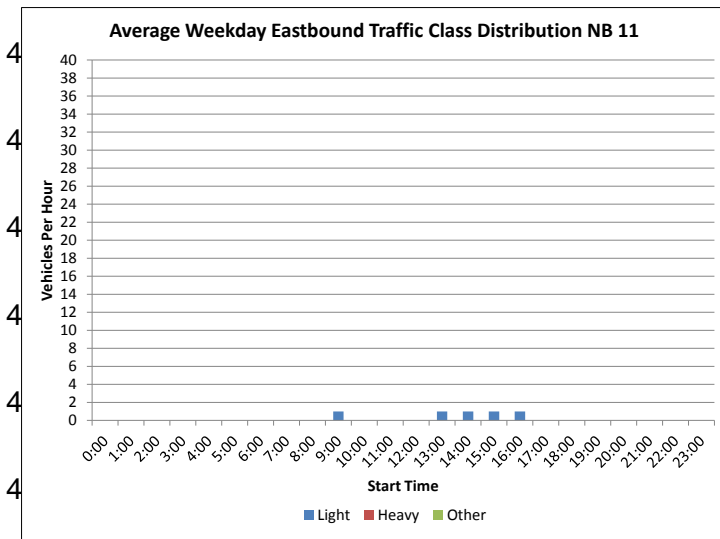
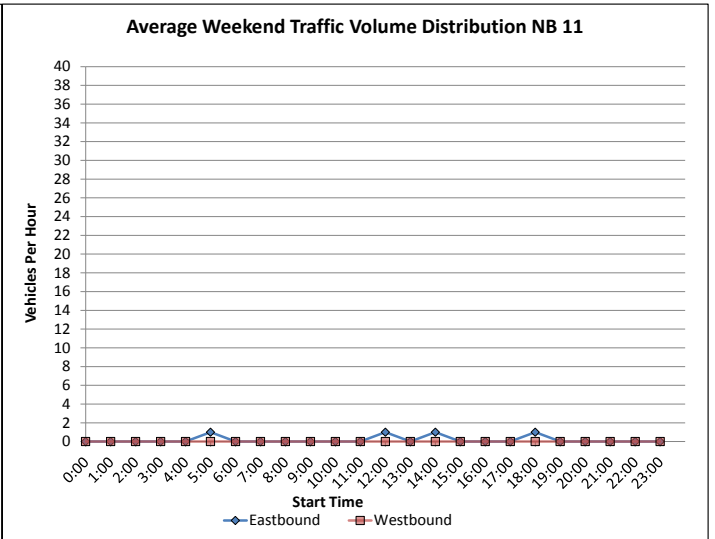
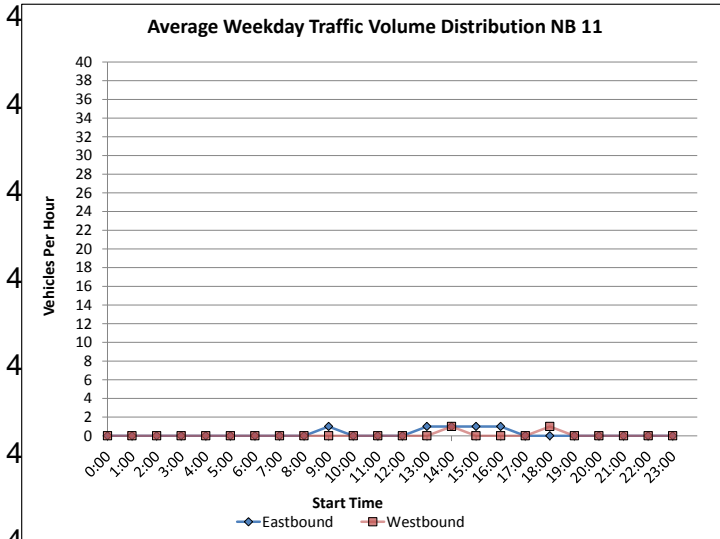
**Average Weekend Traffic Class**  
**Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	1	0	0	1	0	0	2
1:00	1	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0
3:00	0	0	0	1	0	0	1
4:00	1	0	0	1	0	0	2
5:00	5	0	0	1	0	0	6
6:00	14	2	0	1	0	0	17
7:00	9	1	0	2	1	0	13
8:00	13	1	0	6	1	0	21
9:00	9	1	0	6	1	0	17
10:00	6	0	0	8	1	1	16
11:00	5	1	1	11	0	2	20
12:00	11	1	0	11	1	2	26
13:00	10	2	0	17	1	2	32
14:00	7	1	0	7	2	0	17
15:00	3	1	0	6	1	0	11
16:00	3	1	0	3	0	0	7
17:00	5	0	0	7	1	2	15
18:00	2	0	0	9	1	0	12
19:00	1	0	0	4	0	0	5
20:00	1	0	0	4	0	0	5
21:00	2	0	1	3	1	0	7
22:00	0	0	0	2	1	0	3
23:00	0	0	0	0	0	0	0
<b>418 Total</b>	<b>109</b>	<b>12</b>	<b>2</b>	<b>111</b>	<b>13</b>	<b>9</b>	<b>422</b>

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	1	0	0	1
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	2	0	0	0	0	0	2
5:00	11	0	0	0	0	0	11
6:00	8	0	0	1	0	0	9
7:00	6	0	0	2	0	0	8
8:00	2	0	0	0	0	0	2
9:00	2	0	0	1	0	0	3
10:00	1	0	0	6	0	0	7
11:00	3	0	0	9	0	0	12
12:00	3	0	0	6	0	0	9
13:00	4	0	0	2	0	0	6
14:00	7	0	0	1	0	0	8
15:00	2	0	0	2	0	0	4
16:00	1	0	0	1	0	0	2
17:00	1	0	0	4	0	0	5
18:00	1	0	0	13	0	0	14
19:00	0	0	0	4	0	0	4
20:00	0	0	0	1	0	0	1
21:00	0	0	0	1	0	0	1
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>54</b>	<b>0</b>	<b>0</b>	<b>55</b>	<b>0</b>	<b>0</b>	<b>109</b>

419

423 **4.11 NB – 11: Unnamed Road 2**





443

444 **Average Weekday Traffic Class**  
445 **Distribution**

448 **Average Weekend Traffic Class**  
449 **Distribution**

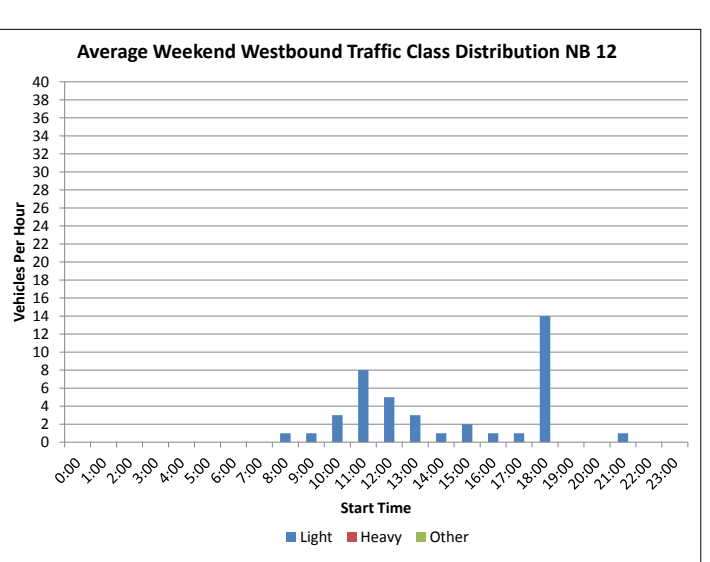
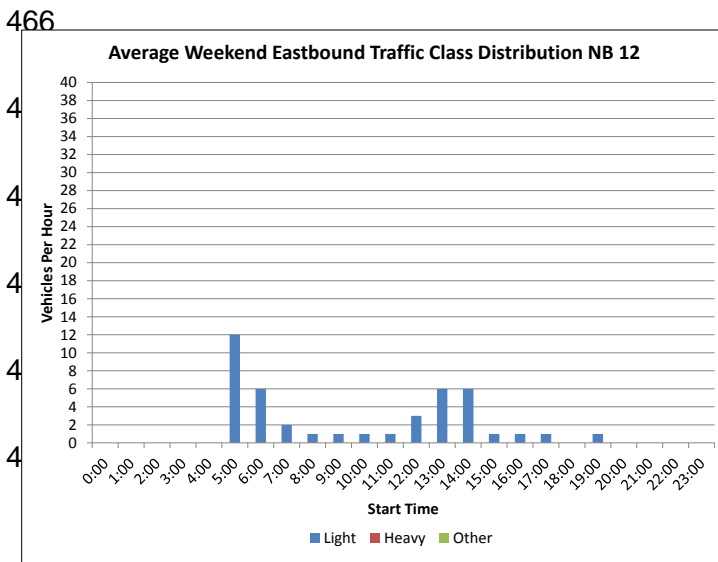
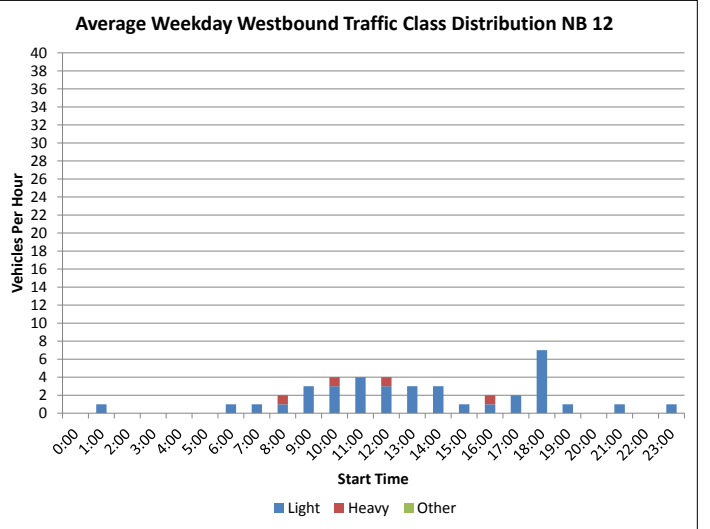
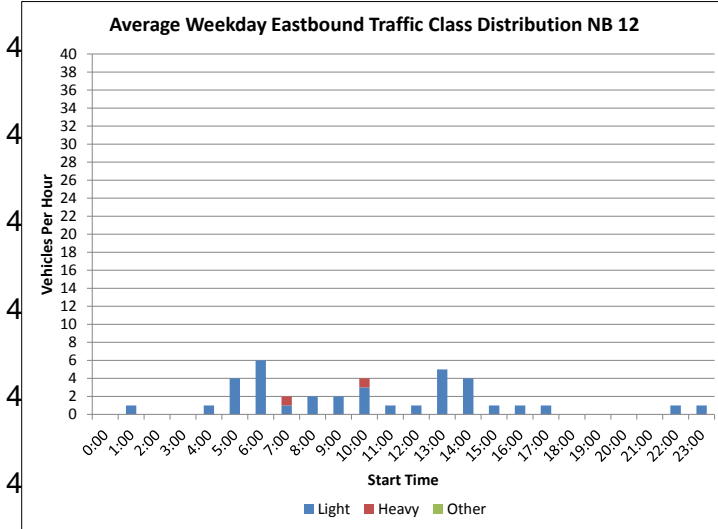
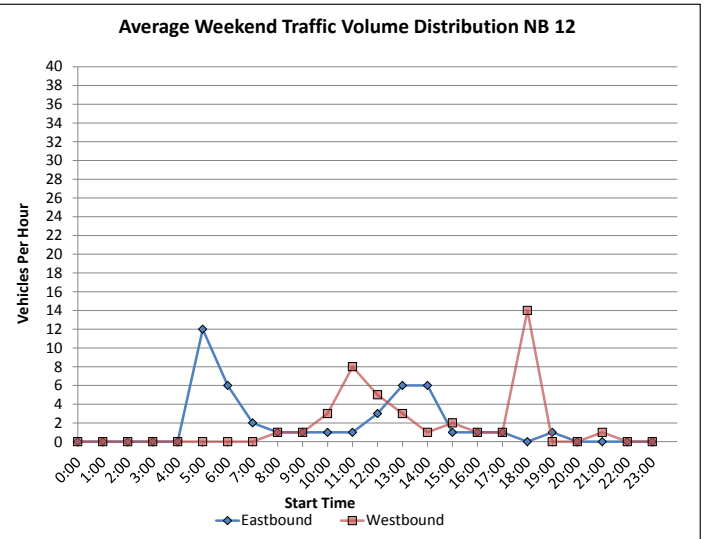
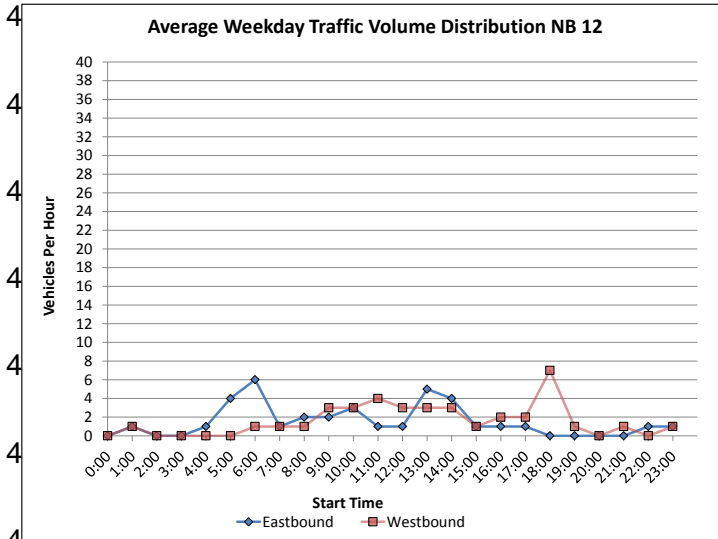
Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	1	0	0	0	0	0	1
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0
13:00	1	0	0	0	0	0	1
14:00	1	0	0	1	0	0	2
15:00	1	0	0	0	0	0	1
16:00	1	0	0	0	0	0	1
17:00	0	0	0	0	0	0	0
18:00	0	0	0	1	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>7</b>

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	1	0	0	0	0	0	1
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	1	0	0	0	0	0	1
13:00	0	0	0	0	0	0	0
14:00	1	0	0	0	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	1	0	0	0	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>

446 450

447 451

452 4.12 NB – 12: SR 103 Buena Vista Road



472

473 **Average Weekday Traffic Class**  
474 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	1	0	0	1	0	0	2
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	1	0	0	0	0	0	1
5:00	4	0	0	0	0	0	4
6:00	6	0	0	1	0	0	7
7:00	1	1	0	1	0	0	3
8:00	2	0	0	1	1	0	4
9:00	2	0	0	3	0	0	5
10:00	3	1	0	3	1	0	8
11:00	1	0	0	4	0	0	5
12:00	1	0	0	3	1	0	5
13:00	5	0	0	3	0	0	8
14:00	4	0	0	3	0	0	7
15:00	1	0	0	1	0	0	2
16:00	1	0	0	1	1	0	3
17:00	1	0	0	2	0	0	3
18:00	0	0	0	7	0	0	7
19:00	0	0	0	1	0	0	1
20:00	0	0	0	0	0	0	0
21:00	0	0	0	1	0	0	1
22:00	1	0	0	0	0	0	1
23:00	1	0	0	1	0	0	2
<b>Total</b>	<b>36</b>	<b>2</b>	<b>0</b>	<b>37</b>	<b>4</b>	<b>0</b>	<b>79</b>

475

476

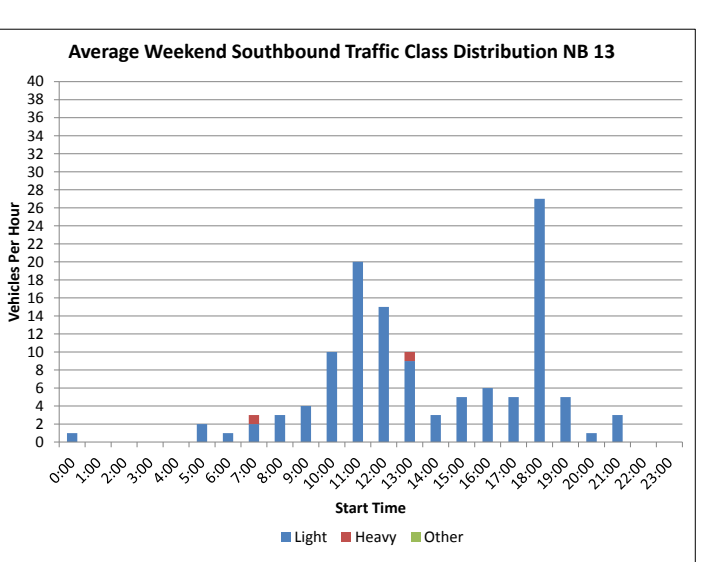
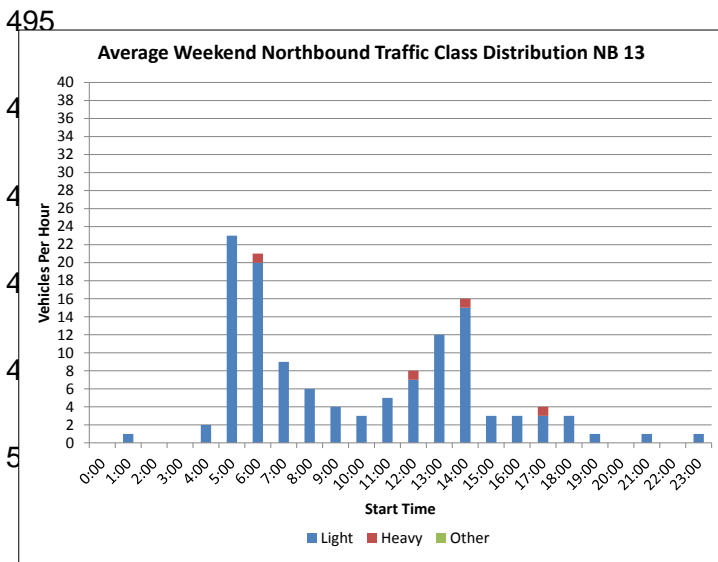
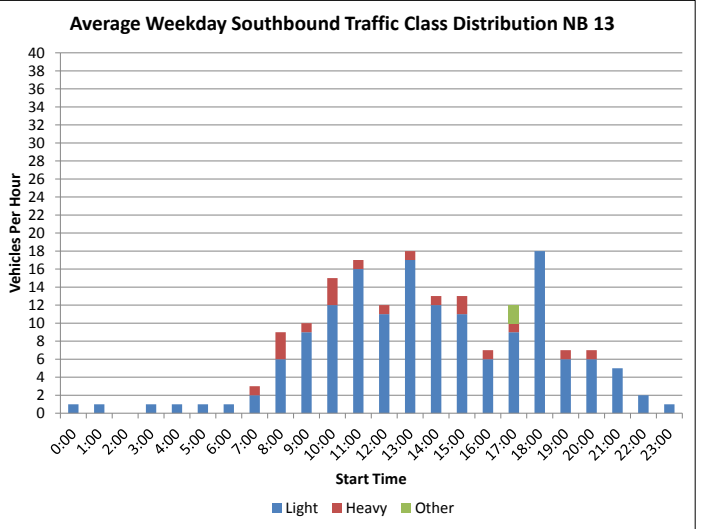
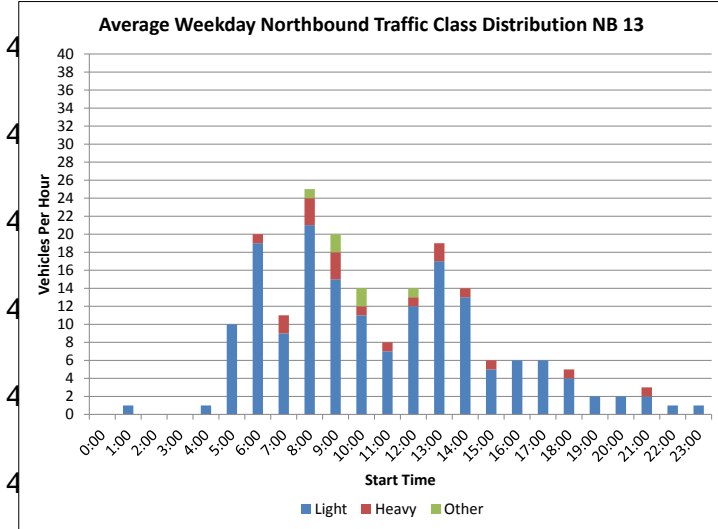
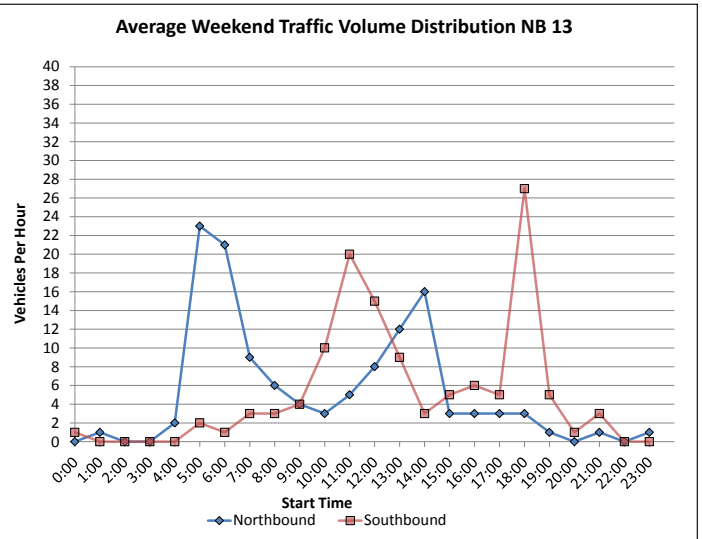
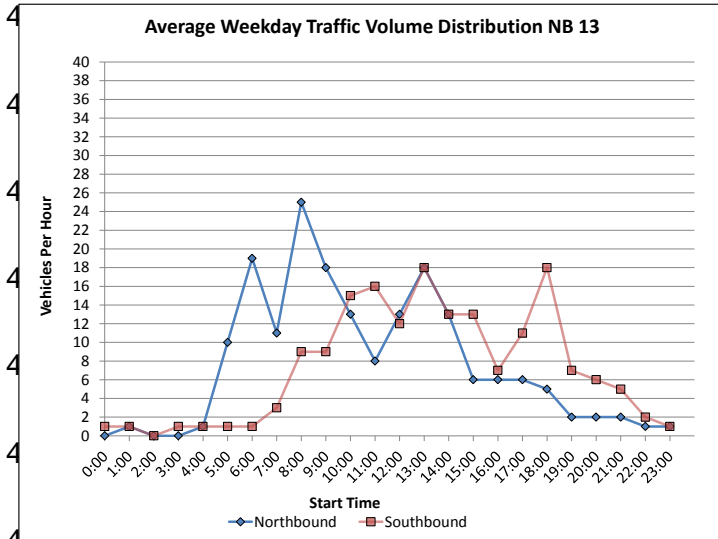
477 **Average Weekend Traffic Class**  
478 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	12	0	0	0	0	0	12
6:00	6	0	0	0	0	0	6
7:00	2	0	0	0	0	0	2
8:00	1	0	0	1	0	0	2
9:00	1	0	0	1	0	0	2
10:00	1	0	0	3	0	0	4
11:00	1	0	0	8	0	0	9
12:00	3	0	0	5	0	0	8
13:00	6	0	0	3	0	0	9
14:00	6	0	0	1	0	0	7
15:00	1	0	0	2	0	0	3
16:00	1	0	0	1	0	0	2
17:00	1	0	0	1	0	0	2
18:00	0	0	0	14	0	0	14
19:00	1	0	0	0	0	0	1
20:00	0	0	0	0	0	0	0
21:00	0	0	0	1	0	0	1
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>43</b>	<b>0</b>	<b>0</b>	<b>41</b>	<b>0</b>	<b>0</b>	<b>84</b>

479

480

481 4.13 NB – 13: 2<sup>nd</sup> Armored Division Road



501

502 **Average Weekday Traffic Class**  
503 **Distribution**

506 **Average Weekend Traffic Class**  
507 **Distribution**

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	1	0	0	1
1:00	1	0	0	1	0	0	2
2:00	0	0	0	0	0	0	0
3:00	0	0	0	1	0	0	1
4:00	1	0	0	1	0	0	2
5:00	10	0	0	1	0	0	11
6:00	19	1	0	1	0	0	21
7:00	9	2	0	2	1	0	14
8:00	21	3	1	6	3	0	34
9:00	15	3	2	9	1	0	30
10:00	11	1	2	12	3	0	29
11:00	7	1	0	16	1	0	25
12:00	12	1	1	11	1	0	26
13:00	17	2	0	17	1	0	37
14:00	13	1	0	12	1	0	27
15:00	5	1	0	11	2	0	19
16:00	6	0	0	6	1	0	13
17:00	6	0	0	9	1	2	18
18:00	4	1	0	18	0	0	23
19:00	2	0	0	6	1	0	9
20:00	2	0	0	6	1	0	9
21:00	2	1	0	5	0	0	8
22:00	1	0	0	2	0	0	3
23:00	1	0	0	1	0	0	2
<b>Total</b>	<b>165</b>	<b>18</b>	<b>6</b>	<b>155</b>	<b>18</b>	<b>2</b>	<b>364</b>

Start Time	Northbound			Southbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	1	0	0	1
1:00	1	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	2	0	0	0	0	0	2
5:00	23	0	0	2	0	0	25
6:00	20	1	0	1	0	0	22
7:00	9	0	0	2	1	0	12
8:00	6	0	0	3	0	0	9
9:00	4	0	0	4	0	0	8
10:00	3	0	0	10	0	0	13
11:00	5	0	0	20	0	0	25
12:00	7	1	0	15	0	0	23
13:00	12	0	0	9	1	0	22
14:00	15	1	0	3	0	0	19
15:00	3	0	0	5	0	0	8
16:00	3	0	0	6	0	0	9
17:00	3	1	0	5	0	0	9
18:00	3	0	0	27	0	0	30
19:00	1	0	0	5	0	0	6
20:00	0	0	0	1	0	0	1
21:00	1	0	0	3	0	0	4
22:00	0	0	0	0	0	0	0
23:00	1	0	0	0	0	0	1
<b>Total</b>	<b>122</b>	<b>4</b>	<b>0</b>	<b>122</b>	<b>2</b>	<b>0</b>	<b>250</b>

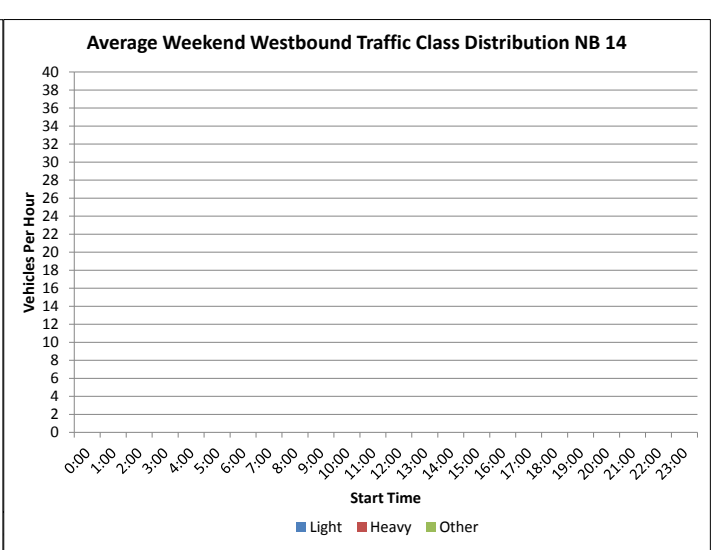
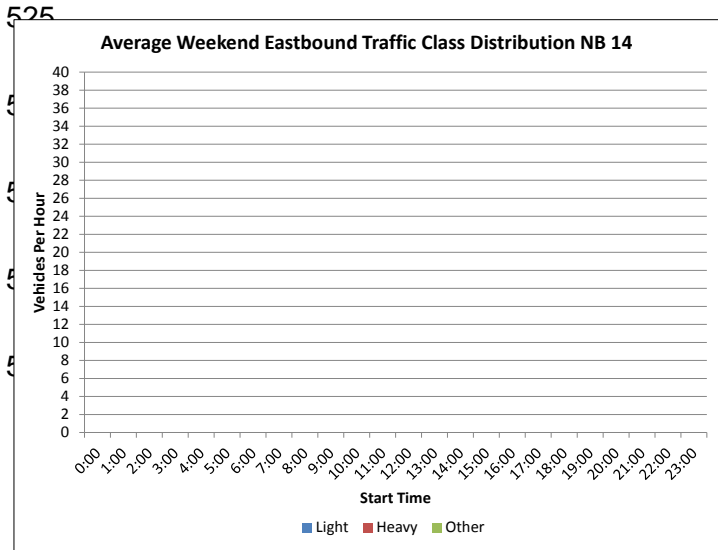
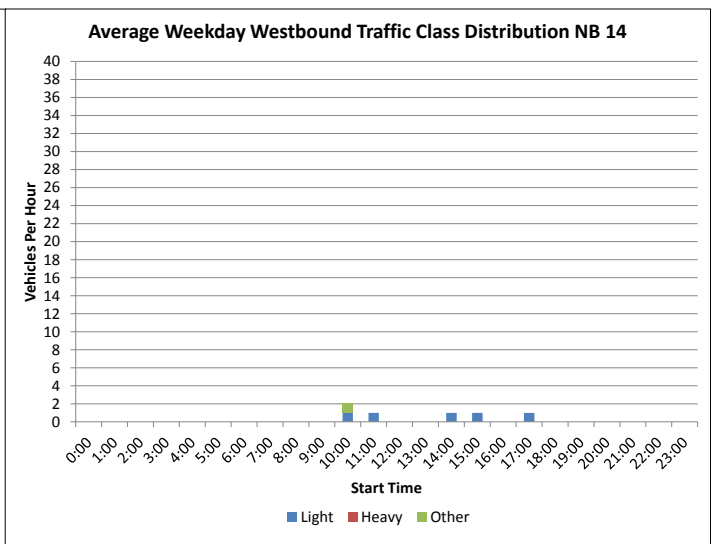
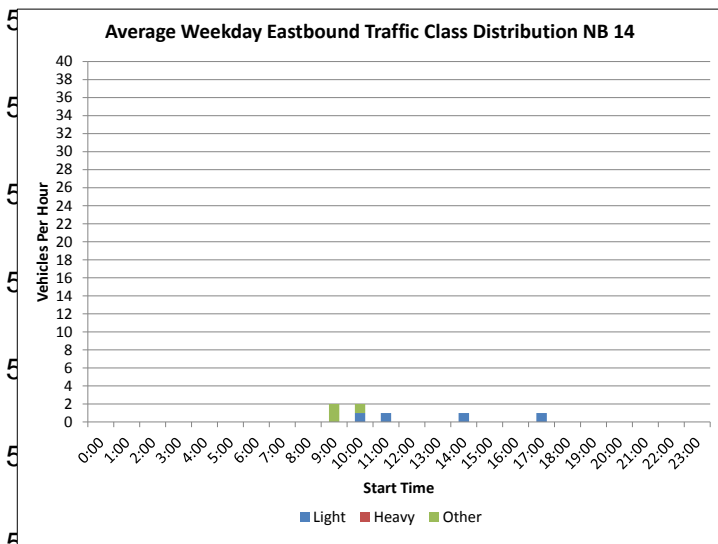
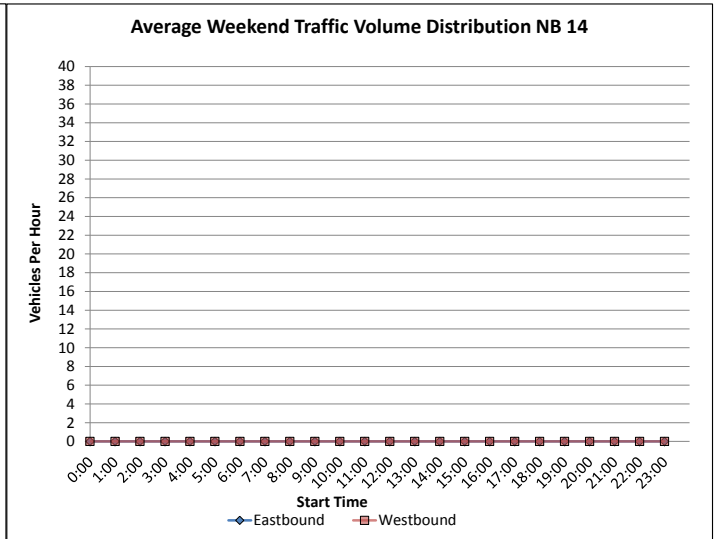
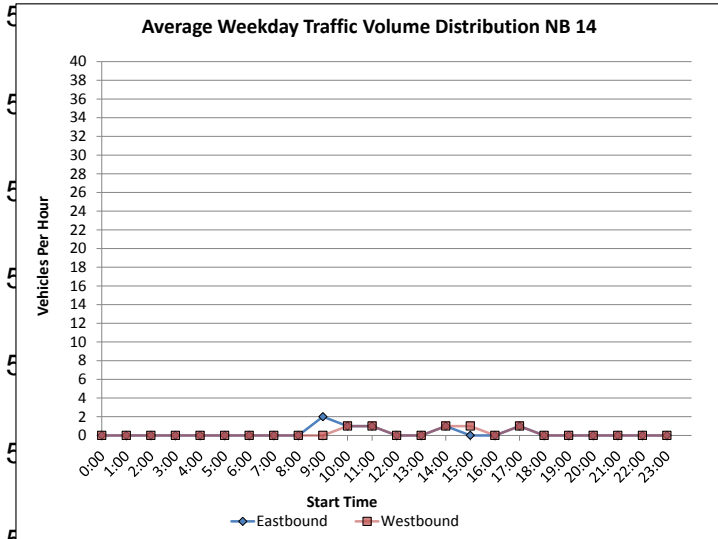
504

508

505

509

510 **4.14 NB – 14: Unnamed Road 3**



530

531 **Average Weekday Traffic Class**  
532 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	2	0	0	0	2
10:00	1	0	1	1	0	1	4
11:00	1	0	0	1	0	0	2
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	1	0	0	1	0	0	2
15:00	0	0	0	1	0	0	1
16:00	0	0	0	0	0	0	0
17:00	1	0	0	1	0	0	2
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>1</b>	<b>13</b>

533

535 **Average Weekend Traffic Class**  
536 **Distribution**

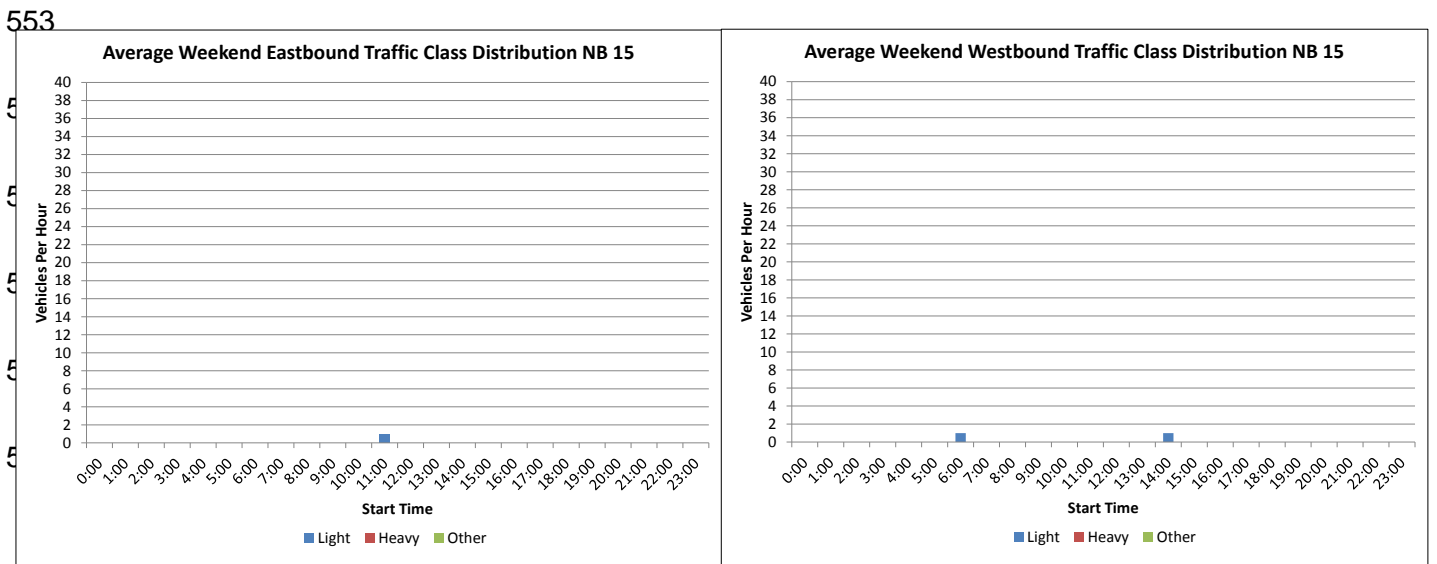
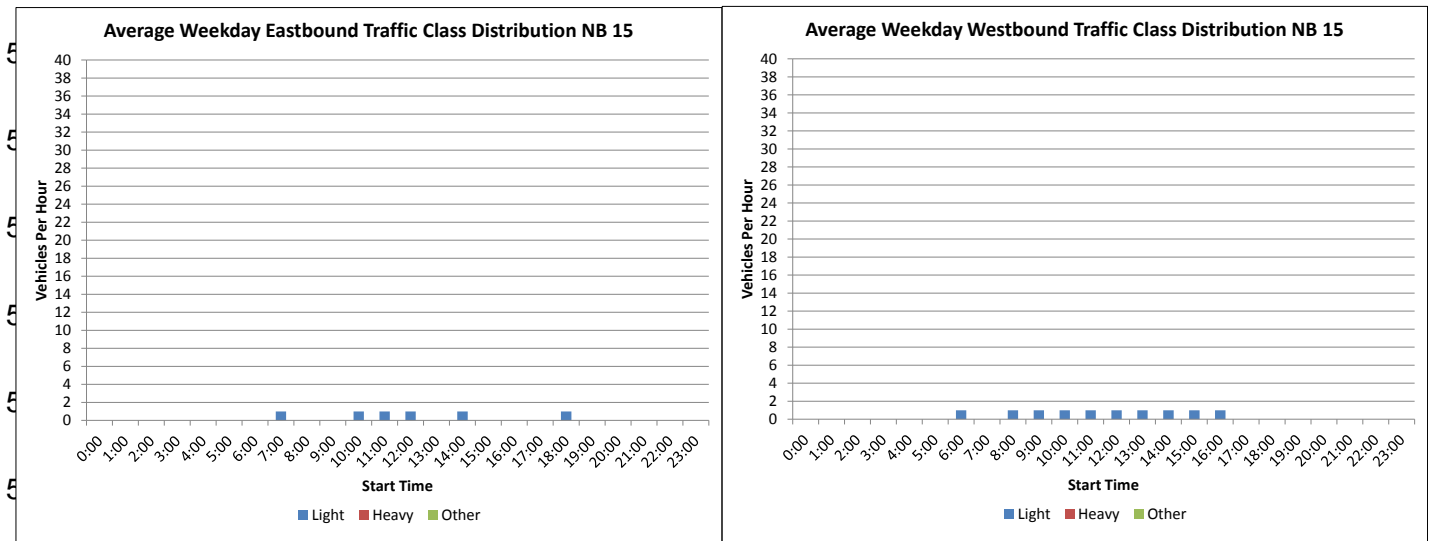
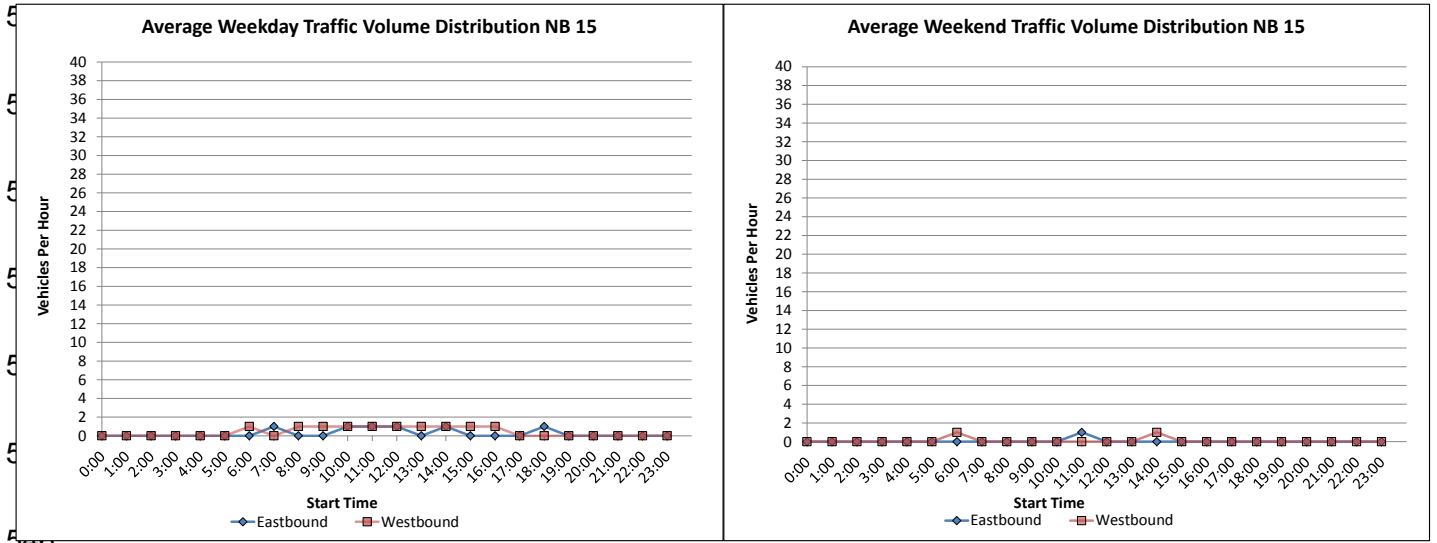
Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

537

534

538

539 **4.15 NB – 15: Bulls Eye Road**





559

560 **Average Weekday Traffic Class**  
561 **Distribution**

564 **Average Weekend Traffic Class**  
565 **Distribution**

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	1
7:00	1	0	0	0	0	0	1
8:00	0	0	0	1	0	0	1
9:00	0	0	0	1	0	0	1
10:00	1	0	0	1	0	0	2
11:00	1	0	0	1	0	0	2
12:00	1	0	0	1	0	0	2
13:00	0	0	0	1	0	0	1
14:00	1	0	0	1	0	0	2
15:00	0	0	0	1	0	0	1
16:00	0	0	0	1	0	0	1
17:00	0	0	0	0	0	0	0
18:00	1	0	0	0	0	0	1
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>0</b>	<b>0</b>	<b>16</b>

Start Time	Eastbound			Westbound			Total
	Light	Heavy	Other	Light	Heavy	Other	
0:00	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	0
6:00	0	0	0	1	0	0	1
7:00	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0
11:00	1	0	0	0	0	0	1
12:00	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0
14:00	0	0	0	1	0	0	1
15:00	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0
19:00	0	0	0	0	0	0	0
20:00	0	0	0	0	0	0	0
21:00	0	0	0	0	0	0	0
22:00	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>3</b>

562

566

563

567

568

569 **4.17 Available Capacity**

570 To determine the available capacity of the roadways counted on the Installation, AECOM  
 571 compared the highest average directional volume collected to the maximum directional service  
 572 volume for the roadway classification. Based on the Highway Capacity Manual (HCM),  
 573 AECOM used a maximum service volume of 400 vehicles per hour for all gravel and dirt  
 574 roadways, and a maximum service volume of 740 vehicles per hour for 2-lane roadways with  
 575 centerline striping. The maps shown in Error! Reference source not found., Error! Reference  
 576 source not found., and Error! Reference source not found. show that no study area roadway  
 577 segment is using more than 25 percent of the roadway capacity. Furthermore, Error! Reference  
 578 source not found. shows the available capacity inputs that AECOM used to generate these maps.

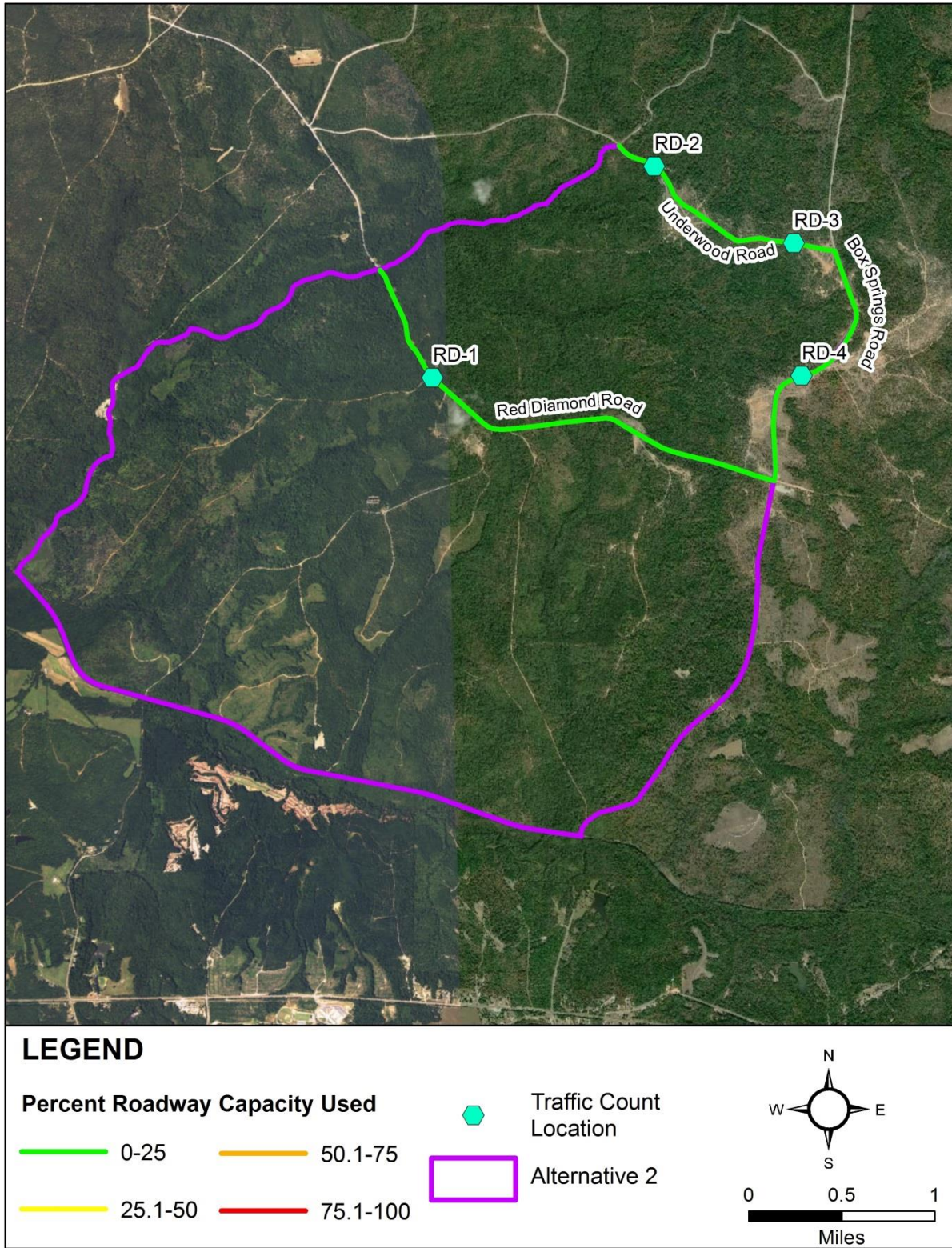
579

**Table 1: Available Capacity Results**

Location	Capacity	Max Hourly Volume	Percent Capacity Used	Percent capacity Remaining
RD-1	400	9	2.3%	97.8%
RD-2	400	3	0.8%	99.3%
RD-3	400	2	0.5%	99.5%
RD-4	400	37	9.3%	90.8%
EB-5	400	1	0.3%	99.8%
EB-6	400	1	0.3%	99.8%
EB-7	400	2	0.5%	99.5%
EB-8	400	2	0.5%	99.5%
EB-9	400	1	0.3%	99.8%
NB-10	740	19	2.6%	97.4%
NB-11	400	1	0.3%	99.8%
NB-12	740	7	0.9%	99.1%
NB-13	740	25	3.4%	96.6%
NB-14	400	2	0.5%	99.5%
NB-15	400	1	0.3%	99.8%

580

581

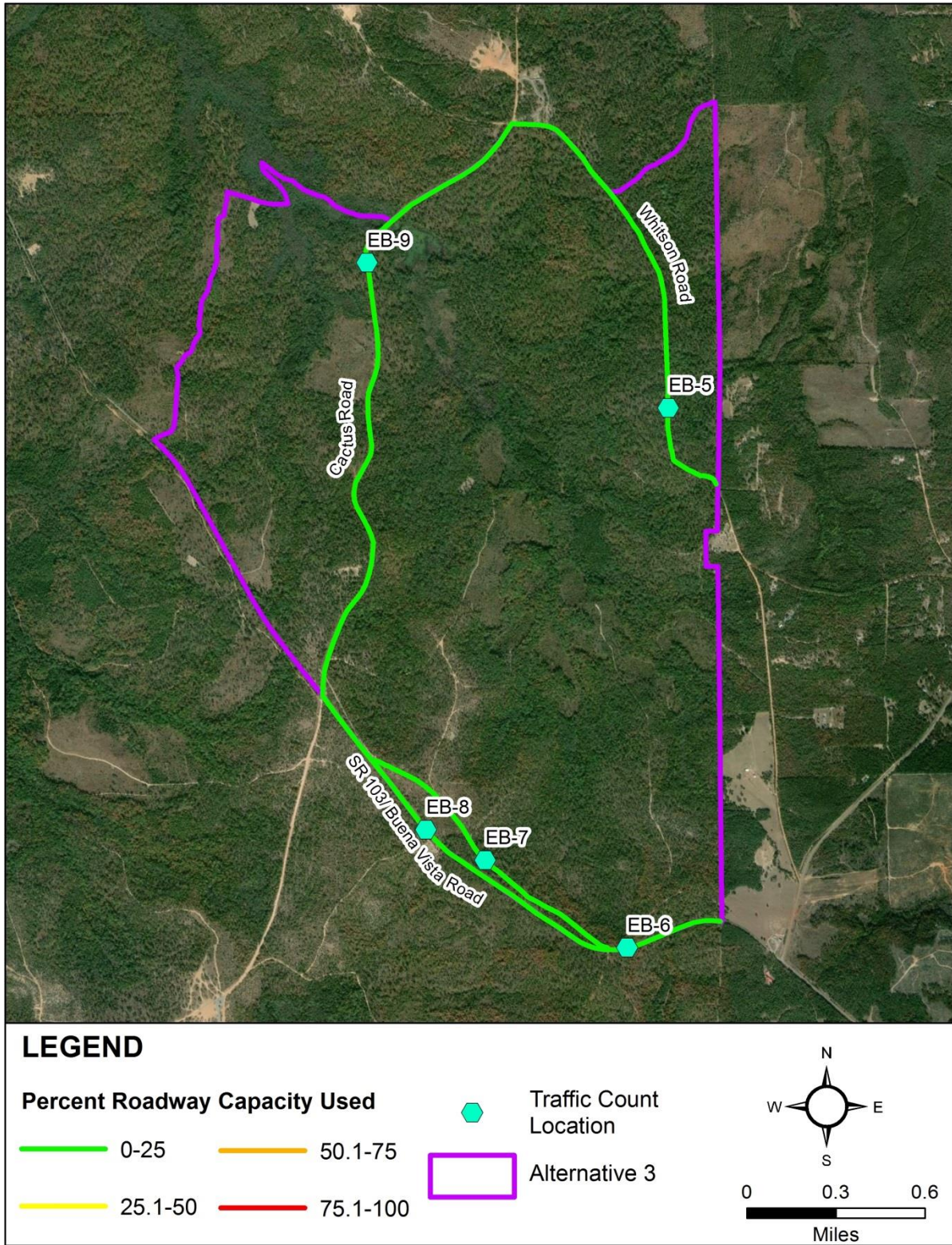


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583

**Figure 5: Red Diamond Alternative Available Capacity Map**



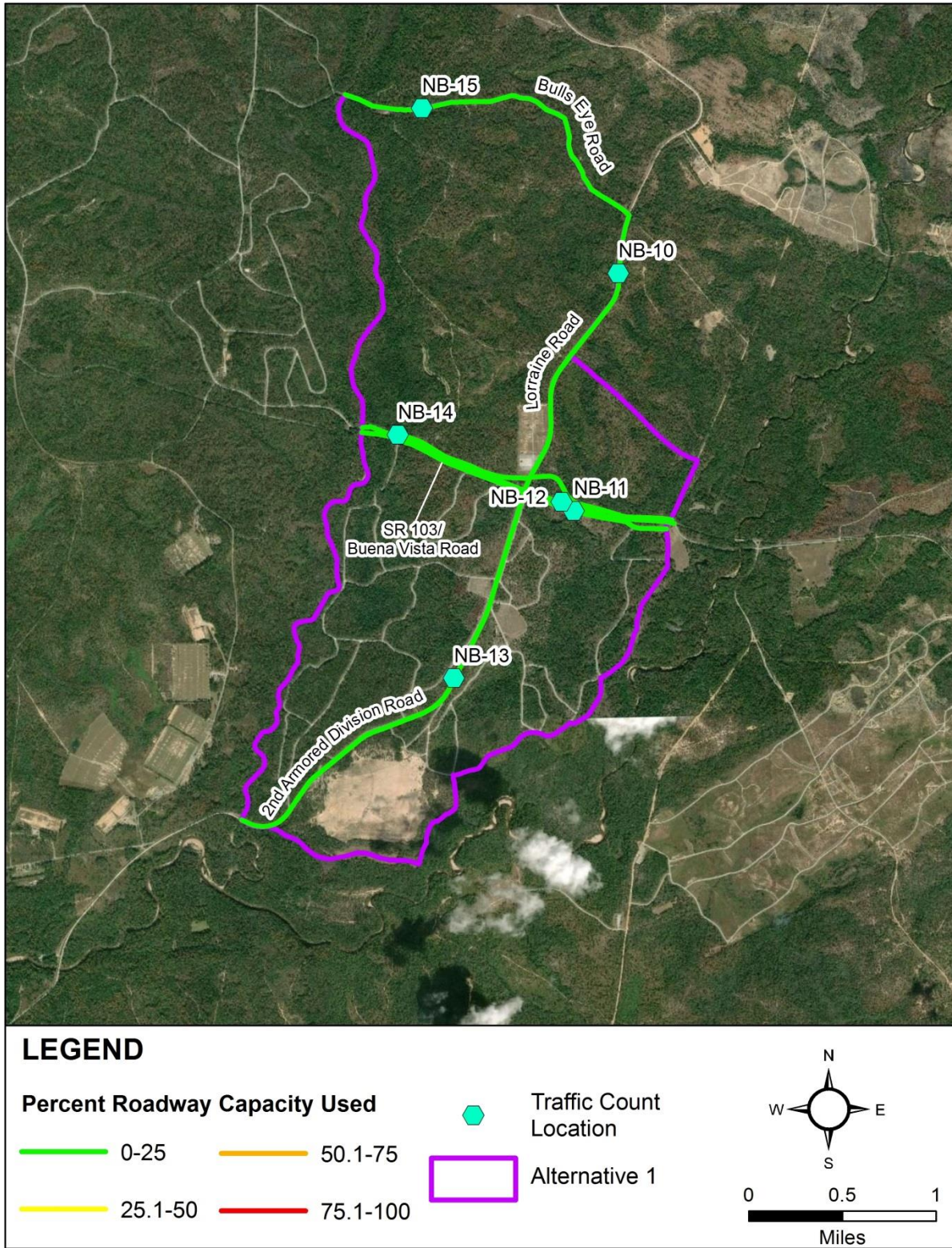


584

585

Figure 6: Eastern Boundary Alternative Available Capacity Map





586

587 **Figure 7: Northern Mounted Maneuver Training Area Alternative Available Capacity Map**

## 588 **5. Conclusion and Next Steps**

589 Based on the data collected, over 99 percent of the roadway capacity remains at 11 of the 15  
590 locations studied. Three of the locations studied have between 96 and 98 percent capacity  
591 remaining, and the most utilized road location has approximately 90 percent of the capacity  
592 remaining. Therefore, as long as development, operation, and maintenance of the proposed  
593 HOMMTA do not draw more than 390 new vehicles per hour, traffic would be expected to  
594 remain under capacity for all of the studied count locations. Further, due to the overall low  
595 volumes of traffic observed, diversion of this traffic to nearby roadways during use of the  
596 HOMMTA would be unlikely to have substantial adverse impacts on the capacity of those  
597 roadways.

598 The next steps of the traffic study are to develop a growth rate and trip generation estimation  
599 with guidance from the Fort Benning Directorate of Public Works for the proposed HOMMTA  
600 locations. With this information, AECOM can project future traffic volumes, estimate future  
601 capacity constraints and Level of Service, and analyze potential traffic impacts. AECOM can  
602 then compare these impacts between alternatives and incorporate that analysis into the  
603 HOMMTA EIS.

604 To accomplish the next steps, AECOM requests the following data from Fort Benning:

- 605 • Build condition traffic volumes for each alternative
- 606 • Future Traffic Growth Rate for each alternative

## **Appendix J: Draft Mitigation and Monitoring Plan**

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## DRAFT MITIGATION AND MONITORING PLAN

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### 1.0 Introduction

Compliance with the National Environmental Policy Act (NEPA) and associated regulations, including the Army’s NEPA Regulation (36 Code of Federal Regulations [CFR] 651) requires identification of mitigation measures for potential adverse impacts, selection of mitigation measures to implement with an action alternative, and monitoring of the selected mitigation measures for effectiveness and enforcement.

The President’s Council on Environmental Quality (CEQ) describes mitigation as:

- **Avoidance:** Avert the impact by changing the plan. Do not take certain actions that would cause the environmental effect.
- **Minimization:** Curtail impacts by changing the intensity, timing, or duration of the action and its implementation.
- **Rectifying:** Remedy, repair, or restore damage that may be caused by implementing the proposed action.
- **Reducing:** Decrease or eliminate the impact over time.
- **Compensation:** Offset the impact by improving the environment elsewhere or by providing other substitute resources such as funds to pay for the environmental impact.

#### 1.1 Mitigation Planning Process

Mitigation through avoidance and environmentally sensitive design, such as establishment of buffers, has been used to avoid impacts to sensitive resources to the maximum extent practicable. This “mitigation by design” was used when determining Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) Action Alternative locations that were reasonable, and when identifying preliminary heavy off-road mounted maneuver areas and buffer areas within the HOMMTA footprint for each Action Alternative. Section 2.1.1 of the HOMMTA Final Environmental Impact Statement (FEIS) addresses mitigation through avoidance which occurred during the initial concept development process. An interdisciplinary team of environmental,

engineering, regulatory, military operations, and planning professionals used geographic information system (GIS) data and existing information to eliminate unreasonable alternatives and reduce and validate potential Alternatives. Scoping comments were also considered. The process helped mitigate potential environmental impacts by avoiding further consideration of sites with potentially more significant environmental impacts, and focusing design on sites that would support the mission and funding requirements while reducing environmental impacts.

At the FEIS stage, this mitigation by design is based on the best available information, including conceptual designs and comments on the Draft EIS (DEIS). If the formal design proceeds, continued attempts to mitigate by design would be used and specific mitigation measures would be determined. Therefore, this Mitigation and Monitoring Plan (Plan) may be updated to reflect that progress if an Action Alternative is selected. This Plan was prepared specifically for the Preferred Alternative (i.e., Alternative 1); if another Action Alternative is selected in the Record of Decision (ROD), then this Plan would be revised to account for mitigation specific to that Alternative.

The Proposed Action would comply with all applicable Federal, State, and local laws and regulations, as well as associated Installation procedures and plans as outlined in Section 2.1.1 of the FEIS. For purposes of the HOMMTA FEIS, those are called regulatory compliance measures (RCMs) that are considered part of the Proposed Action. Many of those RCMs have the effect of mitigating potential adverse impacts to environmental resources, and the RCMs listed in Section 2.1.1 of the FEIS are mandatory. Table 2.1-1 in the FEIS is also attached to this Plan as Table J-1.

During the formal design and permitting phases of the Proposed Action, the Army would complete consultation with pertinent regulatory agencies regarding required RCMs. Specifically, formal consultation and/or permitting would be performed to comply with the Clean Water Act (CWA), Endangered Species Act (ESA), and National Historic Preservation Act (NHPA). These efforts would include obtaining a permit for anticipated impacts to jurisdictional wetlands/waters of the US; preparing a National Pollutant Discharge Elimination System (NPDES) permit application including an Erosion, Sedimentation, and Pollution Control Plan (ESPCP); preparing a Biological Assessment for federally listed species; and mitigating adverse impacts on cultural resources listed on, or eligible for listing on, the National Register of Historic Places (NRHP).

In addition to RCMs, the Army would include as part of the Proposed Action environmental protection measures (EPMs) to reduce potential adverse impacts from construction, operation, and maintenance of the Proposed Action. These EPMs primarily include common environmentally sensitive construction practices and implementation of existing Installation resource management plans. The required EPMs for all Action Alternatives include: up to 100-foot buffers from construction, operation, and maintenance activities around cemeteries; up to 50-foot buffers from the same activities around NRHP-eligible archaeological sites, unless otherwise mitigated; up to 100-foot buffers from heavy off-road mounted maneuver training around streams and wetlands; and use of the Integrated Training Area Management (ITAM) program or other resources to address soil erosion and/or other environmental impacts of HOMMTA operation and training.

Beyond those measures mandated for regulatory compliance, Fort Benning proposes to use a variety of additional measures to mitigate potential adverse impacts, which are categorized as mitigation measures in the HOMMTA FEIS. Mandatory mitigation measures for implementation of an Action Alternative will be specified in the ROD. Timing of the mitigation measures is often important for some mitigation to occur (e.g., prior to any timber harvest). Some of the mitigation proposed in the FEIS would be subject to further public review, in addition to coordination and consultation with stakeholders. Other environmental planning processes may result in identification of mitigation that would be required. For example, the US Army Corps of Engineers may require conditions (e.g., specific mitigation measures) within a CWA Section 404 wetlands permit.

## **2.0 Mitigation Phases**

This Plan focuses on mitigation for Alternative 1; however, mitigation for the other Action Alternatives would be similar. Mitigation activities included in this Plan have also been characterized by each phase (i.e., construction, operation, and maintenance) of the Proposed Action. It is also possible that a pre-project mitigation monitoring phase (i.e., pre-construction phase) may be required to collect baseline data and establish trends to compare against construction, operation, and maintenance mitigation phase data. Mitigation would be implemented as applicable to either all or only specific mitigation phases of the Proposed Action as indicated.

As Alternative 1 would have no potential adverse environmental impacts to the following environmental resources, or valued environmental components (VECs), no mitigation was identified for them in the FEIS: Land Use (except Recreation), Noise, Geology, Topography, Socioeconomics including Protection of Children (EO 13045) and Environmental Justice (EO 12898), and Airspace. The FEIS also concluded that no additional mitigation measures (beyond the RCMs and EPMs) were identified or required for Air Quality, Infrastructure, and Hazardous and Toxic Materials and Waste under any of the proposed Action Alternatives. As such, they are not discussed further in this Plan.

## **2.1 Construction Phase Mitigation**

Before and during construction of the HOMMTA, the Army would implement mandatory RCMs, EPMs, and mitigation measures as identified in the ROD. Some of the potential adverse impacts identified for the construction phase can be mitigated through the design process. After Fort Benning received community input from public scoping meetings held in 2018, preliminary conceptual design of the HOMMTA was initiated. Later, the HOMMTA's formal design would include detailed construction designs with various specifications to mitigate potential environmental impacts.

HOMMTA construction would be funding dependent, take between 2 and 3 years, and be conducted in two primary stages. The first stage of HOMMTA construction would be vegetation removal. Thereafter, the Army or its contractors would prepare the area and install infrastructure. This second phase involves land disturbing activities such as grading some slopes, installing erosion control measures, upgrading roads, hardening or burying utilities, and clearly marking buffer zones (e.g., areas that are off-limits to construction disturbance and heavy maneuver around streams, wetlands, archaeological sites, and cemeteries).

All mitigation measures cannot be detailed for this phase until the formal design is prepared that indicates any areas of soil disturbance and potential environmental impacts. Also, regulatory coordination for some mitigation actions is underway but not yet complete. For ESA compliance, Fort Benning prepared a Biological Assessment and initiated formal consultation with the USFWS on February 3, 2020. The vegetation removal part of the construction phase is when potential adverse impacts to the red-cockaded woodpecker (RCW), a federally listed species, would occur.

The USFWS's July 27, 2020 Biological Opinion (BO) identifies what mitigation/minimization actions would be required for potential adverse RCW impacts due to loss of RCW cavity trees, clusters, and/or habitat.

Both phases of construction would also involve potential wetland/waters of the US and State water impacts, requiring a CWA Section 404 permit and NPDES permit, respectively. NPDES would require preparation of an ESPCP, which would include incorporation of environmental Best Management Practices (BMPs) into the construction process. A Soil Erosion Control (SEC) Plan would detail BMPs to be implemented and the timing of implementation. Those types of permits and plans would specify mitigation requirements that must be met as part of the construction of the HOMMTA. Any additional requirements identified through continuing coordination and consultation with stakeholders would be incorporated into the construction phase through compliance with regulations and construction specifications.

NHPA Section 106 consultation with the Tribes and HPD is ongoing via the FEIS as well as through meetings, correspondence, and other communication methods. Consultation comments received on the DEIS have been incorporated as appropriate into this Plan.

Army planners must ensure that construction specifications and construction contractors' environmental protection plans incorporate the required RCMs and EPMs that are part of the Proposed Action, as well as the mandatory mitigation measures as set out in the ROD. Any that are not incorporated into the timber removal and other construction-related contracts would be the responsibility of the Army. The Proponent will coordinate any deviation from those with the NEPA Manager, Environmental Management Division (EMD), Department of Public Works, so that any additional NEPA reviews can be properly conducted and documented prior to implementation of activities that may be impacted by the project change.

Mitigation measures for each VEC during the construction phase are discussed further in Section 4 of this Plan.

## **2.2 Operation Phase Mitigation**

The operational phase would begin after construction is complete. Soldiers would begin training on the new HOMMTA. Fort Benning EMD and the G3/Directorate of Plans, Training,

Mobilization, and Security (DPTMS) would continue to work closely to ensure all mitigation requirements are implemented as planned. Additional mitigation measures for each VEC during the operational phase are discussed in Section 4 of this Plan.

### **2.3 Maintenance Phase Mitigation**

The maintenance phase would begin during the operational phase and be conducted primarily through Fort Benning's ITAM program. Maintenance activities would largely be focused on monitoring, preventing, and addressing soil disturbance and the consequent potential for soil erosion and sedimentation. Additional mitigation measures for each VEC during the maintenance phase are discussed in further sections.

## **3.0 Mitigation Monitoring Strategy**

A very important aspect of environmental mitigation is appropriate monitoring of mitigation measures' implementation and effectiveness, and re-evaluation and actions to remedy any mitigation measures that are not successful. For that reason this Plan describes how Fort Benning would monitor mitigation and adjust plans and operations as needed to help ensure actual environmental impacts are not substantially different than predicted in the HOMMTA FEIS and ROD.

Fort Benning plans to monitor implementation and effectiveness of the RCMs, EPMs, and any mitigation measures selected to implement the Proposed Action. The Installation would use a combination of staff (e.g., personnel, hiring contractors, etc.) and existing systems (e.g., the Environmental Performance Assessment System [EPAS]) to track mitigation compliance. The Army has directed each Installation to develop and implement an Environmental Management System (EMS), such as International Organization for Standardization (ISO) 14001, to improve environmental management, compliance, and stewardship. For information on EMS and ISO 14001 EMS, please refer to the following website: <https://aec.army.mil/index.php/support/EMS>.

This section tentatively labels each of the HOMMTA FEIS mitigation measures as optional or mandatory. This Plan also includes enforcement monitoring that will help the Army, which is ultimately responsible for the mitigation activities, to establish responsibilities and procedures regarding who will actually perform the mitigation, such as contractors, educational facilities, etc.

Mitigation measures are applicable throughout the life of the Proposed Action (construction, operation, and maintenance) unless otherwise noted in the text.

### 3.1 Land Use (Recreation)

Fort Benning permits limited (but controlled) access for recreational activities, such as hunting, fishing, geocaching, photography, and birdwatching. This VEC focuses on hunting, as it is the only primary recreational activity for which the Installation maintains data and it is a very popular activity. During the Alternative 1 construction phase (i.e., as compared to the operation and maintenance phases), up to 14 training compartments would likely be closed for longer periods at a time (i.e., potentially one or multiple full hunting seasons, depending on species) while construction occurs. During operation and maintenance, these compartments would be closed for shorter periods encompassing only the time necessary to complete training and maintenance activities.

The FEIS identified a mitigation measure to reduce potential conflicts between training, construction, and recreational activities by improving access to areas nearby and/or adjacent to the HOMMTA.

- Redelineate the boundaries of training compartments that are partially included within the proposed HOMMTA to align more closely with the boundary of the HOMMTA.

Recreational activities could continue in training compartments adjacent to the HOMMTA during training if the training compartment boundaries are adjusted so that no partial compartments lie within the HOMMTA footprint. This mitigation measure is considered optional rather than mandatory, as the logistics of re-delineating training compartments must be thoroughly processed, and abundant recreational lands are available elsewhere on Post.

No monitoring of this mitigation would be needed.

### 3.2 Soils

Potential impacts to soils from Alternative 1 have been minimized to the extent feasible through sensitive project conceptual design; the mitigation by design would continue into formal design. EPMS have been proactively incorporated into the Proposed Action: suitable vegetated buffers would be maintained adjacent to surface waters and wetlands to slow runoff and contain soil

erosion; areas of moderately to highly erodible soils would be avoided to the extent practical; water crossings would be sited to minimize cut/fill activities, where practical; and heavy maneuver training would avoid slopes greater than 20 percent. The requirement for a NPDES permit is an RCM for this project. The permit requires the implementation of an erosion control plan showing locations and details of BMPs. NPDES permits generally ensure that erosion control measures are incorporated in the construction phase and do not extend into the operation/maintenance phases.

The HOMMTA FEIS identified additional mitigation measures to further reduce potential less-than-significant, direct and indirect impacts to soils from construction, where feasible. The following mitigation measures for the HOMMTA are considered optional as the RCMs, EPMs, and mitigation measures identified as mandatory in this Plan would be sufficient to reduce potential adverse impacts to soils.

- Plan construction activities to occur in a manner that reduces the potential for erosion, such as by minimizing the amount of time that soil is exposed (i.e., through revegetation measures), minimizing disturbance of moderately or highly erodible soils, or lightly wetting disturbed areas to reduce dust.
- Conduct vegetation removal and land disturbance activities during times of the year with generally lower amounts of precipitation to reduce the risk of erosion.
- Implement stormwater/water quality mitigation measures described in Section 3.3 of this Plan; these measures would help reduce indirect effects to offsite areas, which could be confirmed through ongoing monitoring and adaptive management under Fort Benning resource/soils management plans and programs.

As part of the proposed HOMMTA project, Fort Benning EMD and Range Division's ITAM personnel would monitor operation and maintenance to determine needs for erosion control and/or revegetation to maintain realistic training areas and sustain the physical integrity of the training area. Monitoring reports would be submitted to the Chief of Range Division and EMD, so that appropriate action is taken. No additional mitigation measures or monitoring actions would be required.



### 3.3 Water Resources

Mitigating impacts to wetlands and streambanks by avoidance was incorporated into the conceptual design process by reducing stream crossings and placing trails, and roads where possible, outside of wetland areas. As part of construction, the hardening of water crossings, coupled with installing properly engineered and sized culverts, would minimize adverse effects to streams and wetlands by stabilizing areas where training activities directly intersect with water resources. Although areas within the stream-side/wetland buffer zone may have vegetation removed for construction of water crossings, erosion control measures would be put in place to minimize sedimentation in the streams via the RCMs and EPMs that are part of the HOMMTA Proposed Action. Similarly, construction, maintenance, and operation phases would utilize proactive, long-term erosion control measures. For mitigation by obtaining wetland bank credits, the wetland permit would state the exact number of wetland and stream credits required for compensatory mitigation of impacts from the project.

An additional mitigation measure was identified in the HOMMTA FEIS for Alternative 1.

- Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 1 when feasible.

Avoidance may be feasible for Alternative 1 as most floodplains are on the western, southern and eastern boundaries of the HOMMTA (see Figure 3.6-5 of the HOMMTA FEIS). A relatively small area of floodplains are within the Alternative 1 HOMMTA footprint (i.e., approximately 200 acres or 4.2 percent of the footprint). Per the FONPA in Appendix E of the HOMMTA FEIS, approximately 63 acres of floodplains would have forest vegetation removed to support mounted maneuver training, and there would be no infrastructure construction or other actions that would reduce floodwater storage capacity or conveyance in any 100-year floodplains. Complete avoidance of floodplains during conceptual design of Alternative 1 was not feasible. As such, the Army has determined there are no practicable alternatives to siting the HOMMTA in areas with floodplains. Later formal design efforts may result in further avoidance of some or all of the floodplains, which may be acceptable to meet training needs. Therefore, avoidance of all 100-year floodplains *when feasible* would be recommended as a mandatory mitigation measure for inclusion in the ROD if Alternative 1 is selected.

The HOMMTA FEIS identified other potential mitigation measures to further reduce less-than-significant adverse impacts to water resources during operation and maintenance.

- Maintain surface water buffers from heavy maneuver training activities that exceed the 25- to 100-foot widths anticipated as part of the Proposed Action, depending on site-specific resources and conditions.

As an EPM in the HOMMTA Proposed Action, surface water buffers were increased from the 25-foot regulatory minimum for construction disturbance of State waters up to as much as 100 feet wide. Extending the buffer even further in very limited areas may remove some training area but reduce potential adverse impacts from soil erosion, sedimentation and surface water turbidity. Given that this mitigation measure is dependent on site-specific resources and conditions, this mitigation measure is recommended as mandatory for inclusion in the ROD if Alternative 1 is selected.

- Implement proactive, long-term erosion control measures in areas where sedimentation is most likely (in addition to the ITAM program).

NPDES permits generally ensure that erosion control measures are incorporated in the construction phase and do not extend into the operation/maintenance phases. The Army's experience with training areas for tanks, Strykers, and similar vehicles, such as at the Good Hope Maneuver Training Area, indicates that more permanent erosion control and sediment reduction measures may be necessary to minimize training impacts that could add to the natural erosion on highly erodible soils at Fort Benning. The ITAM program would normally handle monitoring and remediation for erosion control and sedimentation as part of maintenance. ITAM historically does not receive enough funding to cover all the range projects on Fort Benning, however, and other sources of funding for training area sustainment may be necessary to sustain heavy off-road mounted maneuver training in Alternative 1. This mitigation measure would plan for not only the construction erosion control measures in the formal design actions, but also proactive erosion control measures during training to sustain the HOMMTA; therefore, this mitigation measure is recommended as mandatory for the ROD if Alternative 1 is chosen.

- Plan “rest and rehabilitation” periods, when feasible, and utilize “smart” scheduling to minimize impacts from multiple, sequential training events.

This mitigation measure may not be feasible given the HOMMTA would be the only one on Fort Benning suitable for the proposed training. The erosion and sediment control measures and range sustainment activities recommended as mandatory above would reduce adverse impacts to a point that this mitigation measure is not needed. Therefore, this mitigation measure is recommended as optional.

- Avoid conducting off-road heavy maneuver training, except when necessary, during or immediately following inclement weather when potential sedimentation impacts are most likely.

Training on Fort Benning is normally scheduled several weeks in advance, and weather conditions wouldn't be known until days before the training start date. Rescheduling HOMMTA training based on weather would disrupt training cycles and therefore a main mission. Similarly, stopping a training event that is in-process because of rain would be problematic. Erosion and sediment control measures and range sustainment activities recommended as mandatory above would reduce adverse impacts to a point that this mitigation measure is not required. Therefore, this mitigation measure is recommended as optional.

During construction, the associated contractors, contracting officers and their representatives, and the EMD would monitor the mitigation measures. The Army's ITAM program would be the main monitoring mechanism of mitigation measures during the operation and maintenance phases. ITAM would conduct resource condition assessments to manage or reduce impacts and manage the repair, maintenance, or reconfiguration of damaged areas between training events.

### **3.4 Biological Resources**

To further reduce adverse biological resources impacts, the HOMMTA FEIS identified the mitigation measures outlined below.

#### **3.4.1 Vegetation**

Potential adverse impacts to vegetation would be moderate in the short- and long-term per the HOMMTA FEIS. The FEIS identified the following associated mitigation measures.

- Re-vegetate disturbed soils with plant species on Fort Benning's approved plant list, to the extent feasible, in order to reduce the adverse impacts of vegetation removal.

For purposes of the FEIS, the entire footprint of the HOMMTA at Alternative 1 was considered to experience vegetation removal, except in buffers to disturbance around surface waters and cemeteries. In actuality, the formal design would likely include areas of vegetation, including mature pines, that can remain elsewhere on the HOMMTA. These areas of remaining vegetation cannot be determined with accuracy at this time. Furthermore, re-vegetating areas of construction disturbance that are compatible with the training/operation of the HOMMTA would reduce potential adverse impacts to vegetation and possibly other VECs as well (e.g., Soils and Water Resources). The ITAM program would be the main method to identify re-vegetation areas, carry out such re-vegetation efforts, and monitor the progress. This mitigation measure is considered mandatory to promote training area sustainment where it is feasible and does not interfere with training missions.

- Implement the mitigation measures identified for Soils in Section 3.2 of this Plan to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on vegetation.

Mitigation measures identified in Section 3.2 (Soils) would also minimize potential adverse impacts; however, those mitigation measures are recommended as optional for soils. Given the extensive RCMs, EPMs, and other VEC mitigation measures as described herein, potential adverse impacts to vegetation would be reduced substantially. Therefore, those mitigation measures listed in Section 3.2 of this Plan are also optional for vegetation.

### **3.4.2 UEs**

The HOMMTA FEIS determined that Alternative 1 would have potential significant adverse impacts on 5.9 acres of the Upatoi Bluffs UEA and 94.9 acres of the Depression Ponds UEA. Both of those UEs overlap southern portions of the Alternative 1 footprint (see Figure 3.7-2 of the FEIS). UEs are an Army management tool and are not federally or State-regulated. Instead, methods to protect and manage UEs are included in the Fort Benning Integrated Natural Resource Management Plan (INRMP). The FEIS identified the following mitigation measure.

- Avoid and mark as “off-limits” approximately 5.9 acres of the Upatoi Bluffs UEA and 94.9 acres of the Depression Ponds UEA in Alternative 1 during the formal engineering and subsequent construction and operational phases. Monitor these areas throughout the life of the Proposed Action to ensure no encroachments occur.

Fort Benning and the Army take seriously the stewardship of environmental resources, such as UEAs; however, the land and resources of Fort Benning are intended to support the Army's mission, including necessary training as would be accomplished on the HOMMTA. During formal design, avoiding parts of the UEAs may be feasible, but at this stage, all the area within the Alternative 1 footprint seems necessary for training. The Army has committed to numerous RCMs and EPMs (such as buffers) in the HOMMTA Proposed Action, and is recommending additional mitigation measures in this Plan as mandatory. This mitigation measure to avoid the UEAs is recommended as optional if Alternative 1 is selected in the ROD.

### 3.4.3 Fish and Wildlife

The HOMMTA FEIS referred to mitigation measures for other VECs that would also mitigate the potential moderate and minor adverse impacts to Fish and Wildlife.

- Implement the mitigation measures identified for Soils identified in Section 3.2 of this Plan to minimize erosion, sedimentation, and potential nutrient/contaminant impacts on aquatic habitats.

All those mitigation measures in the Soils section are recommended to be optional, as the RCMs and EPMs that are part of the Proposed Action, and the mitigation measures that are recommended as mandatory in this Plan, are considered adequate. Therefore, those Soils mitigation measures are considered optional for this VEC, too.

- Implement the mitigation measures identified for Water Resources in Section 3.3 of this Plan to minimize impacts to aquatic habitats and the species that inhabit these areas.

Two out of four of those mitigation measures are recommended as mandatory for Water Resources, and are restated here.

- Incorporate into the final design, and throughout operation and maintenance, avoidance of all 100-year floodplains within Alternative 1 when feasible.

Avoidance of floodplains may be feasible for Alternative 1 as most floodplains are on the western, southern, and eastern boundaries of the HOMMTA (see Figure 3.6-5 of the HOMMTA FEIS). Although complete avoidance of floodplains during conceptual design of Alternative 1 was not feasible, later formal design efforts may result in further avoidance of some or all of those

floodplains. Therefore, avoidance of all 100-year floodplains *when feasible* is recommended as a mandatory mitigation measure for Fish and Wildlife as well.

- Where practical, use erosion control materials that are biodegradable and/or mobile to reduce their longevity in the environment. Remove erosion control measures following construction when not needed for long-term soil stabilization.

The Georgia Department of Natural Resources (GADNR) Wildlife Resources Division commented on the DEIS, recommending biodegradable and/or mobile erosion control measures during construction activities to minimize fish and wildlife entrapment or death. The Proposed Action includes the RCM of complying with NPDES construction permits and associated plans. Specific NPDES BMPs would be determined during formal design and would consist of those in the Georgia Stormwater Management Manual, generally known as the “Blue Book.” Some of the Blue Book BMPs allow use of biodegradable and/or mobile mitigation measures during timber removal and construction. As of 2016, the Georgia Environmental Protection Division (GAEPD) also allows alternative BMPs to be used if they are equivalent or superior to the conventional BMPs, have been tested, were used in comparable environmental conditions, and detail proper installation and maintenance. GAEPD maintains an Equivalent BMP List that may provide biodegradable and/or mobile mitigation measures suitable for the construction phase of the Proposed Action. Given the options available for NPDES BMPs, this identified mitigation measure is recommended as mandatory for inclusion in the ROD.

The HOMMTA FEIS identified other potential mitigation measures for implementation during operation and maintenance.

- Maintain surface water buffers from heavy maneuver training activities that exceed the 25- to 100-foot widths anticipated as part of the Proposed Action, depending on site-specific resources and conditions.

As an EPM in the Proposed Action, surface water buffers were increased from the 25-foot regulatory minimum for construction disturbance of State waters up to as much as 100 feet wide. Extending the buffer even further in very limited areas may remove some training area but reduce potential adverse impacts from soil erosion, sedimentation, and surface water turbidity. Given that

this mitigation measure is dependent on site-specific resources and conditions, this mitigation measure is recommended as mandatory for Fish and Wildlife too.

- Implement proactive, long-term erosion control measures in areas where sedimentation is most likely (in addition to the ITAM program).

For Fish and Wildlife, this mitigation measure would incorporate not only the construction erosion control measures in the formal design actions where they need to be long-term, but also proactive erosion control measures during training to sustain the HOMMTA; therefore, this mitigation measure is recommended as mandatory for the ROD if Alternative 1 is chosen.

The other mitigation measures are recommended as optional for Water Resources in Section 3.3 of this Plan; they are also recommended as optional for Fish and Wildlife for the same reasons and are not repeated here.

During construction, the associated contractors, contracting officers and their representatives, and the EMD would monitor the mitigation measures. The Army's ITAM program would be the main monitoring mechanism of mitigation measures during operation and maintenance phases. ITAM would conduct resource condition assessments to manage or reduce impacts and manage the repair, maintenance, or reconfiguration of damaged areas between training events.

#### **3.4.4 Special Status Species**

- Avoid construction within the nesting season of migratory birds (generally April to August, including spring and summer), if feasible.

The time frame for migratory birds nesting varies widely. The five month timeframe identified in this mitigation measure would probably severely disrupt construction activities, causing extra cost and HOMMTA establishment delays. Migratory bird nesting locations have not been determined, and construction downtime over the entire HOMMTA area would be unwarranted. This mitigation measure is recommended as optional.

##### **3.4.4.1 RCW**

One federally listed species and one candidate for Federal listing would be impacted by Alternative 1: the RCW and the gopher tortoise, respectively. The Army consulted with the USFWS under Section 7 of the ESA; the Army's BA was submitted to USFWS on February 3, 2020. USFWS

supplied Fort Benning with a Biological Opinion (BO) on July 27, 2020 that Alternative 1 would not jeopardize any federally listed species or critical habitat. To minimize the incidental take of 11 RCW clusters, however, Reasonable and Prudent Measures must be carried out as specified in the BO.

One additional mitigation measure was identified in the HOMMTA FEIS for federally listed species:

- Avoid construction within 200 feet of clusters during RCW (federally endangered) nesting season (April through July).

The HOMMTA BA and BO indicate that only six RCW clusters are currently adjacent to Alternative 1; however, none of those cavity trees are within 200 feet of the boundary. Within 6 months of construction start (including vegetation removal in RCW habitat areas), Fort Benning would resurvey for RCWs that may have established new clusters overlapping the HOMMTA footprint. Fort Benning would reinitiate consultation, either formal or informal, with USFWS if new RCW clusters are found that may be impacted by the HOMMTA. In any case, this avoidance measure is limited in time and area so that it should not hinder the construction process. Therefore, this mitigation measure is recommended as mandatory for inclusion in the ROD.

This mitigation measure should be incorporated specifically in any contracting documents associated with construction (including vegetation removal in areas with RCW habitat) of the HOMMTA. Contractors, contracting officers and their representatives, and Fort Benning EMD biologists would monitor compliance with this mitigation measure.

#### **3.4.4.2 Gopher Tortoise**

- If State-listed wildlife or plant species are located during the construction or maintenance of the proposed HOMMTA, avoid or relocate these species to the extent feasible.

Identification of State-listed wildlife or plant species may require education and/or experience such as a biologist would have; normally these types of personnel are not required to be on construction contractor staff and on-site for the entire construction period. Nonetheless, information from the contractor, Fort Benning, or other resources may be used to educate construction personnel



regarding certain species that are likely to be encountered during construction, and how to manage them to reduce adverse impacts.

Gopher tortoises, a State-listed and Federal candidate species, may be encountered during construction. Although gopher tortoises would be relocated prior to ground-disturbing activities, some may remain or return during the 2 to 3 year construction timeframe. The HOMMTA construction contract would detail how personnel should handle any gopher tortoises found during construction as part of the environmental protection plans, and Fort Benning biologists would ensure the contractor's plan is adequate and consistent with the terms of the INRMP and the February 14, 2008 *Management Guidelines for the Gopher Tortoise on Army Installations*.

The following mitigation measure would reduce adverse impacts to the gopher tortoise without hindering construction activities substantially, and therefore is recommended to be mandatory.

- If gopher tortoises are located during construction or maintenance of the proposed HOMMTA, avoid them to the extent feasible; if avoidance is not feasible, then relocate them in accordance with the *Management Guidelines for the Gopher Tortoise on Army Installations* and Fort Benning's INRMP.

Mitigation monitoring would occur by the contracting officer or representative and Fort Benning EMD biologists, or as approved in the contractor's environmental protection plan(s).

### **3.5 Cultural Resources**

The HOMMTA FEIS determined that minor adverse impacts (adverse effects under the NHPA) could occur to cultural resources, although avoidance and data recovery would result in "no effect" to historic properties under the NHPA. There may be negligible increases in noise at four cemeteries that would remain in place; no mitigation is proposed for that potential impact.

While several RCMs and EPMS are considered part of the HOMMTA Proposed Action, the FEIS identified two additional mitigation measures.

- Establish a 50-foot buffer from all vehicle, digging, or other disturbance around NRHP-eligible archaeological site footprints (including, as applicable, the Property of Traditional and Religious Cultural Importance [PTRCI]) in the field prior to HOMMTA construction by

installing Seibert Stake reflectors, along with “Sensitive Area” signage, at 45-foot intervals. Existing vegetation would be retained within these buffers as barriers to vehicle traffic, and boulders would be emplaced at 6-foot intervals, where needed, to supplement vegetative barriers.

- Monitor NRHP-eligible archaeological sites and, as applicable, the PTRCI routinely throughout the HOMMTA’s lifecycle.

As part of the HOMMTA Proposed Action and in accordance with the NHPA, many archaeological sites in Alternative 1 would be properly documented and removed to offset most potential adverse impacts. Both of the mitigation measures above would apply to known archaeological sites and the PTRCI (if it is located in Alternative 1) that can be avoided and left in place as determined during the formal design phase. These types of mitigation measures were incorporated into the GHMTA with success, and would be recommended as mandatory if Alternative 1 is selected in the ROD. Potential mitigation for VECs that may constitute part of the PTRCI and could be adversely impacted by the Proposed Action are provided elsewhere in this Plan and the FEIS.

HOMMTA project planners and managers would ensure that the mitigation terms were incorporated into construction specifications, and that construction site plans, ITAM Annual Work Plans, and training packets identify areas off-limits to ground disturbance. The construction contractor’s environmental protection plan would include a cultural resources plan with the mitigation measure terms and further detail as needed. The contractor’s plan would be approved by Fort Benning EMD before construction begins.

Consultation comments from Tribal representatives requested that a specific type of plant, important to their history and culture, be planted in vegetative barriers to reduce soil erosion. If that plant exists in the Action Areas, it probably would be located near surface waters that would be in the vegetative buffers. The Army considered establishing new populations of that plant in those vegetated buffer areas; however, logistical and resource limitations make that mitigation not feasible at this time. Fort Benning welcomes further consultation with the Tribes on this topic that is not limited to the Proposed Action. For example, other areas of Post than the proposed HOMMTA may be better suited for the plant.

## **4.0 Funding**

Implementation of the proposed mitigation measures is dependent on funding availability. For proposed mitigation measures identified in this FEIS, Fort Benning would request funds from the Army Installation Management Command (IMCOM) and the Army's Military Construction (MILCON) program.

## **5.0 Conclusion**

This HOMMTA Mitigation and Monitoring Plan would serve as a working document for mitigation planning and monitoring, and it may be modified to reflect adaptations during the implementation process. If mitigation measures identified as mandatory or required in the HOMMTA ROD cannot be implemented, then Fort Benning would conduct further NEPA review of the situation, and supplemental NEPA documentation may be prepared if appropriate. Annual reports may assist in informing Fort Benning and Army personnel of the status of the mitigation measures. The HOMMTA RCMs and EPMs could also be grouped into any annual report to provide a comprehensive view of all mitigation efforts associated with the HOMMTA. Implementing the RCMs, EPMs, and mandatory mitigation measures for the HOMMTA would ensure the training area is sustainable for training Soldiers well into the future.

**Table J-1: EPMS and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<p><b>Land Use (Recreation)</b></p>	<p>None</p>	<p>None</p>
<p><b>Air Quality</b></p>	<ul style="list-style-type: none"> <li>• Cover truck beds while in transit to limit fugitive dust emissions.</li> <li>• Spray water on any unpaved roads, soil stockpiles, or construction-related bare soil areas to limit fugitive dust emissions.</li> <li>• Use ultra-low sulfur diesel as a fuel source in onsite construction vehicles, where appropriate and feasible, to minimize sulfur dioxide (SO<sub>2</sub>) emissions.</li> <li>• When feasible, electric-powered equipment could be used instead of diesel-powered equipment.</li> <li>• Implement control measures on onsite construction vehicles, such as minimizing operating and idling time, to limit criteria pollutant emissions.</li> <li>• Follow applicable State requirements and plans for any future prescribed burns on the site (see Table 3.3-1 of the FEIS).</li> <li>• Adhere to applicable requirements in Fort Benning’s Title V permit.</li> <li>• Implement applicable fugitive dust controls in Georgia’s Fugitive Dust Rule.</li> </ul>	<ul style="list-style-type: none"> <li>• Use ultra-low sulfur diesel as a fuel source in all onsite maintenance vehicles, where appropriate and possible, to minimize SO<sub>2</sub> emissions.</li> <li>• When feasible, electric-powered equipment could be used instead of diesel-powered equipment.</li> <li>• Implement control measures on onsite maintenance vehicles, such as minimizing operating and idling time, to limit criteria pollutant emissions.</li> </ul>
<p><b>Noise</b></p>	<ul style="list-style-type: none"> <li>• Adhere to applicable noise guidance, including AR 200-1 and the Noise Control Act of 1972.</li> <li>• Ensure construction personnel, and particularly equipment operators, wear adequate personal hearing protection to limit exposure and ensure compliance with Federal health and safety regulations.</li> </ul>	<ul style="list-style-type: none"> <li>• Adhere to applicable noise guidance, including AR 200-1 and the Noise Control Act of 1972.</li> <li>• Ensure construction personnel, and particularly equipment operators, wear adequate personal hearing protection to limit exposure and ensure compliance with Federal health and safety regulations.</li> </ul>

**Table J-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<b>Soils and Topography</b>	<ul style="list-style-type: none"> <li>• Continue to control soils through management plans and programs such as the ITAM program, Integrated Natural Resources Management Plan (INRMP), and Soil Conservation Program (SCP).</li> <li>• Implement NPDES BMPs and comply with Federal and State regulations (e.g., preparation of a project-specific ESPCP) and implement BMPs in accordance with the Manual for Erosion and Sediment Control in Georgia (GSWCC, 2016) to meet or exceed Georgia State minimum requirements.</li> <li>• Restore compacted soils (e.g., via regrading) and revegetate disturbed areas with grasses following construction, to the extent feasible.</li> <li>• Implement an environmentally sensitive conceptual design process (see Section 2.1 of the FEIS).</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with management plans and programs such as NPDES, ESPCP, ITAM program, INRMP, and SCP to minimize soil erosion.</li> <li>• Reduce potential erosion impacts through compliance with Federal and State regulations (e.g., preparation of a project-specific ESPCP), and implementation of BMPs in accordance with the Manual for Erosion and Sediment Control in Georgia (GSWCC, 2016) to meet or exceed Georgia State minimum requirements.</li> </ul>
<b>Water Resources</b>	<ul style="list-style-type: none"> <li>• Complete permitting and mitigation procedures required under the CWA with the USACE.</li> <li>• Adhere to applicable Installation management plans such as the Spill, Prevention, Control, and Countermeasures (SPCC) Plan, Installation Spill Contingency Plan (ISCP), Hazardous Waste Management Plan (HWMP), and ESPCP.</li> <li>• Implement an environmentally sensitive conceptual design process (see Section 2.1 of the FEIS).</li> <li>• Implement Soils and Topography EPMs to minimize potential for water quality degradation through soil erosion and consequent sedimentation.</li> <li>• Implement HTMW EPMs to minimize the potential of an accidental release and consequent contaminated runoff entering nearby surface waters.</li> </ul>	<ul style="list-style-type: none"> <li>• Adhere to applicable Installation management plans such as the SPCC Plan, ISCP, HWMP, and ESPCP.</li> <li>• Implement Soils and Topography EPMs to minimize potential for water quality degradation through soil erosion and consequent sedimentation.</li> <li>• Implement HTMW EPMs to minimize the potential of an accidental release and consequent contaminated runoff entering nearby surface waters.</li> </ul>

**Table J-1: EPMS and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<b>Biological Resources</b>	<ul style="list-style-type: none"> <li>• Complete formal consultation required under Section 7 of the ESA with the USFWS.</li> <li>• Continue to manage biological resources on Fort Benning in accordance with the Fort Benning INRMP, Pest Management Program, and species management plans.</li> <li>• Continue to coordinate with the USFWS and GADNR, as appropriate, regarding management of special status species.</li> <li>• Prior to construction, translocate gopher tortoises from the proposed HOMMTA to other suitable habitat in accordance with the Army Gopher Tortoise Management Guidelines and Fort Benning INRMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Continue to manage biological resources on Fort Benning in accordance with the Fort Benning INRMP, Pest Management Program, and species management plans.</li> <li>• Continue to coordinate with the USFWS and GADNR, as appropriate, regarding management of special status species.</li> <li>• To the extent feasible, maintenance activities would avoid a 50-foot buffer around known gopher tortoise burrows (MCoE Regulation 350-19).</li> </ul>
<b>Cultural Resources</b>	<ul style="list-style-type: none"> <li>• Complete required mitigation requirements in compliance with the NHPA.</li> <li>• Establish buffers of up to 100 feet (depending on the proximity of existing active roads and trails) around all cemeteries, regardless of NRHP status, throughout project lifecycle.</li> <li>• Mark cemeteries on all construction documents and in the field both prior to construction and during operation.</li> <li>• Fort Benning CRM professionals would monitor cemeteries routinely throughout the project lifecycle.</li> <li>• Inadvertent discoveries of cultural resources would be addressed through the inadvertent discovery process specified in the Fort Benning ICRMP.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish buffers of up to 100 feet (i.e., depending on the proximity of existing active roads and trails) around all cemeteries; mark cemeteries during operation; monitor cemeteries routinely throughout the project lifecycle.</li> <li>• Adhere to inadvertent discovery process specified in the Fort Benning ICRMP.</li> </ul>
<b>Socioeconomics</b>	None	None
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Comply with the DoD Traffic Safety Program and AR 385-10.</li> <li>• Coordinate construction activities such that temporary utility/transportation network interruptions do not adversely affect the Installation mission.</li> <li>• Bury electrical infrastructure at sufficient depth and with sufficient protection to avoid future inadvertent damage by maneuvering vehicles. This may include placing a setback buffer along buried utilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with the DoD Traffic Safety Program and AR 385-10.</li> <li>• Coordinate training activities such that temporary utility/transportation network interruptions do not adversely affect the Installation mission.</li> </ul>

**Table J-1: EPMs and RCMs Included in Proposed Action**

VEC	Planning and Construction	Operations and Maintenance
<p><b>Infrastructure (cont.)</b></p>	<ul style="list-style-type: none"> <li>• Clearly mark all electrical and telecommunications infrastructure on design drawings and in the field prior to onsite construction activities with sufficient buffer to ensure avoidance.</li> <li>• Conduct utility work prior to large-scale construction work to avoid inadvertent collisions and unnecessary interruptions to power.</li> <li>• Work with construction contractors to implement a Traffic Control Plan that coordinates access around construction areas to minimize adverse impacts to training, including along roads and trails.</li> <li>• Implement a Traffic Control Plan during construction that identifies necessary road closures and appropriate detours. Detours identified in the Traffic Control Plan would be developed to accommodate the military needs of the Installation, convenience of roadway users, and the needs of emergency vehicles. During road closures, implement traffic controls, such as signage, barricades, and access guards, to direct traffic safely through or around the area.</li> <li>• Implement appropriate traffic control measures during construction to minimize the disruption of traffic flow, which may include posted detours, timing construction to avoid peak traffic volume times, and flaggers.</li> </ul>	<ul style="list-style-type: none"> <li>• Implement a Traffic Control Plan during training that identifies appropriate detours and traffic control measures. Detours identified in the Traffic Control Plan would be developed to accommodate the military needs of the Installation, convenience of roadway users, and the needs of emergency vehicles. Traffic control measures may include posted detours, timing construction to avoid peak traffic volume times, and flaggers.</li> </ul>
<p><b>Hazardous and Toxic Materials and Waste</b></p>	<ul style="list-style-type: none"> <li>• Use, manage, and dispose of hazardous waste in accordance with applicable Federal and State regulations, as well as the Installation’s existing management plans and procedures, such as the SPCC Plan, ISCP, HWMP, and Integrated Solid Waste Management Plan (ISWMP), including as they apply to contractors, to minimize the potential for release.</li> </ul>	<ul style="list-style-type: none"> <li>• Use, manage, and dispose of hazardous waste in accordance with applicable Federal and State regulations, as well as the Installation’s existing management plans and procedures, such as the SPCC Plan, ISCP, HWMP, and ISWMP, including as they apply to contractors, to minimize the potential for release.</li> <li>• Implement 100-foot buffer from surface waters during refueling activities and maintain spill kits in the proximity.</li> </ul>

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## **Appendix K: Draft EIS Public Comments and Responses**

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Comment Number	Commenter	Comment	Response
1	US Environmental Protection Agency	The EPA appreciates Fort Benning’s effort to address our scoping comments and identify appropriate best management practices including the Integrated Training Area Management program to address soil erosion and/or other environmental impacts of HOMMTA. Based on our review of the DEIS, appropriate alternatives were considered and analyzed that are supportive of the MCoE meeting training requirements and accomplishing heavy armor vehicle off-road maneuver training using a minimum of 2,400 additional contiguous acres. The EPA recognizes that the mitigation measures included in Table 5.5-2 are designed to reduce potential adverse effects of the Proposed Action. We recommend that the final environmental impact statement and the record of decision detail the mitigation measures the U.S. Army will implement for the selected alternative.	<b>Comment noted. The Army will identify in the Record of Decision (ROD) which mitigation measures it will implement to further reduce potential adverse impacts, if an Action Alternative is selected. In accordance with the Army's National Environmental Policy Act Regulation at 32 Code of Federal Regulations 651, the Army will develop and implement a Mitigation and Monitoring Plan to ensure selected mitigation measures are successfully implemented.</b>
2	Georgia (GA) Historic Preservation Division (HPD)	Based on the information contained in the reports regarding archaeological sites, HPD concurs that archaeological sites FS-1, FS-11, FS-12, 9ME1154, 9CE109, 9CE1168, 9CE1186, 9CE1193, 9CE1198, 9CE1919, 9CE1218(B), 9CE1263, 9CE1966, 9CE1972, 9CE1975, and 9CE2072 are not eligible for listing in the National Register of Historic Places (NRHP). Additionally, HPD concurs that the cemeteries CEM24 (9ME643), CEM25 (Ginn-Pate Family Cemetery), CEM39 (9CE191), and CEM 40 (Prosperity Church Cemetery) are not eligible for listing in the NRHP, under Criterion D. Furthermore, HPD concurs that archaeological sites FS-2-3, FS-4, FS-5, FS-6, FS-7, FS-8, FS-9, 9CE104, 9CE117, 9CE976, 9CE1174, 9CE1792, 9CE1921, 9CE2524, 9CE1215, 9CE1216, 9CE1218(A)/9CE1220, 9CE1226, 9CE1233, 9CE1251, 9CE1254/9CE1259, 9CE1814, and 9CE1978 and cemetery CEM60 (9ME509) are eligible for listing in the NRHP. However, due to site 9CE1974 not being fully delineated, it is HPD’s opinion that the eligibility of the site is unknown for listing in the NRHP, but that the portion of the site within the proposed alternative/COA lacks data potential and integrity. HPD recommends revising existing or submitting new site forms to the Georgia Archaeological Site Files, as needed.	<b>Comment noted. The Army has revised or prepared new site forms for each archaeological site according to the results of the Phase II investigations. The Army will submit these site forms to the Georgia Archaeological Site Files when complete. These forms will include information regarding site 9CE1974 to clarify status.</b>
3	GA HPD	Regarding historic resources, HPD would like to note that while the EIS indicates that no historic resources are within the proposed project’s area of potential effect (APE), there is no discussion of background research, previous surveys, and/or methods in order for our office to concur. Additionally, without this noted information, it is unclear whether visual impacts have been considered for the APE surrounding the project area(s). Furthermore, HPD is unable to comment on the eligibility of the five (5) cemeteries under Criteria A, B, or C, without additional information.	<b>The Army revised Final Environmental Impact Statement (FEIS) Section 3.8.1 to describe how it determined that no historic resources are within the Proposed Action's direct or indirect Area of Potential Effects.</b>
4	GA Environmental Protection Division (EPD) Watershed Protection Branch	We would request the applicant to please accept our following comments for the HOMMTA. -Proper adherence to (Corps’) 401(b)(1) sequencing procedures for avoidance & minimization of construction footprints in wetlands/streams on-site. Establish necessary drainageway crossings at the narrowest possible points and avoid such crossings at sizeable wetland zones vs. localized flowing streams.	<b>Comment noted. The Army would comply with the Clean Water Act Section 404(b)(1) guidelines as applicable during the Section 404/401 permitting process; these guidelines were added to FEIS Table 3.6-1. Further, the Army revised FEIS Section 3.6.1 to note that it refined the proposed water crossing locations in Alternative 1 (the Preferred Alternative) through a detailed field wetland delineation to avoid and minimize potential Waters of the US (WOUS) impacts while maintaining necessary training capabilities. The revised WOUS impact approximations reflect environmentally sensitive considerations, including establishing crossings at narrow points and avoiding crossings with notable adjacent wetlands/wetland zones.</b>
5	GA EPD Watershed Protection Branch	-Proper use of E&S control measures and BMPs during project construction and subsequent operation. This may include appropriately bottomless culverted, free-span bridged or at-grade hardened/reinforced crossings of streams, in order to minimize ongoing operational erosion/sedimentation disturbance and input to streams where military vehicle crossings would be necessary as part of the fundamental operation concept of this military training area.	<b>Comment noted. As described in FEIS Sections 2.1.1.1 (including Table 2.1-1) and 3.5.2, the Army would comply with Federal and State erosion and sedimentation regulations, and would implement its Installation-specific management plans and programs to maintain soils on the proposed HOMMTA. Proposed water crossings would typically be culverted spans over streams/wetlands.</b>

Comment Number	Commenter	Comment	Response
6	GA EPD Watershed Protection Branch	-Particular attention regarding land use history assessment and possible associated physical (soil) sampling as to address issue of any possible hazardous materials as contaminants on construction and operational footprints of proposed project.	<b>Comment noted. The Army analyzed the potential for soil contamination in FEIS Section 3.11.1. As described in FEIS Section 3.11.2, if existing contamination is discovered during construction, the Army would cease construction in that area until the Army appropriately secures, investigates, and remediates the area.</b>
7	GA EPD Watershed Protection Branch	-Since this project is proposed to disturb one acre or more, it will require coverage under the General NPDES Permit for Storm Water Discharges Associated with Construction Activity. Part 4 of the Permit requires the submittal of the Erosion, Sedimentation and Pollution Control Plan to EPD’s Watershed Protection Branch. A plan review/state waters review will determine if a stream buffer variance is needed for the project. Information and applicable forms for the stream buffer variance and the NPDES construction general permit can be found on our website at <a href="http://epd.georgia.gov/">http://epd.georgia.gov/</a>	<b>Comment noted. The Army would prepare an Erosion, Sedimentation, and Pollution Control Plan as part of the Proposed Action (see FEIS Section 2.1.1.1). That Plan would be submitted to GA EPD prior to ground-disturbing activities covered in the Plan. The Army would also obtain a stream buffer variance if required during the permitting process.</b>
8	GA Department of Natural Resources (DNR) Wildlife Resources Division	Federally listed species have been documented near the proposed project. To minimize potential impacts to federally listed species, we recommend consultation with the United States Fish and Wildlife Service. Please email <a href="mailto:GAES_Assistance@fws.gov">GAES_Assistance@fws.gov</a> for additional information.	<b>Comment noted. Pursuant to Section 7 of the Endangered Species Act, the Army prepared a Biological Assessment analyzing the potential impacts to federally listed species, and the US Fish and Wildlife Service (USFWS) issued its Biological Opinion. These documents are included in FEIS Appendix F.</b>
9	GA DNR Wildlife Resources Division	State protected species have been documented near the proposed project. For information about these species, including survey recommendations, please visit our webpage at <a href="http://georgiawildlife.com/conservation/species-of-concern#rare-locations">http://georgiawildlife.com/conservation/species-of-concern#rare-locations</a> . We recommend that surveys for species of conservation concern be completed within the area of the selected alternative prior to the initiation of activities.	<b>Comment noted. The Army analyzed potential impacts to State-protected species in FEIS Section 3.7 using the best available data. The Army revised this section to cite the Georgia Biodiversity Portal from the referenced webpage.</b>
10	GA DNR Wildlife Resources Division	Gopher tortoises may be present on site. We recommend that burrows be marked before logging or other activities begin. Contractors should be notified of the presence of gopher tortoises. Heavy equipment should be kept at least 10 feet away from burrow entrances, and contractors should be asked to be diligent in watching for tortoises on roads as they enter and exit the site. A tortoise relocation plan may be deemed necessary. Please contact Marylou Moore <a href="mailto:Marylou.Moore@dnr.ga.gov">Marylou.Moore@dnr.ga.gov</a> for recommendations related to relocation of gopher tortoises.	<b>Comment noted. The Army included gopher tortoises (Federal candidate species) in its Final Biological Assessment. The Army would conserve gopher tortoises according to the measures described in Table 2.1-1 and Section 3.7.2 of the FEIS, including translocating tortoises prior to construction and implementing the Installation-specific Gopher Tortoise Management Plan. The Army will continue to coordinate with the USFWS and GA DNR regarding management of threatened and endangered species.</b>
11	GA DNR Wildlife Resources Division	The bald eagle no longer is listed under the Endangered Species Act, but remains under Federal protection under the Bald and Golden Eagle Protection Act. The BGEPA prohibits the take, possession, sale, purchase, or barter of these birds, alive or dead, including any part, nest, or egg, unless allowed by permit. The Act's prohibitions would include harvest of an active nest, even if the birds are not present, or nest disturbance during the nesting period. The Fish and Wildlife Service released federal guidelines in 2007 that were designed to minimize the impact of human activities on eagles. These guidelines define inner and outer buffer zones centered on eagle nest trees and provide recommendations concerning types of activities, such as tree clearing, that can or cannot safely be conducted within these buffer zones during the nesting or non-nesting seasons. ( <a href="https://www.fws.gov/southdakotafielddoffice/NationalBaldEagleManagementGuidelines.pdf">https://www.fws.gov/southdakotafielddoffice/NationalBaldEagleManagementGuidelines.pdf</a> ).	<b>Comment noted. Potential Proposed Action impacts on bald eagles are analyzed in Section 3.7.2 of the FEIS. No bald eagle nests are located within 1.5 miles of the Action Alternatives. Fort Benning manages bald eagles on the Installation according to its Bald Eagle Species Management Component, which complies with the Migratory Bird Treaty Act, Bald and Golden Eagle Protection Act, and the 2007 Federal guidelines.</b>
12	GA DNR Wildlife Resources Division	No harvesting of timber within active clusters of Red Cockaded Woodpeckers should occur from April-July. Use of heavy equipment should be prohibited within 50 feet of cavity trees. Please consider reasonable precautions to avoid damaging cavity trees. For additional guidance on protections for the Red Cockaded Woodpecker, please consult with the United States Fish and Wildlife Service.	<b>Comment noted. The Army would implement the Proposed Action in accordance with its Final Biological Assessment and the USFWS's Biological Opinion, including the impact minimization measures specified therein.</b>
13	GA DNR Wildlife Resources Division	Please be aware that the type of erosion control material used during logging or other construction activities can impact wildlife. We strongly recommend using natural, biodegradable materials such as ‘jute’ or ‘coir’. Mesh strands should be movable, as opposed to fixed. Use of plastic fencing frequently leads to wildlife entrapment and death.	<b>The Army uses biodegradable erosion control materials in its projects when feasible. The Army added use of biodegradable and mobile erosion control materials as a potential mitigation measure to FEIS Section 3.7.3.</b>

Comment Number	Commenter	Comment	Response
14	GA DNR Wildlife Resources Division	If you know of populations of highest priority species that are not in our database, please fill out the appropriate data collection form and send it to our office. Forms can be obtained through our web site ( <a href="http://georgiawildlife.com/conservation/species-of-concern#rare-locations">http://georgiawildlife.com/conservation/species-of-concern#rare-locations</a> ) or by contacting our office.	<b>Comment noted. Fort Benning periodically shares species data with the State; however, there is no new species data from this project to share.</b>
15	Karen Fenoglietto	Very impressive work.	<b>Thank you!</b>

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## **Appendix L: Tribal Consultation Comments**

Comments included in this appendix reflect all Tribal consultation comments received as of September 1, 2020.

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Comment Number	Commenter	Date	Comment	Response
1	Chickasaw Nation – Division of Historic Preservation and Repatriation	12.10.2019	Thank you for the project notification. This project is outside of our area of interest at this time.	<b>Comment noted.</b>
2	Chickasaw Nation – Division of Historic Preservation and Repatriation	12.10.2019	Thank you for the project notification. This project is outside of our area of interest at this time.	<b>Comment noted.</b>
3	Cherokee Nation - Tribal Historic Preservation Office	12.11.2019	Many thanks for the notice and research design, Mr. Hobgood. Chattahoochee County, Georgia is outside Cherokee Nation's Area of Interest. Thus, this Office respectfully defers to federally recognized Tribes that have an interest in this landbase. Thank you for the opportunity to comment upon this proposed undertaking. Please contact me if there are any questions or concerns.	<b>Comment noted.</b>
4	Cherokee Nation - Tribal Historic Preservation Office	6.5.2020	The Cherokee Nation recently received a review request for a proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning, in Chattahoochee and Muscogee Counties, Georgia. These aforementioned counties are outside the Nation's Area of Interest. Thus, this Office respectfully defers to federally recognized Tribes that have an interest in this landbase.	<b>Comment noted.</b>
5	Seminole Tribe of Florida - Tribal Historic Preservation Office	7.9.2020	The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents provided and agree with Fort Benning's eligibility determinations. We would respectfully like to ask to be a part of the planning for mitigation and/or avoidance measures once an alternative has been selected. Please also notify us if any archaeological, historical, or burial resources are inadvertently discovered.	<b>Comment noted. The Army will continue to consult with the Seminole Tribe of Florida (STOF) on the HOMMTA through the Section 106 process. If an Action Alternative is selected in the ROD, the Army plans to continue consultation (using appropriate methods) to exchange information related to: additional information regarding proposed mitigation and monitoring via the Final EIS (FEIS; including a Mitigation and Monitoring Plan) and the ROD; bi-annual update meetings and associated information documents; updates regarding the HOMMTA project and design; notification of any changes in proposed mitigation and monitoring plans; and Tribal notification in the case of any inadvertent discovery. If the STOF has recommendations for other continuing consultation methods, please advise the Army and our Cultural Resources Manager.</b>
6	Tribal Consultation Topics	N/A	Tribal representatives requested the Army provide a reclamation plan for the HOMMTA once it is no longer needed by the Army for training.	<b>Comment noted. Section 3.8.1.3 was revised to include a discussion of the Tribe's comments, including discussion of the Property of Traditional Religious and Cultural Importance (PTRCI) and the requests for a reclamation plan and vegetative buffers with a specific plant of historical and cultural importance.</b>
7	Tribal Consultation Topics	N/A	Tribal representatives requested a plant important to their history and culture be planted as vegetative buffers along streams and wetlands in the HOMMTA to reduce sedimentation in the Action Alternatives.	<b>Comment noted. Section 3.8.1.3 was revised to include a discussion of the Tribe's comments, including discussion of the PTRCI and the requests for a reclamation plan and vegetative buffers with a specific plant of historical and cultural importance.</b>

Comment Number	Commenter	Date	Comment	Response
8	Tribal Consultation Topics	N/A	Tribal representatives identified a PTRCI during a site visit.	<p><b>Comment noted. Section 3.8.1.3 was revised to include a discussion of the Tribe’s comments, including discussion of the PTRCI and the requests for a reclamation plan and vegetative buffers with a specific plant of historical and cultural importance.</b></p>

### Placeholder Page

Fort Benning maintains meeting notes and/or transcripts of bi-annual consultation meetings with Native American Tribes. These records are not publicly releasable.

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<b>Subject</b>	<b>Memorandum for Record Consultation Meetings with Federally Recognized Native American Tribes</b>
<b>Meeting Dates</b>	18-19 April 2018   28-29 November 2018   28-29 May 2019
<b>Memo Prepared by</b>	Michael D. Ecks
<b>Meeting Locations</b>	Fort Bragg; North Carolina; Fort Benning, Georgia; Tulsa, Oklahoma
<b>Project Name</b>	Heavy-Off Road Mounted Maneuver Training Area (HOMMTA) Environmental Impact Statement (EIS), Fort Benning, Georgia

### **2018 Spring Regional Consultation Meeting**

**18-19 April 2018**

**Hosted at Fort Bragg, North Carolina by Fort Bragg Cultural Resource Management Program**

**Fort Benning Staff and Associated Tribes Attendees. Alphabetical by last name.**

Bryant Celestine	THPO, Alabama-Coushatta Tribe of Texas
Michael Ecks	Cultural Resource Site Monitor - contractor, Graham and Associates, Inc.
Theodore Isham	THPO, Seminole Nation of Oklahoma
Robert Larimore	Environmental Management Division Chief, Fort Benning
Corain Lowe-Zepeda	THPO, Muscogee (Creek) Nation
Rachel Perash	NAGPRA Coordinator, United Keetoowah Band of Cherokee Indians (via teleconference)
Emman Spain	NAGPRA Coordinator, Muscogee (Creek) Nation
George Steuber	Deputy Garrison Commander, Fort Benning
Elizabeth Toombs	THPO, Cherokee Nation (via teleconference)

### **2018 Fall Regional Consultation Meeting**

**28-29 November 2018**

**Hosted at Fort Benning, Georgia by Fort Benning Cultural Resource Management Program**

**Fort Benning Staff and Associated Tribes Attendees. Alphabetical by last name.**

LaDonna Brown	THPO, The Chickasaw Nation
Bryant Celestine	THPO, Alabama-Coushatta Tribe of Texas
Michael Ecks	Cultural Resource Site Monitor - contractor, Graham and Associates, Inc.
Ronald Hobgood	Cultural Resource Management Program Manager, Fort Benning
Bernard Howard	Project Coordinator, Seminole Tribe of Florida
Edward Howard	Historic Preservation Specialist- contractor, Graham and Associates, Inc.
Turner Hunt	Archaeological Technician, Muscogee (Creek) Nation
Theodore Isham	THPO, Seminole Nation of Oklahoma
Corain Lowe-Zepeda	THPO, Muscogee (Creek) Nation
Victoria Menchaca	Compliance Review Specialist, Seminole Nation of Florida
Jessica Parks	Cultural Resource Site Monitor - contractor, Graham and Associates, Inc.
Susanne Perry	Architectural Historian- contractor, Graham and Associates, Inc.
Emman Spain	NAGPRA Coordinator, Muscogee (Creek) Nation
George Steuber	Deputy Garrison Commander, Fort Benning (Retired)
Kirk Ticknor	Environmental Management Division Chief, Fort Benning



## **2019 Spring Regional Consultation Meeting**

**28-29 May 2019**

**Hosted at Tulsa, Oklahoma by Muscogee (Creek) Nation Historic and Cultural Preservation Office**

**Fort Benning Staff and Associated Tribes Attendees. Alphabetical by last name.**

Bryant Celestine	THPO, Alabama-Coushatta Tribe of Texas
RaeLynn Butler	Historic and Cultural Preservation Manager, Muscogee (Creek) Nation
Charles Coleman	Retired THPO, Thopthlocco Tribal Town
Michael Ecks	Cultural Resource Site Monitor - contractor, Graham and Associates, Inc.
Anne Edwards	TCNS Coordinator, Muscogee (Creek) Nation
Cecilia Flores	Chairperson, Alabama-Coushatta Tribe of Texas
Melissa Harjo-Moffer	Archives and Records Technician, Muscogee (Creek) Nation
Ronald Hobgood	Cultural Resource Management Program Manager, Fort Benning
Edward Howard	Historic Preservation Specialist- contractor, Graham and Associates, Inc.
Turner Hunt	Archaeological Technician, Muscogee (Creek) Nation
Theodore Isham	THPO, Seminole Nation of Oklahoma
Corain Lowe-Zepeda	THPO, Muscogee (Creek) Nation
Jessica Parks	Cultural Resource Site Monitor - contractor, Graham and Associates, Inc.
Gano Perez	GIS Cultural Specialist, Muscogee (Creek) Nation
Susanne Perry	Architectural Historian- contractor, Graham and Associates, Inc.
David Proctor	Traditional Cultural Advisor, Muscogee (Creek) Nation
Mark Randolph	MCN National Council, Muscogee (Creek) Nation
Emman Spain	NAGPRA Coordinator, Muscogee (Creek) Nation
George Steuber	Deputy Garrison Commander - retired, Fort Benning (Retired)
Robin Soweka Jr.	Cultural Resource Specialist, Muscogee (Creek) Nation
Kirk Ticknor	Environmental Management Division Chief, Fort Benning
LeeAnne Wendt	Tribal Archaeologist, Muscogee (Creek) Nation



REPLY TO  
ATTENTION OF

## EXAMPLE

DEPARTMENT OF THE ARMY  
INSTALLATION MANAGEMENT COMMAND  
SOUTHEAST REGION  
GARRISON COMMAND  
35 RIDGWAY LOOP, ROOM 385  
FORT BENNING, GEORGIA 31905

February 11, 2019

Office of the Garrison Commander

Honorable Colabe III Clem Sylestine,

I am writing to inform you about Fort Benning's proposed Heavy Off-Road Mounted Maneuver Training Area project. The Army published the attached Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) in the Federal Register on February 11, 2019. The EIS analyzes potential impacts associated with the project.

We will hold a regulators' scoping meeting at the Columbus Consolidated Government Annex on February 26, 2019 from 3:00 p.m. to 4:00 p.m. EST. A public scoping meeting will follow from 6:00 p.m. to 8:00 p.m. EST. You or any representatives of your Tribal government are welcome to attend. The information presented at these meetings is also available at [www.benning.army.mil](http://www.benning.army.mil).

If you are unable to attend the scoping meetings in Columbus, Georgia, we invite you to provide written comments about the Proposed Action or environmental concerns at any time during the February 11, 2019 to March 12, 2019 scoping period. Your participation will assist the Army in identifying issues/concerns associated with the Proposed Action, defining the EIS's scope of analysis, and identifying reasonable alternatives and potential mitigation actions.

We presented preliminary information about this action to Tribal Historic Preservation Officers (THPOs) attending the Fort Benning Cultural Resource Management Program's consultation with Federally Recognized Tribes on 28 and 29 November, 2018. Considering the Proposed Action's potential impacts on ancestral Tribal lands is an important part of the EIS process. Government-to-Government consultation with your THPO is an ongoing process, and we will provide updates at our next consultation meeting with Tribes being planned for May 2019 in Tulsa, Oklahoma.

Fort Benning Environmental Management Division points of contact are Mr. John Brown, NEPA Program Manager, (706) 545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil), and Mr. Ron Hobgood, Cultural Resource Management Program Manager, (706) 545-3734 or [ronald.e.hobgood.civ@mail.mil](mailto:ronald.e.hobgood.civ@mail.mil).

Sincerely,

Clinton W. Cox  
Colonel, US Army  
Garrison Commander

Attachment: Notice of Intent

**Busam, Michael**

---

**From:** Hobgood, Ronald E Jr CIV USARMY USAG (USA) <[REDACTED]>  
**Sent:** Tuesday, December 10, 2019 11:37 AM  
**To:** [REDACTED]  
**Subject:** FW: Fort Benning - Research Design for Phase II Archaeological Evaluations of 36 Sites (UNCLASSIFIED)

Here is the response from the Chickasaw Nation without the confidentiality clause. V/r, Ron

---

**From:** Autumn Gorrell [REDACTED]  
**Sent:** Tuesday, December 10, 2019 10:31 AM  
**To:** Hobgood, Ronald E Jr CIV USARMY USAG (USA)  
**Subject:** [Non-DoD Source] RE: Fort Benning - Research Design for Phase II Archaeological Evaluations of 36 Sites (UNCLASSIFIED)

Thank you for the project notification.  
This project is outside of our area of interest at this time.

Sincerely,

Autumn L. Gorrell  
Historic Preservation Tech.  
Chickasaw Nation  
Division of Historic Preservation and Repatriation  
Department of Culture and Humanities  
Office: [REDACTED]  
Email: [REDACTED]

-----Original Message-----

**From:** Hobgood, Ronald E Jr CIV USARMY USAG (US) [REDACTED]  
**Sent:** Tuesday, November 13, 2018 1:48 PM  
**To:** [REDACTED]

**Cc:** [REDACTED]

**Subject:** Fort Benning - Research Design for Phase II Archaeological Evaluations of 36 Sites (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Partnering Federally Recognized Tribe THPOs and Georgia SHPO:

Please find attached the research design for the Phase II Archaeological Evaluations of 36 Sites. These investigations are part of the preparation of an Environmental Impact Statement for the development of a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) on Fort Benning, Georgia. The project will study three courses of action, which are all located within Fort Benning in Chattahoochee and Muscogee Counties, Georgia. The 36 archaeological sites include prehistoric, historic, and multicomponent sites. A portion of the project (Course of Action #1) was briefed without comment during the April 2018 regional meeting at Fort Bragg. Two more courses of action have been added to the study since the April 2018 regional meeting.



The work has begun, and the initial evaluations are focusing on historic sites. Should any human remains be encountered, additional consultation will be conducted under applicable NAGPRA and/or Georgia cemetery law before proceeding. This project affects only the Fort Benning property itself, and there are no impacts to Fort Benning managed properties in Florida or north Georgia. Another research design for evaluating the cemeteries within the study areas (Phase II Archaeological Evaluations of Seven Cemeteries) will be forthcoming.

Please don't hesitate to contact me if there are any concerns.

Very Respectfully

Ron

Ronald Hobgood  
Cultural Resource Manager  
DPW, Environmental Management Division

[REDACTED]  
Fort Benning, Georgia 31905  
[REDACTED]

CLASSIFICATION: UNCLASSIFIED

**Busam, Michael**

---

**From:** Hobgood, Ronald E Jr CIV USARMY USAG (USA) <[REDACTED]>  
**Sent:** Tuesday, December 10, 2019 11:38 AM  
**To:** [REDACTED]  
**Subject:** FW: Fort Benning - Research Design for Phase II Archaeological Evaluations of 7 Cemeteries (UNCLASSIFIED)

Here is the response from the Chickasaw Nation without the confidentiality clause. V/r, Ron

---

**From:** Autumn Gorrell [REDACTED]  
**Sent:** Tuesday, December 10, 2019 10:30 AM  
**To:** Hobgood, Ronald E Jr CIV USARMY USAG (USA)  
**Subject:** [Non-DoD Source] RE: Fort Benning - Research Design for Phase II Archaeological Evaluations of 7 Cemeteries (UNCLASSIFIED)

Thank you for the project notification.  
This project is outside of our area of interest at this time.

Sincerely,

Autumn L. Gorrell  
Historic Preservation Tech.  
Chickasaw Nation  
Division of Historic Preservation and Repatriation  
Department of Culture and Humanities  
Office: [REDACTED]  
Email: [REDACTED]

-----Original Message-----

**From:** Hobgood, Ronald E Jr CIV USARMY USAG (US) [REDACTED]  
**Sent:** Wednesday, November 21, 2018 2:44 PM  
**To:** [REDACTED]

**Cc:** [REDACTED]

**Subject:** Fort Benning - Research Design for Phase II Archaeological Evaluations of 7 Cemeteries (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Partnering Federally Recognized Tribe THPOs and Georgia SHPO:

Please find attached the research design for the Phase II Archaeological Evaluations of Seven Cemeteries. These investigations, along with the evaluation of 36 sites discussed previously, are part of the preparation of an Environmental Impact Statement for the development of a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) on Fort Benning, Georgia. The project will study three courses of action, which are all located within Fort Benning in Chattahoochee and Muscogee Counties, Georgia. A portion of the project (Course of Action #1) was briefed without comment during the April 2018 regional meeting at Fort Bragg. Two more courses of action have been added to the study

since the April 2018 regional meeting.

The work has begun evaluating the 36 archaeological sites. These initial evaluations are focusing on historic sites. Should any human remains be encountered, additional consultation will be conducted under NAGPRA and/or applicable Georgia cemetery law before proceeding. This project affects only the Fort Benning property itself, and there are no impacts to Fort Benning managed properties in Florida or north Georgia.

Please don't hesitate to contact me if there are any concerns.

Very Respectfully,

Ron

Ronald Hobgood  
Cultural Resource Manager  
DPW, Environmental Management Division

[REDACTED]  
Fort Benning, Georgia 31905  
[REDACTED]

CLASSIFICATION: UNCLASSIFIED

**From:** [Elizabeth Toombs](#)  
**To:** [Hobgood, Ronald E Jr CIV USARMY USAG \(US\)](#)  
**Subject:** [Non-DoD Source] RE: Fort Benning - Research Design for Phase II Archaeological Evaluations of 36 Sites (UNCLASSIFIED)  
**Date:** Tuesday, December 11, 2018 2:00:00 PM

---

Many thanks for the notice and research design, Mr. Hobgood. Chattahoochee County, Georgia is outside Cherokee Nation's Area of Interest. Thus, this Office respectfully defers to federally recognized Tribes that have an interest in this landbase.

Thank you for the opportunity to comment upon this proposed undertaking. Please contact me if there are any questions or concerns.

Wado,

Elizabeth Toombs, Tribal Historic Preservation Officer  
Cherokee Nation  
Tribal Historic Preservation Office



-----Original Message-----

**From:** Hobgood, Ronald E Jr CIV USARMY USAG (US) [REDACTED]  
**Sent:** Tuesday, November 13, 2018 1:48 PM  
**To:** [REDACTED]  
**Cc:** [REDACTED]

**Subject:** <EXTERNAL> Fort Benning - Research Design for Phase II Archaeological Evaluations of 36 Sites (UNCLASSIFIED)

\*\*\*\*\*  
NOTICE: THIS EMAIL CONTAINS AN ATTACHMENT SENT FROM AN EXTERNAL SENDER.  
IF YOU DO NOT KNOW THE SENDER OR WERE NOT EXPECTING THIS EMAIL, DO NOT OPEN ANY  
EMAIL ATTACHMENTS AND DELETE THIS MESSAGE.

Thank you: The Cherokee Nation - Information Technology Department  
\*\*\*\*\*

CLASSIFICATION: UNCLASSIFIED

Partnering Federally Recognized Tribe THPOs and Georgia SHPO:

Please find attached the research design for the Phase II Archaeological Evaluations of 36 Sites. These investigations are part of the preparation of an Environmental Impact Statement for the development of a Heavy Off-Road Mounted Maneuver Training Area (HOMMTA) on Fort Benning, Georgia. The project will study three courses of action, which are all located within Fort Benning in Chattahoochee and Muscogee Counties, Georgia. The 36 archaeological sites include prehistoric, historic, and multicomponent sites. A portion of the project (Course of Action #1) was briefed without comment during the April 2018 regional meeting at Fort Bragg. Two more courses of action have been added to the study since the April 2018 regional meeting.

The work has begun, and the initial evaluations are focusing on historic sites. Should any human remains be encountered, additional consultation will be conducted under applicable NAGPRA and/or Georgia cemetery law before proceeding. This project affects only the Fort Benning property itself, and there are no impacts to Fort Benning managed properties in Florida or north Georgia. Another research design for evaluating the cemeteries within the study areas (Phase II Archaeological Evaluations of Seven Cemeteries) will be forthcoming.

Please don't hesitate to contact me if there are any concerns.

Very Respectfully

Ron

Ronald Hobgood  
Cultural Resource Manager  
DPW, Environmental Management Division

[REDACTED]

Fort Benning, Georgia 31905

[REDACTED]

CLASSIFICATION: UNCLASSIFIED



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Herbert Johnson  
Second Chief  
Alabama-Coushatta Tribe of Texas  
571 State Park Road 56  
Livingston, Texas 77351

Dear Second Chief Johnson:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

Due to the COVID-19 pandemic and associated social distancing, Fort Benning is doing the following to maximize your participation in our decision-making process:

a. We have developed a "Virtual Public Meeting Room" on-line at the following link, <https://fortbenning.consultation.ai/> where you can now view relevant information in a similar format as you would at an in-person event. Display materials, topic-specific stations, and informational handouts are available to further explain the process and proposal; materials are downloadable from that website, including the Draft EIS. Comments can also be posted on the website discretely. The website will be active throughout the 45-day public review period of the Draft EIS. Materials are also available online at <https://www.benning.army.mil>.

b. We will be hosting a live, call-in public meeting for two hours, from 6:00 PM to 8:00 PM EST on June 30, 2020. To attend that virtual public meeting, please call 1-877-369-5230 and enter Access Code: 0625977## at that time to register your verbal comments. These meeting data are also on the website. At this virtual public meeting, Army

representatives will be available to provide information on the Draft EIS, including the Proposed Action, Alternatives, and environmental impact analysis. The meeting will be recorded.

c. All interested persons can provide written comments at any time during the 45-day public comment period, which extends from May 29, 2020 to July 13, 2020. Comments must be postmarked no later than July 13, 2020 for consideration in the Final EIS.

The point of contact for this activity is Mr. John Brown, NEPA Program Manager, Environmental Management Division, Directorate of Public Works, at 706-545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Scalia', with a large, stylized flourish at the end.

Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Nelson Harjo  
Chief  
Alabama-Quassarte Tribal Town  
PO Box 187  
Wetumka, OK 74883

Dear Chief Harjo:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

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Sincerely,

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Bill Anoatubby  
Governor  
The Chickasaw Nation  
PO Box 1548  
Ada, Oklahoma 74820-1548

Dear Governor Anoatubby:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

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Sincerely,

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Brian Givins  
Mekko  
Kialegee Tribal Town  
100 Kialegee Dr.  
Wetumka, Oklahoma 74883

Dear Mekko Givins:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

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The point of contact for this activity is Mr. John Brown, NEPA Program Manager, Environmental Management Division, Directorate of Public Works, at 706-545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Scalia', is written over the printed name.

Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Cyrus Ben  
Chief  
Mississippi Band of Choctaw Indians  
PO Box 6257  
Choctaw, Mississippi 39350

Dear Chief Ben:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

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Sincerely,

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
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**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable James R. Floyd  
Principal Chief  
Muscogee (Creek) Nation  
PO Box 580  
Okmulgee, Oklahoma 74447

Dear Principal Chief Floyd:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

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Sincerely,

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Stephanie Bryan  
Tribal Chair  
Poarch Band of Creek Indians  
5811 Jack Springs Rd  
Atmore, Alabama 36502

Dear Tribal Chair Bryan:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

The public is asked to provide input on the Draft EIS. The Army will consider your comments and use them to prepare a Final EIS before making any decision regarding Proposed Action implementation. The Draft EIS analyzes the potential environmental and socioeconomic impacts of the Proposed Action. The Army published the Notice of Availability (NOA) for the Draft EIS in the Federal Register on May 29, 2020. That NOA is enclosed for further information. Also, enclosed for your review are reports documenting the Phase II assessments of archaeological sites and cemeteries located in the study areas.

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b. We will be hosting a live, call-in public meeting for two hours, from 6:00 PM to 8:00 PM EST on June 30, 2020. To attend that virtual public meeting, please call 1-877-369-5230 and enter Access Code: 0625977## at that time to register your verbal comments. These meeting data are also on the website. At this virtual public meeting, Army

representatives will be available to provide information on the Draft EIS, including the Proposed Action, Alternatives, and environmental impact analysis. The meeting will be recorded.

c. All interested persons can provide written comments at any time during the 45-day public comment period, which extends from May 29, 2020 to July 13, 2020. Comments must be postmarked no later than July 13, 2020 for consideration in the Final EIS.

The point of contact for this activity is Mr. John Brown, NEPA Program Manager, Environmental Management Division, Directorate of Public Works, at 706-545-7549 or [john.e.brown12.civ@mail.mil](mailto:john.e.brown12.civ@mail.mil).

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Scalia', written over a horizontal line.

Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Gregory Chilcoat  
Principal Chief  
The Seminole Nation of Oklahoma  
PO Box 1498  
Wewoka, Oklahoma 74884

Dear Principal Chief Chilcoat:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



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**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Marcellus W. Osceola, Jr.  
Chairman  
Seminole Tribe of Florida  
30290 Josie Billie HWY, PMB 1004  
Clewiston, Florida 33440

Dear Chairman Osceola:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

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Sincerely,

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures



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**US ARMY INSTALLATION MANAGEMENT COMMAND**  
**IMCOM DIRECTORATE - TRAINING**  
**1 KARKER STREET, MCGINNIS-WICKAM HALL**  
**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Ryan Morrow  
Town King  
Thlopthlocco Tribal Town  
PO Box 188  
Okemah, Oklahoma 74859

Dear Town King Morrow:

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Matthew Scalia  
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**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Chuck Hoskin, Jr.  
Principal Chief  
Cherokee Nation  
PO Box 948  
Tahlequah, Oklahoma 74465-0948

Dear Principal Chief Hoskin:

The Draft Environmental Impact Statement (EIS) for the proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning (Proposed Action) is now available for your review.

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Matthew Scalia  
Colonel, U.S. Army  
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**IMCOM DIRECTORATE - TRAINING**  
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**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Richard G. Sneed  
Principal Chief  
Eastern Band of the Cherokee Nation  
PO Box 455  
Cherokee, NC 28719

Dear Principal Chief Sneed:

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Colonel, U.S. Army  
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Enclosures



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**FORT BENNING, GEORGIA 31905-5000**

May 29, 2020

Directorate of Public Works

Honorable Joe Bunch  
Chief  
United Keetoowah Band of Cherokee Indians  
PO Box 746  
Tahlequah, Oklahoma 74465

Dear Chief Bunch:

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Matthew Scalia  
Colonel, U.S. Army  
Garrison Commander

Enclosures

**From:** Elizabeth Toombs [REDACTED]  
**Sent:** Friday, June 05, 2020 12:29 PM  
**To:** Brown, John E CIV USARMY IMCOM ATLANTIC (USA)  
**Subject:** [Non-DoD Source] Fort Benning, Proposed Heavy Off-Road Mounted Maneuver Training Area

Mr. Brown:

The Cherokee Nation recently received a review request for a proposed Heavy Off-Road Mounted Maneuver Training Area on Fort Benning, in Chattahoochee and Muscogee Counties, Georgia. These aforementioned counties are outside the Nation's Area of Interest. Thus, this Office respectfully defers to federally recognized Tribes that have an interest in this landbase.

Thank you for the opportunity to comment upon this proposed undertaking. Please contact me if there are any questions or concerns.

Wado,

Elizabeth Toombs, Tribal Historic Preservation Officer  
Cherokee Nation

Tribal Historic Preservation Office  
[REDACTED]



SEMINOLE TRIBE OF FLORIDA  
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC  
PRESERVATION OFFICE

SEMINOLE TRIBE OF FLORIDA  
30290 JOSIE BILLIE HIGHWAY  
PMB 1004  
CLEWISTON, FL 33440

THPO PHONE: (863) 983-6549  
FAX: (863) 902-1117

THPO WEBSITE: WWW.STOFTHPO.COM



TRIBAL OFFICE

MARCELLUS W. OSC  
CHAIRMAN

MITCHELL CYPRIAN  
VICE CHAIRMAN

LAVONNE ROBERTSON  
SECRETARY

PETER A. HARRIS  
TREASURER

July 09, 2020

Ronald Hobgood  
Cultural Resource Manager  
DPW, Environmental Management Division  
Meloy Hall (Bldg# 6) Rm # 310G  
6650 Meloy Drive  
Fort Benning, Georgia 31905  
Phone: 706 545-3734  
Email:ronald.e.hobgood.civ@mail.mil < Caution-mailto:ronald.e.hobgood.civ@mail.mil >

Subject: US Army - Fort Benning Heavy Off-Road Mounted Maneuver Training Area (HOMMTA), Chattahoochee and Muscogee Counties, GA  
THPO #: 0031344

Dear Mr. Hobgood,

Thank you for contacting the Seminole Tribe of Florida – Tribal Historic Preservation Office (STOF-THPO) regarding the Phase II Testing of 31 Archaeological Sites for the US Army - Fort Benning Heavy Off-Road Mounted Maneuver Training Area (HOMMTA), Chattahoochee and Muscogee Counties, GA. The proposed undertaking does fall within the STOF Area of Interest. We have reviewed the documents provided and agree with Fort Benning's eligibility determinations. We would respectfully like to ask to be a part of the planning for mitigation and/or avoidance measures once an alternative has been selected. Please also notify us if any archaeological, historical, or burial resources are inadvertently discovered.

If you have any additional questions, please do not hesitate to contact us.

Sincerely,

Victoria L. Menchaca MA, RPA  
Compliance Review Specialist  
STOF-THPO, Compliance Review Section  
30290 Josie Billie Hwy, PMB 1004

Clewiston, FL 33440

Office: [REDACTED]

Email: [REDACTED]

Web: Caution-www.stofthpo.com < Caution-http://www.stofthpo.com >