Enhanced Training Environmental Assessment

Fort Benning, Georgia

prepared for

U.S. Army Garrison
Fort Benning
Columbus, Georgia

prepared by

The Louis Berger Group, Inc.
1250 23rd Street NW
Washington, DC 20037

June 2015

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ENHANCED TRAINING ENVIRONMENTAL ASSESSMENT AT FORT BENNING, GEORGIA

Prepared by:

U.S. ARMY ENVIRONMENTAL COMMAND

Approved by:

Michail S. Huerter

Colonel, Infantry

Garrison Commander

12 JUN 2015

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ENVIRONMENTAL ASSESSMENT

Lead Agency: U.S. Department of the Army

Title to Proposed Action: Enhanced Training at Fort Benning, Georgia

Affected Jurisdictions: Chattahoochee and Muscogee counties, Georgia, and Russell County, Alabama

Review and Comment: Interested parties are invited to review and comment on the environmental assessment (EA) during the 30-day comment period, 25 June through 24 July 2015. The EA and draft Finding of No Significant Impact can be accessed at the Columbus and Cussetta-Chattahoochee Public Libraries, Sayers Memorial Library, and the Phenix City-Russell County Library and available online at: http://www.benning.army.mil/garrison/DPW/EMD/legal.htm. Written comments must be received by 25 July 2015 to ensure consideration prior to reaching any decisions.

Written comments should be forwarded to:

Fort Benning Environmental Management Division
IMBE-PWE-P
C/O NEPA Program Manager
6650 Meloy Drive
Building 6, Room 309
Fort Benning, GA 31905-5122

Electronic comments should be submitted to the NEPA Program Manager: Mr. John Brown at john.e.brown12.civ@mail.mil.

Document Designation: Environmental Assessment

Abstract: Fort Benning has prepared this environmental assessment to examine the potential environmental effects of enhancing training in accordance with the National Environmental Policy Act of 1969 (NEPA); the regulations of the President's Council on Environmental Quality; United States Department of the Army Regulation 200-1, and Army NEPA Regulation (32 CFR Part 651).

The Proposed Action would not result in potential significant impacts to the quality of the natural or cultural environment at Fort Benning. Alternative 1 would result in negligible to moderate impacts to environmental and socioeconomic resources. The most noticeable impacts would be to vegetation and soils, water resources, and wildlife and special status species from enhancing the off-road heavy maneuver training capability in the Good Hope Maneuver Training Area (GHMTA). No federally listed species have been found to occur in the GHMTA. The conversion from an Armored Brigade Combat Team to an Infantry Brigade Combat Team (IBCT) would generally reduce ongoing, adverse impacts to resources from the reduction in heavy equipment on the Fort Benning training landscape. Locating the Army Reconnaissance Course off-road heavy maneuver training in the GHMTA would result in negligible environmental impacts.

For up to the first 5 years, Alternative 2 would result in impacts similar to those discussed for Alternative 1. After approximately 5 years, the IBCT would be inactivated, reducing the training load at Fort Benning and generally reducing adverse environmental impacts.

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1.0 PURPOSE, NEED, AND SCOPE

1.1 Introduction

Fort Benning has prepared this draft environmental assessment (EA) to examine the potential environmental effects of enhancing training in accordance with the National Environmental Policy Act of 1969 (NEPA); the regulations of the President's Council on Environmental Quality (CEQ); United States (U.S.) Department of the Army (Army) Regulation 200-1, and Army NEPA Regulation (32 Code of Federal Regulations (CFR) Part 651).

The EA is a public document used to determine and evaluate the potential environmental consequences of the Proposed Action, identify possible/potential mitigation measures to lessen or eliminate adverse effects, and examine feasible alternatives to the Proposed Action. The intended audience of the EA is Army decision-makers; interested government agencies; and non-governmental organizations, federally recognized Native American Tribes, and members of the public. The effects analyses in this EA are based on a variety of sources and the best available information at the time of preparation. The information contained in this EA will be reviewed and considered by the Army prior to the final decision on how to proceed with the implementation of the Proposed Action, if at all.

1.1 Study Area

Fort Benning is an Army installation that was founded in 1918 and is located outside Columbus, Georgia. Fort Benning, on a daily basis, supports more than 120,000 Active Duty military, Family members, reserve component Soldiers, retirees, and Army civilian employees. Fort Benning is located in an area commonly referred to as the "Tri-County" area and/or the "Chattahoochee Valley" region, which is composed of Columbus and Fort Benning, Georgia, and Phenix City, Alabama. The Installation is located on approximately 182,000 acres in southwest Georgia in Chattahoochee and Muscogee counties and in Russell County, Alabama. Figure 1-1 displays the general location of Fort Benning.

1.2 Proposed Action Background

Fort Benning is home to the Maneuver Center of Excellence (MCoE). The MCoE provides trained, agile, and adaptive Soldiers and leaders ready to operate across the range of military operations; develops capabilities for the Maneuver Force and individual Soldier, and provides a world class quality of life for Soldiers, Army civilians, and their Families. In Fiscal Year (FY) 2013, the MCoE had a total annual training load of 74,935 or approximately 12,000 Soldiers in training daily. Since 2013, Fort Benning's Continental Replacement Center (CRC) has been permanently relocated to Fort Bliss, Texas; in FY 13, the CRC had a training load of 9,738 Soldiers. The loss of the CRC mission saw the MCoE train 70,857 Soldiers in FY 14 and a projected training load of approximately 67,000 to 69,000 Soldiers from FY 15 to FY 18 (Brosch 2015).

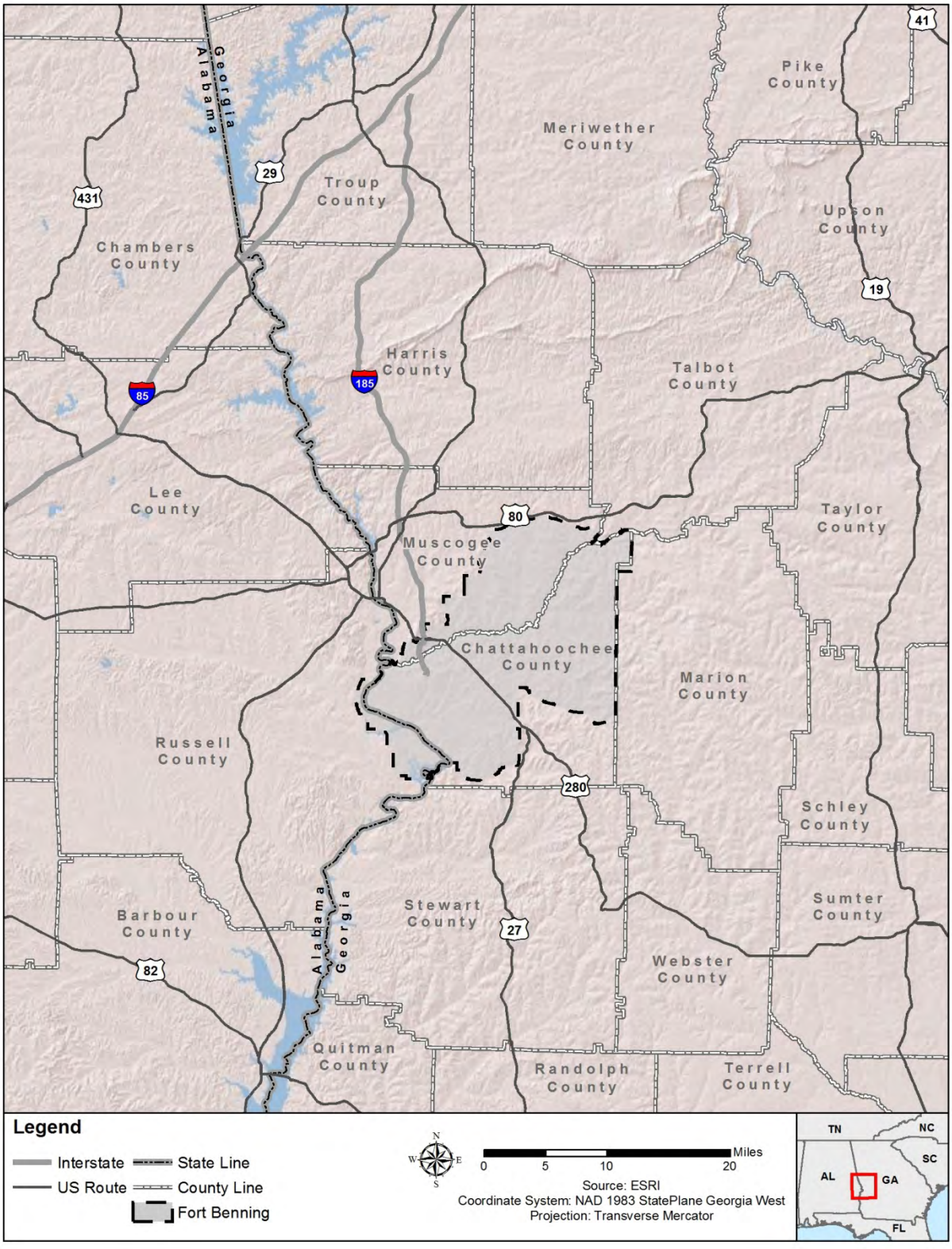

Figure 1-1. Fort Benning Vicinity

Fort Benning plays a pivotal role in supporting the Army's to fight and win our Nation's wars. Fort Benning's training function includes:

1. As home to the MCoE, the Installation must support the institutional training of Infantry and Armor Soldiers and leaders. The training conducted at Fort Benning provides Army leaders with the opportunity to encounter and respond to a wide variety of realistic situations that could occur on the modern battlefields.

2. As the Army's premier Installation for the basic and advanced individual training of all enlistees, Fort Benning must maintain sufficient land and facilities for Soldiers to learn their skills.

3. Fort Benning—As home to the only Officer Candidate School (OCS) in the Army and the Army's Basic Airborne Course—provides functional training in many special skills needed to support the operating force.

4. Additionally, the MCoE has a Capabilities Development and Integration Directorate whose mission is to determine and develop future force capabilities and requirements for Infantry and Armor formations to maintain the battlefield primacy of Soldiers and the formations in which they fight. As the home to numerous deployable units, Fort Benning must provide sufficient land and facilities for the units to train up to the battalion level. Fort Benning must be able to train and develop highly proficient and cohesive units capable of conducting operations across the full spectrum of conflict.

1.3 Purpose and Need for Action

The Proposed Action at Fort Benning has three components: 1) converting the 3rd Armored Brigade Combat Team (ABCT) and other associated units to an Infantry Brigade Combat Team (IBCT); 2) locating the heavy maneuver portions of training of the Army Reconnaissance Course (ARC) in the Good Hope Maneuver Training Area (GHMTA); and 3) enhancing the off-road heavy maneuver training capability in the GHMTA. Enhanced training refers to increasing flexibility for conducting approved program of instruction training. These training initiatives involve large-scale, interrelated changes in the next 5 years or as funding becomes available.

The purpose of the Proposed Action is to accommodate Army Force Structure decision to convert the ABCT to an IBCT, locate ARC off-road heavy maneuver training to reduce red-cockaded woodpecker (RCW) impacts, and enhance already approved off-road heavy maneuver boxes in the GHMTA.

The Proposed Action is needed to improve Soldier training, adjust to the conversion of the ABCT, improve training area scheduling flexibility, support environmental sustainability of training areas, and avoid the expense of procuring off-road heavy maneuver training land in the era of declining budgets. Additional background on the purpose and need is provided in this section.

1.3.1 Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

In 1999, the Senior Leadership of the Army proposed a new vision regarding the future readiness, force structure, personnel, and the transformation of the Army to meet the global challenges, demands, and

threats of the 21st century. This idea envisioned an Army that would be more responsive, agile, and lethal with the ability to deploy faster and sustain itself and survive with greater probability than the current force structure. In 2000, the Army proposed to undertake a synchronized program, as stated in the Army Transformation Campaign Plan, to transform the existing force structure in three phases over a 30-year period. As part of the implementation of this vision the Deputy Chief of Staff of the Army, G3, signed a Record of Decision based on an environmental impact statement (EIS) to proceed with the 30-year phased implementation of Army Transformation, which will result in the transformation of the Army from a "division-based" force to a modular integrated "brigade-based" force. The decision to move from a division-based force to a brigade-based force is based on several changes the Army anticipates in global security. Under modularity, maneuver units are organized around the Brigade Combat Teams (BCTs), an organization designed to be self-sustaining and capable of operating independently in today's complex operating environment. The Army has three types of ground maneuver BCTs: ABCTs, IBCTs, and Stryker Brigade Combat Teams (SBCTs). The 3rd Brigade of the 3rd Infantry Division (3/3 or 3rd Brigade) is now an ABCT with two maneuver battalions.

Currently, the Army is in a period of critical transition as the Nation has concluded major combat operations in Iraq, assesses force requirements in Afghanistan, and develops new strategy and doctrine for future conflicts. During this transition, the Army must identify prudent measures to reduce spending without sacrificing critical operational capabilities necessary to implement national security and defense priorities. To help achieve mandated spending reductions, the Army is decreasing the current total number of Soldiers and Army civilians, while reorganizing the current force structure. In 2012, the Army proposed to realign the force structure by reducing the Active Duty end-strength from the FY 12 end-strength of 562,000 to 490,000 by FY 20, including a reduction of at least 8 BCTs from the current total of 45 BCTs.

The Army studied options to implement the proposed force realignment and reduction, including conducting a programmatic environmental assessment (PEA) in 2013 to consider the environmental and socioeconomic impacts (U.S. Army 2013). The 2013 PEA examined possible force structure changes at 21 installations, including Fort Benning. The 2013 PEA studied Fort Benning for a reduction of up to 7,100 Soldiers and Army civilians. Fort Benning was not studied for realignment of the 3rd ABCT to add the 3rd battalion that is standard in ABCT structure because the 2013 PEA realignment alternative included potential increases in Soldier numbers and Fort Benning does not have the training areas to accommodate substantial increases in heavy maneuver training.

The Army reached initial force realignment decisions based on mission requirements, resource efficiencies, analysis of impacts in the 2013 PEA, and other factors. On 25 June 2013, the Army announced that the 3rd ABCT would remain at Fort Benning. Furthermore, during that time frame, the Army considered converting the 3rd ABCT to an IBCT at Fort Benning. On 15 October 2014, the Army approved the conversion of the 3rd ABCT to an IBCT. Therefore, this EA analyzes how to implement the conversion of the 3rd ABCT to an IBCT at Fort Benning.

In March 2014, the Army announced it would study further end-strength reductions of between 440,000 and 450,000 due to fiscal, policy, and strategic conditions. The Army prepared a Supplemental PEA (SPEA) to study the potential environmental and socioeconomic impacts from the end-strength reductions on the 21 installations analyzed in the 2013 PEA as well as 9 more. Fort Benning was studied for a loss of

up to 10,800 permanent party Soldiers and Army civilians (U.S. Army 2014). As part of a substantial force reduction at Fort Benning, it is possible that the 3rd BCT would be inactivated because the Army's force structure realignment efforts as studied in the PEA and SPEA have focused on reducing BCTs. Due to uncertainties in Congressional budget restrictions and resultant Army Leadership force reduction decisions, however, it is also possible that other units on Fort Benning could be realigned or inactivated. Other units that may also be involved in a force reduction are undeterminable at this time. Army realignment decisions to conform to expected budgetary limits would be implemented from FY 16 to FY 20. This EA addresses the potential impacts from training changes due to inactivation of the 3rd BCT.

1.3.2 Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

The ARC training has three phases of training in various locations across the Installation. Phase I has dismounted reconnaissance training. Phase II has mounted and dismounted collective exercises focused on establishment, reconnaissance, and security of a named area of interest, as well as a mounted and dismounted collective exercise focused around reconnaissance of urban areas. Phase III is the culminating mounted and dismounted zone reconnaissance and security operations. A portion of Phase III has the off-road heavy maneuver training that is the focus of the second Proposed Action. A map of all ARC training areas is provided in Figure 1-2.

In 2009, Fort Benning prepared an EIS and biological assessment (BA) to study the potential environmental impacts of moving the Armor School to Fort Benning, establishing the MCoE and implementing other Base Realignment and Closure (BRAC) and Army Transformation actions (USACE 2009). The U.S. Fish and Wildlife Service (USFWS) issued a jeopardy biological opinion (BO) on the MCoE BA for the RCW in part due to potential for increased training impacts on the RCW and its habitat. The MCoE BO requires the relocation of the ARC off-road heavy maneuver field training (a portion of Phase III) from the current Fort Benning footprint to an area without RCWs within 5 years of that course training start date (i.e., by no later than September 2016).

The Army had proposed to meet this requirement in conjunction with the need for additional heavy maneuver training land by acquiring up to 82,800 acres through the Training Land Expansion Program (TLEP). The Army prepared a Draft EIS for the TLEP and released it for public review in May 2011 and then held public meetings in June 2011 (Fort Benning 2011). In October 2011 and March 2012, Fort Benning announced that the TLEP proposal process was on hold to allow resolution of pending Army force structure and budgetary decisions that may affect the need for additional heavy maneuver lands at Fort Benning.

Changed circumstances since the beginning of the TLEP proposal continue to necessitate a pause in the TLEP process. Because the need for additional training land at Fort Benning is based on the requirements of the Army to prepare its Soldiers to defend the Nation, Army leadership needs to base its decision on whether or not to acquire additional land for training on information about the Department of Defense (DoD) budget and force structure that is not yet available.

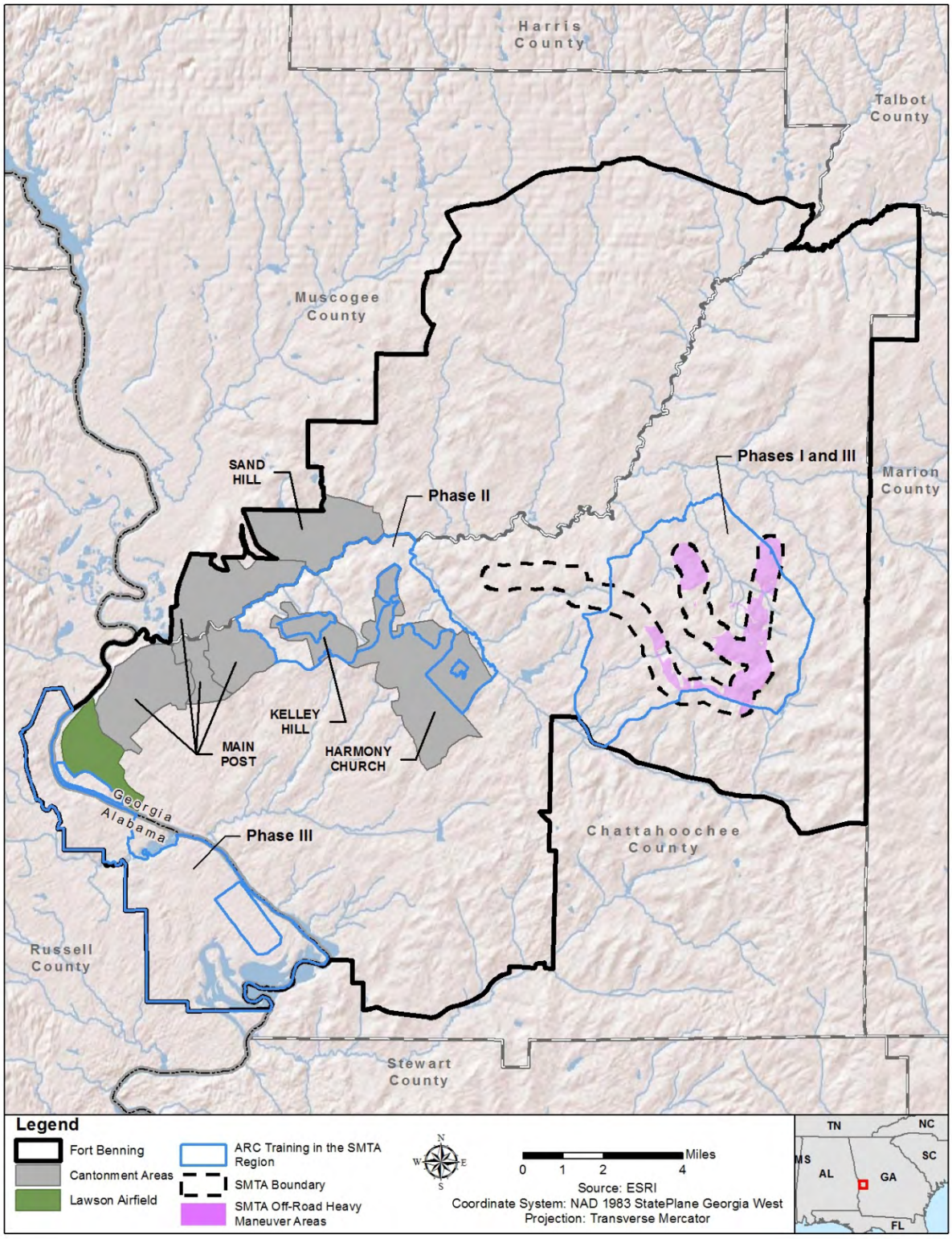

Figure 1-2. ARC Training Locations

The Army force realignment and reduction efforts, as proposed in the Army's 2013 PEA and 2014 SPEA, will provide Army leadership with more information to address the Army's budget and force structure. Fort Benning expects to inform the communities of a resolution on the TLEP after carefully assessing pending decisions with regard to future Army budgets and force structure needs. Because of the length of this current pause in the TLEP process, Fort Benning must find another way to meet the requirement of the MCoE BO to move the heavy maneuver portion of the ARC training out of the Southern Maneuver Training Area (SMTA) by the September 2016 deadline. When consulting with USFWS on the MCoE action, Fort Benning used the best information available to estimate the potential training impacts from the Armor School. Fort Benning's BA of the MCoE actions estimated that the ARC would conduct 10 days of heavy maneuver for 11 classes per year in the SMTA, resulting in approximately 110 heavy training maneuver days per year. ARC would use approximately 13 tracked vehicles, 8 Strykers, and 38 wheeled vehicles per training event. Based on that information, Fort Benning asserted that the ARC could not conduct training elsewhere on the Installation because of the lack of availability of heavy maneuver training lands.

When ARC training began at Fort Benning, the course Commander desired a large contiguous area, rather than the SMTA configuration; however, the training was conducted without using heavy maneuver vehicles. Fort Benning consulted with USFWS the ARC utilizing more training areas, and ARC currently uses the SMTA and areas nearby the SMTA for training that would have otherwise occurred with heavy vehicles. That area totals approximately 14,700 acres. To date, no ARC off-road heavy maneuver training has occurred in the SMTA. ARC training is enhanced by using heavy vehicles in the third phase of training, so the Army proposes to conduct approximately 2 heavy maneuver training days for approximately 8 ARC classes per year, resulting in approximately 16 heavy maneuver training days per year. ARC would use approximately four high mobility multipurpose wheeled vehicles (HMMWVs) and four Bradley M2/M3 tracked armored fighting vehicles per training event. Fort Benning proposes to reintroduce the heavy maneuver portion of ARC to the GHMTA, an area without RCWs and without any current or future habitat allocated in the Habitat Management Units as required by the BO.

Since relocating the Armor School to Fort Benning, actual training information indicates that the training and associated environmental impacts were overstated in some cases in the prior MCoE analysis. The GHMTA on Fort Benning can accommodate the heavy maneuver portion of the ARC training. Keeping the ARC off-road heavy maneuver training on the Installation would provide mission benefits and cost savings. No RCW clusters occur in the GHMTA, and currently, no potentially suitable or future habitat is allocated in the GHMTA. Therefore, Fort Benning considers locating the ARC off-road heavy maneuver training to GHMTA as biologically equivalent to moving that training off the Installation. Fort Benning plans to consult with USFWS on locating the heavy maneuver portion of the ARC training to the GHMTA as meeting the intent of the MCoE BO requirement.

1.3.3 Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

The Armor School uses the GHMTA for the training of Armor Basic Officer Leaders Course students, including providing off-road vehicular maneuver training of tank platoons to Armor Lieutenants attending Armor Basic Officer Leaders Course. Other users include the 194th Armor Brigade, the 316th Cavalry Brigade, and tenant units. Fort Benning desires to establish more maneuver boxes within the existing

footprint of the GHMTA. Although the GHMTA consists of 11,156 acres, only five non-contiguous maneuver boxes consisting of approximately 2,930 acres are currently authorized for off-road heavy maneuver training. Unless in established maneuver boxes, the Armor School and other users are limited to moving wheeled and tracked vehicles only on roads and tank trails. The Proposed Action includes building the required infrastructure and erosion control measures (e.g., tank trails, low water crossings, and turn pads) needed to increase the off-road training area in the GHMTA by approximately 4,700 acres. This increase would allow Fort Benning units enhanced off-road heavy maneuver capability to support training and would allow for multiple units to train simultaneously.

1.4 Decision to be Made

The Army decision to be made is whether the Proposed Action would result in a Finding of No Significant Impact (FNSI) and which action alternative to implement, if any. The Action Alternatives consist of two enhanced training scenarios differing in the realignment or inactivation of the 3rd BCT. Both action alternatives include locating the ARC off-road heavy maneuver training in the GHMTA and enhancing additional off-road maneuver training capability within the GHMTA. Chapter 2 discusses the action alternative that may be implemented, as well as the No Action Alternative. The final decision of which alternatives to be implemented will be documented in either a FNSI if no significant environmental impacts are expected, or a Notice of Intent (NOI) to prepare an EIS if significant impacts are expected to occur as a result of the alternatives. A FNSI will identify the Army's selected alternative and identify mitigation measures that are essential to the reduction of identified impacts. In making the decision, the Army will select among the three alternatives described in Chapter 2.

1.5 Scope of Environmental Analysis

This EA identifies, documents, and evaluates the potential environmental effects of proposed enhanced training at Fort Benning in accordance with NEPA implementing regulations issued by the CEQ (40 CFR Parts 1500–1508) and the Army's *Environmental Analysis of Army Actions* (32 CFR Part 651). The purpose of the EA is to inform decision-makers and the public of the potential environmental consequences of the Proposed Action and alternatives along with associated mitigation. To understand the environmental consequences of the decision to be made, the EA qualitatively and quantitatively evaluates the environmental and socioeconomic impacts of the proposed enhanced training on Fort Benning associated with the alternatives analyzed. Under NEPA, the analysis of environmental and socioeconomic conditions only addresses those areas, or region of influence (ROI), and environmental resources with the potential to be affected by the Proposed Action or alternatives. Locations and resources with no potential to be affected are not analyzed. The ROI, which includes all areas and lands that might be affected, may vary by resource.

The Army's NEPA regulation, *Environmental Analysis of Army Actions* (32 CFR 651) calls for the environmental analysis to be proportionate to the nature and scope of the action; the complexity and level of anticipated effects on important resources; and the capacity of Army decisions to influence those effects in a productive, meaningful way from the standpoint of environmental quality. Project footprints, construction activities and time frames, and training descriptions for each of the proposed alternatives have been identified to the fullest extent possible at this time. In the absence of specific information, the

analysis conservatively estimated the environmental impacts of the Proposed Action and addressed potential broad-level environmental impacts.

The EA and Draft FNSI were distributed to individuals and organizations on the distribution list in Chapter 8.0 for a 30-day review and comment period. Based on the results of the EA analyses, and with consideration given to public and agency comments, the Army will make a determination as to whether implementation of the Proposed Action would have significant effects on the environment. If it is determined that the Proposed Action would have significant, adverse effects, the Army will issue an NOI to prepare an EIS. If it is determined that the Proposed Action would not have significant adverse effects, the Army will select the Proposed Action for implementation.

1.6 Public Involvement

The CEQ and Army NEPA regulations provide opportunities for the public to participate in the public involvement process. These opportunities include a minimum 30-day public review period for the EA and Draft FNSI.

Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. All agencies, organizations, and members of the public with a potential interest in the Proposed Action, including minority, low-income, and/or disadvantaged groups, are urged to participate in the decision-making process.

The EA and Draft FNSI were distributed to individuals and organizations on the distribution list on 25 June 2015. Notice of availability was posted in the Columbus Ledger-Enquirer, the Tri-County Journal, and Fort Benning's Bayonet and Saber on 24 and 25 June 2015. Copies of the EA and Draft FNSI were made available for public review at four libraries in the region and on the Fort Benning website (http://www.benning.army.mil/garrison/DPW/EMD/legal.htm). The public comment period for the EA and Draft FNSI will last 30 days, ending on 24 July 2015.

Written comments should be forwarded to:

Fort Benning Environmental Management Division
IMBE-PWE-PC/O NEPA Program Manager
6650 Meloy Drive
Building 6, Room 309
Fort Benning, GA 31905-5122

Electronic comments should be submitted to the NEPA Program Manager: Mr. John Brown at john.e.brown12.civ@mail.mil

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action

2.1.1 Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Converting the 3rd ABCT to an IBCT would result in substantial differences in equipment and training missions and their impacts on the environment. An IBCT does not use any tracked vehicles, such as M1A2 tanks, M2/M3 Bradley tracked armored fighting vehicles, or Paladins artillery system for off-road heavy maneuvers which are found in an ABCT. A typical IBCT consists of approximately 750 light and medium wheeled vehicles (e.g., HMMWV and cargo trucks) that would be used primarily on roads for Command and Control or logistical purposes. The IBCT would conduct dismounted training versus tracked vehicle training as a main part of their mission. These changes would result in considerable reduction of heavy maneuver training across the Fort Benning landscape. Table 2-1 displays the differences in vehicle requirements for the ABCT and IBCT.

Table 2-1. 3/3 Brigade Conversion from Armored Brigade Combat Team to Infantry Brigade Combat Team Vehicle Requirements

Equipment	ABCT	IBCT	Net Difference
Tracked vehicles	301	0	-301
Strykers	3	0	-3
ASV Knights	0	3	3
Heavy trucks	153	97	-56
Heavy truck trailers	119	91	-28
Light trucks	570	731	161
Light truck trailers	367	465	98

Note: This table does not include the Brigade Engineer Battalion vehicle changes.

Additionally, the 11th Engineer Battalion would execute force structure changes to support the Total Army Analysis restructure of the current 3rd ABCT Brigade Special Troops Battalion to the new Brigade Engineer Battalion (BEB) and its subsequent inclusion in the IBCT. The 11th Engineer Battalion would deactivate its Bridge, Concrete, Vertical, and Horizontal Companies as part of this conversion. The 3/3 Brigade's conversion to an IBCT BEB would mean the loss of 31 tracked engineer vehicles (e.g., armored vehicle launched bridges and dozers), while the IBCT BEB would retain approximately six tracked engineer vehicles to support the 3/3 Brigade. The BEB would continue to use the same training areas.

The conversion would also add a maneuver battalion to the IBCT, resulting in an increase in Soldiers from approximately 3,800 to 3,900. The slight personnel increase from conversion to an IBCT would be offset by reductions of BCT support personnel so that Fort Benning expects virtually no net change in personnel numbers due to this action.

Existing facilities would support the conversion, so no new construction is expected. An increase in small arms (.50 caliber or less) range usage and a decrease in large arms ranges (larger than .50 caliber) are expected as well.

2.1.2 Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Fort Benning proposes to move the ARC off-road heavy maneuver training out of the previously approved location in the SMTA, where numerous RCW clusters exist, to within the existing GHMTA footprint that has no known RCW clusters and, currently, no potentially suitable or future habitat is allocated. ARC off-road heavy maneuver training has never occurred in the SMTA; therefore, the impacts projected under the MCoE EIS were never realized. Currently, the ARC cannot use the SMTA for off-road heavy maneuver training without reinitiating consultation with USFWS. Informal consultation with USFWS in 2012 expanded the ARC training area in and around the SMTA, but removed the authorization for off-road heavy maneuver training in this location. The current maneuver area in the GHMTA can accommodate the ARC off-road heavy maneuver training. Locating the ARC off-road heavy maneuver training from the SMTA and into the GHMTA is expected to result in avoiding off-road heavy maneuver training impacts on the RCWs in that area, which the MCoE BO indicated was the goal for RCWs in and near the SMTA. Fort Benning has not identified any other suitable areas on the Installation for the off-road heavy maneuver portion of the ARC training that does not contain RCWs or foraging partitions. Fort Benning will consult with USFWS to ensure that this proposal meets the intent of the MCoE BO provisions regarding the ARC training. Figure 2-1 displays both the ARC off-road heavy maneuver areas within the SMTA region and the boundary of the GHMTA within Fort Benning.

2.1.3 Enhance Off-Road Maneuver Training Capability in the Good Hope Maneuver Training Area

Fort Benning proposes to enhance off-road heavy maneuver training capability within the existing GHMTA footprint to provide approximately 5,000 acres off-road maneuver area. This action includes designing and building the infrastructure and erosion control measures needed to sustain the training area, including the construction and upgrade of tank trails, low water crossings and turn pads within the GHMTA. This additional acreage would increase the total contiguous off-road areas available to heavy maneuver training within the GHMTA. Fort Benning staff identified the configuration and acreage of the additional maneuver boxes to maximize training capabilities while avoiding or minimizing environmental impacts.

Figure 2-2 depicts an additional 4,667 acres that would be used for planning purposes. This boundary and acreage may be adjusted to further minimize environmental impacts and maximize training benefits during implementation. If the environmental impacts of any adjusted area are different than studied in this EA, Fort Benning will conduct any additional NEPA analysis that may be required at that time.

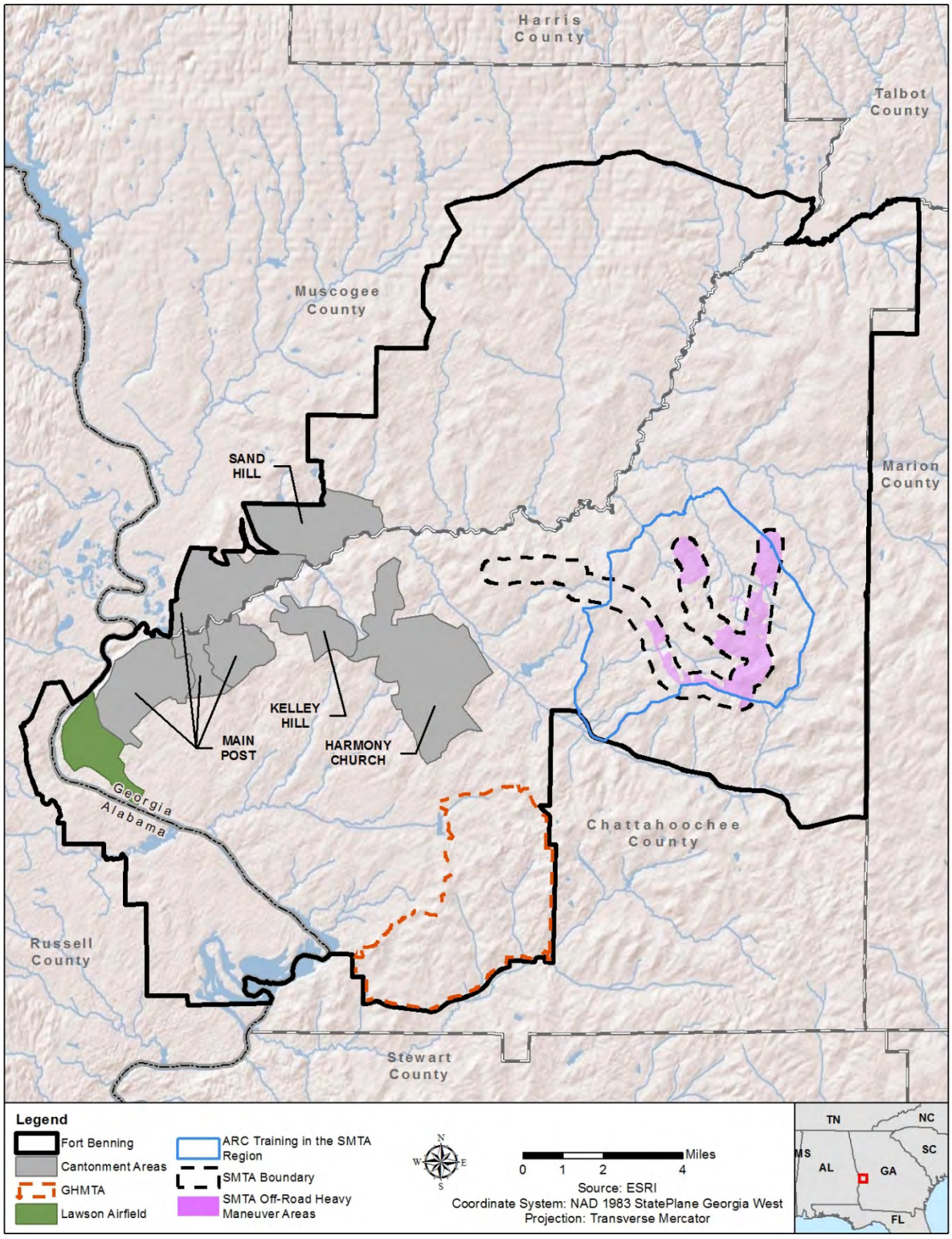

Figure 2-1. Army Reconnaissance Course in the SMTA Region and Good Hope Maneuver Training Area at Fort Benning

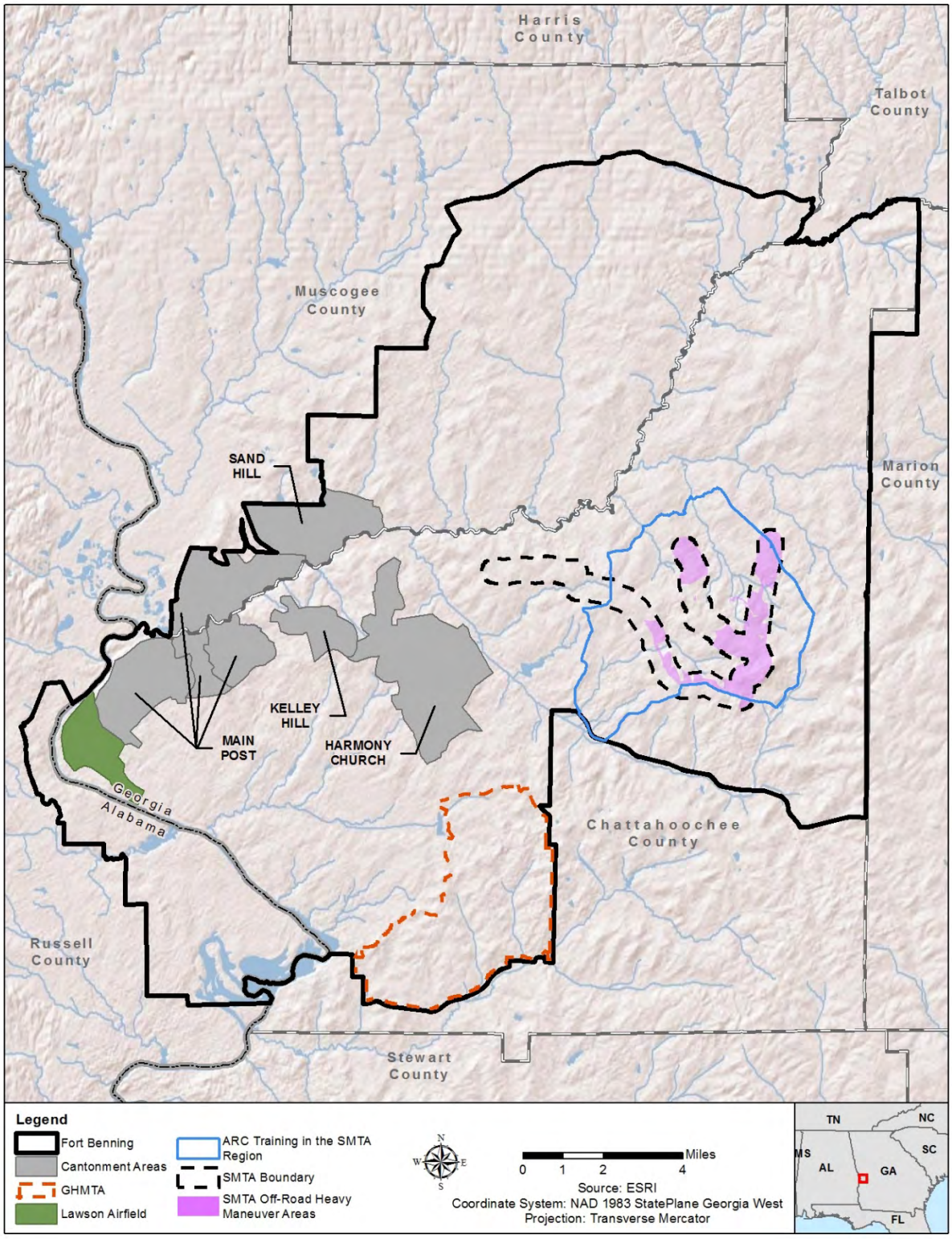

Figure 2-2. Proposed Enhanced Off-Road Maneuver Boxes within the Good Hope Maneuver Training Area

The GHMTA is most suitable for off-road heavy maneuver because it contains no threatened or endangered species and has been partially prepared with erosion control measures to minimize maneuver damage. Tenant units on Fort Benning use areas other than the GHMTA to support heavy vehicle movement (as opposed to maneuver). These areas are in the northern half of the Installation and contain habitat, endangered species, wetlands, and topography (slope) that practically restrict movement to roads and trails. Movement is further limited by frequently active ranges and associated Surface Danger Zones (SDZ) as well as dudded impact areas. Therefore, despite a potential inactivation of the BCT on Fort Benning, the GHMTA remains critical to meeting requirements of the Armor School.

2.2 Alternatives Screening Criteria

The following criteria (in no particular order of importance) have been used to determine whether or not an alternative would be considered reasonable and carried forth for further consideration within this EA:

- Implement Army Force Structure decisions at Fort Benning while maintaining or improving training and mission capabilities.
- Comply with the intent of the MCoE BO requirement to relocate the off-road heavy maneuver portion of ARC training from the SMTA to an area without RCWs and achieve Fort Benning's need to maintain and enhance ARC training capabilities.
- Increase contiguous off-road heavy maneuver training capabilities on the Installation.
- Implement the components of the Proposed Action to site the training and projects using available information to minimize environmental impacts to the extent feasible. This EA may identify additional mitigation that could be implemented to further reduce environmental impacts of the Proposed Action.

2.3 Alternatives

This section describes the three alternatives carried forward for analysis in this EA. These alternatives include the No Action Alternative and two action alternatives.

2.3.1 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would remain as is and no additional maneuver battalion would be added. The ARC Phase III training would continue without use of heavy tracked vehicles in the SMTA. Fort Benning would consult with USFWS to determine other possible ways to comply with or revise the MCoE BO requirement to move the ARC off-road heavy maneuver training off the Installation no later than September 2016. Under this alternative, the GHMTA would not be enhanced to expand off-road heavy maneuver training capabilities. The No Action Alternative describes the status quo, but it does not meet the needs and purpose of the Proposed Action. CEQ and Army NEPA regulations require a No Action Alternative for comparison of environmental impacts with the action alternatives.

2.3.2 Alternative 1—Preferred Alternative

Under Alternative 1, the 3rd ABCT and other associated units would be converted to an IBCT. The ARC off-road heavy maneuver component would be located in the GHMTA, and the GHMTA would be enhanced to expand off-road heavy maneuver training capabilities.

2.3.3 Alternative 2

Under Alternative 2, the 3rd ABCT would be converted to an IBCT for the short term, and within 5 years, the IBCT would be inactivated, resulting in associated reductions in training. It is predicted that any major force reductions at Fort Benning would include inactivation of the BCT; other Fort Benning units that may undergo force reductions cannot be determined at this time and therefore cannot be included in this EA. If additional units are inactivated or relocated off Fort Benning in the future, appropriate NEPA analysis will be conducted at that time. This EA focuses on environmental impacts due to the changes in training from the loss of the BCT because the BCT is the only large unit that is considered and whose loss is appropriate to look at in a programmatic level.

The ARC off-road heavy maneuver training component would be located in the GHMTA, and the GHMTA would be enhanced to expand off-road heavy maneuver training capability.

2.4 Alternatives Considered but Eliminated from Further Consideration

The following alternatives were considered during alternatives development but were eliminated from further consideration for reasons described in each section.

2.4.1 Use of Virtual, Constructive, and Gaming to Replace Live Army Reconnaissance Heavy Maneuver Training

While the increased use of virtual and constructive training can instill valuable lessons and teach tactics, techniques, and procedures, it cannot replace live training in a field environment. There are no systems within the Army's current inventory of virtual, constructive, or gaming systems that can replicate or replace the field training tasks in the ARC Program of Instruction. Live training remains critical to overall conduct of the ARC Program of Instruction and is the cornerstone of the Army's training doctrine.

2.4.2 Increase of Heavy Maneuver Off-Road Areas Elsewhere on the Installation

Other training areas across the Installation have many environmental and safety factors that limit the ability to support heavy off-road maneuvers. In accordance with the 2007 *Management Guidelines for Red-cockaded Woodpecker on Army Installations*, a number of training activities are limited or prohibited within 50 and/or 200 feet (dependent upon the type of activity) of marked RCW cavity trees. Due to the high density of RCW cavity trees and habitat across the majority of the Installation, tracked vehicle training is limited to movement versus maneuver and is primarily conducted on established roads and trails in training areas outside the GHMTA. Other environmental factors and slope safety requirements also limit off-road training availability. In addition, off-road heavy maneuver is restricted by the location of ranges that, when active, create SDZ and as well as dudded impact areas for large caliber, direct and indirect weapon systems. Although Fort Benning personnel considered areas other than the GHMTA for establishment of additional off-road heavy maneuver areas, use of other areas for that purpose would either interfere with Army missions or involve extensive environmental impacts and, therefore, did not meet the screening criteria.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This chapter describes the affected environment of Fort Benning and the surrounding area along with the potential environmental impacts of the Proposed Action and alternatives on the affected environment. The affected environment forms a baseline for analysis of the potential environmental effects from the alternatives described in Chapter 2. The ROI varies among resources and defines the geographic extent of potential effects from the alternatives on the important elements of that resource. Each section in this chapter delineates its ROI and identifies the topics and resources addressed by that section. Immediately following the affected environment discussion for each resource is the presentation of potential environmental consequences for each alternative. This chapter describes the potential direct and indirect effects associated with each alternative as well as mitigation measures. Cumulative effects are addressed in Chapter 4.

The CEQ defines direct effects as those that are caused by the Proposed Action and occur at the same time and place; indirect effects are caused by the Proposed Action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR Part 1508.8). Impacts are characterized in this EA as:

- **Beneficial**—A positive net impact.
- N**egligible**—The term used to indicate an environmental impact that could occur but would be less than minor and might not be perceptible.
- **Minor**—The term used to indicate an environmental impact that clearly would not be significant.
- **Moderate—**The term used to indicate an environmental impact that is not significant but is readily apparent. Examples include cases where the predicted consequences of implementing an action suggest the need for additional care in following standard procedures, or applying precautionary measures to minimize adverse impacts.
- **Significant—**An adverse environmental impact, which given the context and intensity, violates or exceeds regulatory or policy standards or otherwise exceeds the identified threshold. The significant impact, however, may be mitigated to less than significant.
- **Direct—**caused by the action, occurring at the same time and place.
- **Indirect—**caused by the action and foreseeable, but occurring at a later time or different place.
- **Cumulative**—The impact on the environment that 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Significance thresholds are also described for each resource at the beginning of each environmental consequences discussion. CEQ guidelines indicate that the significance of an impact is determined by the

intensity and the context of the impact. Intensity refers to the severity or extent of an impact, and context relates to the environmental circumstances at the location of the impact. Significance thresholds were developed in consideration of CEQ's guidance for determining significance (40 CFR Part 1508.27).

Impacts also are characterized as short term or long term. Short-term effects typically are those that would be temporary and associated with the construction phase but would no longer be perceptible once construction is completed or shortly thereafter. Long-term effects are those that would be permanent or would persist for the operational life of the project.

3.1.1 Resource Areas Carried Forward for Analysis

The U.S. Army Environmental Command (USAEC) *NEPA Analysis Guidance Manua*l (USAEC 2007) provides information on identifying valued environmental components (VECs), which are those resources that are considered to be important by society and potentially at risk from human activities or natural hazards. After consideration of the anticipated impacts associated with the proposed alternatives and information gathered during the scoping process, the following VECs were selected to be carried forward for detailed analysis in this EA:

- Air Quality
- Airspace
- Wildlife and Special Status Species
- Cultural Resources
- Hazardous Materials/Hazardous Waste
- Land Use
- Noise
- Vegetation and Soils
- Environmental Justice and Protection of Children
- Traffic and Transportation
- Water Resources

3.1.2 Resource Areas Not Carried Forward for Analysis

The CEQ encourages federal agencies "to concentrate on relevant environmental analysis in their EAs and EISs, not to produce an encyclopedia of all applicable information. Environmental analysis should focus on significant issues, discussing insignificant issues only briefly. Impacts should be discussed in proportion to their significance, and if the impacts are not deemed significant there should be only enough discussion to show why more study is not warranted" (CEQ 2012).

Accordingly, this section briefly describes resource areas that are not carried forward for further study. Implementation of the Proposed Action or action alternatives would involve no or negligible impacts to the resource area, involve no important issues of concern for the resources area, or adequate NEPA analysis of the resource area has been completed and still applies. The action alternatives involve training

changes, so the following resources areas, which are typically considered for study in Army NEPA documents, are modified to provide a more concise and focused analysis.

- **Geology**—Neither of the action alternatives has the potential to affect geology. The enhanced training proposal would be conducted within current Fort Benning training areas without substantial earth moving and in accordance with all applicable laws and regulations. No changes to geological resources or their management is proposed or envisioned. Therefore, geological resources are not studied further in this EA.

- **Utilities and Energy**—The Proposed Action and alternatives are limited to the training areas and do not involve changes to utilities. Utilities on Fort Benning have been privatized, and all are capable of supporting the current the Proposed Action. The PEA and SPEA addressed Fort Benning utilities as part of the Energy Demand and Generation resource area and determined that force reduction would result in beneficial impacts primarily due to less energy use. Those analyses still apply and further analysis would not be beneficial. Therefore, utilities and energy are not analyzed further in this EA.

- **Socioeconomics**—This resource area consists of several subcategories that were studied in the PEA and SPEA, including Population and Demographics, Employment and Income, Housing, Schools, Public Health and Safety, and Family Support Services. The PEA and SPEA included detailed analysis of the potential economic impacts of a force reduction at Fort Benning; further study of the potential economic impacts in this EA would be redundant. Similarly, potential impacts from force reduction at Fort Benning were presented in the PEA and SPEA for the other subcomponents of Socioeconomics listed above; therefore, those subcomponents are not carried forward for further study. The Recreation subcomponent could be affected by the action alternatives of this EA, but only to the extent that changes to training areas may affect availability of those areas for public recreation such as hunting, fishing, and bird-watching. Recreation is carried forward for further analysis in the Wildlife and Sensitive Species resource area. Analyses involving Environmental Justice and Protection of Children are required, so although those were studied in the PEA and SPEA, those topics are carried forward for further study.

- **Facilities and Infrastructure**—This resource area was also studied for Fort Benning in the PEA and SPEA. The action alternatives of this EA are not anticipated to affect any facilities or infrastructure other than those described in the Proposed Action for the GHMTA trails and roads for off-road maneuver training capability enhancements. The related potential impacts are included in this EA's other resource areas, including Vegetation and Soil and Water Resources.

Demolition or major renovation of facilities is not expected as a result of the inactivation of the BCT at Fort Benning under this EA's action alternatives. The Infrastructure Reduction Program systematically identified facilities that are obsolete or are underutilized, such as temporary World War II wood buildings, and demolition is implemented as funding is available. Fort Benning also is removing all relocatable buildings in accordance with Army guidance. By the end of FY 15, Fort Benning plans to remove more than 1.44 million square feet of existing facilities. The BCT primarily uses facilities at Kelley Hill that were renovated with the last 10 years and are not slated for demolition. Consistent with the SPEA, potential demolition of existing buildings as a result of the inactivation of the BCT is not reasonably foreseeable at this time; therefore, facility demolition are not carried forward for study in this EA.

3.2 Air Quality

3.2.1 Affected Environment

The U.S. Environmental Protection Agency (USEPA) defines ambient air in its *National Primary and Secondary Ambient Air Quality Standards* (40 CFR Part 50.1[e]) as: "that portion of the atmosphere, external to buildings, to which the general public has access." In compliance with the 1970 Clean Air Act (CAA) and the 1977 and 1990 CAA Amendments, USEPA has promulgated National Ambient Air Quality Standards (NAAQS). The NAAQS were enacted for the protection of the public health and welfare, allowing for an adequate margin of safety. To date, USEPA has issued the NAAQS for the following criteria pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter (particles with a diameter less than or equal to a nominal 10 micrometers [PM_{10}] and particles with a diameter less than or equal to nominal 2.5 micrometers [$PM_{2.5}$]), ozone (O_3), nitrogen dioxide (NO_2), and lead (Pb).

The Installation's cantonment areas, training areas, and maneuver areas are included in the ROI. The air emission's ROI at Fort Benning is the multi-county airshed to include Muscogee, Chattahoochee, Russell, Lee, Harris, Talbot, and Marion counties. USEPA has designated these counties as in attainment for all required standards for criteria pollutants (except Pb in a limited area off the Installation in Muscogee County around a battery plant [USEPA 2014a]).

The region is considered to be in attainment for O_3, based on the 2008 primary and secondary standards. Motor vehicles (mobile sources) are a primary contributor to ground-level O_3 levels in Georgia.

Fort Benning also generates emissions from prescribed fire activities as part of its ongoing ecosystem management program. Prescribed burning is the largest single source of criteria pollutant emissions on the Installation (U.S. Army 2013); however, it is a critical management tool for fire-dependent natural communities, RCW habitat, and training area management. Prescribed burning events of approximately 30,000 acres per year would continue based on a 3-year rotational schedule across the Installation (U.S. Army 2013).

The Georgia and Alabama Forestry Commissions administer each state's Smoke Management Plan, which details the basic frameworks of procedures and requirements for managing smoke from prescribed fires. The purpose of each Smoke Management Plan is to minimize the public health and environmental impacts of smoke intrusion into populated areas from fires, avoid significant deterioration of air quality and potential CAA violations, and avoid visibility impacts in Class I prevention of significant deterioration (PSD) areas (U.S. Army 2013). The closest PSD Class I areas are the Sipsey Wilderness Area, Alabama, as well as Cohotta, Wolf Island, and Okefenokee Wilderness Areas, Georgia. All of these Class I areas are located more than 200 miles away, and it would be unlikely that they would be affected by emissions generated at Fort Benning; therefore, PSD is not further considered in this air quality analysis.

3.2.1.1 Air Quality General Conformity and Prevention of Significant Deterioration

Federal regulations designate Air Quality Control Regions in violation of the NAAQS as nonattainment areas. According to the severity of the pollution problem, nonattainment areas can be categorized as marginal, moderate, serious, severe, or extreme. USEPA classifies the entire ROI as in attainment for all criteria pollutants.

To regulate the emission levels resulting from a project, federal actions located in nonattainment or maintenance areas are required to demonstrate compliance with the general conformity guidelines established in *Determining Conformity of Federal Actions to State or Federal Implementation Plans* (the Rule) (40 CFR Part 93). Because the ROI is in attainment, the Rule does not apply to this Proposed Action and therefore is not studied further in this EA. A PSD determination is required for a new major source or major modifications of facilities in attainment areas. The Proposed Action does not qualify as a major modification; therefore, a PSD determination is not required for criteria pollutants.

3.2.1.2 Fugitive Dust

Georgia also requires compliance with Georgia's Fugitive Dust Rule, which stipulates that reasonable precautions are implemented to prevent fugitive dust from becoming airborne and that fugitive dust opacity remain below 20 percent. In its letter dated 21 April 2003, the Georgia Department of Natural Resources confirmed that burning, firing, impact of ordnance and resulting explosions as well as the use of vehicles and equipment in military training and exercises on ranges and unpaved roads and trails are not subject to the Fugitive Dust Rule (Reheis 2003).

3.2.1.3 Regional Air Quality Index Summary

USEPA calculates the Air Quality Index (AQI) for five major air pollutants regulated by the CAA: ground-level O_3, particulate matter ($PM_{2.5}$ and PM_{10}), CO, SO_2, and NO_2. USEPA collects data daily to determine air quality for the region and releases it in the form of the AQI. The AQI ranges from zero to 500 with zero being no air pollution and 500 representing severely unhealthy air pollution levels. An AQI value between 101 and 150 indicates that air quality is unhealthy for sensitive groups who may be subject to negative health effects. Sensitive groups may include those with lung or heart disease who will be more negatively affected at a lower threshold of ground-level O_3 and by particulate matter than other members of the public. An AQI value between 151 and 200 is considered to be unhealthy and may result in negative health effects for the general public with more severe effects possible for those in sensitive groups. AQI values above 200 are considered very unhealthy. An AQI greater than 300 represents hazardous air quality (Clean Air Partners Undated).

Table 3-1 shows the recent AQI data for the Columbus, Georgia-Alabama, airshed.

Table 3-1. Air Quality Index Data for Columbus, Georgia-Alabama, Airshed

Year	Air Quality Index Ranges		
	101 to 150—Unhealthy for Sensitive Groups (no. of days)	151 to 200—Unhealthy (no. of days)	201 to 300—Very Unhealthy (no. of days)
2010	2	1	1
2011	4	0	0
2012	1	0	0
2013	1	0	0
2014	1	0	0

Source: USEPA (2014b)

3.2.1.4 Air Permit Requirements

Title V Permit

Fort Benning operates under an Installation-wide Title V Permit for various stationary sources throughout the Installation (Permit No.: 9711-215-0021-V-03-0; 12 March 2014). Fort Benning currently has 11 boilers that are greater than 10 million British thermal units per hour each, and hundreds of smaller boilers or heaters. Most units fire natural gas and liquefied petroleum gas (Georgia Department of Natural Resources 2014). Because construction or demolition of buildings would not occur under the Proposed Action, no generators would be added, and there would be no changes to the Title V permit, it will not be studied further in this EA.

3.2.1.5 Greenhouse Gases

There is broad scientific consensus that humans are changing the chemical composition of earth's atmosphere. Activities, such as fossil fuel combustion, deforestation, and other changes in land use, are resulting in the accumulation of trace greenhouse gases (GHGs), such as CO_2, in the atmosphere. An increase in GHG emissions is said to result in an increase in the earth's average surface temperature, which is commonly referred to as global warming. Global warming is expected, in turn, to affect weather patterns, the average sea level, ocean acidification, chemical reaction rates, and precipitation rates, all of which is commonly referred to as climate change. The Intergovernmental Panel on Climate Change's best estimates are that the average global temperature rises between 2000 and 2100 could range from 0.6 degrees Celsius (1.08 degrees Fahrenheit) (with no increase in GHG emissions above year 2000 levels) to 4.0 degrees Celsius (6.66 degrees Fahrenheit) (with substantial increase in GHG emissions) (Intergovernmental Panel on Climate Change 2007). Even small increases in global temperatures could have considerable detrimental impacts on natural and human environments.

GHGs include water vapor, CO_2, methane, nitrous oxide, O_3, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential, which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface. A gas's global warming potential provides a relative basis for calculating its carbon dioxide equivalent (CO_2e), which is a metric measure used to compare the emissions from various GHGs based on their global warming potential. CO_2 has a global warming potential of 1 and is therefore the standard to which all other GHGs are measured.

Water vapor is a naturally occurring GHG and accounts for the largest percentage of the greenhouse effect. Next to water vapor, CO_2 is the second-most abundant GHG. Uncontrolled CO_2 emissions from power plants, heating sources, and mobile sources are a function of the power rating of each source, the feedstock (fuel) consumed, and the source's net efficiency at converting the energy in the feedstock into other useful forms of energy (e.g., electricity, heat, and kinetic). Because CO_2 and the other GHGs are relatively stable in the atmosphere and essentially uniformly mixed throughout the troposphere and stratosphere, the climatic impact of these emissions does not depend on the source location on the earth (i.e., regional climatic impacts/changes will be a function of global emissions).

Regulatory Climate

Currently, federal agencies address emissions of GHGs by reporting and meeting reductions mandated in laws, executive orders, and policies. The most recent of these are Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, of 5 October 2009 and Executive Order 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, of 26 January 2007. These executive orders were revoked on 25 March 2015 with the publication of Executive Order 13693, *Planning for Federal Sustainability in the Next Decade*, which retained the goal to maintain federal leadership in sustainability and GHG emissions.

The Energy Policy Act of 2005, Energy Independence and Security Act of 2007, and Executive Order 13693 require an installation to adhere to specific energy improvements that address waste reduction and improvements in efficiency. Specifically, the DoD Strategic Sustainability Performance Plan contains strategies to reduce energy waste and improve efficiency (DoD 2010).

On 13 May 2010, USEPA issued the Tailoring Rule, which addresses GHG emissions from stationary sources under the CAA permitting programs. The Tailoring Rule includes three steps aimed at setting GHG thresholds for PSD[1] and Title V permits for new, modified, and existing sources. Steps 1 and 2 set thresholds for these major stationary sources. PSD requirements applied to new sources with the potential to emit at least 100,000 tons per year of CO_2e or existing sources that emit 100,000 tons per year of CO_2e making modifications that increase GHG emissions by at least 75,000 tons per year of CO_2e. Title V GHG requirements apply to new or existing sources with the potential to emit 100,000 tons per year of CO_2e (USEPA 2012). Step 3, finalized on 29 June 2012, added plant-wide applicability limitations that are emissions limits applied on a source-wide basis rather than to specific emissions points (USEPA 2012).

Greenhouse Gas Emissions at Fort Benning

GHG emission sources at Fort Benning include vehicle use, boilers, chillers, water heaters, and emergency generators. Fort Benning is classified as major stationary source and has a Title V permit, but the Proposed Action would either maintain or reduce GHG emissions. Because there would not be an increase of GHG emissions by at least 75,000 tons per year, the Tailoring Rule does not apply to this Proposed Action and will not be evaluated further in this EA.

[1] PSD is required for major source facilities in areas in attainment for all criteria pollutants. It requires a general conformity-like analysis be completed for modifications to those facilities so that air quality does not deteriorate. Because the Proposed Action would not involve impacts to stationary sources and would involve vehicle emission reductions, PSD not be addressed further in this EA.

3.2.2 Environmental Consequences

3.2.2.1 Significance Thresholds

Impacts would be considered significant if emission would:

- Increase ambient air pollution concentrations above the NAAQS

3.2.2.2 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would remain as is and would not be converted to an IBCT. The ARC training would remain in its current locations, and the GHMTA would not be enhanced to expand off-road heavy maneuver training capability. Existing emissions levels are expected to continue. Mobile sources, or vehicle emissions, would continue, including personal vehicles and both wheeled and tracked vehicles, as well from prescribed fire activities. The No Action Alternative would continue to have a minor impact on air quality.

3.2.2.3 Alternative 1

Overall impacts to air under Alternative 1 would be negligible to minor.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Under Alternative 1, the existing 3rd ABCT and other associated units would be converted to an IBCT, resulting in a shift and substantial differences in equipment and training missions as well as a reduction in the operation of tracked vehicles and a slight increase in the use of small wheeled vehicles, such as HMMWVs. The reduction in tracked vehicles would result in a slight decrease in vehicle and fugitive dust. This would be offset by a slight increase in vehicle emissions due to the 100 Soldier increase in the IBCT. Overall, adverse impacts to air quality would be negligible because of the conversion of the 3rd ABCT to an IBCT.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training component in the GHMTA would not affect air quality because of the negligible differences in conducting the training with tracked vehicles versus wheeled vehicles. Air emissions are analyzed regionally, so locating off-road heavy maneuver training in the GHMTA would remain within the airshed and would not change regional vehicle emissions. There would be no additional impacts to air quality.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

Enhancing the off-road maneuver training capability in the GHMTA would not result in an increase in vehicle emissions. The hours of training that occur within the training area are not expected to increase; the area available for training would just expand within the existing defined boundaries of the GHTMA. Vehicles would be more spread out and more area would be available for training, but the number of units

would not increase, except the addition of the ARC off-road heavy maneuver training described above. Short-term, minor impacts would occur during construction of additional tank trails and permanent erosion control measures, potentially resulting in particulate matter emissions from construction traffic on unpaved surfaces as well as construction vehicle emissions. Impacts to air quality would continue to be minor from the existing mobile source emissions in GHMTA.

3.2.2.4 Alternative 2

Overall impacts to air under Alternative 2 would be negligible to minor, similar to those described under Alternative 1. The ABCT would be converted to and operate as an IBCT within approximately 5 years, so the impacts would be the same as Alternative 1 during that time frame. Thereafter, the IBCT would be inactivated, resulting in further reduction of air quality impacts from the elimination of a substantial portion of training events, vehicle operation and maintenance.

Impacts from locating the ARC off-road heavy maneuver component in the GHMTA and enhancing maneuver boxes within the GHMTA would be the same as described for Alternative 1, resulting in negligible to minor impacts to air quality.

3.2.2.5 Mitigation Measures

No mitigation measures other than applicable laws and regulation are warranted for air quality.

3.3 Airspace

Airspace use and management addresses how and where aircraft operate in airspace in or near Fort Benning. This section examines the rules, regulations, and procedures for military aircraft to operate safely among all aircraft in the National Airspace System as managed by the Federal Aviation Administration (FAA). Airspace under the National Airspace System contains all facets of navigable airspace, including terrestrial- and satellite-based navigation facilities, equipment, and services; airports or landing areas; aeronautical charts, information, services, rules, regulations, and procedures; technical information; manpower; and materials. Navigable airspace is airspace above the minimum altitudes of flight prescribed by regulations under *Air Commerce and Safety* (United States Code Title 49, Subtitle VII, Part A) and includes airspace needed to ensure safety in the takeoff and landing of aircraft, as defined in *Safe, Efficient Use, and Preservation of the Navigable Airspace* (14 CFR Part 77).

This ROI for this resource consists of the airspace within a 50-nautical-mile radius of Fort Benning, including both the Columbus Metropolitan Airport and Lawson Army Airfield.

3.3.1 Affected Environment

DoD and the Army manage airspace delegated to them by FAA in accordance with the processes and procedures outlined in DoD Directive 5030.19, *DoD Responsibilities on Federal Aviation and National Airspace System Matters* (DoD 1997), and are implemented by Army Regulation 95-2, *Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control, and Navigation Aids* (U.S. Army 2008). DoD and the Army collaborate with FAA to ascertain the minimum requirement for airspace, evaluating any environmental consequences of proposed airspace designations in compliance with both FAA and DoD's NEPA implementing regulations.

The two categories of airspace or airspace areas are regulatory and non-regulatory. Within these two categories, the four types of airspace are controlled, special use airspace (SUA), other, and uncontrolled airspace. Controlled airspace is airspace of defined dimensions within which air traffic control service is provided to Instrument Flight Rule flights and to Visual Flight Rule flights in accordance with the airspace classification (FAA 2008). Controlled airspace is categorized into five separate classes: Classes A through E. These classes identify airspace that is controlled, airspace that supports airport operations, and designated airways that accommodate en route transit from place to place. The classes also dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace. Uncontrolled airspace is designated Class G airspace.

FAA has designated the majority of airspace within Fort Benning as restricted airspace for activities associated with Lawson Army Airfield. Lawson Army Airfield—a designated Power Projection Platform located in the southwest corner of Fort Benning—is the hub for all military aircraft operations in and around Fort Benning, and it operates an average of 35,000 takeoff and landing operations per year (U.S. Army 2013) The airfield was designed and allows for helicopter, fixed-wing aircraft, and unmanned aircraft systems (UAS) throughout the year at varying frequencies and complexities. A major portion of the aircraft operations at Lawson Army Airfield involves airborne jump training. Other training includes both small- and large-scale military training exercises using both large- and medium-sized fixed wing cargo aircrafts, high performance jets, helicopters, UAS, and other special purpose aircraft.

Airspace use outside Lawson Army Airfield at Fort Benning is supported by several commercial and private airports, which are located within the ROI, including Columbus Metropolitan Airport in Columbus, Georgia, approximately 6 miles north of Fort Benning. Major airports located in the Fort Benning region but outside the ROI include Hartsfield-Jackson Atlanta International, Macon Middle Georgia Regional, and Albany Southwest Regional Airports.

Airspace around Fort Benning is restricted and therefore is designed to provide aircraft separation for approach, landing, and takeoff from the Lawson Army Airfield and for activities occurring at Fort Benning. Airspace restrictions at Fort Benning vary based on location and height and include the following:

- Lawson Class D Airspace—controlled airspace to terminal visual and instrument flight routes at airports that have a control tower
- Southern Region Georgia Class E Airspace—the surface area designated for an airport
- Regulatory SUA (Restricted Area® 3002A through G)—areas designated to contain artillery, mortars, missiles, and rockets
- Non-regulatory SUA (Benning Memorandum of Agreement)—airspace area designated air combat maneuvers, air intercepts, and acrobatics
- Military Training Routes (Slow Routes 38 and 39)—visual flight routes that are designated for low-altitude tactical training

Fort Benning's designated SUA reduces the likelihood of interaction between military aircraft and public, private, or commercial aircraft. UAS vehicles are not allowed to operate outside restricted airspace because they do not have "see and avoid" capability. Training is currently conducted within the

designated SUA and the restricted operating zone to allow unencumbered training flights to meet mission essential training goals.

3.3.2 Environmental Consequences

The type, size, shape, and configuration of individual airspace elements in a region are based on, and intended to satisfy, competing aviation requirements. Potential impacts could occur if air traffic in the ROI and/or the air traffic control systems are encumbered by changed flight activities contributed by the Proposed Action or alternatives.

3.3.2.1 Significance Thresholds

Airspace impacts would be considered significant if they:

- Create substantial conflicts with air traffic in the region
- Result in a reclassification of restricted airspace from a less restrictive to a more restrictive classification

3.3.2.2 No Action Alternative

Under the No Action Alternative, no impacts to airspace are anticipated. The 3rd ABCT would remain as is and would not be converted to an IBCT. The ARC off-road heavy maneuver component would remain approved in the current location, but no training would occur, and the GHMTA would not be enhanced to expand off-road heavy maneuver training capability. No impacts to Lawson Army Airfield would occur, and existing flight and training activities would remain unchanged. Airspace classifications throughout Fort Benning would remain unchanged, and the No Action Alternative would not affect military training or military use of the airspace.

3.3.2.3 Alternative 1

Overall, adverse impacts to airspace under Alternative 1 would be negligible, resulting from increased loads to Lawson Army Airfield and existing airspace management.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Under Alternative 1, the existing 3rd ABCT and other associated units would be converted to an IBCT, resulting in a shift and substantial differences in equipment and training missions, including the incorporation of additional UAS not found in the ABCT. The incorporation of additional UAS would place a greater load on Lawson Army Airfield and on existing airspace management but would not require additional airspace for training, would not require changes to current airspace classifications and restrictions, and would not affect existing flight activity in the ROI, resulting in negligible impacts.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training component in the GHMTA would not affect airspace because the only change is the location of ground operations.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

Enhancing the off-road heavy maneuver training capability in the GHMTA would change only ground operations but would not affect airspace.

3.3.2.4 Alternative 2

Overall, adverse impacts to airspace under Alternative 2 would be negligible, resulting from increased loads to Lawson Army Airfield and existing airspace management. With the inactivation of the IBCT, beneficial impacts to airspace could occur because of decreased load requirements to Lawson Army Airfield and existing airspace management.

Similar to Alternative 1, under Alternative 2, the existing 3rd ABCT and other associated units would be converted to an IBCT for the short term, resulting in a shift and substantial differences in equipment and training missions, including the incorporation of additional UAS not found in the ABCT. The incorporation of additional UAS would place a greater load on Lawson Army Airfield and on existing airspace management but would not require additional airspace for training, would not require changes to current airspace classifications and restrictions, and would not affect existing flight activity in the ROI, resulting in negligible adverse impacts for this period.

Within 5 years of the conversion to an IBCT, the 3rd IBCT would be inactivated, resulting in associated reductions in training. This reduction in training could lessen load requirements on Lawson Army Airfield and existing airspace management, resulting in potential beneficial impacts from reduced potential airspace management conflicts.

Impacts associated with the locating the ARC off-road heavy maneuver training component in the GHMTA and enhancing off-road heavy maneuver training capabilities in the GHMTA would be the same as described for Alternative 1, airspace is not anticipated to be affected.

3.3.2.5 Mitigation Measures

No mitigation measures outside of adherence to applicable federal, state, and Army laws and regulations regarding airspace have been identified.

3.4 Wildlife and Special Status Species

3.4.1 Affected Environment

For purposes of this evaluation, special status species are defined as those plant and animal species listed by USFWS or listed under different levels of concern by the states of Georgia and Alabama. The ROI for wildlife and special status species includes the area within and immediately adjacent to Fort Benning that could potentially be affected under the Proposed Action.

3.4.1.1 Wildlife

Fort Benning is inhabited by more than 350 species of 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. Commonly encountered animals include

American alligators (*Alligator mississippiensis*), turtles, water snakes, wading birds, migratory waterfowl, North American beaver (*Castor Canadensis*), white-tailed deer (*Odocoileus virginiana*), feral swine (*Sus scrofa*), eastern wild turkey (*Meleagris gallopavo*), eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), rabbits (*Sylvilagus* spp.), other small mammals, and a wide variety of songbirds. The Seminole bat (*Lasiurus seminolu*), southeastern myotis (*Myotis austroriparius*), and Brazilian free-tailed bat (*Tadarida brasiliensis*) are known to occur at Fort Benning. Reptiles and amphibians found on the Installation include eastern coachwhip (*Masticophis flagellum flagellum*), eastern diamondback rattlesnake (*Crotalus adamanteus*), Florida pinesnake (*Pituophis melanoleucus mugitus*), southern hognose snake (*Heterodon simus),* eastern tiger salamander (*Ambystoma tigrinum*), and other species of the Longleaf Pine Ecosystem (Fort Benning 2015a).

Fort Benning supports a high diversity of native freshwater fishes, including both game and non-game species. Native non-game fishes include many species of shiners, darters, shad, and minnows, as well as the southern brook lamprey (*Ichthyomyzon gagei*). Popular game fish species most often sought by fishermen include largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), redear or shellcracker (*Lepomis microlophis*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), white bass (*Morone chrysops*), and hybrid white bass (*Morone chrysops saxatilis)* (Fort Benning 2015a).

Fort Benning is rich in invertebrate biodiversity. Common insects in stream systems include larval and adult stages of stoneflies, mayflies, midges, and caddis flies. In addition, a variety of crustaceans, such as crayfish, mussels, isopods, snails, and amphipods, occur within the regional habitat. Mussels in particular are sensitive indicators of water quality and ecological integrity. At least four mussel species of conservation concern occur within Uchee Creek in Alabama (Fort Benning 2015a). Water bodies on Fort Benning commonly containing mussels include the Chattahoochee River, Victory Pond, and Uchee, Cox, Shell, and Oswichee creeks (Fort Benning 2003).

Some of the species discussed herein provide major outdoor recreational value in the form of hunting, fishing, and wildlife viewing. Management of these species, which is important to meet user demands, includes ensuring adequate enforcement of hunting and fishing regulations. During training exercises, Fort Benning limits access for hunting and fishing inside the boundaries of the Installation because of safety and security concerns.

3.4.1.2 Migratory Birds

Approximately 150 species of birds protected under the Migratory Bird Treaty Act inhabit Fort Benning, either seasonally or year-round. Most of these species are breeding residents or neotropical migrants for which the typical breeding season is spring through summer.

Section 315 of the 2003 National Defense Authorization Act provided that the Secretary of the Interior prescribe regulations to exempt the Armed Forces from the incidental taking of migratory birds during military readiness activities. Military readiness activities include all training and operations of the Armed Forces that relate to combat. In accordance with the *Authorization of Take Incidental to Military Readiness Activities* published in the Federal Register by USFWS, an installation is not allowed to take migratory birds indiscriminately during readiness activities, and the regulation requires installations to consider the protection of migratory birds when planning and executing military readiness activities

(50 CFR 21.15). In addition, Fort Benning manages and conserves migratory bird species through its Integrated Natural Resources Management Plan (INRMP) and considers effects to migratory birds in any proposed action through the NEPA process.

The Migratory Bird Treaty Act grants the Secretary of the Interior the authority to establish hunting seasons for species for which USFWS has determined that hunting is appropriate; species for which there is a long tradition of hunting; and species for which hunting is consistent with their population status and long-term conservation. Two species of resident game birds at Fort Benning include the northern bobwhite quail (*Colinus virginianus*) and eastern wild turkey. Nineteen other species of migratory game birds (at least 16 of which are waterfowl) at Fort Benning include the mourning dove (*Zenaida macroura*), common snipe (*Gallinago gallinago*), American woodcock (*Scolopax minor*), Canada goose, mallard duck (*Anas platyrhynchos*), wood duck (*Aix sponsa*), ring-necked duck (*Aythya collaris*), gadwall (*Anas strepaera*), American wigeon (*Anas americana*), northern pintail (*Anas acuta*), American black duck (*Anas rubripes*), green-winged teal (*Anas crecca*), bluewinged teal (*Anas discors*), canvasback (*Aythya valisineria*), redhead (*Aythya americana*), bufflehead (*Bucephala albeola*), hooded merganser (*Lophodytes cucullatus*), northern shoveler (*Anas clypeata*), lesser scaup (*Aythya affinins*), and crow (*Corvus* spp.) (USACE 2009).

Bald eagles (*Haliaeetus leucocephalus*) are no longer listed as threatened, endangered, or proposed by USFWS under the Endangered Species Act (ESA); nevertheless, the species is still protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668–668d) and the Migratory Bird Treaty Act (16 U.S.C. 703–712).

3.4.1.3 Endangered, Threatened, and Rare Species

A total of 96 species (4 amphibians, 8 birds, 7 fishes, 4 mammals, 4 mussels, 9 reptiles, and 60 plants) of conservation concern is found on Fort Benning. Plant and animal species listed as threatened, endangered, or rare are considered special status species by USFWS, the state of Georgia, and the state of Alabama. The ESA only protects federally listed species. State listed species are protected in the state of Georgia under the Georgia Wildflower Preservation Act and Georgia's Endangered Wildlife Act. The state of Alabama likewise protects a number of species through the Nongame Species Regulation (Alabama Administrative Code 220-2-.92).

Although state-listed species are not protected under the ESA, they may be considered for federal listing in the future and are afforded special management attention in Fort Benning's INRMP. Army Regulation 200-1, *Environmental Protection and Enhancement,* guides Army compliance with the ESA.

The Biological Assessment for Enhanced Training at Fort Benning, Georgia (2015 Enhanced Training BA) provides in-depth information and analysis of endangered, threatened, and rare species related to the Proposed Action, and the BA is incorporated by reference herein (U.S. Army 2015). The BA is available at: http://www.benning.army.mil/garrison/DPW/EMD/legal.htm. Species that occur or could potentially occur in the project areas are shown in Table 3-2. No federally listed species are found in the GHMTA (U.S. Army 2015).

Table 3-2. Federally Listed Species Potentially Occurring within the Region of Influence, Fort Benning, Georgia and Alabama

Scientific Name	Common Name	Federal Status	State Status (GA, AL)	Known to Occur on Fort Benning?
Plants				
Arabis georgiana	Georgia rockcress	T	T, N/A	Y
Trillium reliquum	relict trillium	E	E, N/A	Y
Birds				
Mycteria americana	wood stork	T	E, SP	Y
Picoides borealis	red-cockaded woodpecker	E	E, SP	Y
Reptiles				
Gopherus polyphemus	gopher tortoise	C	T, SP	Y
Mussels				
Hamiota subangulata	shiny-rayed pocketbook	E, CH[a]	E, SP	N

Source: U.S. Army (2015)

Notes: C = Candidate; CH = Critical Habitat; E = Endangered; T = Threatened; N/A = Not Applicable; SP = State Protected
Y = Yes; N = No

[a] Critical habitat has been designated for the shiny-rayed pocketbook on Fort Benning along Uchee Creek in Russell County, Alabama (Federal Register, 15 November 2007, 50 CFR Part 17).

Red-cockaded Woodpecker (Federal Endangered)

The RCW is a small, non-migratory woodpecker endemic to mature, fire-maintained pine forests in the southeastern United States, where it was historically common. The RCW was listed as endangered in 1973 with the passage of the ESA because of its rarity, documented declines in local populations, and reductions in available nesting habitat. RCWs have social structures that involve a breeding pair and helpers that assist with cavity excavation and maintenance, egg incubation, feeding young, and defending the group's territory. Fort Benning has one of the largest RCW populations in the southeastern United States. The RCWs are well dispersed over the Installation. However, no active clusters exist on the Alabama portion of the Installation or on the Main Post, and no clusters are located in the GHMTA. The GHMTA plays no role in recovery because no current, potentially suitable, or future habitat is allocated in this area.

Demographic analysis conducted between 2009 and 2013 concluded the total number of clusters needed on the landscape to attain a recovery goal of 351 potential breeding groups is 382 clusters. This number is based on the percentage of active potential breeding groups the Installation has relative to the total number of manageable clusters on the landscape. In 2014, 374 total manageable clusters were located on Fort Benning. Using 2014 geographic information system and tabular data provided by Fort Benning, 369 managed and 8 unmanaged RCW clusters are allocated in foraging habitat partitions. Five clusters contained 2 nesting groups of RCWs in 2014 ("split"); nevertheless, foraging partitions are typically not allocated until a newly established group has bred for 2 consecutive years. Of the 377 clusters with foraging partitions, not including permanent, noncontiguous habitat, 153 partitions currently contain 150

or more acres of manageable habitat and can meet recovery guidelines, 70 have 120 to 150 acres and may be able to meet recovery guidelines, and 154 have less than 120 acres and will not be able to meet recovery guidelines (U.S. Army 2015).

Intensive efforts have been made to enhance management activities since the mid-1990s. For example, the MCoE BA outlined criteria to be met in order for the Installation to proceed with its proposed move of the Armor School to Fort Benning. This criteria included measures that would minimize impacts to the RCW in accordance with a BO issued by USFWS. Along with specific criteria outlined in the USFWS' Red-cockaded Woodpecker Recovery Plan (USFWS 2003), management of the RCW also follows the *2007 Management Guidelines for the Red-cockaded Woodpecker on Army Installations* (U.S. Army 2007). USFWS issued a BO on the RCW Endangered Species Management Component, which approves use of the 2007 Management Guidelines on Fort Benning (Imm 2014). Subsequent changes to construction and training impacts evaluated in the MCoE BO have been approved through the Installation's NEPA process and, when necessary, consultation with USFWS.

Specific management actions for the RCW include the restoration of longleaf pine, frequent prescribed burning in habitat, cavity tree and cluster boundary marking, controlling of hardwoods or pines in the midstory within clusters, monitoring to determine population trends, artificial cavity installation, and the translocation of birds.

Wood Stork (Federal Threatened)

The wood stork is a large wading bird in the stork family that was reclassified from endangered to threatened in 2013. Wood storks use a variety of freshwater and estuarine wetlands for nesting, feeding, and roosting. Management of the wood stork currently follows the USFWS' *1997 Revised Recovery Plan for the U.S. Breeding Population of the Wood Stork.*

Sightings of wood storks have been very infrequent on Fort Benning due to their transient nature, dependence on available food supplies, and need for proper water levels. In 1996, a roost was discovered on Fort Benning during a USFWS survey. In 2000, a single wood stork was observed for the first time on the Georgia side of the Installation. The biggest influence on wood stork presence at Fort Benning is the water-level manipulations conducted by U.S. Army Corps of Engineers (USACE) on the Chattahoochee River (Fort Benning 2015a). Management efforts are focused on summer surveys, roost surveys, protection of habitat, and removal of invasive aquatic vegetation through herbicide treatments to keep feeding areas open (Fort Benning 2015a).

Relict Trillium (Federal Endangered)

Relict trillium was listed as an endangered species in 1988. This species is endangered as a result of habitat loss due to residential and industrial development, roads and utility corridors, logging, agricultural conversion, and fires. Management of relict trillium currently follows USFWS 1991 Recovery Plan for Relict Trillium. Relict trillium is a perennial herb belonging to the lily family. It grows in moist hardwood forests with little to no recent disturbance. The species exists primarily in shaded conditions; therefore, timber harvests can be detrimental to this species. Japanese honeysuckle (*Lonicera japonica*) and kudzu (*Pueraria lobata*) are examples of introduced vegetation that threaten relict trillium due to the aggressive

growth with a habit of encroaching into hardwood habitat and replacing native plant species. Additionally, feral swine can damage relict trillium by trampling, uprooting, and destabilizing soil.

Seven known relict trillium locations are found on the northern portion of the Installation. Conservation efforts focus on preserving habitat to maintain existing populations at stable levels. Current management activities for this species consist of surveys, monitoring efforts, and protection of sensitive areas.

Monitored subpopulations are designated at Baker Creek (approximately 2.34 acres in Compartment K6), Kendall Creek North (approximately 11.79 acres, Compartment K6), Kendall Creek South (approximately 3.31 acres, Compartment K6), Randall Creek North (approximately 22.29 acres, Compartment O6) and Randall Creek South (approximately 14.54 acres, Compartment O8). The two remaining subpopulations known to exist at Fort Benning do not have intensive monitoring in place at this time. These subpopulations are checked annually however for any sign of disturbance (Fort Benning 2015a).

Georgia Rockcress (Federal Threatened)

Georgia rockcress is federally listed as a threatened species. The plant was identified as needing federal protection in 1975 and has been a candidate for listing as a threatened species under the ESA since 2004. No USFWS recovery or conservation plans currently exist for the species. However, current management efforts on the Installation for the Georgia rockcress consist of habitat protection and periodic monitoring of the two known populations existing along the bank of the Chattahoochee River. Digging, timber harvesting, high-intensity burning, and vehicular traffic are not permitted in these sensitive areas (Fort Benning 2015a). Areas encompassing both populations were previously proposed as critical habitat; USFWS determined that the protective measures in the 2015 INRMP (Fort Benning 2015a) were sufficient to benefit the species, and no critical habitat was designated on the Installation.

Georgia rockcress is a tall herbaceous plant found on rocky bluffs and slopes along watercourses, as well as along sandy, eroding stream banks. The plant is a light-loving species and does not tolerate prolonged shaded conditions. Threats to this species include various forms of habitat degradation and disturbance. Timber harvest and road building can directly modify potential habitat. Ground disturbance also encourages encroachment by exotic plant species. Invasive plants, particularly Japanese honeysuckle, overtake populations of Georgia rockcress. An increased threat from invasive plants was cited by USFWS in support of the candidate priority upgrade (Fort Benning 2015a).

Monitoring the encroachment of invasive species and prohibiting ground disturbances within the boundaries of the population are the principal management activities on Fort Benning.

Shiny-rayed Pocketbook (Federal Endangered)

The shiny-rayed pocketbook is a medium-sized freshwater mussel that was federally listed as endangered in 1998. Management of the shiny-rayed pocketbook currently follows the USFWS' 2003 Recovery Plan for Seven Mussels. Like other freshwater mussels, adults are filter-feeders that consume detritus, diatoms, phytoplankton, zooplankton, and other microorganisms through the siphoning of the water column.

Historically, the shiny-rayed pocketbook was known to inhabit the Flint and Chipola rivers; nevertheless, it has not been collected from the main channel of the Apalachicola River. As well, it has been found at various sites along the Flint and Chattahoochee rivers and associated tributaries in Georgia and Alabama. Currently, no known populations are located on Fort Benning. Critical habitat has been designated for the shiny-rayed pocketbook on Fort Benning along Uchee Creek in Russell County, Alabama (*Endangered and Threatened Wildlife and Plants* [Federal Register, 15 November 2007, 50 CFR Part 17]).

Because of the designation of Uchee Creek as critical habitat for the shiny-rayed pocketbook, management activities focus on maintaining and improving the habitat quality within the portion of Uchee Creek that resides on the Installation. Fort Benning would evaluate the potential impacts of any actions that might affect the quality and integrity of the creek prior to activities occurring within the watershed and would conduct manage activities in accordance with the Endangered Species Management Component.

Gopher Tortoise (Federal Candidate, Georgia Threatened)

The gopher tortoise is a is a large, dark-brown to grayish-black terrestrial turtle with elephantine hind feet, shovel-like forefeet, and throat projection on the yellowish, hingeless undershell. West of the Tombigbee River, the gopher tortoise has been listed as threatened in Alabama, Louisiana, and Mississippi since 1987. East of the Tombigbee River, the gopher tortoise is a candidate for listing. The species relies on dry sandy sites for foraging habitat and to dig burrows, which provide shelter for a variety of other animal species. The gopher tortoise is found primarily within the sandhill communities located in the northeastern portion of the Installation. Current management includes protection of existing suitable and potential habitat while maintaining or increasing the current population on the Installation. This management involves, but is not limited to, conducting habitat surveys, implementing prescribed fire activities, applying silvicultural treatments, and monitoring gopher tortoise activity (Fort Benning 2015a). All management activities were developed to be compatible with the 2008 Management Guidelines for the Gopher Tortoise on Army Installations.

Management of the gopher tortoise currently follows the USFWS' 1990 Gopher Tortoise Recovery Plan. Fort Benning is currently divided into four tortoise Habitat Management Units, totaling an estimated 28,000 acres (Veenstra 2015). A USFWS survey completed in 1999 discovered more than 8,200 gopher tortoise burrows in these units; however, the most recent population estimate is approximately 2,500 gopher tortoises (Veenstra 2015). Many factors are limiting the gopher tortoise, but the most significant threat is the loss of habitat due to intensive land use. Management activities focus on the protection and enhancement of gopher tortoise habitat with the goal of maintaining the existing populations on Fort Benning.

3.4.2 Environmental Consequences

3.4.2.1 Significance Thresholds

Impacts would be considered significant if they were to result in:

- Substantial permanent conversion or net loss of habitat at landscape scale
- Long-term loss or impairment of a substantial portion of local habitat (species dependent) or substantial loss to a species population from implementation of the Proposed Action
- Unpermitted "take" of threatened and endangered species or other legally protected species (e.g., migratory birds)

3.4.2.2 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would not be converted to an IBCT, the ARC off-road heavy maneuver training component would not be located in the GHMTA, and additional maneuver boxes would not be established within the GHMTA. Wildlife and special status species would continue to be affected at the current level of training events with approximately the same number and type of vehicles in the same training areas. Overall impacts to wildlife and special status species would range from no impact to potential moderate, adverse impacts.

Wildlife

Unintentional mortality from training activities could continue to affect fish and wildlife on Fort Benning under the No Action Alternative; however, the potential losses through training activities would be minimal and result in minor impacts (USACE 2009). The presence of heavy maneuver operations, off-road vehicles, and Soldier activity would impede regenerating vegetation and maintain physical stressors on aquatic and terrestrial communities. Some wildlife species would respond to these activities by underutilizing the SMTA and other training areas.

Migratory Birds

The No Action Alternative would not affect migratory bird populations. Continuation of the current training at Fort Benning is not expected to diminish the capacity of a population of migratory bird species to sustain itself at a level that maintains its genetic diversity to reproduce and to function effectively in its native ecosystem.

Fort Benning would continue to consider the protection of migratory birds when planning and executing military readiness activities. In addition, Fort Benning manages and conserves migratory bird species through its INRMP and would continue to employ management/conservation efforts to the greatest extent feasible that would lessen the impacts on migratory bird species (USACE 2009).

Endangered, Threatened, and Rare Species

Under the No Action Alternative, the 3rd ABCT would remain as is and no additional maneuver battalion would be added. The ARC off-road heavy maneuver component would continue to be authorized in its

current locations and without use of heavy tracked vehicles. Fort Benning would consult with USFWS to determine other possible ways to comply with or revise the MCoE BO requirement to move the ARC off-road heavy maneuver training off the Installation by no later than September 2016. Under this alternative, the GHMTA would not be enhanced to expand off-road heavy maneuver training capability.

The 2015 Enhanced Training BA for locating the ARC off-road heavy maneuver training component analyzed the actual impacts to endangered, threatened, and rare species from actual training that has occurred as a result of BRAC and MCoE.

Red-cockaded Woodpecker

Under the No Action, the impacts described in the MCoE EIS are expected to continue to not occur because the ARC off-road heavy maneuver training component would continue to not occur. There would not be any unpermitted "take"; therefore, impacts would be minor from other training activities.

USFWS issued the MCoE BO for the RCW in part due to the potential for increased training impacts on the RCW and its habitat. However, there have been changes to construction and training impacts evaluated in the MCoE BO that have been approved via the Installation's NEPA process and, when necessary, consultation with USFWS. Consequently, the post-project conditions presented in the MCoE BO and subsequent consultations no longer represent a true "starting point" for analyses, or no action, for the Proposed Action. Instead, the baseline "post-MCoE" conditions reflect all construction and training impacts that have occurred to date and those additional training impacts that would occur in the future under the MCoE BO without implementation of the Proposed Action. This baseline includes no off-road heavy maneuver training component for ARC, which had been approved under the MCoE BO.

With impact reductions resulting from the actual training that has occurred, the 2015 Enhanced Training BA (U.S. Army 2015) recalculated the amount of incidental take expected for direct impacts encompassed within the No Action Alternative (baseline); they are as follows (previous totals as of MCoE BO and associated addenda are in parentheses): 36 foraging habitat and/or loss of cavity tree takes (decreased from 42), 4 foraging habitat takes combined with pine decline (decreased from 8), 1 direct harassment take (decreased from 2) and 9 group density takes (decreased from 10). This totals 50 direct takes, as compared to 62 direct takes in the MCoE BO. Indirect harassment will require incidental take at 17 clusters (9 are temporary) prior to the migration of the ARC off the Installation (MCoE required 7 indirect harassment and 10 temporary indirect harassment takes).

A total of 117 clusters had foraging habitat analyses, 10 clusters were analyzed for harassment impacts only, 4 clusters had partition shifts and therefore had no impacts (A10-A, K20-A, O17-A and O11-A), and 3 neighborhood level takes associated with the enhanced training actions were included in this document (134 total clusters). A total of 87 clusters had incidental takes previously issued for BRAC/MCoE impacts. After the 2014 baseline reanalysis, 75 clusters had incidental take. Under the No Action Alternative, Fort Benning has the potential to add a net of 12 clusters back into the recovery population.

Wood Stork

The No Action Alternative would not affect the wood stork because of the absence of these species from areas of potential impact and continuing management efforts pursuant to the INRMP (Fort Benning 2015a).

Relict Trillium

The No Action Alternative would result in a "may affect, not likely to adversely affect" determination for the relict trillium (U.S. Army 2015). No off-road heavy maneuver training would occur. Potential direct impacts to relict trillium include damage to plants by timber harvesting, ground disturbance, or project construction, as well as the loss of canopy cover. Impacts would not be substantially different from other training occurring in the northern portion of the Installation under the No Action Alternative.

Potential direct impacts to the relict trillium include damage to plants by timber harvesting, ground disturbance and/ or project construction, as well as the loss of canopy cover. Construction of one BRAC project Material Recycle Facility 6 (PN 65048) required transplanting three relict trillium plants from the Randall Creek North population to just north of the Baker Creek population on Fort Benning in the summer of 2008 (U.S. Army 2015). Two MCoE projects, a security fence (PN 67457) and an asphalt administrative road (PN 65554), were expected to affect approximately 9.3 percent of the adult stems at the Randall Creek North population (U.S. Army 2015). Approximately 2,274 mature and juvenile relict trillium were translocated off the Installation or to nurseries for safeguarding during these projects.

All practices and best management practices (BMPs) listed in the INRMP and Endangered Species Management Component to protect the relict trillium from disturbances would continue to be implemented, including continued monitoring, fencing populations, prohibiting timber harvest within 200 feet of the population boundary, and prohibiting digging and vehicles within the sensitive area signs around each population. Any unit that conducts a training exercise or construction activity on Fort Benning must complete a Form FB 144-R (Request for Environmental Analysis) detailing its proposed activity and location. Those activities that might affect the relict trillium or its habitat would be carefully coordinated to minimize adverse impacts (Fort Benning 2015a).

Georgia Rockcress

The No Action Alternative would not affect the Georgia rockcress. Georgia rockcress was listed as threatened and given designated critical habitat after the BRAC and MCoE BOs were completed; however, there were no BRAC or MCoE actions analyzed in the vicinity of the Fort Benning Georgia rockcress populations. The species was considered in the ARC biological evaluation (BE) for possible impacts of expanding the areas used for training. Fort Benning determined that Soldiers were not likely to traverse the steep river banks where Georgia rockcress occurs. When this was considered, along with digging and vehicles already being prohibited within population boundaries, Fort Benning and USFWS determined that the ARC training in the SMTA would have no effect on the Georgia rockcress (U.S. Army 2015). Other on-going training at Fort Benning, including the 3rd ABCT, would not affect the Georgia rockcress because known locations of this species would be designated as Sensitive Areas, in which digging and vehicles are not allowed (Fort Benning 2015a).

Shiny-rayed Pocketbook

The No Action Alternative would have no effect on the designated critical habitat for the shiny-rayed pocketbook because this species is not near the SMTA region. Impacts to Uchee Creek were considered for the ARC BE (for possible impacts of expanding the areas used for training). The limit of the designated critical habitat is above the high water mark of each creek bank. To avoid impacts within this zone, the ARC BE specified: "Commanders will not allow any vehicles, equipment, debris, or sedimentation into or within the high water mark of Uchee Creek." Other on-going training at Fort Benning, including the 3rd ABCT, would not affect the shiny-rayed pocketbook because the protected habitat comprises a relatively small area of the Installation and is located in an area that receives little training pressure.

Gopher Tortoise

The gopher tortoise is considered a candidate species by USFWS in the majority of its range. The largest concentrations of gopher tortoises at Fort Benning are in the northeastern portion of the Installation. The gopher tortoise and its habitat on Fort Benning are monitored and protected, the gopher tortoise is a keystone species (i.e., a species that plays an important role in its ecosystem and if it were removed or greatly decreased would cause a disproportionate impact to that ecosystem) with numerous vertebrate and invertebrate species utilizing the burrow (Fort Benning 2003, 2001). There are 3,314 known active burrows on the Installation, of which an estimated 30 percent potentially would be affected under the No Action Alternative from training impacts. The biggest military influence affecting gopher tortoise habitat on Fort Benning is heavy mechanized training. Many of these burrows are located in or near the ARC off-road heavy maneuver training area in the SMTA region, and potential impacts to gopher tortoise in this area would be spread out over several years. Because of the magnitude of the impact and the potential for future listing action by USFWS, impacts are considered potentially significant; however, the ARC off-road heavy maneuver training component has not occurred in the SMTA region and would not occur under the No Action Alternative, so impacts would be moderate. Continuing adherence to INRMP policies and practices and mitigation measures for gopher tortoise would reduce the impact on this species, but the magnitude of the impact would remain moderate.

3.4.2.3 Alternative 1

Wildlife

Under Alternative 1, conversion of the 3rd ABCT to an IBCT would reduce the potential wildlife impacts compared to the No Action Alternative. The reduction of off-road heavy maneuver vehicles in training areas would reduce physical stressors on aquatic and terrestrial ecosystems, allowing wildlife to more readily use the habitats.

Locating the ARC off-road heavy maneuver training in the GHMTA could affect terrestrial wildlife through minor additional displacement as a result of soil disturbance, removal of vegetation, vehicle traffic, and incidental human activity. Terrestrial wildlife may be adversely affected as a result of the loss of some contiguous forest through the enhancement of off-road heavy maneuver training capability. This loss may restrict wildlife movement but is expected to be minor. Ground disturbance may also result in erosion, especially near wetland habitats and riparian areas, affecting fish and aquatic wildlife. In addition

to increasing sedimentation and turbidity, removal of vegetation near stream banks or at stream crossings could result in some segments becoming inhospitable to native aquatic species, thereby interfering with dispersal and use of upstream or downstream areas that are not otherwise affected. However, these potential impacts to aquatic wildlife are expected to be minor. Compliance with applicable federal and state water protection requirements and continuation of mitigation would minimize erosion and sedimentation, limiting the potential for negative vegetation and surface water effects.

Noise during maneuver operations and off-road training may result in disturbance to wildlife primarily within the sites, and edge effects may extend into adjacent habitat.

Fort Benning would continue to manage wildlife habitat to provide food and cover for certain species. Fort Benning would continue to implement voluntary buffers to avoid damage from off-road heavy maneuver vehicles. In the GHMTA, a 50-foot vegetated stream buffer and an average 100-foot buffer for wetlands is in place along with dedicated stream crossings (see Section 3.12, *Water Resources*, for a detailed description). A network of mature hardwood and mixed hardwood-pine forests would be maintained to provide corridors for wildlife movement and diverse sources of soft and hard mast.

Training exercises would be conducted in accordance with MCoE 350-19 guidelines and restrictions stated in the INRMP. These procedures and requirements would help ensure the compatibility of training activities with the sensitive biological resources of the Installation. Furthermore, due to safety and security concerns, Fort Benning may change hunting and fishing access inside the GHMTA and other training areas.

Migratory Birds

Alternative 1 would not affect migratory bird populations across the Installation. Locating the ARC off-road heavy maneuver component in the GHMTA, enhancing off-road heavy maneuver training capabilities within the existing GHMTA footprint to provide approximately 4,700 acres of contiguous off-road heavy maneuver area, and converting the ABCT to an IBCT are not expected to 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 would continue to consider the protection of migratory birds when planning and executing military readiness activities. In addition, Fort Benning manages and conserves migratory bird species through its INRMP and would continue to employ management/conservation efforts to the greatest extent feasible that would lessen the impacts on migratory bird species.

Endangered, Threatened, and Rare Species

Red-cockaded Woodpecker

The biological determination from the 2015 Enhanced Training BA is “may affect but not likely to adversely affect” for the RCW. Cavity trees or RCW foraging habitat would not be lost. Locating the ARC off-road heavy maneuver training from the SMTA region would result in the preservation of foraging habitat that had been predicted to be impacted by off-road heavy maneuver training.

Impacts from the use of tracked vehicles would be greatly reduced as a result of converting the ABCT to an IBCT. Dismounted troops, however, are less restricted by terrain than armored vehicles. The effect of increased vehicular and foot traffic would be minimized by following the restrictions already in place for 200-foot cluster buffers and other restrictions in the Army Guidelines (U.S. Army 2007).

The proposed location of the ARC off-road heavy maneuver training component in the GHMTA would involve the use of Bradley Fighting Vehicles, but off-road heavy maneuver training would only occur in the GHMTA. Potential RCW habitat does exist in the GHMTA; however, there are no known active clusters in the GHMTA. Furthermore, the GHMTA is located on the periphery of the RCW population and is excluded from the Installation's Habitat Management Units for RCW recovery. Movement of tracked vehicles during the route reconnaissance portion of ARC training would be on roads and trails, and the number of personnel, the number of days per iteration, and the number of iterations per year have been reduced since the ARC BE. These limitations and reductions, along with the restrictions set forth in the 2007 RCW Guidelines (U.S. Army 2007), should minimize any harassment impacts from the ARC.

The retention of RCW nesting and foraging habitat formerly planned for removal in the SMTA and the elimination of harassment impacts would represent a positive step in RCW population recovery at Fort Benning. Incidental take post-BRAC/MCoE totaled 88 (direct and indirect). Alternative 1 is expected to require the take of 59 clusters. A net total of 29 formerly taken clusters post-BRAC/MCoE would be counted toward the Installation's recovery goals. Habitat contiguity would also benefit from locating the ARC off-road heavy maneuver training outside the SMTA region to the GHMTA. Alternative 1 would enhance the survival and population viability of RCWs at Fort Benning because RCW nesting and foraging habitat, formerly planned for removal, would be retained and harassment impacts would be reduced or eliminated. Consultation with USFWS is ongoing.

Wood Stork

The biological determination from the 2015 Enhanced Training BA is "no effect"; therefore, no impacts to the wood stork are expected under Alternative 1. The conversion of the 3rd ABCT to an IBCT, locating the ARC off-road heavy maneuver training in the GHMTA and enhancing off-road maneuver boxes within the GHMTA would not affect any suitable wood stork roosting or nesting habitat, and these actions are not expected to alter dispersal behavior. This is primarily due to most wood stork observations at the Installation being in the backwaters of the Chattahoochee River. This area, along with the type of wetlands where wood storks feed, are not likely to be used for military training purposes.

Relict Trillium

The biological determination in the 2015 Enhanced Training BA is "may affect, not likely to adversely affect"; therefore, minor impacts to relict trillium are expected under Alternative 1. IBCT training may be more likely to take place in floodplains where relict trillium occurs; therefore, the ABCT conversion could affect relict trillium populations primarily because of foot traffic in and the use of lighter vehicles to access these areas. Nevertheless, the Randall Creek and Kendall Creek relict trillium populations are within frequently active range SDZ. The Kendall Creek populations are outside the areas predicted to be used most frequently by the 3rd bridgade. In addition, the boundaries of all seven populations are marked with sensitive area signs. Digging and vehicular trespass are prohibited within those boundaries. Foot traffic is still allowed, but presumably it would be minimal given the access limitations. There would be

beneficial impacts from the reduction of dust as a result of ABCT heavy maneuver being replaced by IBCT training.

Locating the ARC off-road heavy maneuver training component in the GHMTA would have no effect on relict trillium because no known populations of the species exist in the GHMTA. In addition, the proposed enhancement off-road heavy maneuver boxes within the existing GHMTA footprint would have no effect on relict trillium. Increased traffic from enhancing off-road heavy maneuver areas would produce minimal dust plumes, which can affect flowering plants by coating foliage and inhibiting flower pollination. Increased traffic along the MCoE road that affected the Randall Creek North population can be expected with the increased use of small arms ranges with the IBCT.

Georgia Rockcress

Locating the ARC off-road heavy maneuver training component and enhancing off-road heavy maneuver boxes under Alternative 1 would have "no effect" on Georgia rockcress, per the 2015 Enhanced Training BA. IBCT Soldiers are not likely to traverse the steep river banks where Georgia rockcress occurs, and no known populations occur within the GHMTA. Additionally, the boundaries of both populations of Georgia rockcress are marked with sensitive area signs within which no digging or vehicles are allowed; therefore, no impacts would occur.

Gopher Tortoise

Alternative 1 is not expected to affect the gopher tortoise population because the gopher tortoise is found primarily within the sandhill communities located in the northeastern portion of the Installation. ABCT conversion to an IBCT would reduce the impacts on gopher tortoise in the various locations where the ABCT and IBCT would train, where populations are known to exist. Per the 2015 INRMP (Fort Benning 2015a), the Installation would protect existing suitable habitat and maintain the current population of gopher tortoises. Mitigation measures would include surveys, transect sampling, coordination with state and federal agencies, and increasing public awareness concerning the tortoise.

Shiny-rayed Pocketbook

Although no known populations currently are known to occur on Fort Benning, critical habitat has been designated for the shiny-rayed pocketbook along Uchee Creek in Russell County, Alabama. Per the 2015 Enhanced Training BA, actions taken under Alternative 1 are expected to have "no effect" on the shiny-rayed pocketbook because there would not be any destruction or adverse modification of any designated critical habitat. Fort Benning would, however, continue to protect surface waters from sedimentation through application of National Pollutant Discharge Elimination System (NPDES) BMPs, avoid soil and vegetation-disturbing activities in the riparian zone, and restore unstable stream channels. The Installation would also prohibit digging and vehicle presence within the high water line of Uchee Creek and control invasive species, such as Asian clams, where feasible; therefore, no impacts are anticipated.

3.4.2.4 Alternative 2

Initially, Alternative 2 would have the same impacts as described for Alternative 1. When the IBCT is inactivated under Alternative 2, beneficial impacts to wildlife and special status species are anticipated because of the loss of the IBCT and related training activities. The loss of the IBCT would result in a

decrease in land use intensity and, therefore, would increase the habitat suitability for plants and animals. The removal of all vehicles, Soldiers, and training events in the IBCT training areas would reduce impacts from tracked vehicles, allowing more recovery time and maintenance functions to be performed. In turn, maneuver training areas would be more sustainable, which would decrease the potential for conflicts with wildlife and special status species. Locating the ARC off-road heavy maneuver training in the GHMTA as well as enhancing off-road heavy maneuver boxes within the existing GHMTA footprint could affect terrestrial wildlife through minor additional displacement from soil disturbance, removal of vegetation, vehicle traffic, and incidental human activity. Overall impacts would be minor, adverse as well as beneficial.

3.4.2.5 Mitigation Measures

The minimization measures put in place to keep students and cadre out of Uchee Creek would remain in effect to prevent impacts to critical habitat for the shiny-rayed pocketbook (U.S. Army 2014). Additionally, the signed buffers around relict trillium and Georgia rockcress populations described would continue to minimize impacts to these populations by dismounted or wheeled traffic associated with the 3rd Brigade and the ARC. Consultation with USFWS is ongoing. Fort Benning would comply with any requirements issued in the Enhanced Training BO to further reduce potential adverse impacts.

Per the ARC BE, Fort Benning personnel have maintained signs along many roads within the ARC training areas to prevent students from traveling into or through RCW clusters. Based on the vehicle tracking data provided by the USACE's Construction Engineering Research Laboratory, the time spent within 200 feet of RCW clusters that are not blocked is negligible; therefore, Fort Benning intends to revise the list of clusters where signs would be maintained in the future.

3.5 Cultural Resources

Cultural resources include archaeological sites, buildings, structures, objects, historic landscapes and districts, sacred sites, and properties of traditional religious and cultural importance. A historic property, as defined in the National Historic Preservation Act of 1966 (NHPA), is a cultural resource that is included or eligible for inclusion in the National Register of Historic Places (NRHP). Under Section 106 of the NHPA and its implementing regulations in *Protection of Historic and Cultural Properties* (36 CFR Part 800), federal agencies must take into account the effects of their undertakings on historic properties. These regulations also require that federal agencies consult with the State Historic Preservation Office (SHPO) on their undertakings and that they afford the Advisory Council on Historic Preservation the opportunity to comment on their undertakings. Section 110 of the NHPA further requires federal agencies to assume responsibility for the identification and preservation of historic properties on land owned or controlled by the agency.

Cultural resources found within the boundaries of Fort Benning include: archaeological sites, buildings, historic districts, and Native American resources. Thirteen federally recognized Tribes are affiliated with the Fort Benning area, of which 10 participate in consultation on a bi-annual basis. Management of cultural resources on Fort Benning is accomplished through the Installation's Integrated Cultural Resources Management Plan. Fort Benning has adopted the Army Alternate Procedures for implementing Section 106 of the NHPA in an effort to improve efficiency in the Installation's cultural resources

management. The Historic Properties component of these procedures establishes protocols for evaluating the potential effect on historic properties and combining Section 106 consultation with the NEPA process.

If mitigation is required, consultation with the appropriate SHPO and Tribes (i.e., stakeholders), as needed, will be conducted through the process required by NEPA. At this stage, all stakeholders can formally submit comments, and Fort Benning must take into account such comments prior to deciding how to proceed. It should be noted that Memoranda of Agreement between Fort Benning and other stakeholders are no longer used to document consultation and mitigation, instead the NEPA documents and the Historic Properties Component steps are used. Thus, a time-consuming effort normally found under 36 CFR 800 has been streamlined, while appropriate coordination with stakeholders occurs. Only NHPA Section 106 is covered by the Army Alternate Procedures. Other legal requirements such as the Native American Graves Protection and Repatriation Act, Archaeological Resources Protection Act, NHPA Section 110, and other mandates are unaffected by the Army Alternate Procedures. Fort Benning's Integrated Cultural Resources Management Plan will address compliance with these requirements. Informal contacts between Installation Cultural Resource Managers, SHPO staff, and Tribal representatives are maintained to ensure appropriate alternatives are explored and considered early in the process to achieve the highest level of historic preservation commensurate with mission requirements.

3.5.1 Affected Environment

The affected environment for cultural resources includes a general overview of cultural resources present at Fort Benning. The specific ROI for cultural resources includes all training areas, but more specifically, the additional boxes for proposed enhancement in the GHMTA, where new training activities would take place. A map of all training locations is provided in the Section 3.7, *Land Use* (see Figure 3-1).

3.5.1.1 Fort Benning History

Humans have lived on what is now Fort Benning for thousands of years. The earliest settlers were Paleoindians who arrived between 14,000 and 11,500 years ago after the end of the last Ice Age. Settlement by individuals of European and African descent began in the later 1790s and resulted in a substantial loss of land and life to the indigenous population of American Indian inhabitants. The area held large plantations and farmsteads; it was intensively farmed for about 80 years until 1918 when land was purchase for the establishment of a temporary 50-acre tent encampment named Camp Benning.

On 9 January 1922, Congress issued War Department General Order Number 1, authorizing the retention of Camp Benning as a permanent military post, and re-designating it as Fort Benning. Construction of Family housing, Soldiers' quarters, a hospital, athletic fields, and mess facilities occurred during the 1920s. By 1930, aviation activities had begun at Fort Benning and the Works Project Administration programs, created during the Great Depression, provided the impetus for construction of the first runways and hangars at Lawson Army Airfield, the first airstrip at Fort Benning.

The birth of the airborne infantry concept resulted in the performance of infantry parachute test jumps over Lawson Army Airfield, leading to the establishment of the Parachute School in 1942. With increased demand by the war effort for combat officers, Fort Benning met the challenge with the organization and establishment of the OCS, which operated from 1941 to 1946. When the Korean Conflict escalated, the

OCS was re-opened to train junior officers. In 1967, under demands of the Vietnam Conflict, the non-commissioned OCS was established to provide squad and fire team leaders.

The escalation of the Vietnam Conflict during the 1960s shifted the emphasis of instruction at the U.S. Airborne Infantry School toward combined-arms training. With the cessation of U.S. military involvement in Vietnam, the U.S. military re-directed its organization toward an all-volunteer army. At Fort Benning, the Modern Volunteer Army Program was initiated and in 1973, the 197th Infantry Brigade at Kelley Hill became the Army's first all-volunteer unit and the first combined-arms team under the Strategic Army Forces concept. Since that time, development of the Fort Benning area and the construction of new facilities to accommodate training and housing have continued. Today, Fort Benning continues to serve as the U.S. Airborne Infantry School and trains many Soldiers for the needs of today's Army.

3.5.1.2 Site-Specific Resources

Fort Benning has three NRHP-eligible historic districts: Main Post, Parachute Jump Towers, and Lawson Army Airfield. These districts include a total of 642 historic properties that are contributing to the districts. Additionally, 15 buildings are individually eligible for listing, of which one—Riverside (Quarters 1)—has been individually listed in the NRHP.

As of 2003, all of the areas of Fort Benning, except those that pose threats to human health and safety (e.g., ordnance impact/dud areas), have been inventoried for archaeological resources. As a result of these surveys, 3,982 archaeological sites have been recorded. Most of those sites (n = 3,062) have been determined ineligible for inclusion in the NRHP. Of the remaining 920 cultural and/or archaeological sites, 575 sites have been evaluated, 389 of which are ineligible and 186 are eligible. The eligible sites included Yuchi Town (1RU63), which is listed in the NRHP and is also designated as a National Historic Landmark. The remaining sites have not yet been evaluated for NRHP eligibility (USACE 2009, Fort Benning 2015b).

More than 80 installation-managed historic cemeteries are located within the boundaries of Fort Benning, including within the GHMTA, and several of these cemeteries are categorized as cultural resources.

Currently, no Tribe has identified a property of traditional religious or cultural importance on Fort Benning-managed lands. Fort Benning has a Reinterment Comprehensive Agreement with several Tribes so that reinterment elsewhere on the Installation is an option for any displaced American Indian burials or related cultural items located on Fort Benning as part of the Native American Graves Protection and Repatriation Act process (Fort Benning 2015b).

Within the areas for proposed enhancement in the GHMTA, there are 12 cultural resources, including 11 archeological resources and a cemetery. Of these 12 resources, 10 are eligible for the NRHP. The eligibility of the additional two have yet to be determined. The total acreage of all 12 cultural resource sites is 36.5 acres.

3.5.2 Environmental Consequences

3.5.2.1 Significance Thresholds

Impacts to cultural resources would be considered significant if they meet one or more of the following criteria:

- The activity would cause an adverse effect to a historic property that is listed on or eligible for inclusion in the NRHP, and measures mitigating the adverse effect of the resource are not available and cannot be implemented.
- The activity would restrict access to a cultural resource of significance to the Tribes associated with the Fort Benning area without resolution through consultation.

Direct effects generally involve physical damage or destruction to all or part of a resource through ground-disturbing activities or deterioration or destruction of a resource brought about through neglect. Indirect effects generally result from alterations to the characteristics of the surrounding environment or setting that contribute to a resource's significance, and increased use of or access to an area containing historic properties.

3.5.2.2 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would remain with no additional maneuver battalion added. The ARC off-road heavy maneuver training component would remain in the current location and would not be moved to an off-Installation location, and the GHMTA would not be enhanced to expand off-road heavy maneuver capabilities. As a result, there would be no change to cultural resources at Fort Benning, and be no impacts would occur.

3.5.2.3 Alternative 1

Overall impacts to cultural resources under Alternative 1 would be negligible.

Converting the 3rd ABCT to an IBCT would have negligible impacts on cultural resources. The reduction of tracked vehicles as a result of this conversion would reduce vehicle traffic near archaeological sites, thereby reducing potential impacts to those resources within the training areas. IBCT training includes more on-the-ground movements by Soldiers. Training could include digging, potentially disturbing archaeological resources. Archaeological resources would be avoided where possible; if not, Fort Benning would pursue mitigation, such as data collection and excavation/relocation, to mitigate any adverse impacts.

Locating the ARC off-road heavy maneuver training component in the GHMTA and enhancing the off-road maneuver training capabilities in the GHMTA would have the potential for adverse impacts on 11 archaeological resources and one cemetery. The cultural resources present within the additional maneuver boxes within the GHMTA would be avoided, if possible. If avoidance is not possible, Fort Benning would pursue mitigation through data collection and excavation/relocation of resources. Impacts to cultural resources would be negligible because procedures are in place to mitigate potential impacts to archaeological resources if avoidance is not possible.

3.5.2.4 Alternative 2

Impacts under Alternative 2 initially would be the same as Alternative 1, resulting in negligible adverse impacts. When the IBCT is inactivated, further reduction in cultural resources impacts from training is expected.

Fort Benning anticipates that the loss of the IBCT would decrease the training operational tempo and Soldier traffic near historic properties, including archaeological sites, thereby reducing potential impacts to those resources within the training areas.

The impacts of locating the off-road heavy maneuver training component in the GHMTA and enhancing off-road heavy maneuver capabilities would be the same as discussed under Alternative 1 (Preferred Alternative) and might result in negligible impacts on 11 archaeological resources and one cemetery. Archaeological resources would be avoided, if possible. If avoidance is not possible, Fort Benning would pursue mitigation, such as data collection and excavation/relocation, to mitigate any adverse effects.

3.5.2.5 Mitigation Measures

If cultural resources cannot be avoid entirely in the GHMTA, mitigation would be completed using the Army Alternate Procedures in place at Fort Benning. No additional mitigation would be required.

3.6 Hazardous Materials and Waste

This section describes the use, handling and storage, transport, and disposal of hazardous materials and wastes at Fort Benning due to training changes. The ROI for hazardous materials and the environmental waste management program includes the entire Installation.

A hazardous substance is any material or agent (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. Hazardous substances are defined and regulated in the United States primarily by laws and regulations administered by the U.S. Occupational Safety and Health Administration, USEPA, and the U.S. Department of Transportation.

Army policy is to ensure that use, handling, and management of hazardous materials and waste is in compliance with all applicable federal, state, or local laws and/or regulations.

3.6.1 Affected Environment

Through the combined efforts of the Safety Office, the Environmental Management Division, and the Directorate of Logistics, programs have been established at Fort Benning to accomplish the following:

- Control the entry of hazardous substances to the Installation
- Safely manage hazardous waste and material handling and transportation within the Installation
- Inform military and civilian employees of hazardous waste and material dangers
- Minimize the risk of human exposure and release into the environment associated with these substances

- Dispose of these substances in an environmentally sound manner when they are no longer useful

3.6.1.1 Hazardous Materials Use, Handling, and Storage

Routine operations on Fort Benning require the use of a variety of hazardous materials, including petroleum products, solvents, cleaning agents, paints, adhesives, and other products necessary to perform vehicle and equipment maintenance, military training activities, and training area upkeep.

3.6.1.2 Toxic Substances Management

Toxic substances that commonly occur on Army installations include asbestos-containing materials (ACM), lead-based paint (LBP), polychlorinated biphenyls (PCBs), and radon.

Asbestos

Routinely, all Fort Benning facilities scheduled for maintenance, renovation, remodeling, and demolition are inspected for presence of ACM. When required by law or as a precautionary measure, ACM is removed under outside contracts by licensed, specialized firms. Once removed, ACM is transported off the Installation by appropriately licensed transporters and disposed in appropriately permitted landfill facilities in accordance with applicable federal, state, local, and DoD regulations (U.S. Army 2009).

Lead-based Paint

The likelihood for buildings constructed prior to 1978 to contain LBP/coatings is high. Painted surfaces can be tested to determine if LBP is present. If testing has not been performed on surfaces painted before 1978, these surfaces should be presumed to contain LBP. Several structures and buildings are known or suspected to contain LBP on the Installation, and the LBP in these areas is generally managed in-place in accordance with industry guidelines and practices (e.g., National Institute for Building Sciences) to minimize the potential for creation of respirable dust, direct contact with the LBP surfaces, and contamination of the surrounding environment. Fort Benning's Lead-based Paint Management Plan addresses LBP risk assessment and disposal procedures for LBP, coatings, and LBP-contaminated soils. All construction contractors are required to follow plan procedures (U.S. Army 2009). The Proposed Action is anticipated to have no building demolition changes that would affect LBP-painted surfaces; therefore, LBP is not studied further.

Polychlorinated Biphenyls

PCBs are highly stable organic chemical compounds with a low flammability (i.e., they do not readily burn), high-heat capacity, and low electrical conductivity. In the past, PCBs were extensively used as a component of many materials, most notably as heat insulating materials (e.g., hydraulic fluid in vehicles, lifts, elevators) and as dielectric fluids in electrical transformers and capacitors. The harmful effects of PCBs to humans and the environment were not well documented in the past; however, PCBs are now known to cause skin irritation, are a suspected carcinogen, and are known to persist in the environment (i.e., they do not easily break down and they tend to accumulate in the tissues of living organisms). Under the authority of the Toxic Substances Control Act (TSCA), USEPA banned the continued manufacture of

PCBs after 1978. In addition, USEPA imposed controls related to existing PCB-containing electrical equipment that remain in use or that are removed from service for reuse or disposal (U.S. Army 2009).

In 1998, Fort Benning developed a PCB Inventory Report, which indicated that of the 2,157 transformers surveyed on the Installation, 1,166 were assumed to be PCB transformers (i.e., they contained equal to or greater than 500 parts-per-million PCBs) (Fort Benning 1998). Also in 1998, Fort Benning developed a PCB Management Plan (Fort Benning 1998) to formally establish the program for compliance with TSCA and other relevant regulatory requirements. Topics covered in the plan include 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 Lawson Army Airfield, which is under the management of Interior Electric (U.S. Army 2009).

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 (Fort Benning 2004a). The Proposed Action is anticipated to have no facility changes that would affect PCBs or their management; therefore, PCBs are not studied further.

Radon

Radon is a naturally occurring, colorless, odorless, radioactive gas produced by the decay of uranium in rock and soil. Radon is a known carcinogen, capable of causing direct damage to lung tissues and increasing the risk of lung cancer when inhaled. If present, radon gas will typically concentrate in airtight buildings and particularly in basements. Although no federal regulations define an acceptable level of radon exposure, USEPA recommends the voluntary, consensus-based mitigation of radon based on the standard developed and issued by the American Society for Testing and Materials (ASTM) International, *Standard Practice for Installing Radon Mitigation Systems in Existing Low-Rise Residential Buildings,* ASTM E-2121**.** The Army and USEPA recommend an action level of 4 picocuries per liter (USEPA 2013).

The Army Policy for Radon as outlined in Army Regulation 200-1, *Radon Policy Reduction Program*, requires measurement of radon in newly constructed Army facilities and use of USACE design criteria for radon reduction in new construction. Radon information provided by USEPA, Region IV, and statistics maintained by the Georgia Environmental Protection Division suggest that radon is not an issue of concern in the region (U.S. Army 2009). The Proposed Action is anticipated to have no facility changes that would affect radon or its management; therefore, radon is not studied further.

3.6.1.3 Hazardous Waste Generation, Storage, and Disposal

Training and support operations across the Installation 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.

The Fort Benning Environmental Management Division oversees the management of hazardous waste by assisting military units and activities that generate the waste. The Centralized Accumulation Points and Satellite Accumulation Points are maintained in various locations across the Installation to facilitate the collection of hazardous wastes and to ensure that the wastes are transported off of the Installation in accordance with applicable federal, state, and DoD regulations.

Hazardous wastes generated by Installation and tenant activities are collected and transferred to a central storage area where they may be stored for no longer than 90 days before being transported offsite for treatment or disposal since Fort Benning is classified as a Resource Conservation and Recovery Act (RCRA) Large Quantity Generator of Hazardous Waste. Fort Benning arranges for the transport and disposal of its hazardous waste by appropriately licensed waste management and transportation companies through a Defense Reutilization and Marketing Office contract.

Fort Benning trains approximately 1,500 workers, inspects nearly 287 waste accumulation areas annually, and provides program oversight for the disposal of over 192,475 pounds of hazardous and toxic waste generated per year (Fort Benning 2006a). Fort Benning currently operates under Corrective Action Permit Number HW-021(CA) and Facility I.D. No. GA3210020084. Also, Fort Benning manages compliance with the relevant regulations through its Hazardous Waste Management Plan.

3.6.1.4 Contaminated Sites

Past resource and waste management practices at DoD facilities have resulted in the presence of toxic and hazardous waste contamination at some Installations, including Fort Benning. In response, Fort Benning has undertaken mitigation and cleanup activities under its Installation Restoration Program to manage these sites, which are referred to as Solid Waste Management Units (SWMUs) (Fort Benning 2005a,b). The Fort Benning Environmental Management Division actively manages programs for addressing contaminated sites in compliance with RCRA and the National Oil and Hazardous Substances Pollution Contingency Plan.

These sites are designated either as Operation and Maintenance, Army-SWMUs, which are being managed—and will be managed in the future as they are discovered—under the 2005 Fort Benning Environmental Action Plan (EAP) or as Environmental Restoration, Army-SWMUs, which are being managed under 2005 Fort Benning Installation Action Plan (IAP). The cleanup activities initiated under the EAP are directed at contamination primarily resulting from current operations, and the contaminants of concern include petroleum, oils, and lubricants; trichloroethylene (TCE); metals; volatile organic compounds; pesticides; and leachate. The IAP is specifically focused on contamination resulting from past activities, and the contaminants of concern include gasoline (including its constituents, benzene, toluene, ethylbenzene, and xylenes), paint, TCE, and leachate. Both the EAP and the IAP have been developed through consultation and coordination with USAEC, USEPA, Georgia Environmental Protection Division, and the public. Two active contaminated sites—Closed Landfill No. 6 and Former AST – Pump House and Dispenser System—are located in the Fort Benning training areas. Neither of the contaminated sites is located in the GHMTA.

Consistent with DoD policy, it is Fort Benning's policy to include a review process to identify any involvement of known or potentially contaminated sites that may be affected by proposed construction to prevent the spread of any contamination and to ensure that construction workers and personnel who use

the project areas are not exposed to unsafe conditions. SMWUs that need corrective action are identified on a geographic information system layer maintained for Fort Benning, and this resource file is reviewed for any proposed construction projects. Those sites requiring corrective action have recorded land use controls that allow the project planners and engineers to evaluate the nature of the contamination and take proper action to prevent the spread of contaminants to the environment or expose personnel as a result of proposed construction. The nature of exposure protection includes the potential for subsurface vapor intrusion below buildings. For locations where contamination has occurred in the past but a determination of No Further Action has been made, this determination is based upon the documentation that all contaminant exposure avenues have been identified and that all exposure levels of any contaminants are below all USEPA and Georgia Environmental Protection Division screening levels, and no protective measures or additional clean-up or land use controls are necessary.

Use of military munitions may also result in hazardous waste and potential soil or water contamination. USEPA's Military Munitions Rule identified when military munitions become a hazardous waste under the RCRA and provided for the safe storage and transport of such waste (62 Federal Register 6621). To support the DOD requirements and the Army's Sustainable Range Program, the Army conducted assessments to determine whether munitions constituents of concern (MCOC) that have been released or cause a substantial threat of release would cause a potentially unacceptable risk to human health or the environment. The Operational Range Assessment Program (ORAP) used sampling for MCOC-related contaminants, including lead and copper, for the assessment at Fort Benning. The low level of detections of MCOC were below conservative limits and/or at concentrations comparable to background levels in the surface water, sediment, and groundwater samples. The ORAP assessment concluded that there are no unacceptable risks to off-range human and/or ecological receptors from MCOC sources associated with the training and range-related operations at Fort Benning (Arcadis Malcom Pirnie Undated). The Proposed Action is not expected to create any new contamination migration pathways, change any sensitive receptor locations, or introduce any new MCOC constituents that would change the ORAP assessment; therefore, potential releases or contamination from military munitions are not considered further in this EA (Veenstra 2015).

3.6.2 Environmental Consequences

3.6.2.1 Significance Thresholds

Impacts would be considered significant if they would result in:

- An unacceptable risk of exposure or impact to human health and safety regarding the amount of materials or waste to be handled, stored, used, or disposed of, as measured by a probable regulatory violation

3.6.2.2 No Action Alternative

The No Action Alternative would not change the baseline conditions for management of hazardous materials, toxic substances, hazardous waste, or contaminated sites at Fort Benning. Fort Benning would continue to minimize any adverse impacts of hazardous materials and waste by following all applicable laws, regulations, and Fort Benning plans. Therefore, negligible impacts are anticipated.

3.6.2.3 Alternative 1

Overall adverse impacts to hazardous materials and hazardous wastes under Alternative 1 would be short term and long term and negligible.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

With the conversion of the 3rd ABCT to an IBCT, the amount of oils and solvents used on vehicles would be reduced; however, the equipment needed for an IBCT could require additional cleaning solutions, resulting in long-term, negligible impacts.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training component in the GHMTA would not affect the amount of hazardous materials and waste produced throughout the Installation, only the location in which they are produced.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

Enhancing the GHMTA with additional off-road heavy maneuver training capabilities may produce increased hazardous materials and waste due to additional vehicle presence during construction; however, Fort Benning would minimize any adverse impacts of hazardous materials and waste by following all applicable laws, regulations, and Fort Benning plans.

3.6.2.4 Alternative 2

Overall adverse impacts to hazardous materials and hazardous wastes under Alternative 2 would be short term and long term and negligible.

Under Alternative 2, the ABCT would be converted to and operate as an IBCT for up to approximately 5 years. During that time frame, impacts would be the same as Alternative 1 or negligible, adverse impacts. Thereafter, the IBCT would be inactivated, resulting in decreased hazardous wastes from vehicle and equipment maintenance. Also, the potential for spills associated with IBCT training and maintenance activities would be eliminated. Negligible, adverse impacts to human health and safety from hazardous materials and hazardous waste are anticipated.

As described for Alternative 1, locating the ARC off-road heavy maneuver training component in the GHMTA would have no effect on the amount of hazardous materials used or hazardous waste generated throughout the Installation.

Enhancing the GHMTA with additional off-road heavy maneuver capabilities would have short-term, negligible, adverse impacts from the amount of hazardous materials used and hazardous waste generated during construction. Fort Benning would minimize any adverse impacts of hazardous materials and hazardous waste by following all applicable laws, regulations, and Fort Benning plans.

3.6.2.5 Mitigation Measures

No mitigation measures are identified outside of applicable federal, state, and Army laws and regulations, and Fort Benning plans.

3.7 Land Use

3.7.1 Affected Environment

Fort Benning covers approximately 182,000 acres in portions of Muscogee, Chattahoochee, and Russell counties. Fort Benning training lands consist of drop zones, landing zones, dudded and non-dudded impact areas, ranges, and maneuver areas. Maneuver areas and landing and drop zones are located throughout the Installation.

Land use conflicts and compatibility issues result from encroachment by the surrounding communities. Land uses immediately adjacent to the Installation consist of residential, agricultural and timber, industrial, and open space. Residential encroachment adjacent to the Installation causes concern due to potential incompatibility. Communities near Fort Benning are required by the state of Georgia to coordinate with Fort Benning on any proposed zoning decisions for land that is within 3,000 feet of the Installation (Georgia Code 36-66-6). The decision-making process enables zoning changes to be compatible with nearby military land use.

Fort Benning produces various impacts—smoke from prescribed burns, the risk of an aircraft accident, and noise from small and large arms firing—that can affect the quality of life in surrounding communities. To assist the communities in the land use zoning decisions, the Joint Land Use Study (JLUS) describes the land use zones and noise zones that the Army uses to estimate the impacts from encroachment (U.S. Army 2013).

Through the JLUS, Fort Benning closely works with the community to develop cooperative approaches for reducing adverse impacts of conflicting land uses. The Army also addresses encroachment issues and promotes natural resource conservation through the Army Compatible Use Buffer (ACUB) program. An implementation strategy of the ACUB program is to acquire conservation easements or other land interests near the Installation's boundaries in perpetuity to promote compatible land use practices. While the ACUB program prohibits development on property enrolled in the ACUB program, the ACUB program promotes compatible uses such as farming and forestry that do not pose a risk of encroachment to Installation training activities. The ACUB program also expands conservation of natural resources, and management of threatened and endangered species to properties outside of Fort Benning.

Lands that are not used for training at Fort Benning are used to support cantonment functions. At approximately 8,850 acres, Main Post is the largest and most developed of the cantonment areas. It includes the MCoE and Garrison Headquarters, Infantry and Armor Schools, Cuartels Barracks Complex, Martin Army Community Hospital, Post Exchange, Commissary, and various Family housing areas. Lawson Army Airfield is located in the southernmost portion of Main Post. The areas of Main Post adjacent to the Chattahoochee River and Upatoi Creek are largely green space. Family housing and outdoor recreation dominate the northern portion of Main Post. The densely developed core of Main Post includes unaccompanied personnel housing, community facilities, training facilities, supply and storage,

maintenance, industrial, and medical land uses. The Proposed Action would not affect cantonment areas, so the Land Use impact analysis does not address cantonment areas.

The majority of training lands at Fort Benning are usable year-round. The primary land use document guiding military training is the Fort Benning Range and Training Land Program (RTLP) Development Plan (Fort Benning 2006a,b). The RTLP Development Plan is prepared using the RTLP planning process as defined in *Army Ranges and Training Land Program* (Army Regulation 210-21), dated 1 May 1997, and *The Army Sustainable Range Program* (Army Regulation 350-19), dated 30 August 2005. The RTLP Development Plan provides a view of the available assets, identifies users, and establishes training needs based on Army training and resource doctrine. The RTLP process addresses managing range facilities and training areas by establishing current requirements and utilization levels for available training assets. This process also provides a near- and long-term project plan for training, public works, and environmental planners. Most training land use is dedicated to maneuver training. Figure 3-1 depicts the operational land use at Fort Benning. Training compartments are identified for the heavy maneuver training areas and the light maneuver training areas. Maneuver area lands are used for conducting force-on-force maneuver training associated with field training exercises and situational training exercises in the Army Training and Evaluation Programs. Combined arms maneuvering integrates field artillery fire support, close air support, and Army aviation with the Infantry and Armor to attack or defend an objective (Fort Benning 2007).

Light maneuver training areas are used for dismounted foot traffic Infantry, wheeled vehicles, and towed artillery training. Heavy maneuver training areas are used for training with both tracked and heavy wheeled vehicles and equipment, primarily on established trails but also some free maneuvering (cross-country travel) of heavy equipment across appropriate terrain. Heavy maneuver areas can be used for light maneuver as well; therefore, all maneuver training areas are available for light forces. Heavy maneuver training areas occupy 62,958 acres primarily located in the northeastern portion of the Installation. Light maneuver training lands occupy 48,171 acres primarily located in the southwestern portion of the Installation (Fort Benning 2006b). The SMTA is located on the southeastern portion of the Heavy Maneuver Training Area on the eastern side of the Installation. The GHMTA is located in southern Fort Benning in an area designated as a Heavy Maneuver Training Area.

The Army identifies land use areas that receive live-fire ordnance as dudded and non-dudded impact areas. A dudded impact area is an area that is known to contain unexploded live ammunition or a dud (an explosive ammunition that has been fired, has failed to function as designed, and as a result is of a hazardous or unpredictable condition). Access to dudded impact areas is restricted to mission essential activities and coordinated with the Range Operations Center office prior to entry. Non-dudded impact areas are those that receive munitions that do not include high explosive or dud-producing ordnance (such as training rounds or projectiles from small arms). Non-dudded impact areas can be used for maneuver training at the expense of ceasing live-fire training when the associated SDZ overlap with the training area. At Fort Benning, dudded and non-dudded impact areas are concentrated in three range complexes on the Installation. The two primary dudded impact areas are the K-15 dudded impact area, located within the Oscar-Kilo Range Complex in the northeast corner of the Installation, and the A-20 dudded impact area, located within the Alpha Range Complex in the southern portion of the Installation. A number of other smaller dudded impact areas are located throughout these two range complexes in addition to the Malone Range Complex on the western boundary of the Installation (see Figure 3-1).

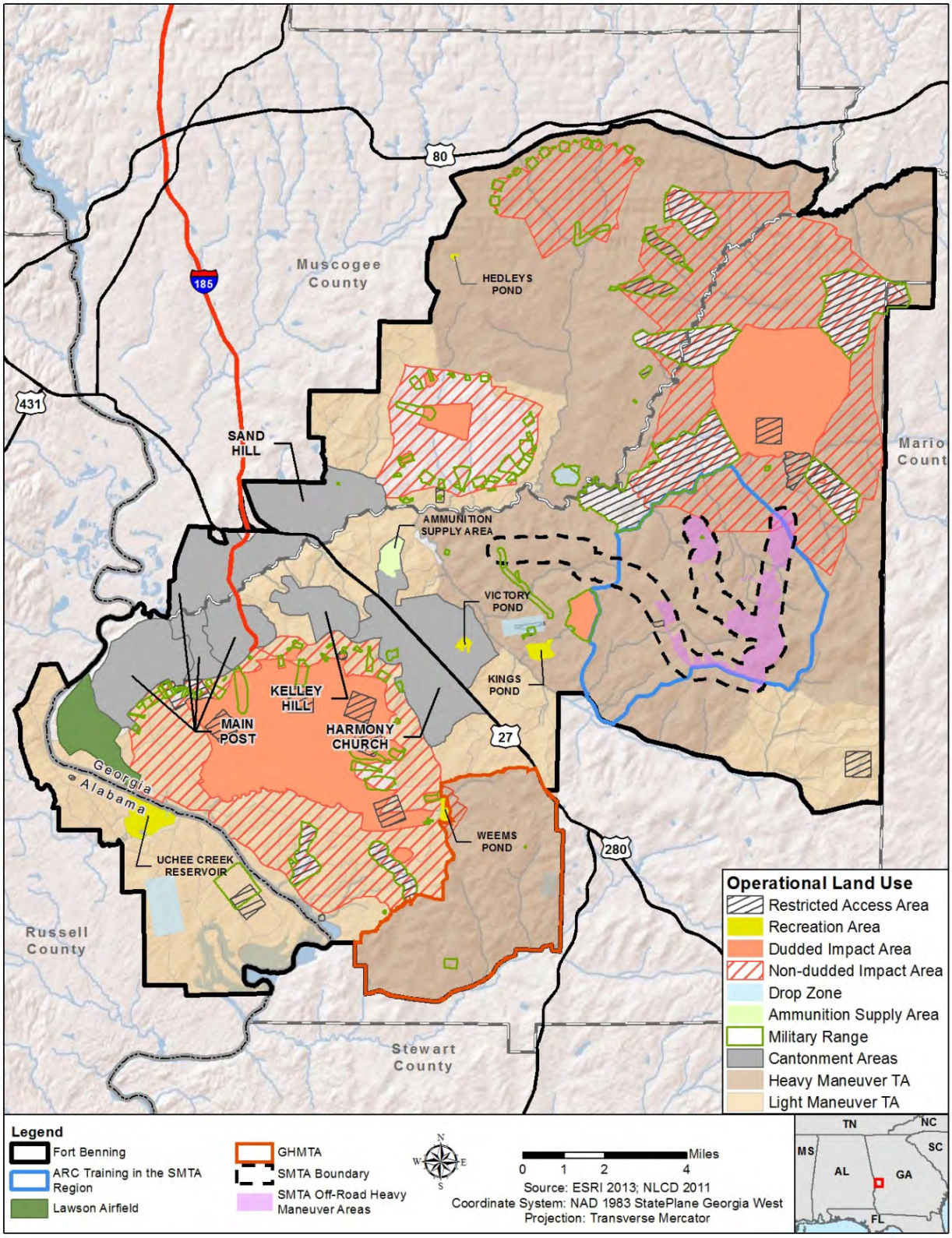

Figure 3-1. Fort Benning Operational Land Use

Aviation units on Fort Benning train at all echelons from individual through battalion/squadron. The training tasks accomplished in the training areas include all tactical maneuvers, performed in accordance with each aircraft's aircrew training manual and the unit's standard operating procedures. These maneuvers include nap-of-the-earth (flying very close to the ground while following the contours of land features), equipment and personnel drops, and low-level flight. Fixed-wing aircraft of the Air Force and Air National Guard also conduct training missions in Fort Benning airspace and use ordnance impact areas on the installation for weapon delivery practice.

3.7.2 Environmental Consequences

3.7.2.1 Significance Thresholds

Impacts to land use would be considered significant if:

- The action would be inconsistent with the surrounding land uses, including those in the nearby community
- The action changes land use in such a way that mission-essential training is degraded

It should be noted that, while mentioned below, potential noise-related impacts both on the Installation and off the Installation are also addressed in detail in Chapter 3

3.7.2.2 No Action Alternative

Fort Benning anticipates no impacts to land use compatibility. With the current operational tempo of live-fire and night-time training events, the encroachment of communities along Fort Benning's boundary could cause conflicts in land use. This conflict is primarily from noise generated by training exercises and the proximity of sensitive noise receptors. Fort Benning's ACUB and JLUS programs attempt to mitigate these potential impacts to the surrounding communities. Continued negligible adverse impacts to land use would occur under the No Action Alternative.

3.7.2.3 Alternative 1

Overall impacts to land use under Alternative 1 would be no impact to negligible impacts.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

No land uses would change under this action. The IBCT would likely use more light maneuver training area lands and small arms ranges than the ABCT uses; however, this is consistent with current land use plans and would not change the overall type of use of training lands, resulting in no impacts to land use. The training lands would not change. Therefore, there would be no increased potential for encroachment. Overall, this is anticipated to result in no impacts to land use.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training component in the GHMTA would not change the land use of this area. The potential for encroachment in the GHMTA would be negligible because the ARC off-road heavy maneuver training would be a relatively small increase in training in the GHMTA and would remain within the existing GHMTA boundary. Fort Benning would continue the JLUS and ACUB programs to minimize potential land use conflicts between training on the Installation and the surrounding community, resulting in negligible impacts.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

Because the GHMTA currently supports, and is authorized for heavy maneuver training, no new land uses would occur under the Proposed Action, and the enhancement of off-road heavy maneuver capabilities within the GHMTA would comply with all land use plans. While some lands in GHMTA would change as a result of their use for off-road heavy maneuver, the overall GHMTA land use designation as a training area would not change under the Proposed Action, resulting in no impacts to land use. Furthermore, the enhancement of some land to accommodate off-road heavy maneuvers would be consistent with nearby land uses, resulting in no impacts to land use. The potential for encroachment in the GHMTA would be negligible because there are already a number of off-road heavy maneuver roads and boxes in the GHTMA and a number of dirt-roads outside the fence line of the Installation. Therefore, there would be no increased potential for encroachment.

3.7.2.4 Alternative 2

Under Alternative 2, initial impacts would be the same as described for Alternative 1. Thereafter, no changes to land use categories are anticipated for the inactivation of the IBCT. Any resulting decrease in large arms fire and night-time training exercises would not likely be sufficient to change current noise zone contours and associated land use impacts. Fort Benning would continue the JLUS and ACUB programs to minimize potential land use conflicts between training on the Installation and the surrounding community.

Impacts from locating the ARC off-road heavy maneuver training and adding off-road heavy maneuver training areas in the GHMTA would be the same as described for Alternative 1, resulting in negligible impacts to land use. Overall, Alternative 2 would result in potentially negligible impacts due to fewer training events on Fort Benning from the inactivation of the IBCT.

3.7.2.5 Mitigation Measures

No mitigation measures have been identified outside of adherence to all existing land use management requirements and use of the JLUS and ACUB programs to minimize potential land use conflicts between training on the Installation and the surrounding community.

3.8 Noise

3.8.1 Affected Environment

Noise is defined as sound that is unwanted and that interferes with normal activities or otherwise diminishes the quality of the environment. Noise may be intermittent or continuous, steady or impulsive, stationary or transient. Receptors have a wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source but also according to the sensitivity and expectations of the receptor, time of day, and distance between the noise source (e.g., a bulldozer) and the type of receptor (e.g., a person or animal). Ambient noise can be generated by a variety of sources including mobile sources (e.g., trucks), stationary sources (e.g., construction sites, machinery, or industrial operations), and natural sources (e.g., wind, streams, and wildlife). Noise associated with military installations is a factor in land use planning both on and off the Installation, and is referred to as operational noise as it occurs during the day-to-day, long-term operation of Fort Benning. Noise emanates from vehicular traffic associated with training and from project sites during construction. Small- and large-caliber weapon fire is the largest producer of noise on the Installation.

Noise levels are measured in decibels (dB), which represent the acoustical energy present. Noise levels are represented in A-weighted decibels (dBA) for higher frequency sounds or C-weighted decibels (dBC) for lower frequency sounds. A 3-dB increase is equivalent to doubling the sound pressure level but is barely perceptible to the human ear. Table 3-3 provides some examples of sound levels of typical noise sources and noise environments.

Table 3-3. Typical Noise Levels

Sound	Noise Level (dBA)	Effect
Shotgun firing, jet takeoff (at 100–200 feet)	130	Painful
Turbo-prop at 200 feet, rock concert	110–140	Threshold of pain begins around 125 dB
Thunderclap (near)	120	Threshold of sensation begins
Stereo (over 100 watts)	110–125	Regular exposure to sound over 100 dB of more than 1 minute risks permanent hearing loss
Symphony orchestra, chainsaw, jackhammer	110	
Jet flyover (1,000 feet)	103	
Electric furnace, garbage truck, cement mixer	100	No more than 15 minutes of unprotected exposure recommended for sounds between 90–100 dB
Subway, motorcycle (at 25 feet)	88	Very annoying
Lawnmower/nearby thunder	85–90	85 dB is the level at which hearing damage (8 hours) begins
Recreational vehicles	70–90	
Diesel truck (40 mph at 50 feet)	84	80 dB or higher is annoying, interferes with conversation, constant exposure may cause damage
Dishwasher, washing machine	75–78	70 dB or higher is intrusive, interferes with telephone conversation
Vacuum cleaner	70	
Automobile (45 mph at 100 feet)	60	Comfortable hearing levels are less than 60 dB.

Sound	Noise Level (dBA)	Effect
Croaking raven (100 feet), conversation	50–65	
Quiet Office	50–60	
Refrigerator humming	40	Quiet
Rustling leaves	20	Very quiet
Normal breathing	10	Barely audible
	0	Approximate threshold of human hearing at 1 kHz

Source: National Institute on Deafness and Other Communication Disorders (1990)

The Army uses a widely accepted metric to measure environmental noise levels for their activities, the day-night sound level (DNL) measurement. This metric is recommended by USEPA, used by most federal agencies when defining their noise environment, and applied as a land-use planning tool for predicting areas of potential annoyance both inside and outside of an installation. DNL describes the average daily acoustic energy over an entire year—meaning that the whole spectrum of sound, from quiet to loud noises, is averaged across the year. The DNL metric also incorporates a "penalty" for nighttime noise (normally 10:00 p.m. to 7:00 a.m.) when loud sounds are more noticeable and annoying (USACE 2009). However, when measuring noise levels from small arms and large-caliber sources, weighted noise metrics are used (USACHPPM 2006). Peak noise levels are also determined to consider the maximum sound level experienced by a receiver during a single-noise event. This unweighted peak measurement, with no time averaging, is a good predictor of complaints (USACHPPM 2006).

The weighted measurements screen out the very high and low sound frequencies that cannot be heard by humans. A-weighted noise measurements reflect what people hear, noted as dBA or ADNL. A-weighting is typically applied to measuring noise for small arms activities. For low-frequency sounds that can cause vibrations, a C-weighting metric is used; noted as dBC or CDNL. Many find that these lower frequency sounds like artillery and explosions are more annoying than other noises so that is taken into account in this metric (USACE 2009).

Noise Perception. According to the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM 2006), the reactions of people when hearing noise can be affected by a number of variables:

- Intensity (how loud the noise is)
- Duration (does it last a second or an hour)
- Repetition (does it occur every day or once a month)
- Abruptness of the onset or stoppage of the noise (does it startle or come about at unpredictable times)
- Background noise levels (does the person hearing the noise live in an urban or rural environment)
- Interference with activities (does it interrupt phone conversations, listening to the radio or television)

- Previous community experience with the noise (some neighbors may be new or have lived there for most of their lives)
- Time (does noise occur in the middle of the day or night)
- Fear of personal danger from the noise sources (can the noise be associated with ammunition escaping from the Installation boundary)
- The extent that people believe the noise can be controlled

All of these factors play into how annoyed the community may feel at any one time when noise is generated at an installation, such as Fort Benning. To assist the community in land-use planning and zoning, the Army uses planning zones where noise levels are separated into four categories associated with noise level contours: Land Use Planning Zone (LUPZ), Zone I, Zone II, and Zone III. The paragraphs below and Table 3-4 present these zones and the types of activities that are considered compatible within these zones (USACHPPM 2006).

Table 3-4. Zone and Compatibility

Zone	Decibel A-weighted/C-weighted/Peak	Compatibility Level
LUPZ	60 to 65 dBA / 57 to 62 dBC	Compatible
I	<65 dBA / <62 dBC	Compatible
II	65 to 75 dBA / 62 to 70 dBC / 87 PK	Normally Incompatible
III	>75 dBA / >70 dBC / >104 PK	Incompatible

- **LUPZ—**This zone is a subdivision of Zone I. The LUPZ is 5 dB lower than the Zone II. Within this area, noise-sensitive land uses are generally acceptable. However, communities and individuals often have different views regarding what level of noise is acceptable or desirable. To address this, some local governments have implemented land use planning measures out beyond the Zone II limits. Additionally, implementing planning controls within the LUPZ can develop a buffer to avert the possibility of future noise conflicts (U.S. Army Public Health Command 2014).
- **Zone I—**Noise-sensitive land uses are generally acceptable within Zone 1. However, though an area may only receive Zone 1 levels, military operations may be loud enough to be heard – or even judged loud on occasion (U.S. Army Public Health Command 2014). This zone includes all areas around a noise source in which DNL is less than 65 dBA or 62 dBC. This area is usually suitable for all types of land use activities (e.g., homes, schools, and hospitals). Zone I on maps are simply areas that are neither Zone II nor Zone III (Fort Benning 2009).
- **Zone II—**This zone consists of an area where the DNL is between 65 and 75 dBA; 62 and 70 dBC; or 87 PK. Exposure to noise within this area is normally incompatible with noise-sensitive land uses and use of the land within the zone should normally be limited to activities such as industrial, manufacturing, transportation, and resource production (e.g., industrial parks, factories, and highways) (U.S. Army Public Health Command 2014).

- **Zone III—**This zone is an area around the source of noise in which the DNL is greater than 75 dBA, 70 dBC, or 104 PK. The noise level within this zone is considered incompatible with noise sensitive land uses such as churches, schools, parks, playgrounds (U.S. Army Public Health Command 2014).

Noise generated at Fort Benning comes from small-caliber weapons firing (.50 caliber and below) and large-caliber weapons firing from mortar, tank guns, and artillery; pyrotechnical devices (e.g., flares); and rotary and fixed-wing tactical aircraft. Noise level contours have been derived from software models that evaluate acoustics specific to weapons and ammunition types in conjunction with firing direction, frequency, and range configuration (e.g., size and berms), as well as aircraft types and numbers, and frequency of takeoffs, landings, and duration of flight operations. Figures 3-2, 3-3, and 3-4 present the noise levels generated through these various activities and illustrate the general noise environment around the Installation.

The ROI for noise encompasses the land within Fort Benning and any communities or neighbors close enough to be reasonably affected by operational noise. For Fort Benning, this includes the urban areas of Columbus, Georgia, and Phenix City, Alabama. The background noise environment in an urban setting includes noise generated on highways, street traffic, police/ambulance sirens, aircraft, construction activities, railroads, and commercial and industrial activities. In small towns around Fort Benning, such as Buena Vista, Cusseta, Juniper, and Upatoi, usual background noise includes vehicles, lawn mowers, and aircraft. Rural areas to the east, south, and southwest of Fort Benning consist of residential, undeveloped, and timberland areas. Background noise in these areas would typically consist of vehicles and agricultural equipment. Sensitive receptors adjacent to the Installation generally comprise residential homes (Fort Benning 2009).

Currently, planning efforts at Fort Benning associated with noise and adjacent land use compatibility are found primarily in two plans—the Installation Operational Noise Management Plan and a community JLUS. These plans present recommendations to the surrounding counties/municipalities for adopting both a noise disclosure and noise easement ordinance for areas within the LUPZ, Zone II, and Zone III, as well as within a planning area adjacent to the Fort Benning boundary. Such planning efforts encourage the community to adopt ordinances that promote land use that is compatible with the noise produced at Fort Benning, including noise level reduction features in new noise-sensitive buildings (e.g., hospitals). Current planning for the Consolidated Columbus Government and the Unified Chattahoochee-Cusseta Government includes considerations for compatible land use planning within the ROI. Fort Benning's ACUB also addresses land use incompatibilities and noise (USACE 2009).

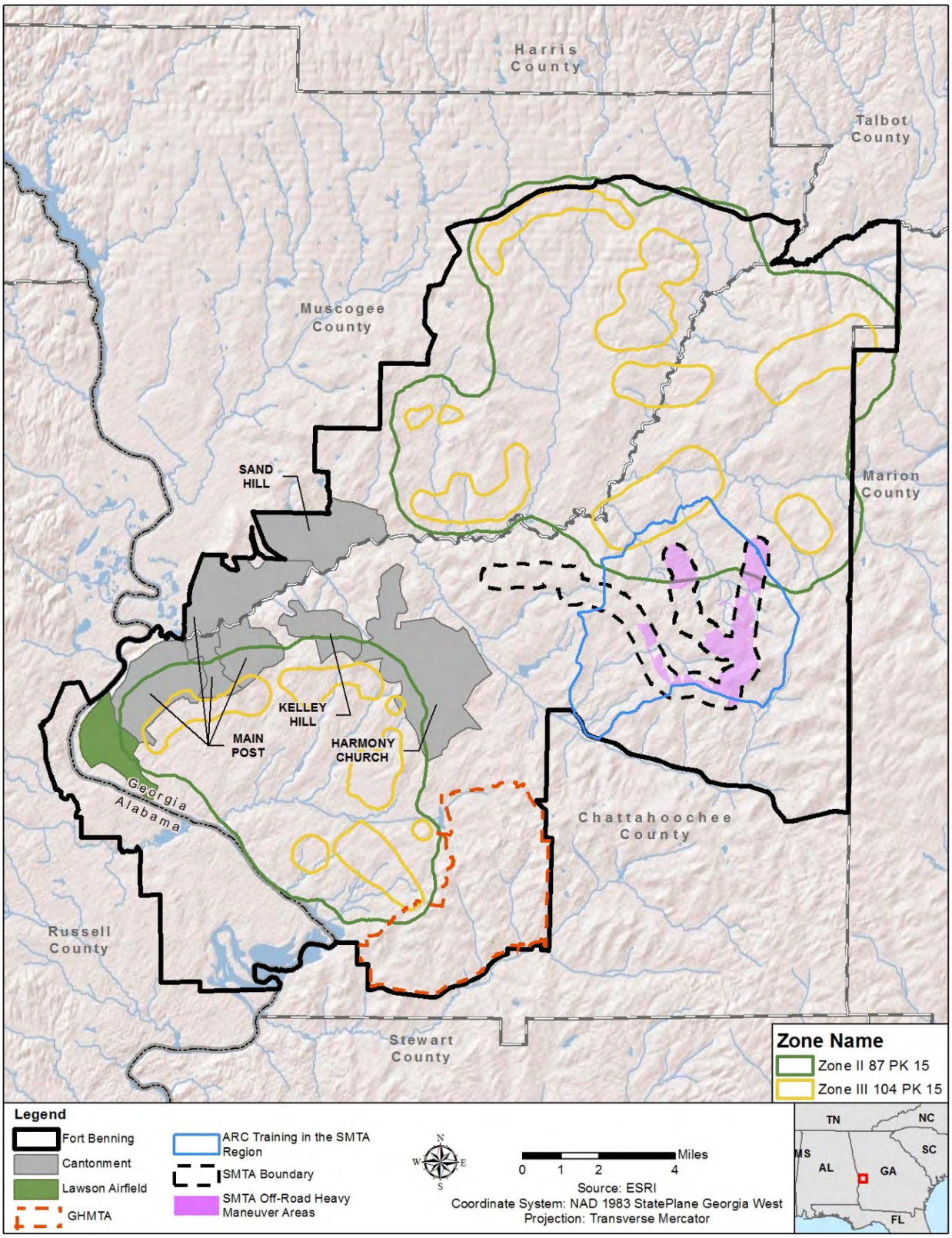

Figure 3-2. Baseline A-Weighted Contour Levels Generated from Small-Caliber Weapons

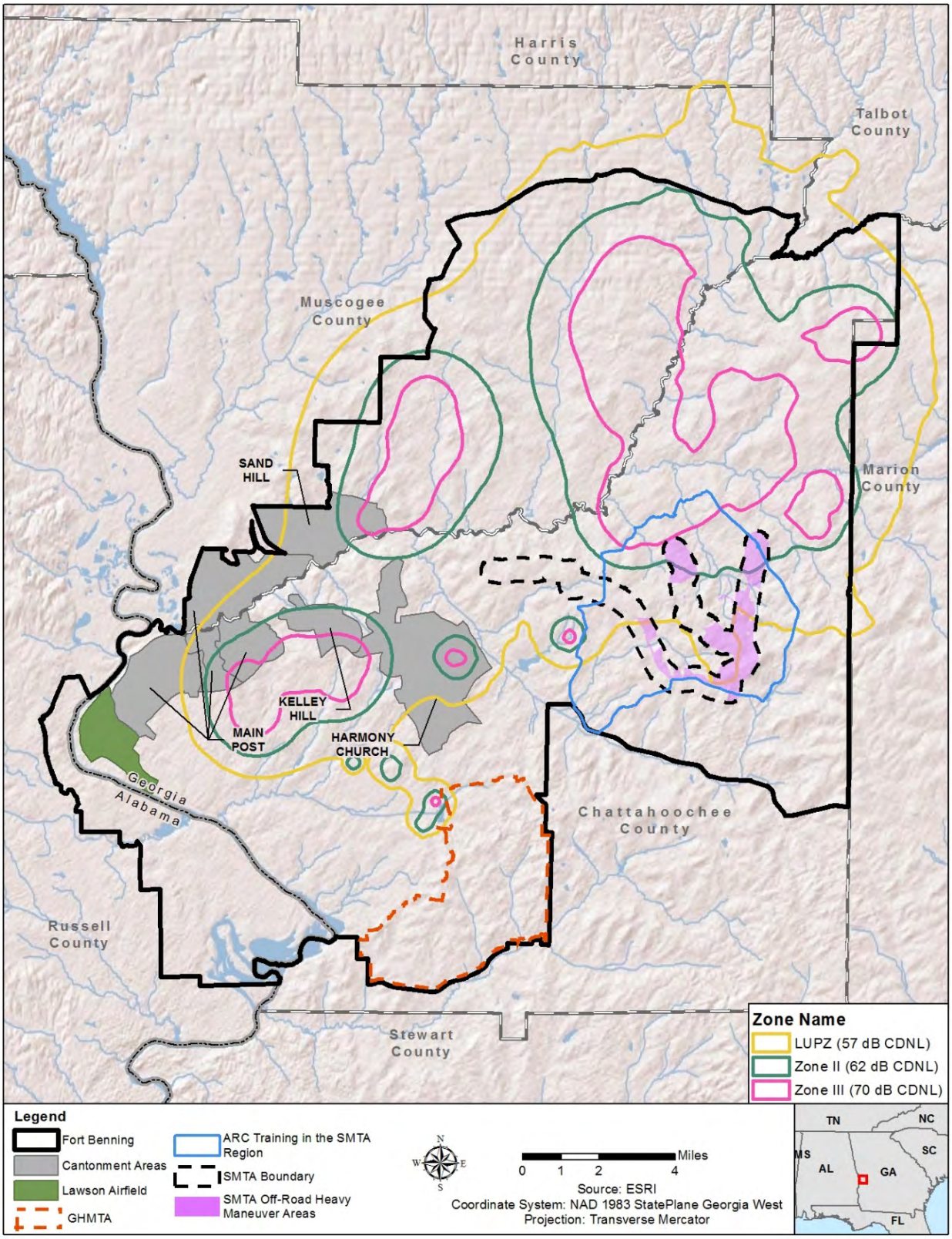

Figure 3-3. Baseline Noise Contour Levels Generated from Large-Caliber Weapons

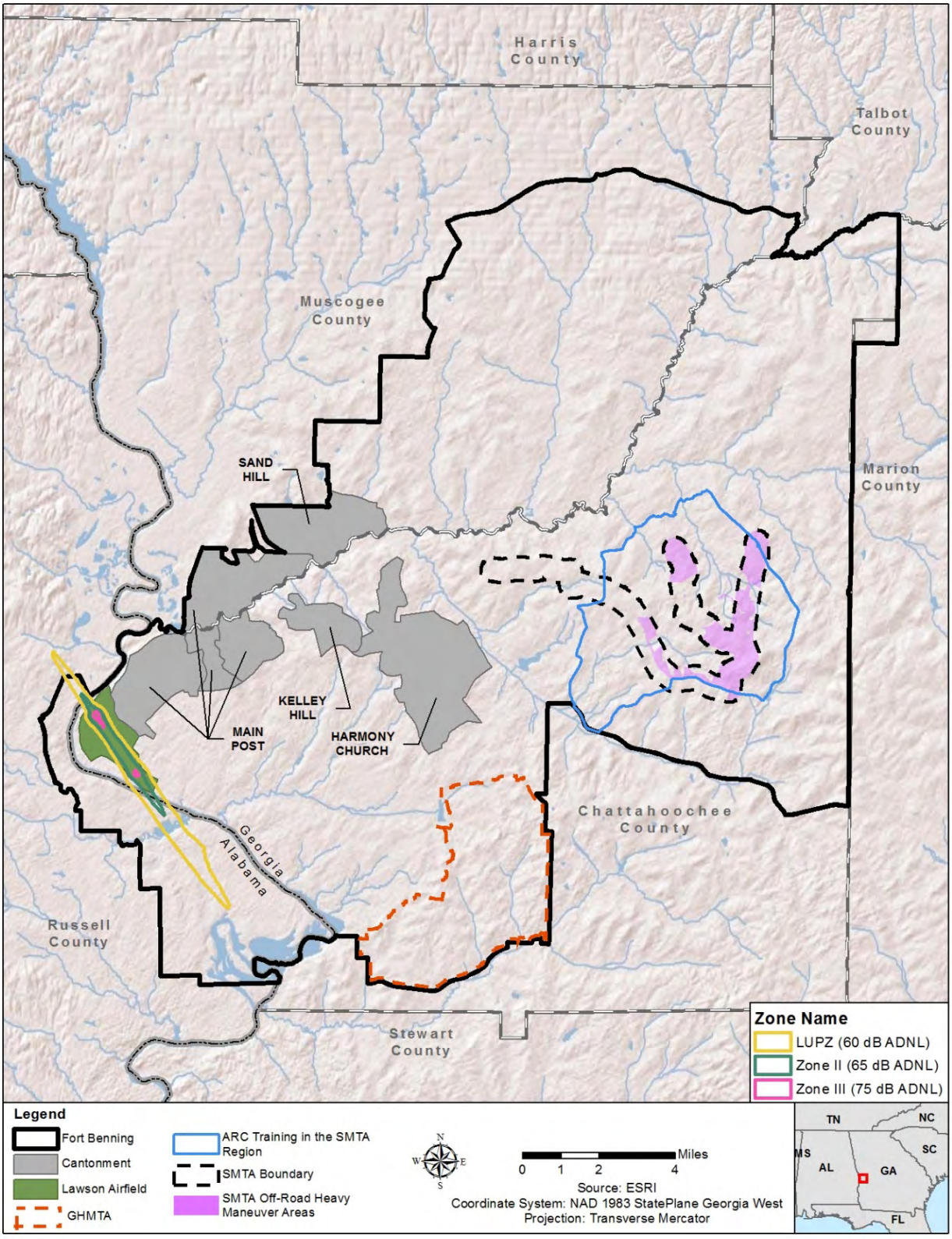

Figure 3-4. Baseline Noise Contour Levels Generated from Rotary and Fixed-Wing Aircraft

These noise level contours do not necessarily reflect exactly what is heard on a day-to-day basis; however, use of these metrics is the best measurement of the noise environment over time and provides the Army and the community with a management tool for land use development. To help reduce noise impacts on the community, Fort Benning has adopted the following *voluntary* restrictions:

- Firing of weapons .50 caliber or greater is restricted between 12:00 a.m. and 6:00 a.m., exceptions to this rule can only be approved in advance by a Brigade or Regiment Commander (Fort Benning 2004b).
- Units have been directed that the Fort Benning Public Affairs Office will be notified of any firing during restricted hours and, in turn, the Public Affairs Office will distribute that information through the local news media, some residents, and local governments.

The Fort Benning Public Affairs Office will continue to notify the public of training activities through public notices issued to media outlets, subscribing residents, and local governments, as well as posts to websites with information regarding smoke and sound.[2]

A noise complaint system is maintained at the Installation to address individual concerns. Civilian noise complaints may be reported to Fort Benning by calling the 24-hour Staff Duty Officer. If needed, investigation and further action follows (Fort Benning 2004b).

3.8.2 Environmental Consequences

3.8.2.1 Significance Thresholds

Impacts would be considered significant if:

- Operations increased any Zone III (incompatible) noise contours where there are sensitive noise receptors (e.g., residences, hospitals, libraries, churches). This threshold is intended to capture areas where there would be “high annoyance” effects from operational noise.
- Construction noise resulting in an hourly equivalent sound level of 75 dBA (based on USEPA data for construction noise) at a sensitive receptor (such noise exposure would be equivalent to noise Zone III) or consistent exposure to noise levels at 85 dBA, over an 8-hour period, the National Institute for Occupational Safety and Health (2006) recommended exposure limit.

[2] Available at: http://www.benning.army.mil/garrison/smokeandsound/.

3.8.2.2 No Action Alternative

Under the No Action Alternative moderate adverse impacts are anticipated to continue due to Zones II and III from operational noise overlapping areas with sensitive noise receptors on and off the Installation. Current Zones II and III noise contours for small- and large-caliber weapons are not anticipated to change. Mitigation measures in place are expected to continue to minimize operational noise impacts, including noise complaint reporting procedures for the public, and posting training schedules for the public when large-caliber and/or night-time training events occur. With these mitigation measures in place, the No Action Alternative would continue to result in minor, adverse impacts.

3.8.2.3 Alternative 1

Under Alternative 1, noise impacts at Fort Benning would be reduced. No change in noise zones is expected under Alternative 1. However, Noise Zones II and III would still remain off the Installation and would result in continued long-term, moderate, adverse impacts.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Converting the 3rd ABCT to an IBCT would decrease the operation of heavy maneuver vehicles at Fort Benning, resulting in reduced noise from vehicles. The decrease would not alter the noise contours. The IBCT would increase usage of small arms ranges and hours of noise may be extended; however, the large gun firing of the ABCT would decrease, reducing the hours of related noise and resulting in a negligible impact.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training in the GHMTA would result in a small increase in training noise in the GHMTA and a minor impact to noise. It is not expected that the current noise zone contours in the GHMTA would need to be changed to account for the increase in tracked vehicles.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

Enhancing off-road heavy maneuver capabilities in the GHMTA would result in short-term impacts to noise during construction. Once construction is complete, training noise is not expected to increase in the GHMTA; the existing noise from heavy maneuver vehicles would still exist, just across a larger area of the designated training area. Noise contours would remain the same.

3.8.2.4 Alternative 2

Under Alternative 2, the noise impacts initially would be the same as described for Alternative 1. Overall, reduced noise impacts are compared to the No Action or Alternative 1; however, Noise Zones II and III would still remain off the Installation and would result in continued, long-term, adverse impacts. After the IBCT is inactivated, the associated training noise would be eliminated. Long-term, adverse noise impacts would still be remain because of other training activities on the Installation. Noise generated from firing ranges and maneuver areas is not anticipated to change current noise zone contours; however, the anticipated decrease in operational tempo would result in less frequent large caliber weapons fire associated with ABCT training activities and may decrease the frequency of night-time training exercises.

Potential noise impacts to the natural environment would also decrease with a reduction of Soldier strength. The anticipated decrease in operational tempo would reduce the number of wheeled and heavy vehicles, Soldier foot-traffic, and use of other military equipment.

Minor, adverse impacts from noise from locating the ARC heavy maneuver component in the GHMTA and enhancing training areas in the GHMTA would occur and would be the same as described for Alternative 1.

3.8.2.5 Mitigation measures

Fort Benning would continue to use a noise complaint process that would assist in responding to noise complaints in a timely manner. In addition, Fort Benning's Installation Operational Noise Management Plan includes outreach programs to achieve the maximum feasible compatibility between the noise environment and noise-sensitive land uses both on and off the Installation. The plan is meant to inform the community of the surrounding noise environment and suggest compatible land uses for development within these areas. To mitigate noise complaints and conflicts, Fort Benning also recommends to communities the practice of disclosing to residents the fact they are located in Noise Zones II or III.

3.9 Vegetation and Soils

3.9.1 Affected Environment

The ROI for vegetation and soils analyses includes Fort Benning and lands adjacent to the Installation that could be directly and/or indirectly affected by vegetation removal, soil erosion and sedimentation.

3.9.1.1 Vegetation

Nearly 1,300 species of plants can be found on Fort Benning located within approximately 29,000 acres of non-forested areas and 150,000 acres of woodland. Loblolly and longleaf pine are the predominant conifers within the Installation, comprising approximately 80,000 acres of the woodland; the remaining 70,000 acres of woodland consist of approximately 15,000 acres of forested restricted access areas and 54,000 acres of hardwood forest (Fort Benning 2015a). Fort Benning has various terrestrial and aquatic communities of plants existing within similar environments. Such communities have been divided into ecological groups and are characterized in general terms as described in the Installation's INRMP. Six of the ecological groups are upland plant communities (Dry-mesic Hardwood/Mixed Hardwood-Pine, Longleaf Pine Loamhills, Longleaf Pine Sandhills, Mixed Forest, Plantations, Successional Upland Deciduous) and the remaining eight are associated with moist or aquatic habitats (Flowing Water, Gum/Oak Ponds, Herbaceous/Shrub Bogs, Mesic Hardwood, Seasonal Depression Ponds, Small Stream Swamps, Stream Floodplains, Wooded Seepage Bogs).

Fort Benning is located within the Longleaf Pine Ecosystem with vegetative cover distributed along two broadly defined ecological units or subsections. The northern portion of the Installation is part of the Sand Hills subsection, characterized primarily by well-drained sandy surface soils and loamy subsoils. The longleaf pine (*Pinus palustris*) is the dominant plant species whose dominance is sustained by frequent fires.

The Upper Loam Hills cover most of the southwestern area of Fort Benning. Characteristic vegetation includes oak-hickory forest, with post oak (*Quercus stellata*), blackjack oak (*Quercus arilandica*), southern red oak (*Quercus falcata*), white oak (*Quercus alba*), pignut hickory (*Carya glabra*), mockernut hickory (*Carya tomentosa*), and sand hickory (*Carya pallida*). In comparison with the Sand Hills, soils are typically heavier in texture with higher organic matter content and water holding capacity. As a result, hardwoods and less fire-tolerant species have become more dominant (Fort Benning 2003, 2001).

The ARC training conducted in the SMTA region is home to three dominant ecological groups, which include approximately 30 percent longleaf pine sand hills, 17.7 percent longleaf pine loam hills, and 11.9 percent dry-mesic hardwoods. Figure 3-5 shows the distribution of vegetation within the SMTA region where the ARC trains.

The GHMTA has three dominant ecological groups, which include approximately 29.5 percent dry-mesic hardwoods, 28.5 percent plantations, and 15.3 percent successional upland deciduous forest. Figure 3-6 shows the distribution of vegetation within the GHMTA.

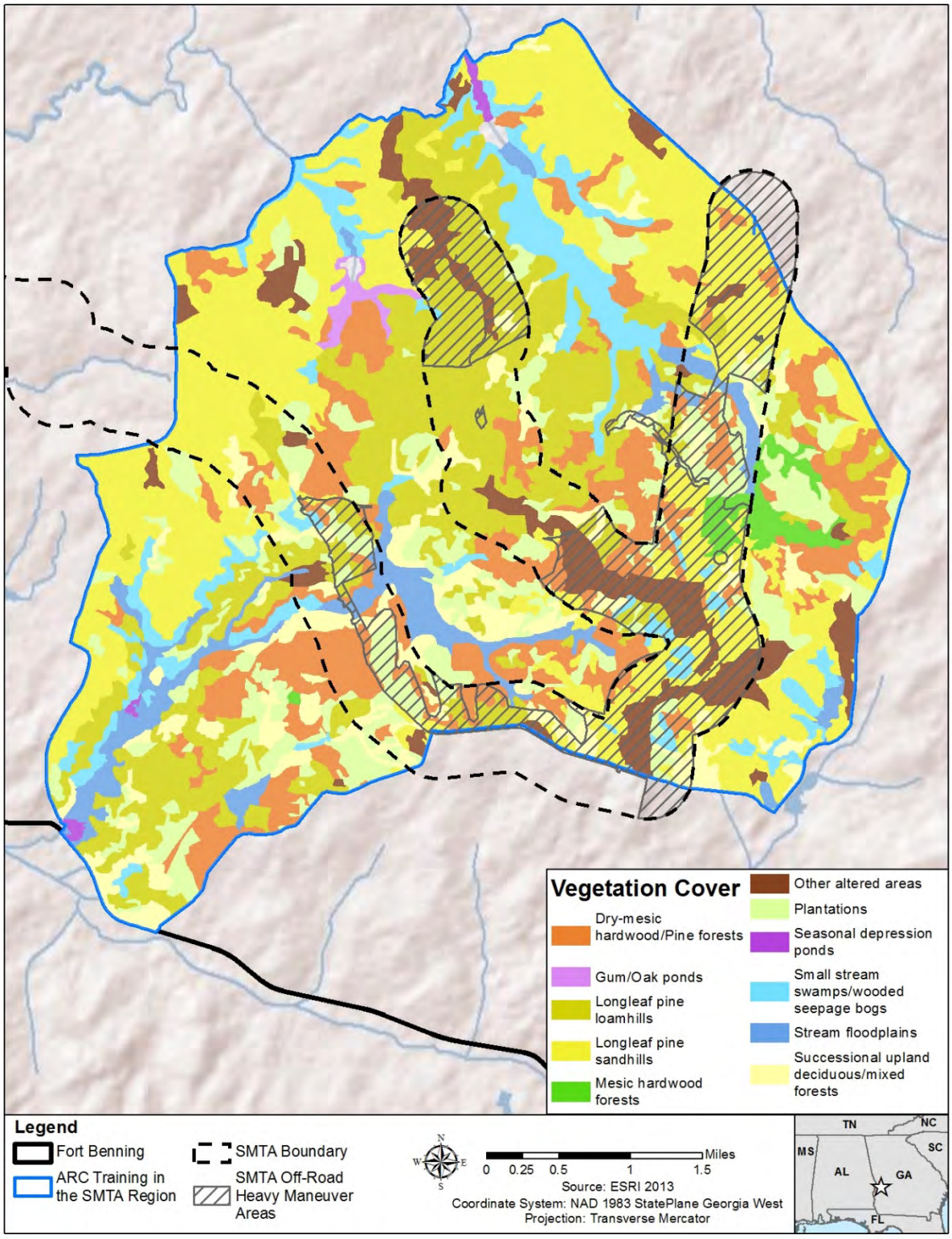

Figure 3-5. Vegetation Cover within the Army Reconnaissance Course in the Southern Maneuver Training Area Region

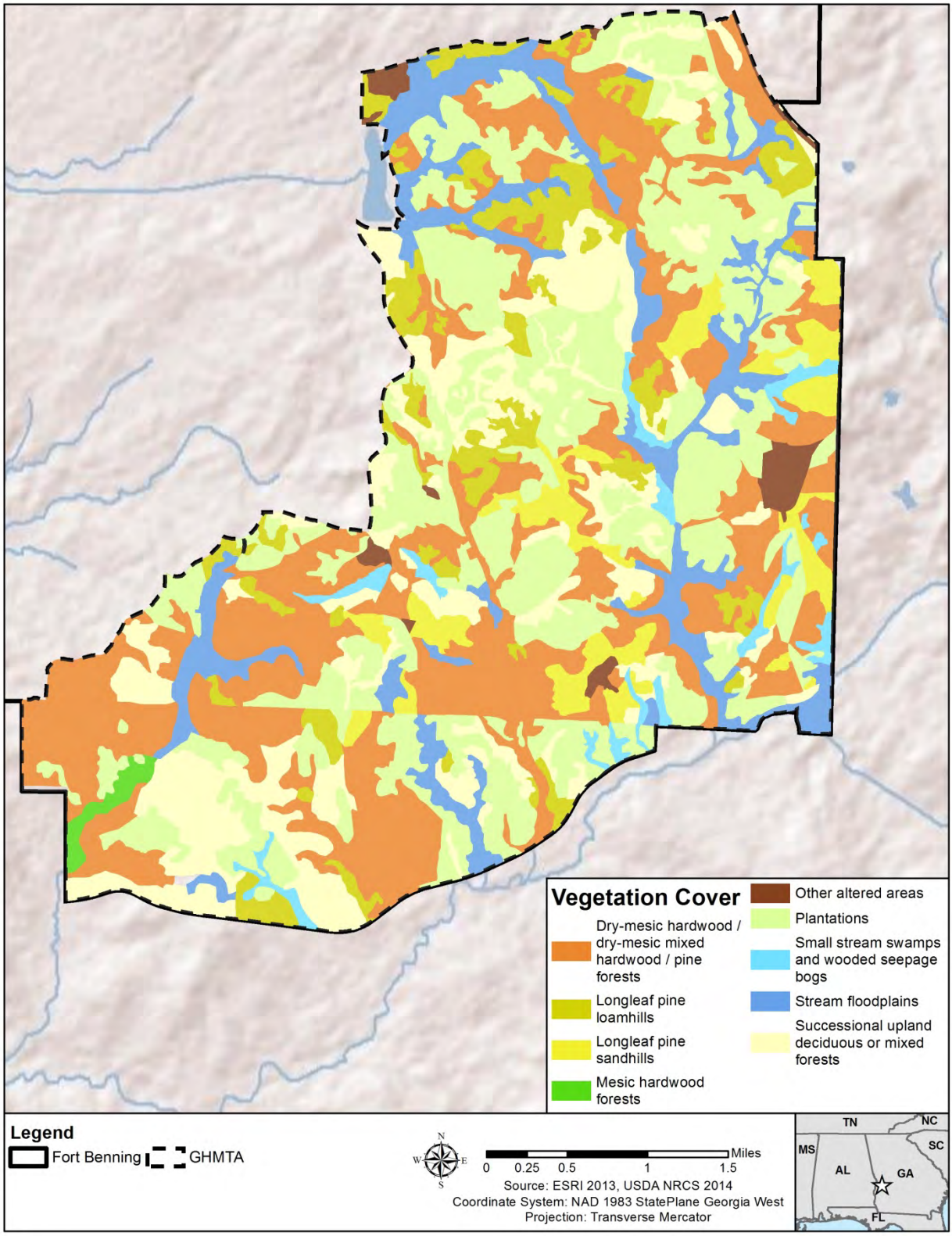

Figure 3-6. Vegetation Cover within the Good Hope Maneuver Training Area

3.9.1.2 Invasive Species

Executive Order 13112 requires federal agencies, to the extent practicable and permitted by law, to prevent the introduction of invasive species; to provide for their control; and to minimize the economic, ecological, and human health impacts that invasive species cause.

Common invasive plant species identified on Fort Benning include the tree species of Chinese tallowtree (*Triadica sebifera*) and mimosa (*Albizia julibrissin*), and shrubs such as Chinese privet (*Ligustrum sinense*) and multiflora rose (*Rosa multiflora*). Invasive vine species include kudzu (*Pueraria montana var. lobata*) and English ivy (*Hedera helix*). Invasive grasses include cogongrass (*Imperata cylindrical*) and Japanese knotweed (*Fallopia japonica*). All are extremely aggressive invaders with the capability of forming dense assemblages and/or extensive root systems that displaces native vegetation. Fort Benning employs an integrated pest management approach to control invasive plant species. Integrated pest management involves using targeted, sustainable control methods that can include a variety of measures, such as habitat modification, biological control, mechanical control, physical control and the judicious use of pesticides. Specific procedures related to the control of invasive plant species are outlined in Fort Benning's Integrated Pest Management Plan (Fort Benning 2013).

3.9.1.3 Soils

Soils found within Fort Benning, including in the locations where the ABCT and IBCT would train, are highly weathered Ultisols, mostly of Coastal Plain origin but with some minor inclusion of alluviums derived from the Piedmont ecological unit, which occur in the northeastern portions of the Installation (Garten and Ashwood 2004). Ultisols are strongly leached, acid forest soils with relatively low native fertility. They are found primarily in humid temperate and tropical areas of the world, typically on older, stable landscapes. Ultisols have a subsurface horizon in which clays have accumulated, often with strong yellowish or reddish colors resulting from the presence of ferric oxides. The upland Piedmont soils in this region are typically highly eroded and often only subsoil remains (Fort Benning 2001).

Based on the available soil survey data and considering an individual soils series category for its K factor only, most of Fort Benning's soils are identified as highly erodible. However, the actual degree of erodibility that soils exhibit is determined by other physical factors such as drainage, permeability, texture, structure, and percent slope (Fort Benning 2001). The rate of erodibility is based on the amount of vegetative cover, climate, precipitation, proximity to waterbodies, and land use.

Generally, soils on Fort Benning are highly susceptible to erosion if vegetation is removed, especially on steep slopes. Continuous or sustained military training within an area can compact soils and damage vegetation and soil, eventually leading to extensive damage and making an area unusable for military training. The establishment and maintenance of appropriate vegetation and proper drainage systems is the primary means of addressing such potential issues.

A map of the soils within the existing ARC training area in the SMTA, as well as the soils within the GHMTA can be found in Figures 3-7 and 3-8.

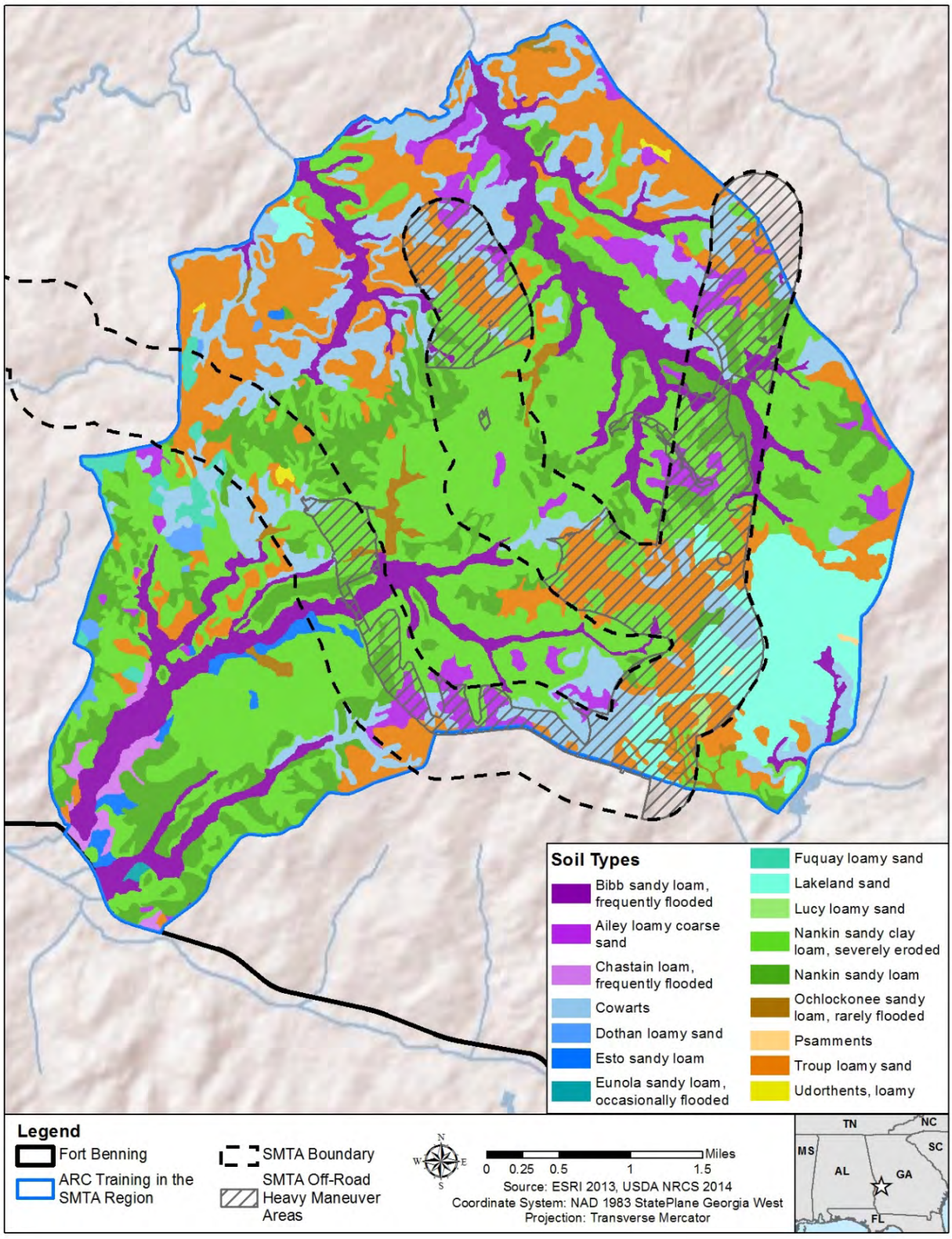

Figure 3-7. Map of Soils found in the Army Reconnaissance Course Training Area of the Southern Maneuver Training Area Region

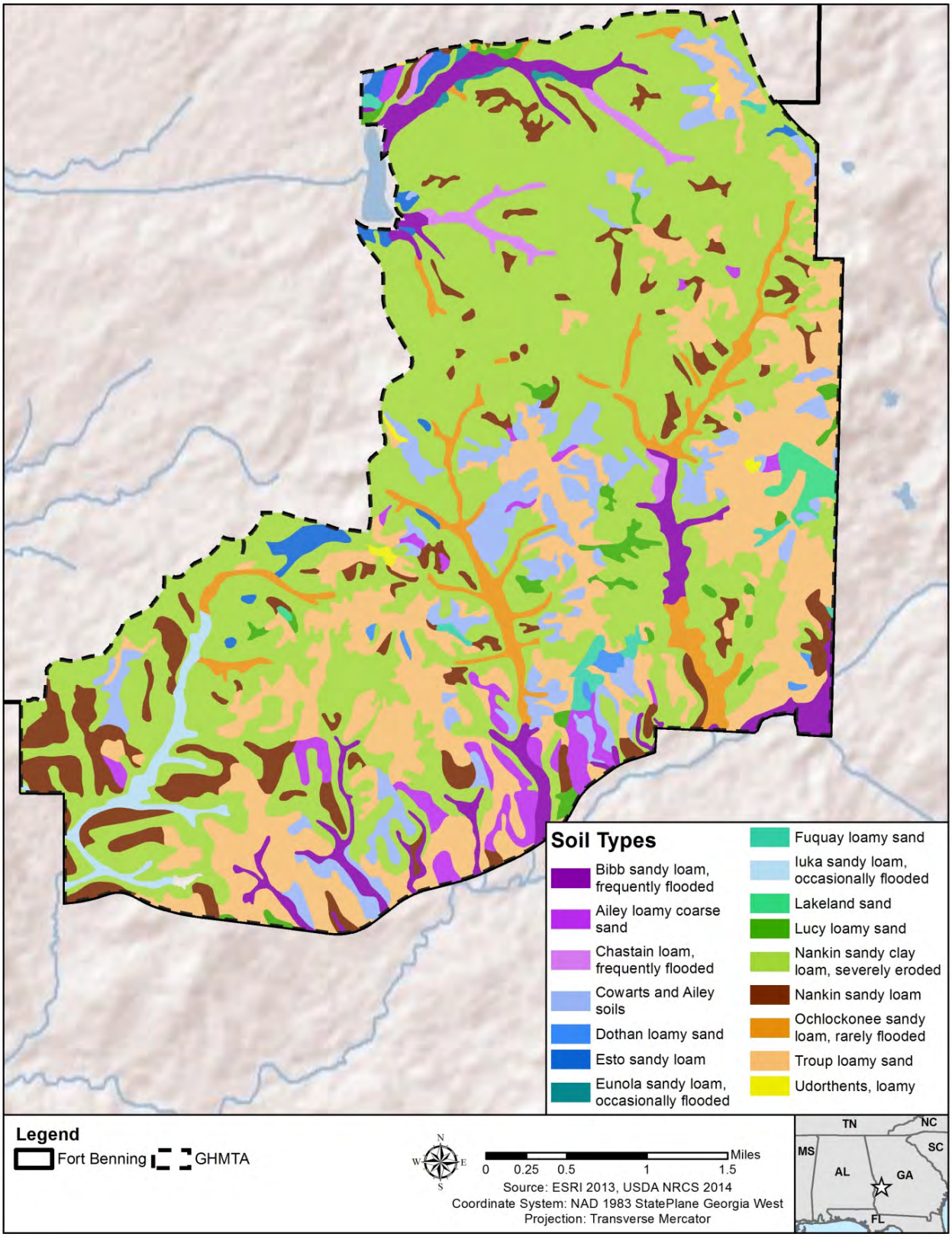

Figure 3-8. Map of Soils found in the Good Hope Maneuver Training Area

Soils classified as Prime Farmland soils are protected under the Farmland Protection Policy Act of 1981. Prime Farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land must also be available for use as cropland, pasture land, forestland, or other land, but not water on urban built-up land). Prime Farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed, including water management, according to acceptable farming methods (USDA 2006). Prime Farmland does not include land already used for or committed to urban development or water storage; however, land used or designated for commercial, industrial, or residential purposes is, therefore, categorically excluded from consideration. While some soils within Fort Benning can be classified as Prime Farmland soils, no soils on Fort Benning are used for agricultural purposes. As a result, no area within the Installation is regarded as Prime Farmland; therefore, it is not discussed further.

Army Reconnaissance Course Training in Southern Maneuver Training Area Region

Most of the soil types found in the SMTA boundary are classified as a slight erosion hazard. Nankin sandy clay loam (12 to 18 percent slopes, severely eroded), Nankin sandy clay loam (18 to 25 percent slopes, severely eroded), Troup loamy sand (12 to 18 percent slopes), and Troup loamy sand (18 to 25 percent slopes) are classified as a moderate erosion hazard and comprise approximately 28.9 percent of the total area (USDA-NRCS 1997). Additional soil types in the SMTA are: Ailey loamy course sand (2 to 5 percent slopes and 5 to 8 percent slopes), Cowarts and Ailey soils (12 to 18 percent slopes), Nankin sandy loam (2 to 5 percent slopes and 5 to 12 percent slopes), Ochlockonee sandy loam (rarely flooded), and Troup loamy sand (2 to 5 percent slopes).

As part of the MCoE EIS analysis, the impacts to soils from the off-road heavy maneuver component of ARC training were determined to be significant. The analysis concluded that the use of tracked vehicles in heavy maneuver areas can produce significant direct and indirect impacts to soils and would leave the soil highly disrupted and susceptible to the erosive forces of rain, wind, and runoff, and ultimately to stream sedimentation. Instead, ARC training was implemented on Fort Benning without completing the off-road heavy maneuver training component. Therefore soil impacts were reduced to minor and adverse from the addition of ARC training; significant, adverse impacts to soils were never realized. Another important program being executed at Fort Benning is the Integrated Training Area Management Program, which can be used to monitor land composition trends and mitigate adverse impacts of the military mission on long-term training land viability (Fort Benning 2001).

Good Hope Maneuver Training Area

Most of the soil types found in the GHMTA are classified as a slight erosion hazard. However, Nankin sandy clay loam (12 to 18 percent slopes, severely eroded), Nankin sandy clay loam (18 to 25 percent slopes, severely eroded), Nankin sandy clay loam (12 to 25 percent slopes, severely eroded), Nankin sandy clay loam (25 to 35 percent slopes, severely eroded), Troup loamy sand (12 to 18 percent slopes), Troup loamy sand (18 to 25 percent slopes), and Troup loamy sand (12 to 25 percent slopes) are classified as a moderate erosion hazard and comprise approximately 45.2 percent of the total area (USDA-NRCS 1997). The majority of the area is classified as moderately well to excessively drained. However, two soil

types, Bibb sandy loam and Chastain loam, are classified as poorly drained and cover 4.8 percent of the training area (USDA-NRCS 1997).

Additional soil types in the GHMTA are: Ailey loamy coarse sand (2 to 5 percent slopes and 5 to 8 percent slopes), Cowarts and Ailey soils (5 to 12 percent slopes), Dothan loamy sand (2 to 5 percent slopes and 5 to 8 percent slopes), Esto sandy loam (2 to 5 percent slopes and 5 to 8 percent slopes), Eunola sandy loam (0 to 3 percent slopes, occasionally flooded), Fuquay loamy sand (0 to 5 percent slopes and 5 to 8 percent slopes), Lucy loamy sand (0 to 5 percent slopes and 5 to 8 percent slopes), Nankin sandy loam (2 to 5 percent slopes and 5 to 12 percent slopes), Ochlockonee sandy loam (rarely flooded), and Troup loamy sand (2 to 5 percent slopes).

The MCoE analysis determine that the impacts to soils from the heavy maneuver training in the GHMTA potentially would be significant, stating that the use of tracked vehicles in heavy maneuver areas can produce significant direct and indirect impacts to soils and would leave the soil highly disrupted and susceptible to the erosive forces of raindrops, wind, and runoff, and ultimately to stream sedimentation. As described in Section 3.12, *Water Resources*, Fort Benning has implemented more mitigation measures than required by the state of Georgia and permitting to protect soils from erosion and from stream sedimentation. Maneuver boxes within the GHMTA allow for off-road heavy maneuver training but do not allow heavy maneuver within 50 feet of all streams, avoid areas of steep slope, and have defined low water stream crossings. Areas on hillsides erode much faster than on flat ground, as surface run-off has greater erosive energy as it moves downhill. Additional mitigation measures include the design and construction of sediment basins to prevent sedimentation impacts to surface waters and wetlands within heavy maneuver training areas.

Armored Brigade Combat Team and Infantry Brigade Combat Team Training Locations

The ABCT currently trains in areas on the Installation designated as Heavy Maneuver (Figure 3-1). The majority of the Heavy Maneuver areas are in the northeastern two-thirds of Fort Benning, as well as the GHMTA. Most of the soils in this area consist of light-textured soils on a dissected upper Coastal Plain landscape. Sand hills soils are also found in the southeastern portion of the Installation. Soils of the southwestern third of Fort Benning consist of Thermic-Udic-Hapludults and are heavier textured and more mesic than soils of the southeastern portion of the Installation. They generally have higher water holding capacity and higher organic matter content. IBCT training would generally occur on the same types of soils as ABCT training, typically Troup loamy sand in the northern and central part of Fort Benning, and Nankin sandy clay loam in the southern portion of the Installation. However, the IBCT training areas would occur mostly in areas designated for light maneuver, occupy a smaller area than is used by the ABCT, and would have less vehicle traffic.

3.9.2 Environmental Consequences

Soils typically are described in terms of their type, slope, physical characteristics, and relative compatibility or limitations with regard to particular activities. The ROI for soils analyses includes Fort Benning and lands adjacent to the Installation that could be directly and/or indirectly affected by soil erosion and sedimentation.

3.9.2.1 Significance Thresholds

Impacts would be considered significant if they would:

- Substantially degrade soils, soil fertility, or soil productivity, or geologic resources
- Have substantial, highly noticeable influences on the rate of soil erosion or the ability of the soil to support native vegetation expected to be present in the area
- Involve the loss of vegetation at a level that would substantially reduce the occurrence of a plant species or degrade the habitat of a dependent animal species at a population level on the Installation

3.9.2.2 No Action Alternative

Vegetation

Negligible, adverse impacts to vegetation are expected to continue under the No Action Alternative because ARC off-road heavy maneuver training is not occurring at the SMTA. However, continued ABCT training in the heavy maneuver areas would continue to result in potential minor to moderate, adverse impacts to vegetation due to vehicular traffic and vegetation removal or trimming to maintain line-of-sight requirements. Heavy vehicular traffic, especially from tracked vehicles such as tanks, removes vegetative cover and degrades soil aggregates (Retta et al. 2013). Heavy maneuver equipment also compacts the soil, making it less permeable to water and plant roots, and renders the land more susceptible to water erosion (Retta et al. 2013). Repeated use of these vehicles therefore leads to the degeneration of plant communities.

Minor to moderate impacts would continue in the GHMTA from continued off-road heavy maneuver training within the designated maneuver boxes. No additional areas would be enhanced, so no new impacts would occur to vegetation under the No Action Alternative.

Invasive Species

Minor, adverse impacts from heavy maneuver training are expected under the No Action Alternative. Off-road heavy maneuvers can alter the composition of plant communities and vegetative structure. Heavy traffic increases the mobility of seed along vehicular and pedestrian corridors, resulting in the potential for rapid spread and establishment of non-native invasive plants. Though continued disturbance in training areas would be conducive to the spread of invasive species, Fort Benning would manage the spread of invasive plants through prescribed burns (Fort Benning 2015a). In upland areas, spot treatment with approved herbicides would be used for control.

Soils

Minor, adverse impacts to soils would continue to occur in the heavy maneuver areas and locations where the 3rd ABCT trains. Under the No Action Alternative, training exercises using troops and tracked vehicles in heavy maneuver areas would continue. The type of training, including the 3rd ABCT and ARC training without heavy maneuver, would continue as currently conducted. Potential impacts to soil

includes removal or damage to vegetation, digging activities, ground disturbance from vehicles, and munitions detonation include compaction, disturbance, and soil erosion.

Soil compaction can result in lower water infiltration, decreased hydraulic conductivity, restricted root growth, and effects to nutrient uptake (Duiker 2004). Lower water infiltration rates increase the potential for surface runoff and erosion and also increase the nutrient and chemical loss with the runoff. Heavy maneuver equipment use would also increase the likelihood of chemical constituents being found in the runoff and potential to affect water quality. The decrease in macropores within the soil profile would lead to lower air permeability and a decrease in aeration (Duiker 2004). The decrease in hydraulic conductivity results in poorer drainage, denitrification losses, and less mineralization of organic nitrogen (Duiker 2004).

With the current operational tempo, off-road maneuver areas have less time to naturally recover from training activities. Consequently, training areas could exhibit more soil and vegetation disturbance and become degraded. This degradation of maneuver areas and road networks would incur high maintenance costs and could potentially render some training areas unusable for periods of time until training area maintenance activities could be completed.

Erosion and sedimentation concerns represent a substantial threat to long-term viable usage of the GHMTA. Highly erodible soil and steep slopes provide indications of potentially serious runoff issues, which if left unmitigated, would jeopardize training in the maneuver boxes established within the GHMTA.

As described in the Affected Environment section, Fort Benning and the MCoE are aggressively pursuing proactive, preemptive actions to mitigate the risks to the GHMTA to include programming of construction projects for sedimentation basins, check dams, and rip rap swales in and along stream buffer zones to prevent surface runoff sedimentation into streams. Several low water crossings have inadequate approaches on steep slopes and require supplemental upgrades. Without the upgrades (i.e., extended approaches with articulated concrete “rumble strips”), tracks would not discard soils prior to entering the stream and maneuver damage, with increased erosion, would occur requiring maintenance and repairs based on the extent and location of the damage. These mitigation measures would ensure impacts to soils would remain minor under the No Action Alternative.

3.9.2.3 Alternative 1

Overall, the impacts to vegetation under Alternative 1 are expected to be negligible to minor with the implementation of mitigation measures.

Vegetation

Alternative 1 would result in a noticeable reduction of tracked vehicle use from the conversion of the 3rd ABCT to an IBCT. An IBCT does not use any tracked vehicles, such as M1A2 tanks, M2/M3 Bradley tracked armored fighting vehicles, or Paladins for off-road heavy maneuvers. Lighter vehicles used by the IBCT would mostly remain on established roads, limiting the impacts to plants onsite. Soldiers on foot would not be likely to disturb these communities in the same noticeable ways that heavy armored and tracked vehicles would; therefore, there would be impacts to vegetation would be reduced.

This alternative would also locate the ARC off-road heavy maneuver training component in the GHMTA. This location would reduce impacts to vegetation in the current ARC training area in the SMTA region because some training events would move to the GHMTA; however, while approved, ARC off-road heavy maneuver training never occurred in the SMTA, so the location of the training in the GHMTA would not alter existing impacts to vegetation in the SMTA. Adverse impacts to vegetation from ARC off-road heavy maneuver training are expected in the GHMTA, as discussed below. These impacts may fragment existing plant communities and subject the area to incremental disturbance and edge effects. Trees and shrubs may be prone to root damage from heavy vehicular traffic, but because limited ARC training would occur in the GHMTA, impacts are expected to be negligible.

Alternative 1 includes enhancing additional off-road heavy maneuver areas within the GHMTA. These areas would ease training pressure and associated effects on the existing maneuver boxes, reduce the risks of vegetative impacts associated with overuse of smaller training areas, and allow unused areas to regenerate. Nevertheless, enhancing additional off-road training areas may require the removal of woody and herbaceous plant. Training in the new maneuver areas would result in impacts to vegetation from vehicular traffic, implementation of erosion control measures, and road construction or improvements; however, these impacts would be minor.

Mitigation to reduce impacts may include avoidance, minimization, repair, rehabilitation, restoration, reduction, and/or conservation. The use of Range and Land Analysis in conjunction with monitoring through the Integrated Training Area Management Program would continue to measure the long-term effects of expanded training areas and implement impact reduction strategies. Temporarily disturbed sites would be re-vegetated with native species. Funding from the Integrated Training Area Management Program would be required for mitigation activities.

During construction, any tree removal within 25 feet of state waters would require a stream buffer variance. Of the removed vegetation, merchantable timber would be sold via a timber sale contract controlled by Fort Benning's Land Management Branch. Any remaining non-commercial vegetative debris would be removed and disposed under a separate slash removal contract in accordance with all applicable federal, state, and local rules and regulations.

Invasive Species

Impacts to vegetation from the spread of invasive species are expected to be minor under Alternative 1. Under this alternative, the 3rd ABCT would be converted to an IBCT, resulting in a reduction of off-road heavy maneuver vehicles across Fort Benning. Heavy maneuver vehicle traffic (tracked vehicles, as opposed to wheeled vehicles) are more susceptible to increasing the mobility of seed along vehicular corridors, resulting in the potential for rapid spread and establishment of non-native invasive plants (DOD SERDP 2011). Because this conversion would reduce heavy maneuver vehicular traffic, the impact from a major source of seed distribution would be decreased. Furthermore, less soil erosion and sedimentation attributable to heavy maneuver activities would occur, allowing native plants to compete and regenerate.

Disturbances to vegetation and soil from increased foot and vehicular traffic in the GHMTA can lead to changes in plant communities over time. The location of ARC heavy maneuver training and additional off-road training areas may further the dispersal and establishment of non-native plants along roads and other areas within the GHMTA. Invasion by non-native grasses and shrubs, particularly Japanese

honeysuckle and kudzu, are problematic as they are capable of out-competing native species for space, water, light, nutrients, and survival

Monitoring and control measures for invasive plant species would be implemented in accordance with the INRMP.

Soils

Overall, the impacts to soils from Alternative 1 are expected to be negligible with the implementation of mitigation measures.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Conversion of the 3rd ABCT to an IBCT with additional maneuver battalion would result in negligible impacts to soils because heavy equipment moving across the soil profile would decrease and be replaced with foot traffic. This would lessen the impact of compaction and result in less runoff and erosion.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training in the GHMTA would result in negligible impacts to soils. Impacts to soils in the GHMTA from the location of the off-road heavy maneuver training would be negligible because the amount of additional off-road heavy maneuver training would be relatively small compared to existing off-road training occurring in the GHMTA.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

The physical impacts to soils that would occur as a result of site preparation (construction of tank trails, low water crossings, and turn pads) and movement of additional heavy maneuver equipment to the GHMTA would include soil compaction and disturbed and modified soil layers. Soil productivity (i.e., the capacity of the soil to produce vegetative biomass) would also decline in disturbed areas and would be completely eliminated for those areas within the footprint of paved or other hardened areas and new structures.

Introducing the use of heavy maneuver equipment to additional maneuver boxes within the GHMTA could result in soil compaction. Effects of soil compaction include lower water infiltration, decrease in hydraulic conductivity, restricted root growth, and effects to nutrient uptake (Duiker 2004). As described for the No Action Alternative, a lower water infiltration rate would increase the potential for surface runoff due to the decrease in the rate in which the water can infiltrate down into the soil.

Similar to the existing maneuver boxes within the GHMTA, described under the No Action Alternative, Fort Benning proposes to implement mitigation measures that exceed state requirements. These mitigation measures, which include avoiding steep slopes, establishing 50-foot buffers for all streams, and

employing silt and erosion control measures, would reduce the potential erosion and runoff impacts and would result in negligible impacts to soils.

3.9.2.4 Alternative 2

Overall, impacts to vegetation under Alternative2 are expected to be negligible to minor with the implementation of mitigation measures.

Vegetation

Impacts under Alternative 2 initially would be the same as Alternative 1. When the IBCT is inactivated, further reduction in vegetation impacts from training is expected. The reduction in wheeled and tracked vehicles, as well as reduction in the number of Soldiers, could reduce the impacts on vegetation because of an anticipated decrease in frequency of training activities. Because the training missions and primary training location of remaining units are not expected to change, off-road maneuver areas would still be prone to some vegetation loss, but to a lesser degree than under the No Action Alternative or Alternative 1. The minor impacts from locating the ARC off-road heavy maneuver component and enhancing off-road heavy maneuver areas in the GHMTA would be the same as those described for Alternative 1.

Invasive Species

With the loss of the IBCT under Alternative 2, non-native invasive vegetation would have reduced mobility because the absence of IBCT vehicles would decrease the amount of invasive seed dispersed.

Soils

Impacts to soils under Alternative 2 initially would be the same as under Alternative 1. When the IBCT is inactivated, a further reduction in impacts to soils from training is expected. The reduction in vehicles and light maneuver training could reduce the impacts on soils and erosion with an anticipated decrease in frequency of training activities. The terrain could show reduced impacts from vehicle maneuvers, including turns and traction from mechanized maneuvering on the Installation. Because the training missions and primary training location of remaining units are not expected to change, off-road maneuver areas would still be prone to soil erosion, but to a lesser degree than under the No Action or Alternative 1. Impacts from locating the ARC heavy maneuver component and enhancing the heavy maneuver areas in the GHMTA would be negligible with the implementation of aggressive mitigation measures, the same as those described for Alternative 1.

3.9.2.5 Mitigation Measures

Monitoring and control measures for invasive plant species would be implemented in accordance with the INRMP. To minimize potential impacts to vegetation in the GHMTA, mitigation measures would be employed to minimize soil movement, stabilize runoff, and generally control sedimentation, as described fully in the Soils subsection (above) and Water Resources section (below). Mitigation measures for vegetation may include avoidance, minimization, repair, rehabilitation, restoration, reduction, and/or conservation. Fort Benning would implement measures from existing plans, such as the INRMP, use Range and Land Analysis in conjunction with the Integrated Training Area Management Program

protocols, and monitor vegetation and soils to measure the long-term effects of training and to identify and implement impact reduction strategies.

Under all action alternatives, Fort Benning would continue to aggressively pursue proactive, preemptive actions to mitigate the potential impacts to soils in the GHMTA. These mitigation measures include:

- Using sedimentation basins, check dams, and rip rap swales to prevent surface runoff sedimentation into streams
- Installing supplemental upgrades and erosion controls at low water crossings
- Developing low impacts erosion control measures such as berms and swales

3.10 Environmental Justice and Protection of Children

3.10.1 Affected Environment

Fort Benning is located in the Columbus, Georgia-Alabama, Metropolitan Statistical Area, which includes Muscogee, Chattahoochee, Harris, and Marion counties in Georgia and Russell County in Alabama. The ROI evaluated in this environmental justice and protection of children analysis consists of the counties in the Columbus, Georgia-Alabama, Metropolitan Statistical Area, as well as Talbot County, Georgia, and Lee County, Alabama, and includes areas that are generally considered the geographic extent to which the impacts of the proposed action alternatives would occur.

Environmental Justice

On 11 February 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Executive Order 12898 directs agencies to address environmental and human health conditions in minority and low-income communities so as to avoid the disproportionate placement of any adverse effects from federal policies and actions on these populations. The general purposes of this Executive Order are as follows:

- Focus the attention of federal agencies on human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice
- Foster nondiscrimination in federal programs that substantially affects human health or the environment
- Improve data collection efforts on the impacts of decisions that affect minority communities and low-income communities and encourage more public participation in federal decision-making by ensuring documents are easily accessible (e.g., in multiple languages and readily available)

As defined by the *Environmental Justice Guidance Under the National Environmental Policy Act* (CEQ 1997a), “minority populations” include persons who identify themselves as Asian or Pacific Islander, Native American or Alaskan Native, Black, or Hispanic. Race refers to census respondents’ self-identification of racial background. Hispanic origin refers to ethnicity and language, not race, and may include persons whose heritage is Puerto Rican, Cuban, Mexican, and Central or South American.

A minority population exists where the percentage of minorities in an affected area either exceeds 50 percent or is meaningfully greater than in the general population. Low-income populations are identified using the Census Bureau's statistical poverty threshold, which is based on income and family size. The Census Bureau defines a "poverty area" as a census tract with 20 percent or more of its residents below the poverty level and an "extreme poverty area" as one with 40 percent or more below the poverty level. A census tract is a small geographic subdivision of a county and typically contains between 1,500 and 8,000 persons (U.S. Department of Commerce 2000).

For the purposes of this analysis, only the states' and counties' poverty and minority statuses were determined because no alternative warrants a more specific investigation of these statistics at or below the geographic level of a census tract.

Lee and Russell counties in Alabama, as well as Marion, Muscogee and Talbot counties in Georgia had impoverished populations at the county level that would be defined as "poverty areas" by the U.S. Census at the Census Tract level (Table 3-5). Furthermore, Russell County, Alabama, and Muscogee and Talbot counties, Georgia, had minority populations that were at least 10 percent or more than the minority population at their respective states' levels (U.S. Census Bureau 2013). Impacts to minority and impoverished populations are discussed in further detail in the following impact analysis.

Table 3-5. Minority Population and Population below Poverty Level

Geographic Area	Total Population	Percent Minority[a]	Population Below Poverty Level (percent)
State of Alabama	4,799,277	33	19
Lee County, Alabama	144,405	31	22
Russell County, Alabama	55,544	49	22
State of Georgia	9,810,417	45	18
Chattahoochee County, Georgia	12,193	38	12
Harris County, Georgia	32,267	23	8
Marion County, Georgia	8,673	42	21
Muscogee County, Georgia	194,949	57	20
Talbot County, Georgia	6,689	61	22

Source: U.S. Census Bureau (2013)

[a] Percent Minority includes Percent Latino.

Protection of Children

Executive Order 13045, *Protection of Children from Environmental Health and Safety Risk*, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. This Executive Order, dated 21 April 1997, further requires federal agencies to ensure that their policies, programs, activities, and standards address these disproportionate risks. Executive Order 13045 defines environmental health and safety risks as

"risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink and use for recreation, the soil we live on and the products we use or are exposed to)."

Children reside in neighborhoods and attend schools in the cantonment area of Fort Benning. Children also attend day care facilities both on and off the Installation and reside within family housing on the Installation. Impacts to children specific to the action alternatives are identified in the following impacts analysis.

3.10.2 Environmental Consequences

3.10.2.1 Significance Thresholds

An environmental justice impact is considered to be significant if the impact from an action alternative disproportionately and adversely affects a minority or low income community. An impact would be significant to the protection of children if the children would be:

- Subject to disproportionate impacts from environmental health risks
- Likely to experience safety risks due to behavior patterns may make them more susceptible to accidents because they are less able to protect themselves

3.10.2.2 No Action Alternative

No change to existing conditions is anticipated under the No Action Alternative. Fort Benning would continue to have the same levels of local impacts. Because no change to existing conditions is anticipated, no environmental justice impacts or impacts to children are expected to occur under this alternative.

3.10.2.3 Alternative 1

Within each affected county, the potential environmental impacts of the Proposed Action would affect all racial and ethnic groups equally. Some of the counties in the ROI, such as Muscogee, Talbot, and Russell counties, have a higher proportion of minorities than the state of Georgia as a whole; however, none of the actions proposed by the Army are anticipated to have greater proportionate impacts on minority populations. Similarly, low income populations would not be disproportionately affected across the ROI. Furthermore, no impacts to children are anticipated under this alternative because the Proposed Action would occur entirely on Fort Benning and would not be located in proximity to places where children reside or play. Standard safety measures and applicable requirements would be implemented during construction and training activities to ensure the safety of children and prevent exposure to hazardous or toxic substances. Therefore, no disproportionate impacts to children are anticipated as a result of this Alternative.

3.10.2.4 Alternative 2

Impacts would initially be the same as Alternative 1. When the IBCT is inactivated, impacts should not be substantially adverse and would not disproportionately affect minority or low income populations in the ROI. Overall, Alternative 2 would not affect environmental justice populations or children.

3.10.2.5 Mitigation Measures

No mitigation measures would be required to prevent environmental justice impacts. No mitigation measures, except adherence to standard safety measures and applicable requirements during construction and training activities, would be required to ensure the safety of children and prevent exposure to hazardous or toxic substances.

3.11 Transportation and Traffic

3.11.1 Affected Environment

Fort Benning covers approximately 182,000 acres and is located in the western part of Georgia and the eastern part of Alabama. Local communities include Columbus, Georgia and Phenix City, Alabama. Major road routes in the region include Interstate 185; U.S. Routes 27, 280, and 431; and Georgia State Routes 1 and 26. The four most used access roads are Benning Boulevard, Lindsay Creek Parkway (Interstate 185), and Victory Drive (USACE 2009). Secondary and tertiary roadways in the region mostly serve the Installation's cantonment areas located in the western portion of the Installation. In addition to this road network for vehicular traffic, a secondary trail network is used by tanks and other vehicles to access training areas. Combat vehicles regularly use this separate system of tank trails to move between the cantonments, 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.

Figure 3-9 depicts the Fort Benning road network and the six Access Control Points (gates) that control entry into the Installation. These restrict unauthorized access to Fort Benning.

3.11.2 Environmental Consequences

3.11.2.1 Significance Thresholds

Impact criteria were developed to determine the significance of the potential transportation impacts of the alternatives. Traffic congestion is usually characterized by the level of service, which ranges from A (least congested) to F (most congested) (Transportation Research Board 2003). A potentially significant transportation impact could occur if the Proposed Action would:

- Create a safety hazard for motorists, bicyclists, or pedestrians
- Generate a considerable net increase in traffic, which would result in a substantial effect on the existing traffic facilities (i.e., highways and traffic intersections)
- Permanently alter traffic patterns and facilities that would reach capacity and result in extensive delays

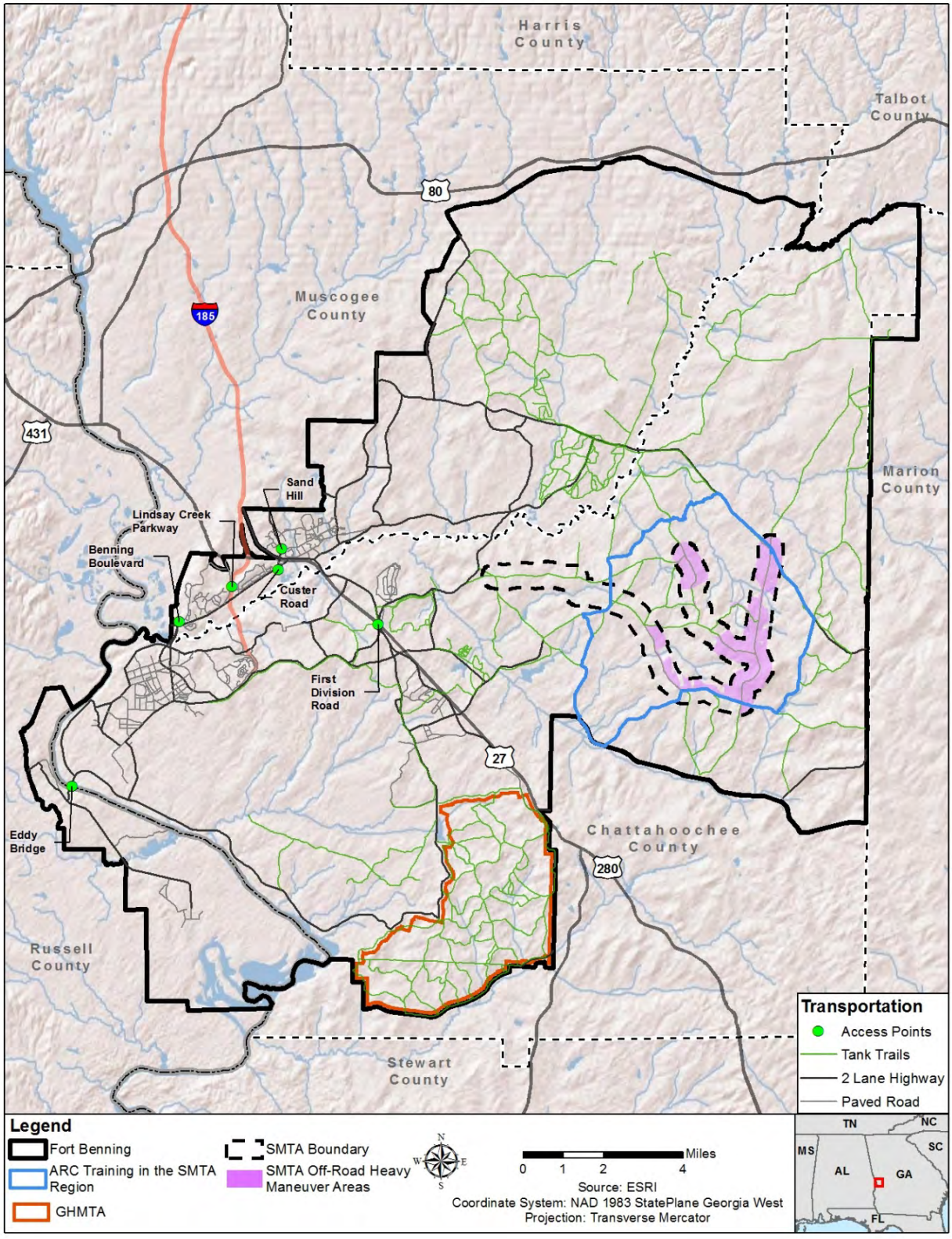

Figure 3-9. Fort Benning Road Network and Access Control Points

3.11.2.2 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would remain, the ARC off-road heavy maneuver training would continue to not occur, and additional maneuver boxes in the GHMTA would not be enhanced. Transportation and traffic conditions at Fort Benning would remain unchanged and unaffected. Traffic studies prepared for analysis in Fort Benning's BRAC and MCoE EISs identified some intersections with traffic delay and congestion issues within the Installation, namely at the Main Post and Kelley Hill (USACE 2009). These intersections would continue to cause traffic congestion, but impacts would be negligible**.**

Negligible future traffic generation is projected in training areas outside the cantonment areas. There is potential for interaction between training and heavy maneuver vehicle traffic with other motorists, bicyclists, and pedestrians. However, Fort Benning has established safety plans to prevent conflicts between the various types of traffic and potential safety and maneuverability issues, which would result in continued negligible impacts.

3.11.2.3 Alternative 1

Overall, negligible impacts to transportation are anticipated under Alternative 1. Conversion of the 3rd ABCT to an IBCT would result in a reduction of heavy maneuver and tracked vehicles; however, the reduction of ABCT heavy maneuver vehicles would be partially offset by the increase in IBCT light and medium wheeled vehicles. Heavy maneuver vehicles use a separate system of tank trails; therefore, this decrease in heavy maneuver traffic would not affect the Installation's road network, traffic congestion, and the traffic flow. Tank trails, while predominantly separate, do at times cross Installation roads, and heavy maneuver vehicles are sometimes transported on the Installation's road network. These minor overlaps would cause negligible impacts to transportation, especially given the reduction of heavy maneuver and tracked vehicles under Alternative 1. This conversion would also result in a small increase of 100 personnel; however, this increase would result in a minimal net change in personnel numbers under this action.

Locating the ARC off-road heavy maneuver training component in the GHMTA would have negligible traffic impacts. Enhancing the GHMTA to expand off-road heavy maneuver capabilities would necessitate an upgrade of the existing tank trail network in the GHMTA. Negligible, short-term, adverse impacts may result from added traffic during the construction phase of the GHMTA expansion.

3.11.2.4 Alternative 2

Initially, Alternative 2 would have the same impacts as Alternative 1. When the IBCT is inactivated under Alternative 2, beneficial impacts to transportation and traffic are anticipated because of the loss of the IBCT and related training and personnel traffic. The reduction of Soldiers, Army civilians, and their Family members would cause a corresponding decrease in traffic congestion, resulting in improvements to traffic flow on the Installation and in neighboring communities.

Locating the ARC off-road heavy maneuver training component in the GHMTA and enhancing the GHMTA to expand off-road heavy maneuver capabilities would be result in negligible, short-term, adverse impacts but no long-term impacts, the same as described for Alternative 1.

3.11.2.5 Mitigation Measures

Implementation of any of the action alternatives would not require any mitigation measures or BMPs.

3.12 Water Resources

3.12.1 Affected Environment

The following is a general discussion of water resources at Fort Benning and more specifically in the areas affected by the proposed training enhancement actions in the GHMTA. Waters resources include surface waters, groundwater, and floodplains. Also included within the discussion of surface waters is a discussion of water quality, wetlands, and stormwater because stormwater runoff affects surface water quality and flow.

3.12.1.1 Surface Water

Rivers, Streams, Tributaries and Other Water Bodies

Fort Benning is located within the Chattahoochee River basin (Hydrologic Unit Code 03130003), and the river flows through approximately 15 miles of the Installation on its southwestern side, close to the cantonment areas and the GHMTA. The Chattahoochee River arises as a cold-water mountain stream in the Blue Ridge Mountains and flows 430 miles to the confluence with the Flint River (U.S. Geological Survey 2014). Several named tributaries to the Chattahoochee River are located within the Fort Benning area, as show in Figure 3-10. Fort Benning has established 29 watershed management units. The GHMTA contains portions of four of these units, and there are three primary streams and their tributaries in the GHMTA: Hewell Creek, Cany Creek, and Oswichee Creek. Hewell and Cany creeks both drain into the Hitchitee Creek just south of the GHMTA, and the Oswichee Creek drains to the west directly into the Chattahoochee River. Weems Pond, an impoundment on Oswichee Creek, is located in the northwest corner of the GHMTA.

Main water bodies in the SMTA region include named tributaries that flow into Ochillee Creek and Sally Branch, both of which eventually flow into the Upatoi.

Stormwater and Drainage

Stormwater on the Installation drains via culverts, ditches, swales, and natural seepage and overland flow. Many of the soils at Fort Benning are characterized as susceptible to erosion, and many of the water quality issues for the streams in and around Fort Benning are related to high levels of sedimentation, particularly after storm events.

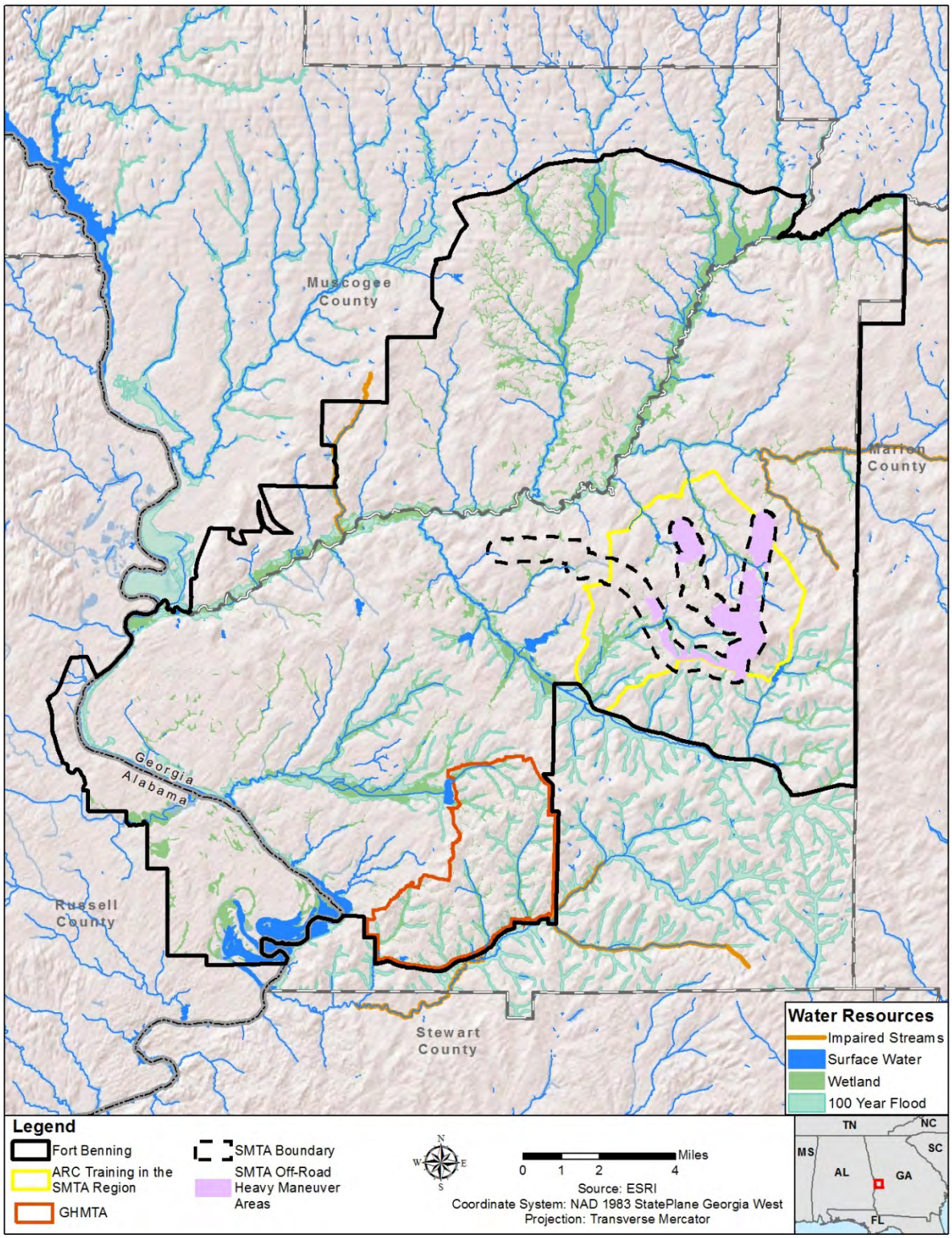

Figure 3-10. Water Resources within Fort Benning

In the GHMTA, previous improvements in existing maneuver training areas included implementation of several mitigation measures to minimize erosion and the potential adverse effects of stormwater runoff resulting from the maneuver activities. These practices include incorporating maneuver training buffers to the streams and waterbodies in the maneuver boxes and installing sediment traps, brush barriers, and filter dams. At a minimum, by regulation, a 25-foot construction buffer to state waters that are not trout streams must be maintained at all times during construction. For construction activities that occur within the watersheds of total maximum daily load (TMDL) listed streams, namely streams within the GHMTA, as discussed in this document, additional NPDES BMPs can be selected from a list of acceptable BMPs. Fort Benning Environmental Management Division advocates adoption of a 50-foot stream buffer as the most effective additional BMP for construction projects in the GHMTA.

Fort Benning delineated training boundaries in the existing GHMTA maneuver boxes in order to implement 50-foot vegetated stream buffers and an average 100-foot buffer for wetlands. This voluntary buffer has mitigated impacts of training operations to water resources due to sedimentation and temperature. Previously anticipated adverse effects on water quality from training-related runoff and erosion have not materialized in these maneuver boxes with these mitigation measures in place.

Similarly, stream crossings within the training areas have been minimized and placed as close to perpendicular to the stream channel as possible. Alterations to the stream channels were limited when the low water stream crossings were constructed in the maneuver boxes by placing articulated concrete mats at the streambed crossing to protect and minimize adverse effects from the low water crossings.

Wetlands

Wetlands constitute approximately 16,930 acres of the Installation's 182,000 acres (Fort Benning 2015a). Wetlands are generally defined as transitional between aquatic and terrestrial environments and are areas where the "frequent and prolonged presence of water at or near the soil surface drives the natural system," including the soils that form, the plants that grow, and the fish and wildlife communities that use these areas (USEPA 2015). Jurisdictional wetlands, which the USACE regulates, are defined under the Clean Water Act (CWA) as areas that are: "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (USEPA 2015). Wetlands within the GHMTA are mostly riparian, associated with the stream systems and named tributary streams to the Oswichee Creek in that part of the Installation, and are gum and oak ponds and small stream swamps and wooded seepage bogs. Wetlands in that area also include a larger amount of small stream swamps and wooded seepage bogs (Fort Benning 2015a).

The SMTA region includes similar wetland systems associated with the tributaries to Sally Branch and Ochillee Creek and are mostly gum/oak ponds, small stream swamps, and wooded seepage bogs.

A wetland permit from USACE would be required if wetlands and/or streams are affected. Impacts may require the purchase of compensatory wetland and stream mitigation credits from a local mitigation bank. A wetland delineation would be required prior to any construction activities to identify jurisdictional wetlands as determined by USACE. For site planning purposes, the National Wetlands Inventory and previously delineated wetlands have been used to estimate locations of wetlands.

3.12.1.2 Water Quality

The state of Georgia has identified several tributaries to the Chattahoochee River as "water quality limited" because of sedimentation in the 305(b) and 303(d) state water quality assessments. TMDL studies must be prepared for impaired waters. The Chattahoochee River does not support its designated uses through Fort Benning because of fecal coliform levels. Hitchitee Creek from Caney Creek to Sand Branch, downstream of the GHMTA, has been listed as not supporting its designated use of fishing as a result of excessive sedimentation.

Construction and training activities in the GHMTA and associated sediment loads can affect water quality in Hitchitee Creek, which has an estimated annual average sediment load of 5.172 tons per year. A TMDL study was prepared in 2003 that recommended monitoring and implementation of sediment management practices, including use of buffers to streams and wetlands and implementation of sediment and erosion control plans that identify specific management measures and practices. These recommendations have been incorporated into the 2009 MCoE improvements in the GHMTA (Georgia Department of Natural Resources 2003). The TMDL study also states that the impairments may be due to past land use, such as agriculture, and that the streams would repair themselves over time if average annual sediment loads were not to increase above the 2002 annual average sediment loading level (Georgia Department of Natural Resources 2003).

3.12.1.3 Groundwater Resources

Fort Benning is located within the Coastal Plain hydrogeologic province of Georgia and Alabama. The principal groundwater source for Fort Benning is the Cretaceous Aquifer System. The recharge area for this aquifer system is the Sand Hills area (USACE 2009). Aquifers in this area typically have the capacity to yield about 50 gallons of water per minute near the Fall Line, but yields increase to approximately 700 gallons per minute near the southern Installation boundary (U.S. Army 2013). The regional groundwater flow in the area is from north to south, and the aquifers in the Coastal Plain consist of porous sands and carbonates and include alternating units of sand, clay, sandstone, dolomite, and limestone that dip gently and thicken to the southeast. The Proposed Action would not affect groundwater resources; therefore, groundwater resources are not discussed further in the Environmental Consequences section.

3.12.1.4 Floodplains

Executive Order 11988, *Floodplain Management*, instructs federal agencies to consider the risks, danger, and potential impacts of locating projects within floodplains. The Executive Order specifies that, in situations where alternatives are impractical, the agency must minimize potential harm to or within the floodplain and take appropriate steps to notify the public.

Floodplains typically are described as areas likely to be inundated by a particular flood. For example, a flood that has a 1 percent chance of occurring in any 1 year is the 100-year flood. The 100-year floodplain includes those lands that are flooded by small and often dry watercourses.

As mentioned previously, the Chattahoochee River floodplain, and its associated blackwater and tupelo swamps, is located in the southwestern portion of the Installation, just west of the GHMTA. Further, mapped 100-year floodplains are associated with all three of the named streams in the GHMTA—Hewell Creek, Cany Creek, and Oswichee Creek (Georgia Department of Natural Resources 2010). The SMTA

region also has several 100-year floodplains associated with the named tributaries to Oswichee Creek (Figure 3-9).

Military training within the stream floodplains is minimal and stream crossings are designed to minimize disturbance. Threats to stream floodplains include damage by rooting feral swine, damage to stream ecology from low water crossings, future range construction, and water pollution (Fort Benning 2001).

3.12.2 Environmental Consequences

3.12.2.1 Significance Thresholds

Impacts to water resources would be considered significant if they:

- Substantially reduce the availability of or accessibility to water resources
- Degrade surface or groundwater quality in a manner that would be out of compliance with existing water quality standards or other regulatory requirements related to protecting or managing water resources

Significant impacts would include unpermitted loss or destruction of more than 0.1 acre of jurisdictional wetlands.

3.12.2.2 No Action Alternative

Under the No Action Alternative, the 3rd ABCT would not be converted to an IBCT; the ARC off-road heavy maneuver training component would not be located in the GHMTA; and additional maneuver boxes would not be enhanced in the GHMTA. Vehicles in the training areas would continue to affect water resources. Indirect effects, such as sedimentation, from these activities on water resources would continue because the movement of heavy maneuver vehicles and infantry would disturb the landscape to some extent. These effects have not proven to be as intense or as adverse as anticipated in the 2009 MCoE EIS, however, because the Installation has implemented extensive voluntary, proactive mitigation measures in the GHMTA off-road maneuver areas to protect soil and water resources and because there is not heavy maneuver training in the ARC currently. Such measures include 50-foot vegetated stream buffers and 100-foot wetland buffers, in which heavy vehicle activities that could disturb soils are restricted, except at approved stream crossings. Furthermore, Fort Benning has implemented appropriate permanent sediment control measures, such as brush barriers, berms, and swales to protect soils and water resources. Therefore, adverse impacts to water resources would continue to be minor to moderate.

3.12.2.3 Alternative 1

Alternative 1 would result in some adverse effects on water resources, but these impacts would be limited through the use of mitigation measures in the GHMTA off-road maneuver areas. These efforts would limit the adverse effects on water resources, resulting in minor to moderate impacts, as discussed below, including short-term, minor, and diminishing impacts associated with the conversion of the 3rd ABCT to an IBCT, minor impacts for the off-road heavy maneuver training component of the ARC in GHMTA, and minor to moderate, adverse impacts associated with enhanced off-road heavy maneuver training capabilities in the GHMTA.

Convert the 3rd Armored Brigade Combat Team and Other Associated Units to an Infantry Brigade Combat Team

Under Alternative 1, the 3rd ABCT would convert to an IBCT, resulting in a reduction in the number of tracked vehicles, such as Paladins, tracked armored vehicles and Strykers, traveling across Fort Benning's training landscape. The vehicles used by the IBCT would remain mostly on established roads, substantially reducing the potential off-road impacts of heavy maneuver vehicles on water resources within the ABCT training landscape. Vehicles associated with the IBCT would not cause any new impacts to water resources. Infantry movement across the training landscape would have minor impacts on water resources; Soldiers on foot would not be likely to disturb soils in the same noticeable ways that armored and tracked vehicles would. The effects of this conversion would reduce the existing adverse impacts to water resources, including surface waters, wetlands, and floodplains.

Locate Off-Road Heavy Maneuver Training Component of the Army Reconnaissance Course in the Good Hope Maneuver Training Area

Locating the ARC off-road heavy maneuver training component in the GHMTA would result in minor, adverse impacts to surface water resources. It would move some ARC training out of the SMTA region, thereby reducing potential impacts to streams, wetlands, and other waterbodies, as well as the floodplains. Other training would continue in the SMTA region, so minor impacts to water resources may continue there. The ARC off-road movement by wheeled vehicles would be located in the GHMTA, but that would only marginally increase potential impacts to water resources in the GHMTA because the amount of ARC training added would be relatively small.

Enhance Off-Road Heavy Maneuver Training Capability in the Good Hope Maneuver Training Area

The third component of Alternative 1 would be enhancing additional off-road heavy maneuver boxes within the GHMTA. Additional boxes would ease training pressure and associated effects on the existing maneuver training boxes and reduce the risks of water quality impacts associated with overuse of smaller training areas. The greatest potential for effects on water resources from construction and heavy maneuver training is from increased sedimentation and altered hydrology.

Consistent with Georgia regulations, direct impacts to water resources from construction of tank trails and permanent erosion and sediment control measures in the proposed off-road heavy maneuver boxes in the GHMTA would be minimized by implementing an approved erosion, sediment, and pollution control plan, which would include appropriate NPDES BMPs, as required by Georgia construction permit requirements in headwaters of impaired streams. In addition, Fort Benning plans to continue to implement the proactive management practices it has already implemented elsewhere in the GHMTA, namely the use of off-road heavy maneuver training restrictions in 50-foot stream buffers and 100-foot wetland buffers, minimization of impacts to floodplains where feasible; and incorporation of additional NPDES BMPs, such as double-row silt fencing and brush barriers. Fort Benning would obtain permits for construction that affects jurisdictional wetlands if required by CWA Section 404 and would mitigate any loss of wetlands as required in the permit. With the use of approved NPDES BMPs and additional proactive management practices, impacts to water resources would be short term and minor related to

construction of training area enhancements, as well as long term and moderate related to disturbance and use of the landscape by heavy vehicles during training maneuvers.

3.12.2.4 Alternative 2

Initially, Alternative 2 would have the same impacts as Alternative 1. When the IBCT is inactivated under Alternative 2, beneficial impacts to water resources are anticipated because of the inactivation of the IBCT. The reduction in training iterations and frequency would allow more recovery time and maintenance functions to be performed. In turn, maneuver training areas would be more sustainable, which would decrease the potential for sedimentation. Ranges and training areas are monitored to detect any adverse water resource impacts and allow for appropriate response. The reduction in personnel at Fort Benning would result in potential beneficial impacts to surface water resources.

Impacts to water resources from locating the ARC off-road heavy maneuver training component and enhancing the GHMTA would be the same as under Alternative 1—minor, short-term, adverse impacts related to construction in training area enhancements, and moderate impacts related to disturbance and use of the landscape by heavy vehicles during training maneuvers.

3.12.2.5 Mitigation Measures

In addition to the mitigation from compliance with applicable laws and regulations, including the CWA and NPDES, continuation of other mitigation measures that could be used to further reduce potential adverse impacts to water resources. Under all action alternatives, Fort Benning plans to implement the same proactive management practices in the additional maneuver areas that it has already implemented elsewhere in the GHMTA. These include the use of off-road heavy maneuver training restrictions in 50-foot stream buffers and 100-foot wetland buffers; minimization of impacts to floodplains where feasible; and installation of permanent erosion control measures around the 100-foot training buffer, such as berms and swales.

3.13 Summary of Environmental Impacts

Table 3-6 presents a summary of environmental consequences for all of the alternatives.

Table 3-6. Summary of Environmental Consequences for Alternatives

Resource	No Action	Alternative 1: Preferred Alternative	Alternative 2
Air Quality	Continued minor impacts from vehicle emissions.	Negligible to minor impacts from fugitive dust emissions and beneficial impacts from the reduction in heavy equipment associated with the ABCT.	Same as Alternative 1 for up to a 5-year period, then additional beneficial impacts from the deactivation of the IBCT.
Airspace	No impact.	No significant impacts. Negligible, adverse impacts resulting from increased loads to Lawson Army Airfield and existing airspace management.	Negligible, adverse impacts for up to a 5-year period resulting from increased loads to Lawson Army Airfield and existing airspace management. Beneficial impacts to airspace could occur as a result of the inactivation of the IBCT as a result of decreased load requirements.
Wildlife and Special Status Species	No minor to moderate impacts to fish and wildlife, migratory birds, invasive species. Significant impacts to threatened and endangered species would continue to occur.	Beneficial and minor, adverse impacts to fish and wildlife, migratory birds, and invasive species and minor impacts to threatened and endangered species.	Same impacts as Alternative 1 for a period of up to 5 years, then beneficial impacts to fish and wildlife, migratory birds, invasive species, and special status species after inactivation of the IBCT.
Cultural Resources	No impact.	Negligible overall impacts to cultural resources; if resources cannot be avoided, Fort Benning would adhere to standard procedures for data collection, excavation, and relocation.	Initially, same as Alternative 1, then further reduction in cultural resources impacts from training after inactivation of the IBCT.
Hazardous Materials / Hazardous Waste	Negligible, adverse effects continuing normal Installation operations.	Negligible, adverse effects from hazardous materials and hazardous wastes and no impacts from toxic substances or contaminated sites. No significant impacts.	Negligible, adverse effects from hazardous materials and hazardous wastes and no impacts from toxic substances or contaminated sites.
Land Use	Negligible impact.	No impacts from land use changes and negligible impacts from encroachment with mitigation (the JLUS and ACUB programs) to minimize potential land use conflicts.	Same as Alternative 1 for up to a 5-year period, a reduction in land use conflicts after inactivation of the IBCT.

Resource	No Action	Alternative 1: Preferred Alternative	Alternative 2
Noise	Continued moderate, adverse impacts from operational noise overlapping areas with sensitive noise receptors.	Reduction in noise, however continued moderate, adverse impacts. No change in noise zones expected.	Initially, same as Alternative 1, then a slight, beneficial impact after inactivation of the IBCT and elimination of training noise.
Vegetation and Soils	Negligible to moderate impacts from training activities with continued mitigation measures.	Negligible to minor, beneficial impacts to vegetation, including invasive species; negligible impacts to soils with mitigation measures and reduction in impact intensity; and beneficial impacts from replacement of heavy equipment with foot traffic.	Same as Alternative 1, then a reduction in adverse impacts after inactivation of the IBCT.
Environmental Justice and Protection of Children	No impact.	No environmental justice impacts and no impacts to children as a result of standard safety measures.	No environmental justice impacts and no impacts to children as a result of standard safety measures.
Traffic and Transportation	Continued negligible impacts from existing congestion.	Negligible, short-term, adverse impacts during construction phase of GHMTA expansion. Negligible, long-term impacts due to minor overlaps in road network and tank trails. No significant impacts.	Beneficial impacts anticipated due to loss of IBCT traffic. Negligible, short-term, adverse impacts due to ARC location and GHMTA enhancements. No additional long-term impacts.
Water Resources	Continued minor to moderate impacts with mitigation measures.	Negligible to moderate impacts. Potential impacts from sedimentation; buffers, NPDES construction BMPs, and permanent sediment control measures used to prevent and limit adverse effects.	Same as Alternative 1, then a reduction of adverse impacts after inactivation of the IBCT.

4.0 CUMULATIVE IMPACTS

In addition to identifying the direct and indirect environmental impacts of their actions, the CEQ's NEPA regulations require federal agencies to address cumulative impacts related to their proposals. A cumulative impact is defined in the CEQ *Cumulative Impact* regulations 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR §1508.7)." This section describes the process used to identify potential cumulative impacts related to the Proposed Action at Fort Benning and discusses those impacts for each of the resources addressed in Chapter 3.

4.1 Process for Identifying Cumulative Impacts

CEQ has published guidance for assessing cumulative impacts in *Considering Cumulative Effects under the National Environmental Policy Act* (CEQ 1997b). In summary, the process outlined by CEQ includes identifying significant cumulative effects issues; establishing the relevant geographic and temporal (time frame) extent of the cumulative effects analysis; identifying other actions affecting the resources of concern; establishing the cause-and-effect relationship between the Proposed Action and the cumulative impacts; determining the magnitude and significance of the cumulative effects; and identifying ways in which the agency's proposal might be modified to avoid, minimize, or mitigate adverse, cumulative impacts.

Issues to be addressed in this cumulative impacts analysis correspond to resources that the alternatives have potential to affect. These resources, discussed in Chapter 3, were identified based on information received during internal scoping or through the analysis of direct and indirect effects that have the potential for cumulative impacts. Several resource categories—Air Quality, Airspace, Cultural Resources, Hazardous Materials and Waste, Noise, Environmental Justice and Protection of Children, and Traffic and Transportation—would have no or negligible impacts under the Proposed Action, so these resource categories are not carried forward for cumulative impacts analysis.

An ROI was defined for each resource in Chapter 3. These ROIs represent the geographic areas within which all notable impacts from the Proposed Action and alternatives are expected to occur. The geographic extent of the cumulative impacts analysis generally coincides with the ROI of each resource and is described by resource in Section 4.3. In addition, significance thresholds defined for each resource in Chapter 3 also apply to the assessment of cumulative impacts.

CEQ regulations specify that cumulative impacts analyses encompass past, present, and reasonably foreseeable future actions. As a practical matter, past actions are generally included in the baseline described in the affected environment in Chapter 3; therefore, past actions that are part of the baseline are not included. Only in unique circumstances are past actions not included in the baseline and addressed in the cumulative impacts analysis. Where appropriate and feasible, Chapter 3 notes past activities that may have contributed to the current affected environment and baseline conditions. Past, present, and reasonably foreseeable future actions considered in the analysis are identified in Section 4.2. In general, this EA considers present and reasonably foreseeable future actions as those actions that are under

construction or are approved and have identified funding. Actions beyond that become increasingly speculative and difficult to assess.

4.2 Identified Past, Present, and Reasonably Foreseeable Future Actions

4.2.1 Past Actions

Fort Benning has undergone robust growth and development in response to multiple Army-required initiatives including, but not limited to, BRAC 2005, Army Modular Force, Grow the Army, and the associated MCoE. Multiple development projects within Fort Benning have been constructed. These projects have been assessed in compliance with the NEPA and the appropriate decision documents have been signed. Relevant previous NEPA disclosure and decision documents can be found at Fort Benning's public notices webpage.[3] No past actions not already included in the baseline in the affected environment were identified for cumulative impacts analysis.

4.2.2 Present and Reasonably Foreseeable Future Actions

The following actions are ongoing or are considered reasonably foreseeable future actions within the Proposed Action ROI. The general vicinity of all cumulative projects is provided in Figure 4-1. Four projects listed as projects 9, 11, 16 and 17 on Figure 4-1, either do not have a determined location, or are regional or cantonment-wide and do not have a specific location on the map.

Present and reasonably foreseeable actions on Fort Benning include:

- **Implementation of a 30-Megawatt (MW) Photovoltaic (PV) Solar Facility (FY 15)**—Construction, operation, maintenance of a 30-MW PV solar system on approximately 250 acres of land on Fort Benning located at the Dove Field near the western boundary of Fort Benning within Russell County, Alabama.
- **Artillery Firing Points (FY 16–17)**—Expansion and maintenance of up to 7 existing firing points with 20-acre footprints in various training area locations south of the K15 Impact Area; potentially two additional 20-acre locations will be constructed to support the Artillery Fires Brigade of the 3ID.
- **ARC Training Locations (FY 16–18)**—Increasing the number of training areas available to the ARC to conduct reconnaissance training using wheeled vehicles (all off-road heavy maneuver training using tracked vehicles would be conducted in the GHMTA).
- **Bridge 27 Replacement (FY 15)**—Approximately 4 acres of disturbance connecting the Sand Hill Cantonment Area to 1st Division Road, including demolition of the existing bridge.
- **Soldier Family Support Center (FY 15)—**Demolition of 35 World War II temporary wooden buildings known as Soldier's Plaza at Dixie Road and Lumpkin Road, and renovation of 8 existing buildings to establish the Resiliency Campus in the Main Post Cantonment Area.

[3] Available at: https://www.benning.army.mil/garrison/DPW/EMD/legal.htm.

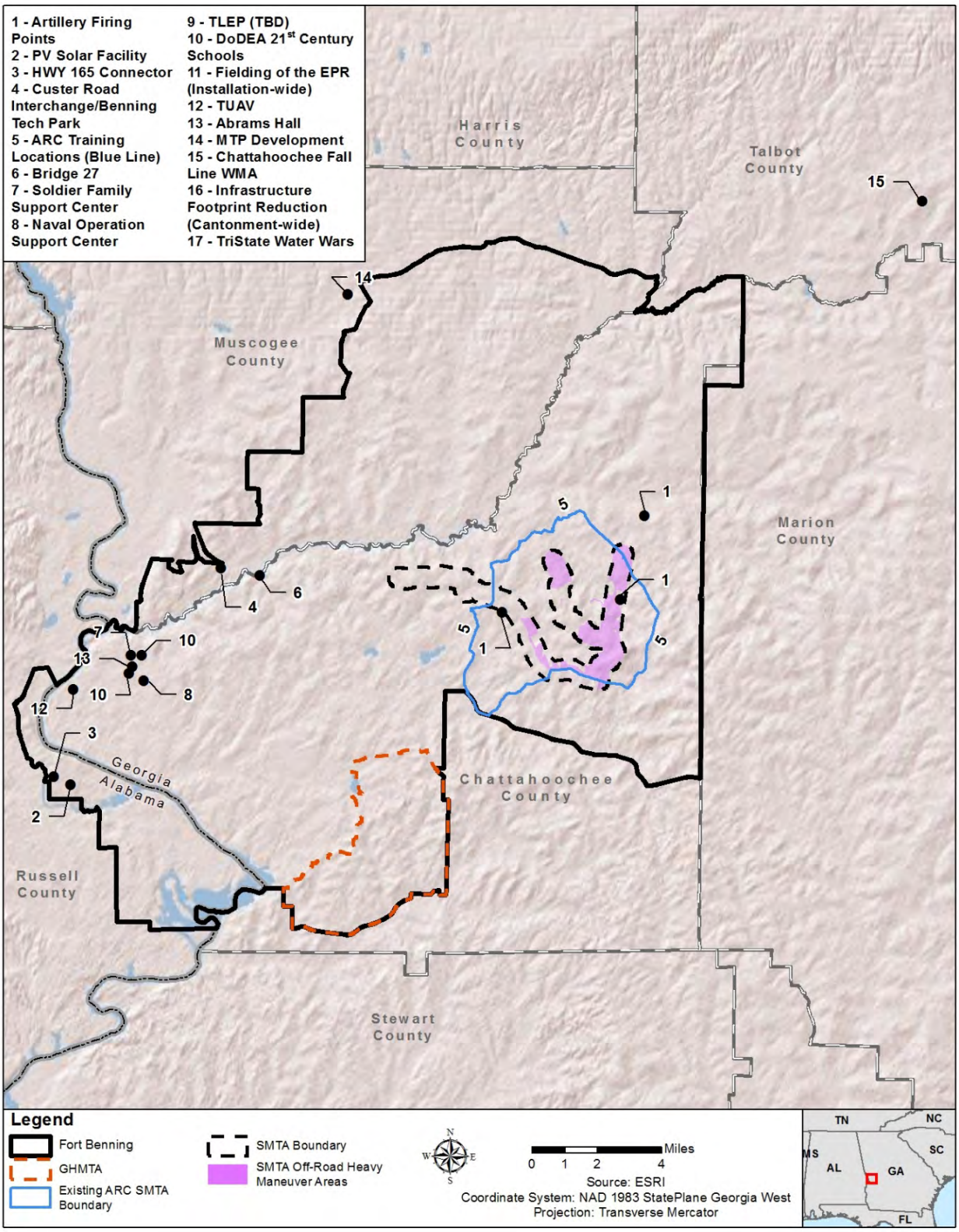

Figure 4-1. Cumulative Project Locations

- **Naval Operation Support Center (FY 16–18)**—Construction on approximately 4 acres in the current location of Soldier's Plaza consisting of an administration building and a parking lot for up to 140 Navy drill Reservists and support staff.
- **Training Lands Expansion Program (On Hold)**—Potential acquisition of up to 82,000 acres of additional heavy maneuver training land adjacent to or near current Fort Benning boundaries; this program is on hold pending Army force structure and budgetary decisions.
- **Department of Defense Education Activity (DoDEA) "21st Century Schools" Initiatives (FY 12–FY 18)—**A program focused on facility improvements to meet current DoDEA learning objectives that include the use of technology, and mandated requirements for sustainability and energy conservation. Four schools have been identified for replacement because they have inadequate space, require extensive maintenance and/or repairs, and are energy inefficient. New construction locations will be close to military housing areas across the Installation to accommodate school-aged children. Re-use or demolition of outdated facilities will be considered based on cost effectiveness and Installation needs.
- **Infrastructure Footprint Reduction Program (FY 14–FY 18)—**An Army-mandated program to eliminate underutilized and outdated facilities and achieve affordability in base operations. Each fiscal year, Fort Benning Master Planning Division identifies structures to be demolished to meet the program goal and consolidates facility functions and personnel into fewer buildings with more effective space utilization. The number and types of facilities and/or buildings to be demolished vary from year to year based on Installation needs and military mission. Notable demolition activities for FY 14–15 include Soldier's Plaza, Airborne Barracks, and Martin Army Community Hospital on Main Post, and vehicle maintenance facilities in Kelley Hill.
- **Fielding of the Enhanced Performance Round (FY 15 and beyond)—**A DoD initiative to improve munitions performance, as well as satisfy a component of the Army's "Green Ammunition" program to create environmentally friendly, small arms ammunition to reduce lead accumulation at training ranges. The current lead-core 5.56 mm ball ammunition will be replaced with a copper-core, which has fewer adverse environmental impacts and concurrently provides better shooting accuracy, consistency, and increased penetrating capability.
- **Tactical Unmanned Aerial Vehicle Hanger (TUAV) (FY 17)—**To support the 75th Ranger Regiment's TUAV Platoon, this 10,340 square foot facility will consist of maintenance bays, classrooms, storage, and administrative areas. Other ancillary support facilities will include hazardous materials storage, a TUAV runway, and personnel parking. This facility is to be constructed alongside other support facilities currently used for operations at Lawson Army Airfield.
- **Abrams Hall (FY 15)—**Construction of an 860-room lodging facility in the Main Post Cantonment Area to accommodate short-term and extended stay needs of Soldiers and their Families, conference attendees, and visitors on official DoD business. Construction of Abrams Hall and Privatization of Army Lodging began in 2012 and is slated to be fully operational for guests by the summer of 2015. The Army will transfer ownership and management of Abrams Hall and other lodging facilities on Fort Benning to a non-federal entity throughout the Privatization of Army Lodging program.

Present and reasonably foreseeable actions outside of Fort Benning include:

- **Tri-State Water Wars (ongoing)**—Legal challenge by the states of Florida and Alabama against Georgia and the USACE that contests the reallocation of water supply from the Chattahoochee River to support population growth in Atlanta, Georgia, and surrounding suburban areas. This lawsuit filed in 1990 argues that the USACE dam construction favors the interests of Georgia over environmental impacts to endangered aquatic species downstream due to decreased water levels and flow rates, as well as affecting freshwater input to the eastern Gulf of Mexico, which increases salinity levels that impact marine life.
- **Development of Muscogee Technology Park (ongoing)**—A 2,124-acre tract of land adjacent to the northwestern corner of the Installation acquired by the city of Columbus from the Army in exchange for 2,156 acres that is now most of the southern portion of the GHMTA. The Muscogee Technology Park is currently home to a FedEx distribution center, Pratt and Whitney Aerospace Manufacturing, and other warehouse distribution centers. Currently, Blue Cross and Blue Shield of Georgia is constructing a new 235,000-square-foot office space to house approximately 1,500 employees who will serve nearly 3 million members in Georgia.
- **Chattahoochee Fall Line Wildlife Management Area (FY 14)**—A 10,800-acre tract spanning north central Marion County and southern Talbot County was created by a partnership between the Georgia Department of Natural Resources, The Nature Conservancy, and Fort Benning through the ACUB Program. This new Wildlife Management Area provides opportunities for outdoor recreational activities, such as hunting, hiking, camping, and bird-watching. It will serve as a demonstration site for longleaf pine ecosystem restoration, an ecosystem that provides important habitat for wildlife, including both game and non-game species such as the federally endangered RCW and the state's official reptile, the gopher tortoise. The Georgia Department of Natural Resources and The Nature Conservancy jointly manage the property.
- **Benning Technology Park and Custer Road Interchange Improvements (FY 15–FY 18)**—The Georgia Department of Transportation will be implementing a road improvements project at the intersection of U.S. Route 27 (Victory Drive) and Custer Road in Muscogee County. The proposed project would improve the existing security checkpoint interchange system in the Sand Hill Cantonment Area by providing civilians access to a proposed commercial development off the Installation without having to pass through the Fort Benning security checkpoint. The commercial development, to be known as Benning Technology Park, borders Fort Benning directly west of the Patton Place military housing area. Benning Technology Park, a private/public joint venture between Columbus State University, Flournoy Development Company, and the Development Authority of Columbus, will include offices, retail services, and educational facilities.

4.3 Cumulative Impacts by Resource

This section describes potential cumulative impacts related to the actions occurring and proposed at Fort Benning by resource. For each resource, the following subsections first identify the geographic boundary considered for the cumulative impacts analysis and describe the nature and magnitude of the cumulative impacts for each alternative evaluated to the extent feasible considering uncertainties inherent in the analysis. In general, this EA assumes a 5-year horizon for estimating future impacts; actions beyond that

time frame become increasingly more speculative and difficult to assess. Impacts are characterized using the same definitions used for direct and indirect impacts (Section 3.1).

4.3.1 Wildlife and Special Status Species

The study area considered in the cumulative analysis for wildlife and special status species includes all species and areas present at or in the vicinity of Fort Benning.

Cumulative impacts on biological resources would be considered significant if one of more of the following conditions would result: 1) substantial loss or degradation of habitat or ecosystem functions (natural features and processes) essential to the persistence of native plant and animal populations; 2) substantial loss or degradation of a sensitive habitat, including wetlands that support high concentrations of special status species or migratory birds; 3) disruption of a federally listed species, its normal behavior patterns, or its habitat that substantially impedes the Installation's ability to either avoid jeopardy or conserve and recover the species; or 4) substantial loss of population or habitat for a state-protected or non-listed but special status species, increasing the likelihood of federal listing action to protect the species in the future.

The definition of "substantial" depends on the species and habitats in question and the regional context in which the impact would occur. Impacts may be considered more adverse if the action affects previously undisturbed habitat or if the impact would occur over a large portion of available habitat in the region.

4.3.1.1 No Action Alternative

Construction and demolition projects located within the cantonment areas would not result in cumulative impacts to wildlife and special status species. These projects are located in developed areas and generally would not affect wildlife habitat or special status species.

Adverse impacts to wildlife and special status species may occur due an increase in amount of habitat disturbed from other present and reasonably foreseeable future projects in the region (called "cumulative projects"), including expansion of training areas and ranges (ARC training areas, Artillery Firing Points, and TLEP), construction of a PV solar facility, implementation of the DoDEA 21st Century Schools Initiatives, development of the Muscogee Technical Park, and development of Benning Technology Park and Custer Road Interchange Improvements. With the exception of the TLEP, these cumulative projects would result in potentially minor to moderate impacts to wildlife.

Cumulative projects would increase the overall amount of area disturbed, namely through implementation of the TLEP, which would greatly expand training areas in the region. Until the expansion area is selected, it is unknown what special status species would be affected; however, Fort Benning would adhere to applicable federal and state laws and regulations, as well as Army requirements, that address protection and management of those species. Coordination with USFWS would occur specifically for the TLEP to determine any mitigation measures that may be necessary to reduce adverse impacts. Noise from construction and operation activities would generally be short term in nature, resulting in minor auditory impacts and would not constitute as a "harassment" impact on resident RCW groups. From the TLEP, impacts to wildlife and special status species are expected to be minor to moderate and adverse, depending on location.

Beneficial impacts resulted from the creation of the new Chattahoochee Fall Line Wildlife Management Area where new areas are designated for longleaf pine ecosystem restoration efforts.

Under the No Action Alternative, minor, adverse impacts to wildlife and special status species would continue as a result of continued use of armored vehicles in the training areas. USFWS, during in its preparation of its BO and determination of a Jeopardy Opinion for the MCoE actions, considered the impacts of state and private actions not involving federal activities that are reasonably certain to occur within the those projects' action areas. During the MCoE consultation, USFWS considered the RCW population at Fort Benning at that time and the modeled levels of the population into the future under a number of scenarios. Combined with the population recovery trends elsewhere in the United States, the determination was made that the Proposed Action would likely to jeopardize the RCW in part due to long-term, cumulative effects. Training events and related environmental impacts in the MCOE BO proved to be overstated based on more current information. Also changes to construction projects and training have occurred and been evaluated via the Installation's NEPA process since the MCOE BO and EIS. Therefore the 2015 Enhanced Training BA recalculated the potential effects to federally listed species based on the most recent project and training information. For detailed information, see the 2015 Enhanced Training BA that is incorporated by reference.

When considering the other cumulative projects, the No Action Alternative would result in overall moderated cumulative impacts to wildlife and special status species.

4.3.1.2 Alternative 1

The same present and reasonably foreseeable future cumulative projects described for the No Action Alternative would also occur under Alternative 1, resulting in potentially minor to moderate impacts to wildlife and special status species. As described previously, adverse impacts to wildlife may occur due to the aggregate of additional habitat disturbance from expansion of training areas and ranges, construction of a PV solar facility, implementation of the DoDEA 21st Century Schools Initiatives, and development of the Muscogee Technical Park and Benning Technology Park, resulting in long-term, minor to moderate, adverse impacts. The TLEP expansion could also result in potentially moderate impacts. A separate consultation with USFWS would be a coordination effort would be completed for that project to identify ways to reduce adverse impacts, or mitigation measures that could be implemented to reduce the severity of any adverse impacts. These moderate, adverse impacts could be magnified under Alternative 1 for wildlife but not federally listed species because of the additional amount of area disturbed at the GHMTA; however, Alternative 1 would also reduce the existing adverse impacts to wildlife and special status species elsewhere on the Installation. Noise from construction and operation activities would generally be short term in nature, resulting in minor auditory impacts, and would not constitute as a "harassment" impact on resident RCW group.

As described for the No Action Alternative, beneficial impacts would result from the Chattahoochee Fall Line Wildlife Management Area where new areas are designated from longleaf pine ecosystem restoration efforts. When considering the other cumulative projects, Alternative 1 would result in overall potentially moderate, adverse, cumulative impacts to wildlife and special status species.

4.3.1.3 Alternative 2

The same present and reasonably foreseeable future cumulative projects described for the No Action and Alternative 1 would also occur under Alternative 2, resulting in minor to moderate impacts. When considering the other cumulative projects, Alternative 2 would result in overall moderate, cumulative impacts. After the IBCT is inactivated, the cumulative impacts to wildlife and special status species would likely be slightly less than for Alternative 1 because of less foot and vehicle traffic in IBCT training areas.

4.3.2 Land Use

The threshold level of significance for land use includes evaluating consistency with land use plans and compatibility with existing and future surrounding land use, including encroachment.

4.3.2.1 No Action Alternative

The No Action Alternative would not change or affect the existing land use or designations at Fort Benning; therefore, no cumulative impacts to land use would occur.

4.3.2.2 Alternative 1

All construction and renovation projects, including the artillery firing points and ARC training locations, are expected to conform with existing land uses and would not affect land use. The TLEP would expand training lands and acquire additional land outside the existing Fort Benning boundary. Adverse impacts could result from potential conflicts with existing county and regional land use plans, the removal of private lands from recreational use, encroachment, and the conversion of lands with prime farmland soils to Army training use. Until a final location is determined for this action, the level of impact to land use from the TLEP it is unknown, although there is the potential for significant impacts. This cumulative analysis assumes that reasonable effort would be made to avoid potential significant impacts under the TLEP; however, if unavoidable, they would be mitigated during the planning process for that action, including updating the JLUS and ACUB programs to account for the new training lands and reduce potential land use conflicts.

Alternative 1 potential impacts would be confined to land within the Fort Benning boundary and would result in negligible impacts because no impacts associated with encroachment are expected. Therefore, when considering the other cumulative projects, Alternative 1 would result in overall potentially negligible, cumulative impacts to land use.

4.3.2.3 Alternative 2

The same present and reasonably foreseeable future cumulative projects described for Alternative 1 would also occur under Alternative 2, resulting in negligible to potentially significant impacts to land use.

Alternative 2 would result in negligible direct and indirect impacts to land use with reduced potentially adverse impacts after the IBCT is inactivated. When considering the other cumulative projects, Alternative 1 would result in overall potentially negligible, cumulative impacts to land use.

4.3.3 Vegetation and Soils

4.3.3.1 No Action Alternative

Present and reasonably foreseeable future cumulative projects that could adversely affect vegetation and soils include construction of a PV solar facility, Bridge 27 replacement, construction of a Soldier Family Support Center, construction of a Naval Operation Support Center, the TLEP, DoDEA 21st Century Schools Initiatives, Infrastructure Footprint Reduction Program, Fielding of the Enhanced Performance Round, TUAV hanger, Abrams Hall, Tri-State Water Wars, development of Muscogee Technology Park, and Benning Technology Park and Custer Road Interchange Improvements. These construction and demolition projects would affect soils through disturbance, compaction, creation of impervious surfaces, and possible removal of impervious surfaces during the construction period. Additional impermeable surface and compaction of soils can result in additional runoff and erosion of soils in the ROI. The majority of these projects are located in previously disturbed or highly developed areas. When combined with appropriate mitigation measures implemented by Fort Benning, these projects would result in negligible to minor impacts. The Custer Road Interchange Improvements could result in similar impacts, though likely on a smaller scale. All projects must follow applicable federal, state and local laws and regulations, including NPDES requirements that mitigate adverse impacts to soils.

The Chattahoochee Fall Line Wildlife Management Area would contribute regional, beneficial impacts to vegetation and soils. The acquisition of additional heavy maneuver training land under the TLEP would affect vegetation and soils. With more additional heavy maneuver training area, potentially adverse impacts would include an increase in runoff and soil erosion due to vegetation removal and disturbance of soils. Long-term effects include creation of impermeable surfaces and potential for more widespread erosion impacts, depending on soil conditions specific to the selected site. Significant impacts could occur; however, Fort Benning would consider proactive mitigation measures to avoid significantly affecting soils and to sustain training areas, resulting in potentially moderate impacts to vegetation and soils from the TLEP.

Under the No Action Alternative, impacts to vegetation and soils in training areas would continue to occur, especially in the off-road heavy maneuver areas of the GHMTA, but Fort Benning would continue to implement proactive mitigation measures in the GHMTA, resulting in potentially moderate impacts. When considering the other cumulative projects, the No Action Alternative would result in overall potentially moderate, cumulative impacts to vegetation and soils.

4.3.3.2 Alternative 1

The same present and reasonably foreseeable future cumulative projects described for the No Action Alternative would also occur under Alternative 1, resulting in beneficial to moderate, adverse impacts to vegetation and soils with the implementation of appropriate mitigation measures.

Alternative 1 would result in negligible to minor, adverse and beneficial impacts to vegetation and soils. In the enhanced off-road heavy maneuver boxes within the GHMTA, Fort Benning plans to implement proactive mitigation measures to reduce potentially moderate, adverse effects that exceed state requirements. When considering the other cumulative projects, Alternative 1 would result in potentially moderate, adverse, cumulative impacts to vegetation and soils.

4.3.3.3 Alternative 2

Initially, cumulative impacts under Alternative 2 would be the same as described for Alternative 1. After inactivation of the IBCT, the cumulative impacts to soils would likely be less than for Alternative 1 because of less foot and vehicle traffic in those areas where the IBCT trained. Other units, however, would continue training including heavy maneuver training on the Installation and enhanced off-road maneuver would occur in the GHMTA. When considering the other cumulative projects, Alternative 2 would result in overall potentially moderate, adverse, cumulative impacts to vegetation and soils.

4.3.4 Water Resources

In considering the impacts of each alternative in the context of past, present, and reasonably foreseeable future projects, watersheds and the nature of the impacts from the cumulative projects were considered. Impacts under the Proposed Action and all the alternatives occur within the Chattahoochee River watershed, and the majority of the potentially adverse impacts from this Proposed Action occur in the GHMTA, which would affect Hitchitee and Oswichee creeks, specifically, and the Chattahoochee River, more indirectly.

Cumulative impacts would be considered significant if they reduce the availability of, or accessibility to, one or more of the water sources or degrade surface or groundwater quality in a manner that would be out of compliance with existing water quality standards or other regulatory requirements related to protecting or managing water resources. Significant impacts would include unpermitted loss or destruction of more than 1 acre of jurisdictional wetlands.

4.3.4.1 No Action Alternative

Present and reasonably foreseeable cumulative projects that could affect water resources, include the implementation of the PV solar facility at Dove Field west of the Chattahoochee River, the construction and demolition projects in the cantonment areas (the replacement of the Soldier Family Support Center, construction of the Naval Operation Support Center, Abrams Hall, and the demolition of the Martin Army Community Hospital), the bridge replacement and road improvements, the development of both the Benning and Muscogee Technology Parks, the TLEP, expansion of artillery firing points, and the ARC training area expansion. The outcome of any legal challenges concerning water allocation in Georgia, Florida, and Alabama could also affect water resources in the ROI over time.

The implementation of the PV solar facility would require washing of the PV cells, and slightly increase the amount of impervious surfaces, but impacts on water resources from wash water would be negligible. This project would not affect either Hitchitee or Oswichee creeks.

Impacts from the cumulative construction projects would also all occur within the Chattahoochee River watershed but would not directly affect Hitchitee or Oswichee creeks. Short-term, adverse impacts would be associated with the construction and demolition activities, but these activities would all be conducted in accordance with Georgia sediment and erosion control requirements with approved sediment and erosion BMPs, and appropriate stormwater management facilities would be incorporated into the designs for the construction projects. Short- and long-term impacts would be potentially minor and adverse.

The Bridge 27 replacement would contribute short-term, adverse impacts related to construction, although the long-term impacts would be negligible. Adverse construction impacts would be minimized through the use of required BMPs for in-stream construction and would be negligible.

The interchange improvements at U.S. Route 27 and Custer Road and potential new commercial development would result in clearing and new impervious surfaces, so impacts would be similar to those described for the construction projects with short-term, adverse effects associated with the construction activity and the potential for soil erosion and sedimentation in streams. The projects would be subject to NPDES-approved BMPs appropriate to the situation as required by Georgia construction permit requirements in 303(d) headwaters to address sediment and erosion control, stormwater management, and other water quality requirements, so adverse effects would be minimized and would be minor.

Potential expansion of the training areas available to conduct ARC training would contribute minimal impacts on water resources. Because all heavy maneuvers using tracked vehicles by the ARC would be within the GHMTA, minimal removal of vegetation would be expected elsewhere. Furthermore, increasing the number of training areas where ARC training could potentially occur means that impacts would be less concentrated in specific training areas and would be dispersed across a larger area. The alternative areas for the TLEP all drain into the Kinchafoonee Creek, which is in the Flint River watershed east of the Installation, so although there would be impacts to water quality, related to the potential for erosion and sediment loads in the waterbody and mitigated with NPDES construction BMPs, permanent stream and wetland buffers, and erosion control measures, this project would not contribute any impacts to water resources in the Chattahoochee River watershed. The Flint River does flow into the Chattahoochee River, but the impacts from the TLEP would no longer be evident at that point, so the TLEP would not contribute cumulative impacts under any of the alternatives.

Impacts from the legal challenges to water allocations and the outcomes of the Tri-state Water Wars are unclear but probably would not be significant. Water is currently being diverted from the Chattahoochee River to support growth in the Atlanta area. Legal challenges assert that the diversion has altered freshwater input into the eastern Gulf of Mexico and affected water levels and flow rates in the Chattahoochee River, including in the ROI for the Proposed Action.

The Chattahoochee Fall Line Wildlife Management Area will result in potential benefits to water resources because the area will be protected for wildlife management and development in the wildlife management area would be minimal and limited to recreational activities, so there would be long-term protection of the water resources from disturbance that could result in sedimentation or other water quality issues.

Under the No Action Alternative, impacts to water resources in training areas would continue to occur primarily in the GHMTA off-road heavy maneuver areas; however, with the proactive mitigation measures already put in place, impacts would continue to be minor to moderate. When considering the other cumulative projects, the No Action Alternative would result in overall potentially minor, adverse, cumulative impacts to water resources.

4.3.4.2 Alternative 1

The same present and reasonably foreseeable future actions described for the No Action Alternative would also occur under Alternative 1, resulting in beneficial to minor, adverse impacts as well as beneficial impacts to water resources.

Alternative 1 would result in some beneficial and some adverse impacts to water resources but would include similar stream and wetland buffers and permanent erosion and sediment control measures in the additional GHMTA off-road heavy maneuver areas to minimize and avoid adverse impacts from erosion and sedimentation and disturbance in the floodplains, wetlands, and riparian areas. These proactive mitigation measures and compliance with NPDES and other CWA requirements would result in potentially moderate impacts to water resources. When considering the other cumulative projects, Alternative 1 would result in overall potentially moderate, adverse, cumulative impacts to water resources.

4.3.4.3 Alternative 2

Initially, the direct and indirect impacts under Alternative 2 would be the same as described for Alternative 1, resulting in negligible to minor as well as beneficial impacts. After the IBCT inactivation, adverse impacts to water resources would be reduced under Alternative 2. When considering the other cumulative projects, Alternative 2 would result in overall potentially minor, adverse, cumulative impacts to water resources.

5.0 CONCLUSIONS

Based on the analysis performed in this EA, implementation of either of the action alternatives would not have significant direct, indirect, or cumulative effects on the natural or human environment. As such, an FNSI is warranted for this Proposed Action and does not require the preparation of an EIS.

As discussed in Chapter 3, Alternative 1 would result in potentially negligible to moderate impacts to environmental and socioeconomic resources. The most noticeable impacts would be to vegetation and soils, water resources, and wildlife and special status species from enhancing the off-road heavy maneuver training capabilities within the GHMTA. Converting the ABCT to an IBCT would generally reduce ongoing, adverse impacts to resources from the reduction in tracked vehicles on the Fort Benning training landscape. Locating the ARC off-road heavy maneuver training in the GHMTA would result in negligible environmental impacts. Table 3-6 provides a summary of all impacts by alternative.

During operation as an IBCT, Alternative 2 would result in impacts similar to those discussed for Alternative 1. Within a 5-year period and the IBCT is inactivated, the training load would reduce at Fort Benning, generally reducing adverse environmental impacts.

Alternative 1—the Preferred Alternative—supports the Army Force Realignment and Reduction Plan decisions that have been made to date, minimizes adverse impacts, and facilitates the intent of the MCoE BO.

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7.0 LIST OF PREPARERS

U.S. Department of the Army

Name	Title	Organization
Michael G. Barron	Wildlife Biologist	Environmental Management Division, Fort Benning, Georgia
Scott A. Brosch	Executive Officer	G3 – DPTMS, Fort Benning, Georgia
John E. Brown	NEPA Program Manager	Environmental Management Division, Fort Benning, Georgia
John Doss	Project Manager	Army Environmental Command, Joint Base San Antonio, Texas
Tracy J. Ferring	NEPA Environmental Planner	Environmental Management Division, Fort Benning, Georgia
Christopher E. Hamilton	Cultural Resources Program Manager	Environmental Management Division, Fort Benning, Georgia
Gary L. Hollon	Soil Conservationist	Environmental Management Division, Fort Benning, Georgia
Britt Horton	NEPA Analyst	Environmental Management Division, Fort Benning, Georgia
David B. Howlett	Environmental Attorney	Environmental Law Division, Office of the Judge Advocate General, U.S. Army, Washington, DC
Ellis P. Leeder	Operational Noise Program Manager	Environmental Management Division, Fort Benning, Georgia
Timothy G. Marston	Lead Wildlife Biologist—RCW	Environmental Management Division, Fort Benning, Georgia
Vance A. Warren	Project Coordinator	Directorate of Public Works, Fort Benning, Georgia
Hugh M. Westbury	Watershed Program Manager	Environmental Management Division, Fort Benning, Georgia
Brent N. Widener	Lead Natural Resource Specialist	Environmental Management Division, Fort Benning, Georgia.
Linda M. Veenstra	Environmental Attorney	Administrative and Civil Law Division, Office of the Staff Judge Advocate, Fort Benning, Georgia

Louis Berger

Name	Title	Education/Role	Experience
Katie Bosserman	Environmental Scientist	B.S., Environmental Geoscience Responsible for Soils and Geology	1 year
Rudi Byron, AICP	Senior Environmental Planner	M.U.R.P., Urban and Regional Planning B.S., Environmental Policy Project Manager—Responsible for Air Quality and all sections of the EA	10 years
Tim Canan, AICP	Associate Vice President	M.U.R.P., Urban and Regional Planning B.S., Public Administration Responsible for document review	24 years
Christopher Dixon, AICP	Environmental Planner	M.U.R.P., Urban and Regional Planning M.B.A B.S., Environmental Economics and Management Responsible for Socioeconomics and Land Use	4 years
Sean Gannon	Environmental Planner	B.S. Environmental Economics Responsible for Energy and Noise	1 year
Sarah Groesbeck	Architectural Historian	M.A., Historic Preservation B.A., Art History Responsible for Cultural resources	5 years
Coreen Johnson	Senior Editor	B.A., English Education Post-graduate Work, Technical Communication Responsible for document preparation and editorial review	21 years
Sue Lindstrom	Environmental Scientist	M.S., Soil and Water Science B.S., Environmental sciences Responsible for Soils	10 years
Kyle Nixon	Geographic Information System Specialist	B.S., Geography Responsible for mapping	11 years
David Plakorus, LEED Green Associate	Environmental Planner	M.B.A., Business Administration M.U.R.P., Urban and Regional Planning, B.A. History. Responsible for Airspace	5 years

Name	Title	Education/Role	Experience
Derrick W. Rosenbach	Environmental Scientist	M.S. Terrestrial Ecology M.S. Environmental Policy/Planning B.A. Political Science B.A. Philosophy Responsible for Wildlife, Special Status Species, and Vegetation	6 years
Suni Shrestha	Senior Environmental Planner	B.S., Environmental Analysis and Planning Responsible for Hazardous Materials and Waste	16 years
Margaret Stewart	Senior Planner	A.B., Growth and Structure of Cities Program M.R.P., Land Use and Environmental Planning Responsible for Water Resources	18 years
Susan Van Dyke	Environmental Scientist	B.S., Environmental Science Responsible for Hazardous Materials and Waste / Noise	1 year
Tristyne Youngbluth, P.E.	Principal Environmental Engineer	B.S., Civil/Environmental Engineering Responsible for Facilities and Infrastructure	16 years
Julia Yuan	Senior Environmental Scientist	M.P.S., Forest and Natural Resource Management B.S., Environmental and Forest Biology/Forest Resources Management Responsible for the oversight of Wildlife, Special Status Species, and Vegetation	12 years

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8.0 DISTRIBUTION LIST

Elected and Appointed Government Officials

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100 10th Street, 6th Floor
Government Center Tower
Columbus, GA 31901

Cusseta-Chattahoochee County
Government Manager
P.O. Box 299
Cusseta, GA 31805-0299

Mayor's Office
City Hall
601 12th Street
Phenix City, AL 36867

Harris County
County Manager
P.O. Box 365
Hamilton, GA 31811

Talbot County
Board of Commissioners
P.O. Box 155
Talbotton, GA 31827

Webster County
County Commissioner
6622 Cass Street
Preston, GA 31824

Stewart County
County Commissioner
P.O. Box 157
Lumpkin, GA 31815-0157

Marion County
County Commissioner
P.O. Box 481
Buena Vista, GA 31803

Russell County Commission
1000 Broad Street
Phenix City, AL 36867

Senator Johnny Isakson
131 Russell Senate Office Building
Washington, DC 20510

Senator David Perdue
B40D Dirksen Senate Office Bldg.
Washington, DC 20510

Rep. Sanford Bishop, Jr.
2407 Rayburn HOB
Washington, DC 20515

Rep. Mike Rogers
324 Cannon HOB
Washington, DC 20515

Office of the Governor
206 Washington Street
111 State Capitol
Atlanta, GA 30334

Office of the Governor
600 Dexter Avenue
Montgomery, AL 36130

Local and Regional Administrators, Federal Agencies, or Commissions with Regulatory Interest in Fort Benning

U.S. Fish & Wildlife Service
West Georgia Office
P.O. Box 52560
Fort Benning, GA 31905

USFWS, Regional RCW Recovery & Longleaf Pine Coordinator
Mississippi Field Office
6578 Dogwood View Parkway
Jackson, MS 39213

GSWCC, Region 5
4344 Albany Highway
Dawson, GA 39842

GA DNR, EPD
Director's Office
2 Martin Luther King Jr. Drive, SE
Suite 1456, East Tower
Atlanta, GA 30334

GA Dept. of Natural Resources
Commissioner's Office
2 Martin Luther King Jr. Drive, SE
Suite 1252, East Tower
Atlanta, GA 30334

USDA NRCS State Office
Water Resources
355 East Hancock Ave., Suite 13
Athens, GA 30601

USEPA Region IV
Regional Administrator
61 Forsyth Street SW
Atlanta, GA 30303

ADEM
Office of the Director
P.O. Box 301463
Montgomery, AL 36130-1463

National Wildlife Federation
Southeast Regional Center
730 Peachtree St. NE; Suite 1000
Atlanta, GA 30308

The Nature Conservancy
Chattahoochee Fall Line Office
P.O. Box 52452
Columbus, GA 31905

The Georgia Conservancy
817 West Peachtree Street
Suite 200
Atlanta, GA 30308

Southern Environmental Law Ctr.
Director
127 Peachtree Street; Suite 605
Atlanta, GA 30303-1840

The Valley Partnership
P.O. Box 1200
Columbus, GA 31902

Defenders of Wildlife National HQ
1130 17th Street NW
Washington, DC 20036

Georgia Wildlife Federation
11600 Hazelbrand Road, NE
Covington, GA 30014

Columbus Chamber of Commerce
1200 6th Avenue
Columbus, GA 31902

Chamber of Commerce
Phenix City – Russell County
1107 Broad Street
Phenix City, AL 36867

Federally Recognized Tribes that Consult with Fort Benning

Mr. Bryant J. Celestine
Tribal Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas 77351

Ms. Amber Hood
Historic Preservation Officer
Chickasaw Nation
P.O Box 1548
Ada, Oklahoma 74820-1548

Mr. Ace Buckner
Representative
Kialegee Tribal Town
P.O. Box 332
Wetumka, Oklahoma 74883

Mr. Kenneth H. Carleton
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
P.O. Box 6010
Choctaw, Mississippi 39350

Mr. Emman Spain
Manager, Cultural Pres. Office
Muscogee (Creek) Nation of OK
P.O. Box 580
Okmulgee, Oklahoma 74447

Mr. Robert Thrower
Tribal Historic Preservation Officer
Poarch Band of Creek Indians
5811 Jack Springs Rd
Atmore, Alabama 36502

Ms. Natalie Harjo
Historic Preservation Officer
Seminole Nation of Oklahoma
P.O. Box 1498
Wewoka, Oklahoma 74884

Dr. Paul Backhouse-Hist. Pres. Officer
Seminole Tribe of Florida
Tribal Historic Preservation Office
30290 Josie Billie HWY, PMB 1004
Clewiston, Florida 33440

Mr. Charles Coleman
Representative
Thlopthlocco Tribal Town
P.O. Box 188
Okemah, Oklahoma 74859

Ms. Molly Franks
Tribal Historic Preservation Officer
Quassarte Tribe of Oklahoma
P.O. Box 187
Wetumka, OK 74883

Fort Benning and Other Army Officials

Installation Management Command
Attn: Public Affairs Office
2405 Gun Shed Road
Fort Sam Houston, TX 78234-1223

HQ US Army FORSCOM
Attn: Public Affairs
Building 8-1808
4700 Knox Street
Fort Bragg, NC 28310

HQ US Army TRADOC
Attn: Ken Kimidy
661 Sheppard Place
Fort Eustis, VA 23604-1626

Office of the Staff Judge Advocate
6450 Way Street
Bldg. 2839
Fort Benning, GA 31905

MCoE Commanding General
1 Karker Street
Building 4; Suite 6304
Fort Benning, GA 31905-5000

Garrison Commander
1 Karker Street
Building 4; Suite 5900
Fort Benning, GA 31905-5000

Infantry School Commandant
1 Karker Street
Building 4; Suite 6104
Fort Benning, GA 31905-5000

Armor School Commandant
1 Karker Street
Building 4; Suite 6606
Fort Benning, GA 31905-5000

Local Media and Libraries

Columbus Ledger-Enquirer
17 West 12th Street
Columbus, GA 31901

Tri-County Journal
71 Bob Webb Road
Buena Vista, GA 31803

The Bayonet and Saber
Public Affairs Office
35 Ridgeway Loop; Suite 381
Fort Benning, GA 31905

Columbus Public Library
3000 Macon Road
Columbus, GA 31906

Phenix City – Russell County Library
1501 17th Avenue
Phenix City, AL 36867

Sayers Memorial Library
6870 Wold Avenue; Bldg. 93
Fort Benning, GA 31905

Cusseta-Chattahoochee Public Library
262 Broad Street
Cusseta, GA 31805

9.0 ACRONYMS AND ABBREVIATIONS

3/3 or 3rd	3rd Brigade of the 3rd Infantry Division
ABCT	Armored Brigade Combat Team
ACM	Asbestos-containing Materials
ACUB	Army Compatible Use Buffer
AQI	Air Quality Index
ARC	Army Reconnaissance Course
Army	U.S. Department of the Army
ASTM	American Society for Testing and Materials
BA	Biological Assessment
BCT	Brigade Combat Team
BE	Biological Evaluation
BEB	Brigade Engineer Battalion
BMP	Best Management Practice
BO	Biological Opinion
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO_2e	Carbon Dioxide Equivalent
CRC	Continental Replacement Center
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted Decibel
dBC	C-weighted Decibel
DNL	Day-Night Sound Level
DoD	Department of Defense
DoDEA	Department of Defense Education Activity
EA	Environmental Assessment
EAP	Environmental Action Plan
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FAA	Federal Aviation Administration

FNSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gas
GHMTA	Good Hope Maneuver Training Area
HMMWV	High Mobility Multipurpose Wheeled Vehicle
IAP	Installation Action Plan
IBCT	Infantry Brigade Combat Team
INRMP	Integrated Natural Resources Management Plan
JLUS	Joint Land Use Study
LBP	Lead-based Paint
LUPZ	Land Use Planning Zone
MCOC	munitions constituents of concern
MCoE	Maneuver Center of Excellence
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O_3	Ozone
OCS	Officer Candidate School
ORAP	Operational Range Assessment Program
Pb	Lead
PCB	polychlorinated biphenyl
PEA	Programmatic Environmental Assessment
$PM_{2.5}$	Particulate Matter with a Diameter Less Than or Equal to Nominal 2.5 Micrometers
PM_{10}	Particulate Matter with a Diameter Less Than or Equal to Nominal 10 Micrometers
PSD	Prevention of Significant Deterioration
PV	Photovoltaic
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker

ROI	Region of Influence
RTLP	Range and Training Land Program
the Rule	Determining Conformity of Federal Actions to State or Federal Implementation Plans (40 CFR Part 93)
SBCT	Stryker Brigade Combat Teams
SDZ	Surface Danger Zones
SHPO	State Historic Preservation Office
SMTA	Southern Maneuver Training Area
SO_2	Sulfur Dioxide
SPEA	Supplemental PEA
SUA	Special Use Airspace
SWMU	Solid Waste Management Unit
TCE	Trichloroethylene
TLEP	Training Land Expansion Program
TMDL	Total Maximum Daily Load
TSCA	Toxic Substances Control Act
TUAV	Tactical Unmanned Aerial Vehicle
UAS	Unmanned Aircraft Systems
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Command
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VEC	Valued Environmental Component