FORT BENNING
TRAINING LAND EXPANSION

Draft Environmental Impact Statement

May 2011

Approved by:

COL. THOMAS D. MACDONALD
Garrison Commander, Fort Benning

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Prepared for:
Fort Benning, Georgia

Prepared by:
Specpro Environmental Services LLC
and
Potomac-Hudson Engineering, Inc.

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Draft Environmental Impact Statement for Training Land Expansion at Fort Benning, Georgia and Alabama

Lead/Responsible Agency:	U.S. Army
Title of the Proposed Action:	Training Land Expansion at Fort Benning, Georgia and Alabama
Designation:	Draft Environmental Impact Statement (DEIS)
Prepared by:	Specpro Environmental Services LLC and Potomac-Hudson Engineering, Inc.
Comments and Enquiries:	Fort Benning Public Affairs Office c/o Monica Manganaro 6460 Way Avenue, Building 2838 Fort Benning, GA 31905
Approved by:	COL. Thomas D. Macdonald Garrison Commander, Fort Benning

Abstract: The purpose of the Proposed Action is to acquire additional training land. Land acquisition would help to reduce current training land shortfalls, alleviate ongoing scheduling conflicts and training pressures, and would facilitate the Installation's compliance with the Maneuver Center of Excellence Jeopardy Biological Opinion issued by the U.S. Fish and Wildlife Service, which requires that the field training of the Army Reconnaissance Course move off current Fort Benning training lands. The DEIS analyzes the potential environmental impacts of six alternatives which include the No Action Alternative, under which the Army would not acquire additional training land, and the following five acquisition alternatives:

- Alternative 1 – Acquisition of approximately 75,800 acres southeast and south of Fort Benning within Marion, Webster and Stewart counties, GA.
- Alternative 2 – Acquisition of approximately 81,300 acres to the west of Fort Benning within Russell County, AL.
- Alternative 3 (Preferred Alternative) – Acquisition of approximately 82,800 acres to the south of Fort Benning within Stewart County, GA.
- Alternative 4 – Acquisition of approximately 80,900 acres to the south of Fort Benning in Stewart County, GA, and lands to the west of Fort Benning in Russell County, AL.
- Alternative 5 – Acquisition of approximately 81,600 acres to the south of Fort Benning in Stewart County, GA, and lands to the north of Fort Benning in Harris and Talbot counties, GA.

According to the President's Council on Environmental Quality National Environmental Policy Act implementing regulations (40 Code of Federal Regulations [CFR] Part 1500-1508), a clear basis for choice among options must be included and analyzed by including a No Action Alternative (40 CFR 1502.14[d]). This DEIS offers an opportunity for decision makers and the public to evaluate potential effects, by comparing impacts of all the alternatives with baseline conditions. The Army has determined that as a result of the Proposed Action significant impacts could occur involving land use (Alternatives 1, 2 and 3) through the conversion of potential prime farmlands and farmlands of statewide importance into military training lands; noise due to the potential for live-fire activities (Alternatives 1 through 5); cultural resources due to the potential unavoidable disturbances (Alternatives 1 through 5); socioeconomics from disproportionate and adverse effects to minority and low income populations (Alternatives 1 through 5) and from loss of property tax revenues (Alternatives 1, 3, 4 and 5); and traffic and transportation due to permanent roadway closures (Alternatives 1 through 5). The DEIS also identifies practicable mitigation for adverse environmental impacts.

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S. SUMMARY

S.1 INTRODUCTION

The Proposed Action is to acquire and use approximately 82,800 acres of training land under Fort Benning's Training Land Expansion Program (TLEP) to meet the training requirements. The study area for land acquisition is areas neighboring Fort Benning that are capable of supporting military training. The TLEP study area is located in Marion, Webster, Stewart, Talbot and Harris counties in Georgia, and in Russell County, Alabama (see Figure S-1). In addition, portions of Chattahoochee County and Muscogee County, Georgia, are being considered for transportation routes to access newly acquired lands.

Fort Benning is preparing this environmental impact statement (EIS) in compliance with their responsibilities under the National Environmental Policy Act (NEPA) and the National Historic Preservation Act (NHPA) to assess the potential direct, indirect, and cumulative impacts to environmental and socioeconomic resources resulting from acquiring additional training land and implementing related Army management, land preparation and construction, and training activities within the newly acquired land.

S.2 INSTALLATION SETTING AND MISSION

Fort Benning is approximately 182,000 contiguous acres, of which 169,260 (approximately 93%) are in Georgia, and the remaining 12,740 acres are in Russell County, Alabama. Fort Benning land is used for military training (e.g., Ranges, Drop Zones, Landing Zones, etc.), military administration, and resource management activities. Of the current property, 141,471 acres are used for training, which includes 30,342 acres of non-dudded ordnance impact areas. Approximately 16,970 acres of the Installation are restricted because of unexploded ordnance (UXO). The rest of the training land is comprised of light and heavy maneuver areas. The cantonment and Family housing areas are comprised of approximately 14,700 acres.

The mission of Fort Benning is to provide trained, agile, adaptive, and ready Soldiers and leaders for an Army at war, while developing future requirements for the individual Soldier and Maneuver Force and providing a world class quality of life for Soldiers and Army Families. Fort Benning plays a pivotal role in supporting the Army's overarching mission and has a threefold training function:

- As the Maneuver Center of Excellence (MCoE), the Installation must support the institutional training of Infantry and Armor Soldiers and leaders;
- As the Army's premier Installation for the basic and advanced individual training of new enlistees, Fort Benning must provide sufficient land for new Soldiers to learn their basic skills; and
- Fort Benning provides functional training in many special skills needed to support the operating force. Among these are the only Officer Candidate School in the Army and the Army's Basic Airborne Course.

Fort Benning must be able to train and develop highly proficient and cohesive units capable of conducting operations across the full spectrum of conflict.

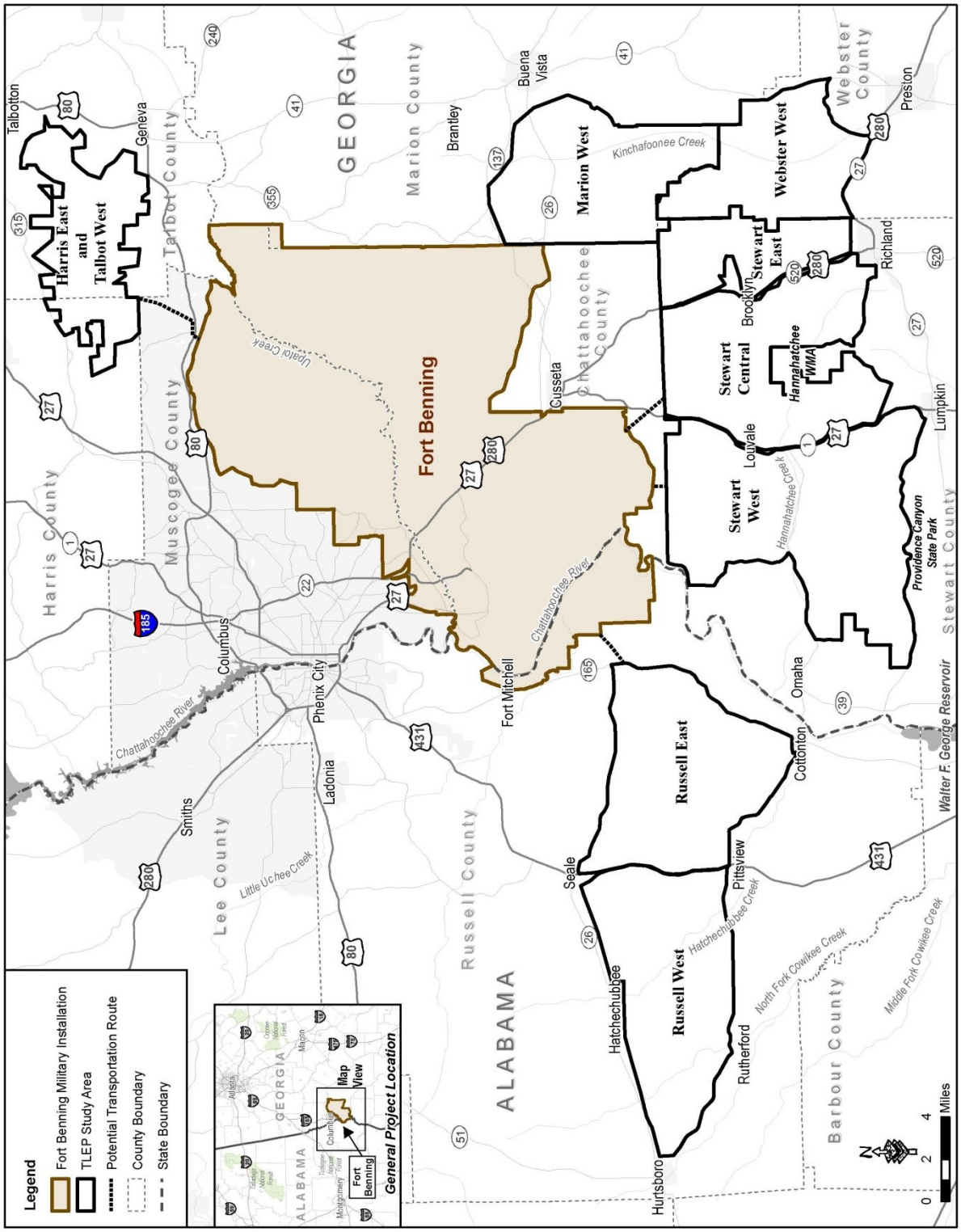

Figure S-1. Fort Benning and TLEP Study Area Location Map

S.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is to reduce the Army's training land shortfall identified in the Fort Benning Land Use Requirement Study (LURS), allow the MCoE to more effectively meet its training mission by relocating the capability to continue the Army Reconnaissance Course (ARC) to newly acquired lands, and permit tenant units to meet their training requirements at their home station. Adequate training areas are essential to prepare Soldiers to train as they fight, so as to "Fight and Win the Nation's Wars." Additionally, adequate training areas are required to prepare Soldiers to accomplish a variety of missions other than war (e.g., peace-keeping, stability, and support operations) to ensure the Army is prepared to accomplish missions across the full spectrum of operations.

The immediate need for land acquisition arises from the MCoE Jeopardy Biological Opinion (JBO) issued by the United States (U.S.) Fish and Wildlife Service (USFWS) for the red-cockaded woodpecker (RCW), which requires the field training on the Scout Leaders Course (SLC) (predecessor of the ARC) to move off the current Fort Benning footprint to areas not inhabited by RCWs within 5 years of that course training start date. Without land acquisition, the Army would pursue other options to meet this JBO requirement (e.g., reduce training requirements and supplement with stimulators if approved, or move the ARC to another installation). Within the existing 182,000 acres of Army-owned land, many current land uses also conflict or compete with one another, which does not allow the Installation to effectively meet its goals of supporting battalion level maneuver training while providing enough space to meet its institutional and basic training requirements. Fort Benning has a total heavy maneuver land shortfall of 228,836 acres. This shortfall can be partially reduced through implementing sustainable land management practices, the use of simulations, and coordinated range scheduling. Fort Benning has determined that it can achieve the maximum feasible training benefit by acquiring approximately 82,800 acres of additional training land.

Together, the additional training land and existing maneuver land would provide maneuver space for two heavy maneuver battalions and elements of the MCoE to train simultaneously. The acquisition of additional training land would support current and future training by units such as the 3rd Heavy Brigade Combat Team, 3rd Infantry Division (3rd HBCT/3rd ID), as well as the 75th Ranger Regiment, without degrading MCoE training. Land acquisition would also enhance future ground maneuver training as the Army's doctrine and weapons systems evolve.

S.4 DECISIONS TO BE MADE AND FRAMEWORK FOR ANALYSIS

This EIS analyzes the potential impacts to environmental and socioeconomic resources. The decision-maker will use the analysis presented in this EIS to determine which alternative to implement. If an alternative to implement the Proposed Action is selected in the NEPA Record of Decision (ROD), then the Army would request funding for land acquisition from Congress. Following this, the U.S. Army Corps of Engineers (USACE) would proceed with the acquisition of approximately 82,800 acres over a number of funding years. The intent of the Army is to acquire land through open negotiation with landowners, leading to purchases from willing sellers. Should negotiations fail, however, and Army leaders determine acquisition of the land is still in the Army's best interest, the Secretary of the Army would consider invoking eminent domain to the Department of Justice. Eminent domain is the inherent power of the government to take privately owned property and convert it to public use, but the government must pay just compensation. The use of eminent domain would be considered on a case-by-case basis, and would be considered only as a last resort.

After land acquisition, appropriate follow-on NEPA analyses would be conducted based upon the proposed improvements in accordance with the Army's NEPA Regulation (32 Code of Federal Regulations (CFR) 651) and other applicable Federal regulations.

This EIS also serves as documentation of the measures the Installation to comply with Section 106 of the NHPA, which requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. Fort Benning has adopted the Army Alternate Procedures (AAP) for implementing Section 106 of the NHPA; therefore, this Draft EIS (DEIS) is part of the consultation process.

The Proposed Action does not include a change in airspace; however, the Army may pursue airspace use modifications in the future. This EIS provides a description of the existing airspace usage and an assessment of potential airspace impacts within the proposed land acquisition areas under the assumption that the Army would likely require airspace use modifications in the future for employing aerial systems and potential live-fire training. The actual ability of the Army to use any of the airspace for these activities in a newly acquired area would not be fully understood until the acquisition is well underway and the full area of land acquisition has been determined. The Army would work with the Federal Aviation Administration (FAA) to determine the effective and efficient means of conducting airspace operations in any newly acquired area, including rulemaking or non-rulemaking actions to existing special use airspace, which would be subject to supplemental NEPA analysis.

S.5 PROPOSED ACTION

The Proposed Action is to acquire and use approximately 82,800 acres of training land to meet the current and future training needs of Fort Benning. The Proposed Action has four stages:

1) The Federal acquisition of approximately 82,800 acres of land adjacent to Fort Benning.
2) The implementation of resource management programs.
3) The preparation of newly acquired land.
4) Army training.

S.6 PROPOSED ACTION ALTERNATIVES

To determine whether an acquisition Alternative should be carried forth for further consideration within this EIS, the Army applied the following criteria: training viability, sustainability and land use compatibility, economic feasibility, and public relations. Five alternatives have been identified for further evaluation, as they met the criteria for land expansion. Each of these alternatives involves the acquisition, management, preparation, and training on approximately 82,800 acres. Alternatives 1, 2, and 3 are presented on Figure S-2, and Alternatives 4 and 5 are presented on Figure S-3.

- **Alternative 1: Acquire Land to the Southeast and South of Fort Benning within Stewart, Webster, and Marion Counties**. This alternative involves approximately 75,800 acres within Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East. As this alternative is contiguous to Fort Benning, no transportation route to newly acquired training lands would be required.
- **Alternative 2: Acquire Land to the West of Fort Benning within Russell County.** This alternative involves approximately 81,300 acres within Russell County, Alabama. Alternative 2 includes Russell West and Russell East. These land areas are not contiguous to Fort Benning and would require the Army to obtain a transportation route for access, most likely through Russell County.
- **Alternative 3: Acquire Land to the South of Fort Benning within Stewart County**. This alternative involves approximately 82,800 acres within Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central. These land areas are not contiguous to Fort Benning and would require the Army to obtain a transportation route for access, most likely through Chattahoochee County.

- **Alternative 4: Acquire Land to the South and West of Fort Benning within Russell and Stewart Counties.** This alternative involves approximately 80,900 acres within Russell County, Alabama, and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central. These land areas are not contiguous to Fort Benning and would require the Army to obtain transportation routes for access, most likely through Chattahoochee County.
- **Alternative 5: Acquire Land to the South and North of Fort Benning within Stewart, Harris, and Talbot Counties.** This alternative involves approximately 81,600 acres within Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West. These land areas are not contiguous to Fort Benning and would require the Army to obtain transportation routes for access, most likely through Muscogee and Chattahoochee counties.

S.7 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support the Fort Benning training requirements would not occur. Force structure, assigned personnel, equipment, land management and ownership, and training would continue in their current form. Implementation of the No Action Alternative would result in the Installation not being able to effectively support the doctrinal maneuver requirements for operational units, as additional land is required to do so. Therefore, under the No Action Alternative, units would continue to be constrained by a lack of available training land and the inability to effectively train Soldiers to standard.

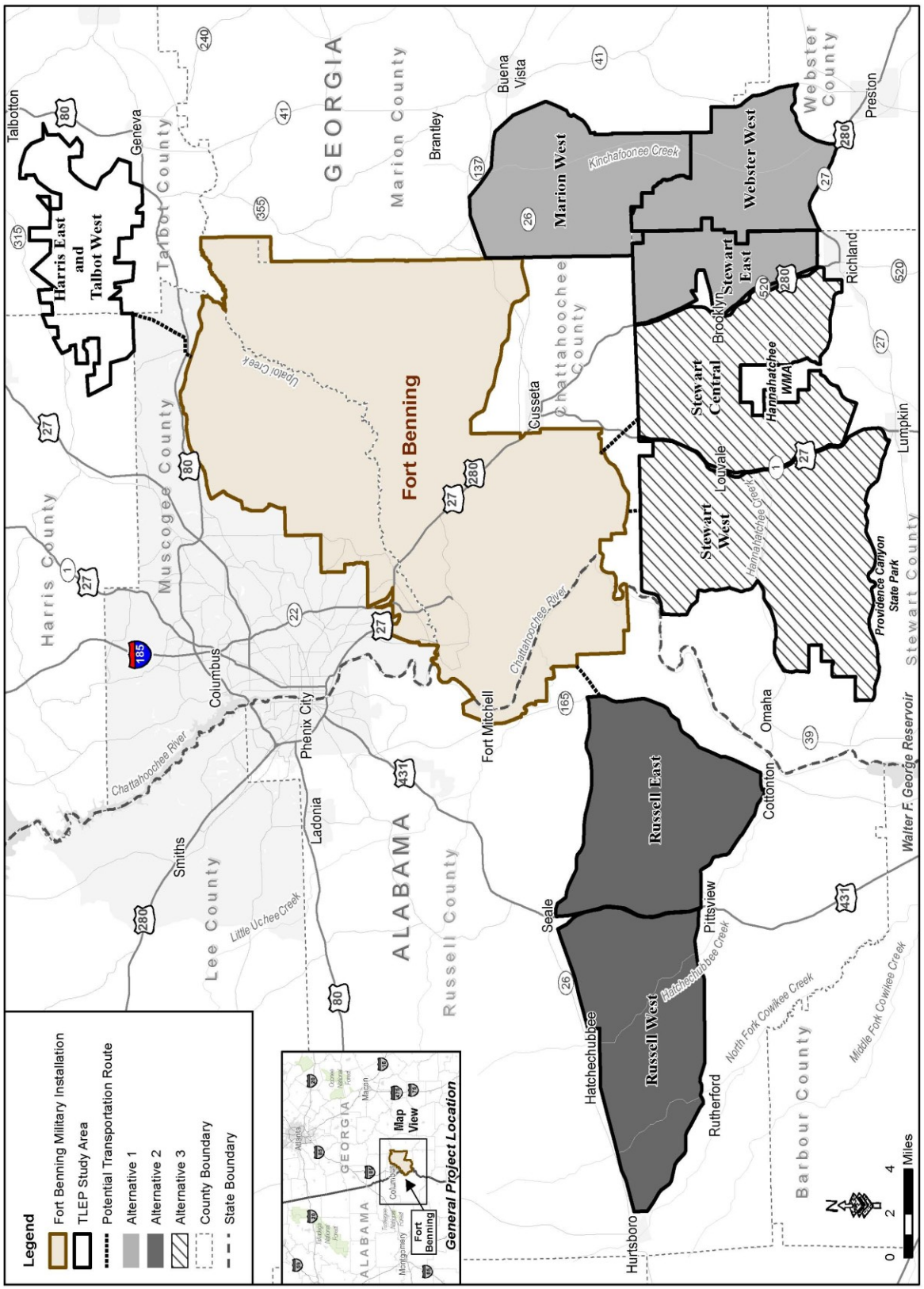

Figure S-2. Alternatives 1, 2, and 3

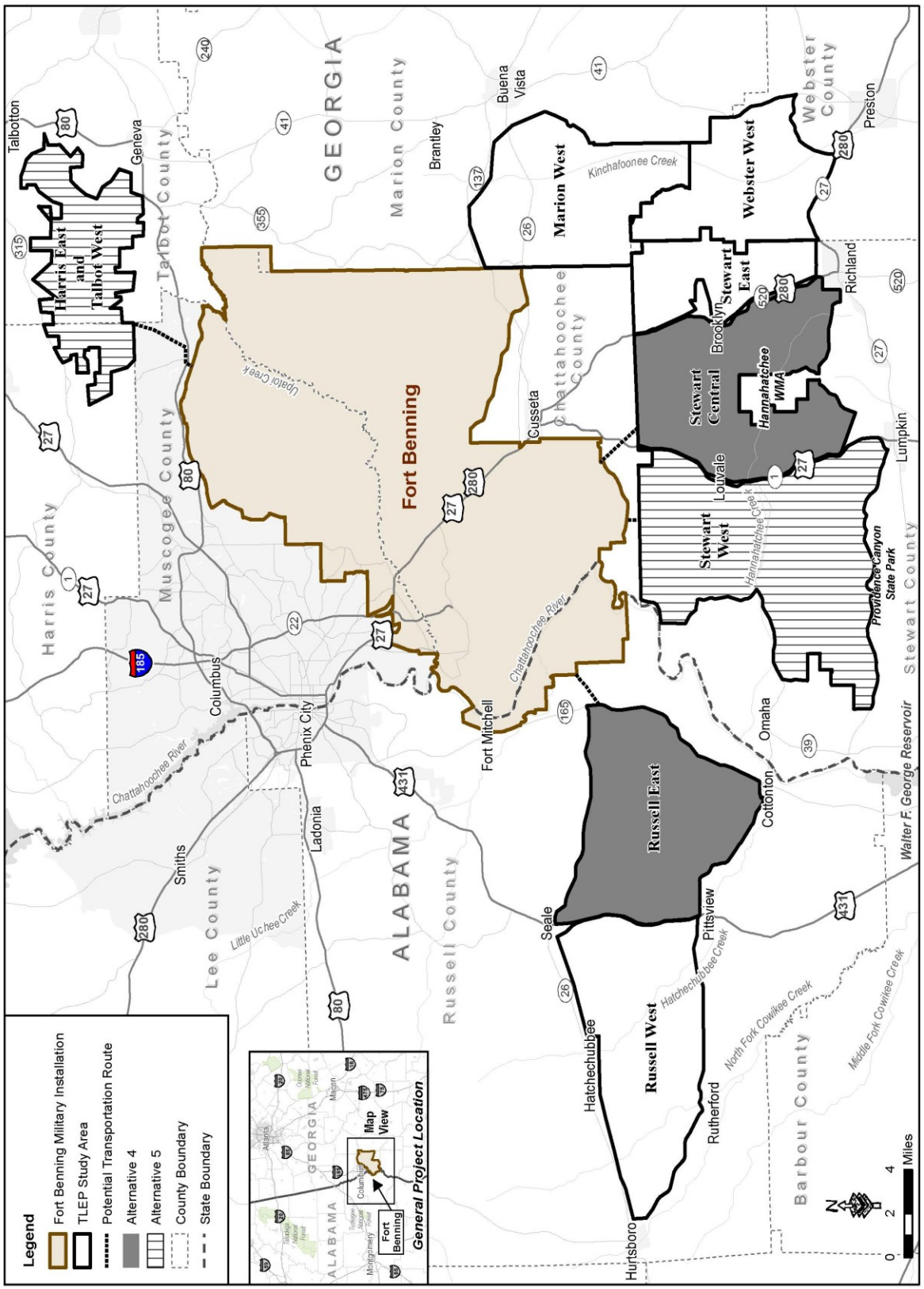

Figure S-3. Alternatives 4 and 5

S.7.1 DESIGNATION OF THE PREFERRED ALTERNATIVE

The Army has identified Alternative 3 (Stewart West and Stewart Central) as its Preferred Alternative. This was based on information in this EIS as well as factors relating to training suitability. Factors considered included proximity to Fort Benning, contiguous land parcels, low population density and large extent of commercial timber operations, suitability for training (e.g., slope and erodible soils), extent of utilities and existing road network, and airspace use. Any of the alternatives, however, could ultimately be selected, including the No Action Alternative. All of the action alternatives would meet the purpose and need, but the No Action Alternative would not.

S.8 ALTERNATIVES CONSIDERED BUT DISMISSED

The following alternatives were determined not to be viable or reasonable. These alternatives could not be implemented in a manner consistent with the intended purpose of the action, could not be implemented within the scope of the Army's legal authority and/or would not be economically and technologically feasible, and would not avoid the likelihood of jeopardizing the continued existence of listed species and/or avert the destruction or adverse modification of critical habitat.

- Transport Soldiers and equipment to other Army installations (e.g., Fort McClellan, Fort Rucker, or Fort Stewart) or other Federal land holdings (e.g., National Forests or the Department of Energy Savannah River Site);
- Training using virtual (e.g., simulation training) and constructive environments to supplement the Army Reconnaissance Course field training;
- Clear dudded impact areas (i.e., the surface clearance of UXO) to provide additional maneuver space; and
- Acquire land in other areas adjacent to or near Fort Benning beyond those considered under the Proposed Action alternatives.

S.9 STAKEHOLDER OUTREACH

Fort Benning has a long-standing program of outreach to stakeholders with interest in or affected by the Installation's activities, as well as governmental agencies that have jurisdiction to issue approvals, authorizations, or permits for Installation projects. Stakeholder outreach was initiated for the TLEP in early 2010.

S.9.1 NATIVE AMERICAN TRIBES

There are 13 Federally-recognized Native American Tribes that claim traditional ties to land in the Fort Benning region, 11 of which indicated that they want Fort Benning to consult with them. Fort Benning's relationship with each of these Tribes as domestic independent nations is on a government-to-government basis. The process and protocols for communicating with the Tribes are addressed in the Installation's *Integrated Cultural Resources Management Plan* (ICRMP). Each of the Tribes was contacted in accordance with the ICRMP by Fort Benning to introduce the TLEP study area, identify any initial concerns, and to invite each to be a consulting party for the purpose of NHPA Section 106 review.

S.9.2 PUBLIC AND AGENCY COORDINATION

On June 4th, 2010, the Army published a Notice of Intent (NOI) to prepare the EIS in the *Federal Register*. All agencies, Native American Tribes, organizations, and members of the public with a potential interest in the Proposed Action including any minority and low-income populations were provided the opportunity to participate in the decision-making process. The NOI was followed by five public scoping meetings, which took place on June 14th through 18th, 2010, and letters inviting regulatory

agencies to attend an agency scoping meeting that was held in May 2010. During the public scoping period (June 4th to July 6th, 2010), comments from all interested persons were considered in preparation of this DEIS to promote open communication and enable better decision-making. Received comments generally addressed potential effects regarding the land acquisition process, impacts to local tax base, use of eminent domain, impacts to cultural resources, recreational access to Army land for hunting and other uses, transportation impacts, biological resources, and impacts of noise to private landowners.

A 45-day comment period of the DEIS began on May 13, 2011, the date the U.S. Environmental Protection Agency (EPA) published the Notice of Availability (NOA) of the DEIS in the *Federal Register*. During the 45-day comment period, public meetings will be held during the week of June 6th, 2011, to provide an opportunity for the public, organizations, and regulatory agencies to provide comments on the DEIS. The Final EIS (FEIS) will address all substantive comments received on the DEIS. The FEIS will be circulated to parties including, but not limited to, relevant Federal and state agencies and offices, persons who requested to review the FEIS, and persons who submitted comments.

A final decision on the Proposed Action will be documented in a ROD. The Army will issue the ROD after a 30-day waiting period; starting from the publication of the FEIS NOA in the *Federal Register,* which announces the availability of the FEIS to the public.

The Fort Benning Public Affairs Office (PAO) has been available throughout the process to answer questions about the scope, status, and progress of the EIS. Contact information is:

Ms. Monica Manganaro, Fort Benning PAO
6460 Way Avenue, Bldg 2838, Fort Benning, GA 31905
land.benning@us.army.mil / 706-545-8820

S.10 ENVIRONMENTAL CONSEQUENCES

Table S–1 at the end of this section presents a summary of the overall environmental and socioeconomic consequences of the Proposed Action alternatives and the No Action Alternative. The characterizations of the effects presented in Table S-1 represent the overall potential impacts expected for each resource area from Army acquisition, Army management, Army construction, and Army training for each alternative. The comparison of the potential impacts provides a tool to assess the overall impacts for each alternative. Implementation of either the No Action Alternative or the Proposed Action alternatives would result in some degree of adverse effect on most environmental resources. Section 3.15 of the EIS contains a more detailed summary table which displays the anticipated impact for each Proposed Action stage.

Under the No Action Alternative, the acquisition and use of additional lands to support Fort Benning training requirements would not occur. Environmental consequences associated with the No Action Alternative are shown in Table S-1 and are discussed fully under each resource in Chapter 3 of the EIS. Similarly, potential cumulative impacts for each resource are shown in Table S-1 and are summarized in Section S.11 and in Chapter 3 of the EIS for each resource (see page S-15). The No Action Alternative is required by the Council on Environmental Quality for consideration in NEPA analyses and provides the benchmark for comparison of the potential environmental impacts of other alternatives.

S.10.1 LAND USE

For Alternatives 1 through 5, the primary adverse impacts would result from potential conflicts with existing county and regional land use plans, removing private lands from recreational use, and converting lands with prime farmland soils and farmland soils of statewide importance for Army training use. Potential adverse impacts from Federal acquisition of lands with prime farmland soils and farmland soils of statewide importance would be significant under Alternatives 1 through 3 and moderate for Alternatives 4 and 5. For Alternatives 1 through 5, Army training would cause potential long-term and

localized minor to moderate adverse impacts to land use through training-related disturbances such as soil erosion. Negligible impacts are expected for land formerly managed for commercial timber production because it would instead be managed for ecological and training sustainability.

S.10.2 AIRSPACE

Overall impacts resulting from Army Airspace management for Alternatives 1 through 5 would have a moderate adverse effect on airspace. During training, the majority of aviation support operations would be conducted in controlled airspace under Visual Flight Rules (VFR); however, commercial and general aviation traffic under Instrument Flight Rules (IFR) along defined Federal airways may experience minor to moderate adverse impacts if higher altitudes are required to traverse the designated areas. Construction and ground maneuver training activities would have negligible adverse impacts to airspace. The availability of Restricted Area 3002 over the current Fort Benning boundaries has allowed training consistent with airspace requirements. While the current restricted area meets the demands of previous training requirements, it will not meet the demands of full spectrum operations training that is critical and vital to the level of maneuver demanded by current or future training. The days of static or linear operations are behind us and demand non-linear dynamic maneuvers driven by ever complex situations. The Army would work closely with the FAA to determine the most efficient and effective means of conducting airspace operations in any newly acquired area and additional supplemental NEPA analysis would be required.

S.10.3 AIR QUALITY

Overall, potential moderate adverse impacts to air quality would result from implementation of Alternatives 1 through 5. Short-term minor and long-term moderate adverse effects to air quality would be primarily due to combustion emissions from prescribed burning activities, additional on-and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. No alternatives would threaten the attainment status of the region, have substantial greenhouse gas (GHG) emissions, or lead to a violation of any Federal, state, or local air regulation. Preparation of newly acquired land would have short- and long-term minor adverse effects from earth-moving operations to construct and upgrade the training infrastructure within the study area. Army training would have long-term minor adverse effects due to the use of both on- and off-road training vehicles and the potential for new live-fire training throughout the new areas.

Unlike Alternative 1, Alternatives 2 through 5 would include new direct and indirect emission sources associated with the transportation routes proposed under these alternatives. No additional levels of impacts, however, are anticipated from the establishment and use of any proposed routes.

S.10.4 NOISE

Noise from construction and Army maneuver training activities may have short- and long-term significant adverse effects on the noise environment. These activities may include small arms, heavy artillery, military explosives, and live-fire activities. In general, the nature of and overall level of noise associated with training activities would be similar to those on the existing Installation. Implementing the Installation Operational Noise Management Plan (IONMP) would have long-term minor beneficial effects with regards to noise within the study area. All policies and procedures for managing noise outlined in this plan would be implemented on the newly acquired lands.

S.10.5 SOILS

For all alternatives, potential short-term minor adverse impacts to soils could occur from the upgrade and construction of road and trail networks (including establishment of water crossings), site hardening at specific locations, and silviculture techniques, including prescribed burning and forest thinning. These

activities would be expected to increase runoff and soil erosion potential during construction due to vegetation removal and exposure and disturbance of soils. Long-term minor adverse effects to soils from construction would include grading, compaction, and creation of impermeable surfaces on expanded portions of existing trails, new trails, and roads.

Potential moderate long-term adverse impacts to soils would result from training activities. For Alternative 1, overall potential adverse impacts to soils would be minor. Alternatives 2 through 5 contain a larger distribution of highly erodible soils compared to Alternative 1; therefore, a higher potential exists for more widespread impacts, which may result in moderate adverse impacts to soils. For Alternatives 1 through 5, potential adverse impacts from maneuver training would mostly be associated with the long-term compaction, disturbance, and exposure of soils from the off-road and unimproved trail use of wheeled and tracked vehicles.

S.10.6 WATER RESOURCES

For Alternatives 1 through 5, the short- and long-term effects of Army management of the natural resources would in general be a net beneficial impact to surface water resources as traditional clear-cut timber harvest areas would be transformed to managed forest land. Land preparation, including upgrading road and trail networks, establishing water crossings, site hardening at specific locations, and prescribed burning and tree thinning would result in potential minor adverse impacts to surface water resources, or cause potential temporary indirect adverse impacts, such as sedimentation from adjacent construction sites. Potential moderate long-term adverse impacts to surface water resources would result from training activities. For Alternative 1, overall potential impacts to surface waters would be minor. Alternatives 2 through 5 contain a larger concentration of surface water features compared to Alternative 1; therefore, a higher potential exists for more widespread impacts, which may result in the potential for moderate adverse impacts to surface waters during training for these alternatives. Vehicle and troop maneuvers within or along the banks or streambeds of surface water features (not containing designated water crossings) may potentially cause changes in streambed and bank morphologies, as well as associated decreases of surface water quality from sedimentation from streambank erosion resulting in potential moderate adverse effects. Adverse effects could also occur to surface waters adjacent to established live-fire areas from the transport of sediments contaminated by munitions compounds.

Unlike Alternatives 1, 2, and 5, Alternatives 3 and 4 contain a state-listed impaired waterbody, Talipahoga Rum Creek, which is located in Stewart County. Army management of the land surrounding this stream, however, would likely be a long-term benefit to its water quality compared to the traditional clear-cut timber harvested landscape, which is prevalent in Alternative 3 and 4.

Overall potential adverse impacts to wetlands during construction would be moderate for Alternative 1 and minor for Alternatives 2 through 5. Alternatives 2 through 5 have a lower concentration of wetlands compared to Alternative 1, making it easier for Fort Benning to implement their policy of avoidance and minimization of adverse impacts to wetlands. For Alternatives 2 through 5, off-road vehicle movements could occur through/near wetland areas, causing potential minor adverse direct impacts from soil compaction and sedimentation, which can alter wetland hydrology. Fort Benning would obtain appropriate stream and wetland permits and authorizations for any potentially unavoidable impacts.

S.10.7 BIOLOGICAL RESOURCES

For Alternatives 1 through 5, construction and upgrades of training infrastructure may result in potential localized and minor adverse impacts, primarily due to vegetation loss and community conversion. During training, off-road vehicle use, dismounted operations (e.g., foot Soldier maneuvers), and field operations (e.g., bivouacking, combat support area(s) and/or field hospitals, etc.) would be expected to cause potential moderate, long-term, adverse impacts to vegetation. Additionally, these actions could result in decreased species diversity in frequently used areas. Vegetation disturbance from construction and

training could also increase opportunities for the introduction or spread of invasive plant species. Potential adverse impacts would be partially offset by Army management of newly acquired land. Similar to existing Fort Benning training lands, natural resources on newly acquired lands would be managed with an ecosystem approach which may improve habitat and biological diversity compared to lands currently managed for commercial timber production.

For Alternatives 1 through 5, potential moderate adverse impacts could occur from wildlife displacement in areas with people, facilities, or training activities. These areas and associated noise could also result in interruptions of nesting and breeding locations (including migratory bird species), interruptions to migration/wildlife corridors, and startling behaviors; however, elevated noise sources and human activity are common within the study area due to logging activities. Vehicle maneuvers during training may result in potential minor adverse impacts from increased potential of direct mortality of individual species from collisions, particularly with less mobile species. Off-road vehicle maneuvers may also cause habitat loss and degradation. Training involving stream activity outside of the water crossings may result in potential moderate adverse impacts to aquatic life. Potential adverse impacts would be offset to a degree by the benefit from Army acquisition because biological resources would be managed and protected under Fort Benning's resource management programs.

Overall, a net beneficial impact to proposed endangered, threatened, and candidate species could occur from implementation of Alternatives 1 through 5 due to Army management of the lands. Each alternative has Federally- and state-protected species that could be associated with the study area. The potential number of Federally-protected species for each alternative is as follows: Alternative 1 – 7 Federally-protected species, Alternatives 2, 3, and 4 – 5 Federally-protected species, and Alternative 5 – 13 Federally-protected species. There is designated Critical Habitat for the purple bankclimber within Alternative 1. Critical Habitat receives protection under the Endangered Species Act. There is no critical habitat present in Alternatives 2 through 5. The number of state-protected species that could be associated with the Alternatives, aside from those that are also Federally-protected, include 12 state-protected species for Alternatives 1 and 3; 9 state-protected species for Alternative 2; 13 state-protected species for Alternative 4; and 18 state-protected species for Alternative 5. The presence of protected species would be unlikely in the study area due to the lack of high-quality habitat.

S.10.8 CULTURAL RESOURCES

As stated in Section 3.9.2, archaeological site data for the Areas of Potential Effect (APEs) reflect the location of previous site-specific intensive surveys and are highly variable. Therefore, the survey data presented within the EIS provide an indication of the known resources within each respective APE but do not provide a conclusive indication to evaluate which alternative is more suitable for implementation from a cultural resource perspective.

Construction and training activities would cause the potential for unavoidable moderate to significant adverse impacts to cultural resources. Overall, Alternatives 1 through 5 are anticipated to create beneficial impacts to cultural resources that may not otherwise be maintained under existing ownership and commercial forestry operations. Within the APEs, the number of architectural structures range from 6 (Alternative 1) to 111 (Alternative 5); the number of historical structures ranges from 21 (Alternative 5) to 101 (Alternative 1); and the number of cemeteries ranges from 5 (Alternative 3) to 22 (Alternative 1). Adherence to the existing cultural resources laws, regulations, and Army requirements, as well as the Installation's cultural resource management program for resources located within the APE, would benefit cultural resources.

S.10.9 SOCIOECONOMICS

Alternatives 1 through 5 would displace or directly affect the population and housing units in the counties involved. The following is an approximation of individuals which may be displaced by alternative based

on Census data: Alternative 1 – 625; Alternative 2 – 1,223; Alternative 3 – 574; Alternative 4 – 844; and Alternative 5 – 474. Alternative 5 would affect the lowest percentage (1.2 percent) of the population and housing units, whereas Alternative 3 would affect the highest percentage (12.6 percent) of the population and housing units, in each of their respective counties. Adequate housing choices would be available for individuals choosing to relocate within the Region of Influence (ROI), minimizing the potential for adverse significant impacts to population and housing. The acquisition of land for Alternatives 1 through 5 may have the potential for significant adverse environmental justice impacts through the disproportionate displacement of minorities and low-income populations when compared to the county and state populations.

The acquisition of land areas would result in estimated reductions of annual property tax revenues for the counties ranging from 5 percent (Alternative 2) to 62 percent (Alternative 3). The counties in Alternative 2 would have a moderate adverse loss of tax revenue, whereas Alternatives 1, 3, 4, and 5 would likely experience significant adverse losses of tax revenue. The loss of tax revenue could have potential adverse impacts on the maintenance of county services and infrastructure. Potential adverse impacts to economic development and employment, law enforcement, fire protection/emergency response, schools, and healthcare would be negligible to moderate for Alternatives 1 through 5. Demolition and construction activities associated with the upgrade of training infrastructure would have a beneficial impact on the ROIs for each alternative by providing temporary employment opportunities.

S.10.10 TRAFFIC AND TRANSPORTATION

For Alternatives 1 through 5, short- and long-term significant adverse effects may result from the acquisition and closure of all roadways that transect or terminate within the alternative study area. Short-term minor adverse effects from construction and infrastructure upgrades would be expected. Traffic may increase due to additional construction vehicles and traffic delays near construction sites, worker commutes, and delivery of equipment and materials. In addition, temporary road closures or detours to accommodate utility work would be expected, creating short-term traffic delays. Overall, potential adverse impacts to traffic and transportation during Army training under Alternative 1 would be minor. Alternatives 2 through 5 would each include the establishment of a transportation route and transportation upgrades, which may result in potential moderate adverse impacts to traffic and transportation during Army training in comparison to Alternative 1. Moderate long-term adverse effects from Army training would be expected from traffic as a result of increased use of roadways by support personnel and wear and tear from training activities on existing roadways within the newly acquired lands.

S.10.11 UTILITIES

Overall potential adverse impacts to utilities for Alternatives 1 through 5 would be minor. The potential also exists for minor adverse impacts to underground utilities from damage during construction and training and periodic interruptions to access existing utility rights-of-way (ROWs) during training. Alternatives 3 and 5 contain the most miles of utilities (40 miles and 36 miles, respectively); therefore, the frequency of the minor adverse impact to utilities (i.e., access to existing ROWs could be interrupted by training missions and would require coordination with Fort Benning) may be more often as opposed to Alternatives 1, 2, and 4. Despite the greater presence of utilities, overall potential adverse impacts to utilities under Alternatives 3 and 5 would likely remain minor.

S.10.12 HAZARDOUS AND TOXIC SUBSTANCES AND WASTE

For Alternatives 1 through 5, overall potential adverse impacts to management of hazardous and toxic substances and waste would be minor. Army construction and upgrades to training infrastructure could result in potential minor short-term adverse environmental impacts due to the use of hazardous materials in construction-related activities. Hazardous and other regulated waste generation could increase temporarily, in proportion to any increases in hazardous material use during construction-related

activities. Similarly, solid waste generation may increase temporarily during site preparation activities (e.g., land clearing, demolition or renovation of existing structures). Such increases, however, would be minor and would not significantly affect hazardous waste disposal capacity in the region. Potential minor to moderate long-term adverse impacts could occur due to munitions use on newly acquired land.

S.10.13 SAFETY

Overall potential minor adverse impacts to safety are expected to result from implementation of Alternatives 1 through 5. Potential minor short-term adverse impacts would result from the use of vehicles and equipment that would pose safety risks to the personnel working and/or monitoring construction and upgrades of training infrastructure activities. Modifying or removing existing facilities on newly acquired land may result in contact with and exposure to asbestos, lead-based paint, polychlorinated biphenyls, and other regulated materials. Potential minor, long-term adverse impacts to transportation safety, public safety, explosive safety, and range safety are expected as a result of Army training. Army management and oversight of potentially harmful materials and training activities through existing programs and plans would guide personnel in all matters of safety, minimizing the potential for adverse safety impacts. Alternatives 2 through 5 contain additional land to be utilized as transportation routes; therefore, the risks of accidents would likely increase proportionally with the increased travel distances. Despite the increase of travel potentially required with these alternatives, potential adverse impacts to safety would be beneficial with implementation of existing Fort Benning management programs and plans.

S.11 CUMULATIVE IMPACTS

Cumulative impacts are the incremental impacts of the Proposed Action when considering the past, present, and reasonably foreseeable future actions that are discussed in Chapter 3. The actions considered in the cumulative impact analysis include actions both within Fort Benning and from the neighboring communities. Potential adverse cumulative impacts to traffic and transportation are predicted to be significant. Potential adverse cumulative impacts to air quality and hazardous and toxic substances and waste would be moderate. Potential negligible or minor adverse cumulative impacts would be expected for land use, noise, soils, water resources, biological resources, socioeconomics, utilities, and safety. Beneficial cumulative impacts would be expected with regards to cultural resources due to Army management and military stewardship of these resources on newly acquired land. Cumulative impacts for airspace cannot be fully assessed in this EIS due to uncertainties regarding which land may actually be acquired and which specific training activities may occur on these lands. Further airspace evaluation with FAA and the Army would occur once land has been acquired, and any proposal for special use airspace above newly acquired land would be subject to additional NEPA analysis.

Table S-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Land Use	Sig	Sig	Sig	Mod	Mod	Neg	Min
Airspace	Mod	Mod	Mod	Mod	Mod	Min	Ben/Mod [2]
Air Quality	Mod	Mod	Mod	Mod	Mod	Neg	Mod
Noise	Sig	Sig	Sig	Sig	Sig	Neg	Min
Soils	Min	Mod	Mod	Mod	Mod	Mod	Min
Water Resources (Surface Water, Groundwater, and Floodplains)	Min	Mod	Mod	Mod	Mod	Mod	Min
Water Resources (Wetlands)	Mod	Min	Min	Min	Min	Mod	Neg
Biological Resources (Vegetation)	Ben	Ben	Ben	Ben	Ben	Mod	Min
Biological Resources (Wildlife and Aquatic Life)	Ben	Ben	Ben	Ben	Ben	Mod	Min
Biological Resources (Proposed, Endangered, Threatened and Candidate Species)	Ben	Ben	Ben	Ben	Ben	Mod	Neg
Cultural Resources	Ben	Ben	Ben	Ben	Ben	Mod	Ben
Socioeconomics (Population and Housing, Environmental Justice and Protection of Children, Public Services)	Sig	Sig	Sig	Sig	Sig	Neg	Neg
Socioeconomics (Economic Development and Employment, Taxes and Revenue)	Sig	Mod	Sig	Sig	Sig	Neg	Neg
Traffic and Transportation	Sig	Sig	Sig	Sig	Sig	Neg	Sig
Utilities	Min	Min	Min	Min	Min	Neg	Neg
Hazardous and Toxic Substances and Waste	Min	Min	Min	Min	Min	Min	Mod
Safety	Min	Min	Min	Min	Min	Neg	Min

[1] Impact Intensity Key: Neg = negligible; Min = minor; Mod = moderate; Sig = significant; Ben = beneficial. Descriptions of impacts (i.e., negligible, minor, moderate, and significant adverse impacts; and beneficial impacts) are provided in Section 3.1.3.1 of the EIS. Impacts are overall effects expected to occur for each resource from Army acquisition, management, construction, and training for each alternative.

[2] Moderate adverse cumulative impacts would be anticipated if Fort Benning were to pursue restricted airspace in the future with FAA (see Section 3.3.3 of the EIS). Cumulative impacts for airspace cannot be fully assessed in this EIS due to uncertainties of actual land to be acquired and specific training activities to occur on these lands. Further airspace evaluation with FAA and the Army would occur once land has been acquired and any substantial adjustment to Restricted Areas would be subject to additional NEPA analysis.

S.12 PROPOSED MITIGATION

Table S-2 identifies proposed mitigation to address uncertainties regarding the level of effects of the Proposed Action. This proposed mitigation is in addition to implementation of existing resource management plans and programs and would aid in rectifying adverse effects by repairing, rehabilitating, or restoring the affected environment and reducing or eliminating adverse effects over time.

Table S-2. Proposed Mitigation

Land Use	Alternative
• Fort Benning would work with local jurisdictions to update the regional Joint Land Use Study and assist the local governments affected by land acquisition in redefining their land use plans around the future Installation border (i.e., including the newly acquired lands). This action may help identify specific future mitigation measures as specific Army training areas and activities are identified.	All
• Mitigation for loss of private recreation lands would be accomplished through Fort Benning's continued work with the local community to maximize recreational opportunities in ways that are compatible with Fort Benning's need to meet unit training requirements.	All
Airspace	**Alternative**
• Future changes to airspace use would be coordinated with the FAA. The configuration of newly acquired lands along with existing Army land holdings would dictate any airspace proposals and would drive specific mitigation measures in coordination with the FAA. Section 3.3.4 contains potential mitigation measures that would be considered for modifications to airspace when coordinating with the FAA.	All
Air Quality	**Alternative**
• No mitigation measures for air quality would be required under the Proposed Action. Compliance with existing regulations, permits, and plans would be required for activities associated with Army resource management, construction, and training, which would reduce the level of effect to less than significant.	All
Noise	**Alternative**
• No mitigation measures for noise would be required under the current Proposed Action. As training activities, infrastructure, and facilities are proposed in the future, subsequent NEPA analysis and comprehensive noise modeling would be conducted, which will more specifically address potential noise impacts, where necessary, to determine the specific impacts of those activities. Mitigation measures, if required, would be determined at that time.	All
Soils	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All
Water and Wetland Resources	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All

Table S-2. Proposed Mitigation

Biological Resources	Alternative
• Mitigation measures will be determined through consultation with the USFWS regarding potential impacts from construction and training to any Federally-listed species in an alternative.	All
Cultural Resources	**Alternative**
• No mitigation measures for cultural resources would be required under the Proposed Action. The specific NEPA and NHPA Section 106 process for future site-specific construction and training areas would include consultation to develop mitigation for the potential or actual loss of any identified resources.	All
Socioeconomics and Environmental Justice	**Alternative**
• The Army would carefully refine the boundaries of prospective acquisition areas as feasible to avoid encompassing residences at the periphery of the areas to minimize potential impacts from demolition of housing and displacement of population. Such measures would be particularly effective where clusters of residences are situated in proximity to potential boundaries of the lands to be acquired.	All
• The Army would give specific consideration to minimize acquisition of properties in Census blocks having the highest percentages of minority and low-income populations to reduce potential environmental justice impacts.	All
• Fort Benning would continue to explore potential mechanisms to reduce the impacts on county revenues that may result from TLEP land acquisition.	All
Traffic and Transportation	**Alternative**
• The Army would take reasonable measures to ensure roadway access to communities outside the newly acquired lands would remain unrestricted. These measures may include building new roads and allowing controlled access across the newly acquired lands.	All
Utilities	**Alternative**
• The Army would reinforce the points where proposed maneuver training routes would cross underground utilities. Any heavy equipment traffic on these routes would be required to use these designated crossing points to prevent utility line damage.	All
Hazardous and Toxic Substances and Waste	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All
Safety	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All

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1 PURPOSE AND NEED

1.1 INTRODUCTION

This Environmental Impact Statement (EIS) evaluates the effects of alternatives for the Army's acquisition and use of approximately 82,800 acres of additional training land in the vicinity of Fort Benning, Georgia. The Army proposes to acquire additional land to support the training requirements of the Maneuver Center of Excellence (MCoE), the deployable United States (U.S.) Army Forces Command (FORSCOM), and the U.S. Army Special Operations Command (USASOCOM) units stationed at Fort Benning. As part of 2008 Land Use Requirements Study (LURS) (Fort Benning, 2008e) and the Major Land Acquisition Proposal for Fort Benning, Georgia (U.S. Army, 2009a), the Training Land Expansion Program (TLEP) has been established by Fort Benning to provide information regarding the land expansion and acquisition process to stakeholders, community, and business members surrounding Fort Benning.

This EIS is to inform Army decision-makers, regulatory agencies, and the public of the potential environmental and socioeconomic consequences of the Proposed Action and alternatives.

1.2 BACKGROUND

The mission of the U.S. Army is to "Fight and Win Our Nation's Wars" by providing prompt, sustained land dominance across the full spectrum of military operations. The Army's mission has increasingly included a broad range of operations to include high intensity conflict, persistent low-level conflict, anti-terrorism operations, and peace-keeping, stability, and support operations. Rapidly delivering highly trained, adaptive, and professional forces is critical to achieving the Army's mission and supporting the nation's strategic and national defense mission and objectives.

Fort Benning's active duty population is approximately 30,000. The mission of Fort Benning is to provide trained, agile, adaptive, and ready Soldiers and leaders for an Army at war, while developing future requirements for the individual Soldier and Maneuver Force and providing a world class quality of life for our Soldiers and Army Families. Fort Benning's average daily training load is approximately 14,000. Fort Benning plays a pivotal role in supporting the Army's overarching mission. Fort Benning has a threefold training function. As the MCoE, the Installation must support the institutional training of Infantry and Armor Soldiers and leaders. The institutional training conducted at Fort Benning provides Army leaders with the opportunity to respond to a wide variety of situations they can expect to encounter on the modern battlefield. As the Army's premier Installation for the basic and advanced individual training of new enlistees, Fort Benning must provide sufficient land for new Soldiers to learn their basic skills. Fort Benning also provides functional training in many special skills needed to support the operating force. Among these are the only Officer Candidate School in the Army and the Army's Basic Airborne Course. Additionally, the MCoE has a Capabilities Development and Integration Directorate (CDID) whose mission is to determine and develop future force capabilities and requirements for Infantry and armor formations to maintain the battlefield primacy of our Soldiers and the formations in which they fight. As the home to numerous deployable units, Fort Benning must provide sufficient land for the units to train up to 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.

1.2.1 BASE REALIGNMENT AND CLOSURE

The 2005 Base Closure and Realignment Commission (BRAC) recommended the relocation of the Armor Center and School from Fort Knox, Kentucky, to Fort Benning, Georgia. This supported the

establishment of the MCoE at Fort Benning. The movement must be completed by September 15th, 2011. Although Fort Benning had adequate maneuver space to accommodate the relocation of the Armor School from Fort Knox to Fort Benning, subsequent force modernization and restructuring, and expanded maneuver land training guidance established new maneuver area requirements to doctrinally train units at the battalion level. These changes have been documented in Training Circular 25-1, *Training Land*. The Army's Training Strategy, November 9th, 2009, places a focus on conducting battalion level maneuver training at home station. The recent transition of the Army to a modular force structure, modernization of Army equipment, and increased training land requirements to meet the mission requirements of both the contemporary operating environment and full spectrum operations have strained Fort Benning's existing land resource base and available training infrastructure to support the training of tenant operational units simultaneously with MCoE training requirements.

Units stationed at Fort Benning have a need for company and battalion level maneuver training as part of the Army Force Generation (ARFORGEN) cycle to facilitate the "Train as You Fight" concept. The current heavy maneuver training land shortfall requires that units rely on work-arounds to meet training requirements, resulting in less effective training and Soldiers who are not trained to a level that would be possible with additional maneuver land. Heavy maneuver training implies the employment of armored vehicles in maneuver formations to include the M1 Abrams Series Main Battle Tank (68 tons, the heaviest vehicle in a Brigade Combat Team [BCT]).

Units stationed at Fort Benning are currently rotating through combat deployments to Iraq and Afghanistan.

The Installation must continue to support its three primary training functions by providing a rigorous, realistic training venue for Soldiers, leaders, and the Installation's deployable units. Fort Benning must also accomplish current training requirements while modernizing its existing infrastructure and facilities to improve the quality of life for its Soldiers and Families.

Fort Benning provides a critical venue in which to train Soldiers, leaders, and units to adapt and solve complex problems that will arise when they are deployed. The ongoing challenge has been to maximize training capacity for the MCoE to include basic and advanced individual training, while supporting the training requirements of tenant units. This situation creates an intensive competition for limited training resources among the three missions. The acquisition of additional maneuver land would alleviate this competition and enable the Installation to meet its training support missions.

1.2.2 MANEUVER CENTER OF EXCELLENCE EIS

In 2009, Fort Benning prepared the MCoE EIS and Record of Decision (ROD) which included a Biological Assessment (BA). The U.S. Fish and Wildlife Service (USFWS) issued a Jeopardy Biological Opinion (JBO) on the MCoE BA for the red-cockaded woodpecker (RCW). The JBO contains a reasonable and prudent alternative (RPA) that requires the relocation of the Armor School Scout Leaders Course (SLC) field training off of the current Fort Benning footprint to a location without RCWs within five years of that course training start date. Fort Benning conducted an analysis of alternatives study (AAS) in 2009 to determine what alternatives were available to the Army based on the RPA. Of the alternatives studied in the AAS, land acquisition was determined to be the alternative that best meets the Army's requirements under the circumstances.

1.2.3 ARMY MAJOR LAND ACQUISITION PROPOSAL

The Army has determined that Fort Benning, Georgia, has a doctrinal training land shortfall. In accordance with Army Regulation (AR) 350-19, *Army Sustainable Range Program*, this shortfall was documented in the LURS. The Army has determined that it can achieve the maximum training benefit by acquiring sufficient land to make up for the training land shortfall (see Section 1.3.1). Through this

acquisition, Fort Benning would be able to support simultaneously the training of operational and tenant units and the MCoE.

There is a current Department of Defense (DoD) moratorium on the acquisition of additional land by the services. Consequently, Fort Benning prepared and submitted an Army Major Land Acquisition Proposal (AMLAP) to the Department of the Army (DA) seeking DoD approval to acquire approximately 82,800 acres of land to support the Installation training missions. On January 25th, 2010, the Undersecretary of Defense conditionally approved the Fort Benning land acquisition proposal for approximately 82,800 acres of additional training land. This initial approval allows the Army to initiate the public planning process for the acquisition, and requires the Army to report on the results of that planning process and request final approval for the proposed land acquisition prior to proceeding with acquisition of any land.

1.2.4 EVOLUTION OF THE ARMY RECONNAISSANCE COURSE

In October 1999, the Senior Leadership of the Army expressed 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; able to deploy with greater speed and able to sustain itself and survive with greater probability than the current force structure. In December 2000, the Army proposed to undertake a synchronized program, as stated in the Army Transformation Campaign Plan, to transform the existing force structure in 3 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 ROD based on an EIS to proceed with the 30-year phased implementation of Army Transformation, which results 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 to a brigade-based force is predicated on several changes the Army anticipates in global security (Fort Benning, 2008e). Under modularity, maneuver units are organized around BCTs, which are organizations of Soldiers and other personnel designed to be self sustaining and capable of operating independently in today's complex operating environment. There are three types of ground maneuver BCTs: Heavy Brigade Combat Teams (HBCTs), Infantry Brigade Combat Teams (IBCTs), and Stryker Brigade Combat Teams (SBCTs).

As a result of transformation and modularization, each of the three types of maneuver BCTs has an organic reconnaissance battalion (also called a reconnaissance squadron). Previously, reconnaissance battalions existed in only the Cavalry Squadrons of Armored Cavalry Regiments, and there was one Reconnaissance Squadron within a Division. Although the reconnaissance battalions in the HBCT, IBCT, and SBCT are equipped with different types of vehicles, the training tasks of the reconnaissance leaders in each of the types of units remain the same. Since the focus of the training is no longer oriented on Scout leaders, the Army has made a decision to change the name of the SLC to the Army Reconnaissance Course (ARC). This is the term that will be used in this EIS.

1.3 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.3.1 NEED

Fort Benning, home to the MCoE, is the Army's premier basic training Installation. All Infantry, Armor, and Scout Soldiers are trained in basic and advanced combat maneuver skills at Fort Benning. Fort Benning is the site where combat maneuver, Airborne, and Ranger Soldiers receive their introduction to the service, including their initial entry training. Fort Benning also has the mission to study, test, and develop future Infantry and Armor doctrine, weapon systems, tactics, techniques, and procedures. In addition, Fort Benning is the primary training platform for operational FORSCOM and USASOCOM deployable units.

Table 1.1-1. Fort Benning Units

Tenant Units	Armor School	Infantry School
3/3 Heavy Combat Brigade (Mechanized) 11th Engineering Battalion (Combat) 13th Combat Sustainment Support Battalion 14th Combat Support Hospital 75th Ranger Regiment 362 Engineers 926 Medical Detachment Army Marksmanship Unit Defense Military Pay (Finance) Infantry Forces Research Unit Logistics Assistant Office Mission and Installation Contracting Command Post Weather Station – 17 ASOS C- Flight Special Forces Recruiting Western Hemisphere Institute for Security Cooperation	**192nd Infantry Brigade** 2nd Battalion 46th Infantry Regiment 2nd Battalion 47th Infantry Regiment 3rd Battalion 47th Infantry Regiment 2rd Battalion 54th Infantry Regiment 30th AG Reception Battalion **194th Armored Brigade** 1st Battalion, 81st Armored Regiment 3rd Battalion, 81st Armored Regiment 5th Squadron, 15th Cavalry Regiment **316th Cavalry Regiment** 1-16 Squadron 2-16 Squadron 3-16 Squadron	**197th Infantry Brigade** Bradley Master Gunner Combat Leader Course Combat Lifesaver Certification Combatives School CONUS Replacement Center Heavy Weapons Leader Course Infantry Mortar Leader Course Javelin Course Maintenance Instructions Mechanized Leaders Course Mechanized Leaders A3 Course SBCT (Stryker) Leaders Course Small Unmanned Aircraft Systems School Sniper School **198th Infantry Brigade** 1st Battalion 19th Infantry 2nd Battalion 19th Infantry 1st Battalion 50th Infantry 2nd Battalion 58th Infantry 1st Battalion 330th Infantry **199th Infantry Brigade** Airborne BOLC IBOLC ISTD MC3 OCS Silver Wings DCO Warrior Training Center Ranger Training Brigade

AG = Adjutant General ; ASOS = Air Support Operations Squadrons; DCO = Direct Commission Officer Course; IBLOC = Infantry Basic Officer Leadership Course; ISTD = International Student Training Detachment; MC3 = Maneuver Captains Career Course; OCS = Officer Candidate School; SBCT = Stryker Brigade Combat Team

Major basic and institutional training units and tenant units stationed at Fort Benning are presented in Table 1.1-1.

To support Installation and Army mission requirements, Fort Benning must have adequate maneuver land and training ranges available to provide realistic training for its tenant units and institutional training requirements. Adequate training areas are essential to prepare Soldiers to accomplish their wartime mission and subsequently the mission of the Army to "Fight and Win the Nation's Wars." Additionally, adequate training areas are required to prepare Soldiers to accomplish a variety of missions other than war (peace-keeping, stability, and support operations) to ensure the Army is prepared to accomplish missions across the full spectrum of operations.

Table 1.1-2 lists the doctrinal maneuver land requirements for mechanized (heavy) training at Fort Benning. Doctrinal training requirements at Fort Benning necessitate sufficient land to train two maneuver battalions simultaneously. Fort Benning, however, does not have sufficient land to train two battalions simultaneously while also conducting MCoE training. Using a standard 242-day training calendar, Fort Benning must be able to support an HBCT in the field at any given time. The following table, using the Army Range and Training Land Program (RTLP) Requirements Model (ARRM), indicates acre days requirement (throughput) converted to acres for units expected to train at Fort Benning by Fiscal Year (FY) 2013.

Table 1.1-2. Doctrinal Heavy Maneuver Training Land Requirements at Fort Benning

Unit	Requirement (acres)
3rd HBCT/3rd ID	167,203
Armor School	119,323
Sub Total	**286,526**
Heavy Maneuver Land Available	57,690
Total Shortfall	**228,836**

Source: U.S. Army, 2009a
3rd HBCT/3rd ID = 3rd Heavy Brigade Combat Team/3rd Infantry Division; MCoE = Maneuver Center of Excellence

The shortfall of available training land at Fort Benning causes the Installation to implement various training management procedures and practices that lead to a degradation in the overall quality and realism of training tenant units. Fort Benning is not large enough to simultaneously support battalion level maneuver training and concurrently provide enough space to meet its institutional and basic training requirements. As a consequence, units of the 3rd Heavy Brigade Combat Team, 3rd Infantry Division (3rd HBCT/3rd ID) and 75th Ranger Regiment, as well as other tenant units, are often relegated to training in an artificially compressed training area, which does not allow the unit to exercise its full capabilities or conduct battalion level maneuvers.

Unit readiness is related to its ability to conduct multi-echelon collective tasks from their Mission Essential Task List (METL). Units are rated on their readiness to execute their METL using the criteria "T" for Trained, "P" for Practiced, and "U" for Untrained. Commanders are reluctant to rate their unit a "T" unless they have actually performed the task to standard under the most realistic conditions possible. Currently at Fort Benning, the exercise of battalion level tactical operations are not possible unless some form of simulation is used which does not offer the optimum realism. It is time and cost prohibitive for battalions to routinely travel off Fort Benning to suitable maneuver areas to conduct training. BCTs periodically travel to Fort Irwin and Fort Polk to exercise Brigade operations in which battalion operations are inherent. The ability of battalions to train up and prepare for Brigade operations, however,

is limited at Fort Benning. Commanders prefer and expect that their units be rated a "T" prior to deployment to the National Training Centers. That is done as best as can be at Fort Benning, but not under the most optimum or realistic conditions due to lack of available maneuver training areas.

While Fort Benning has a total heavy maneuver land shortfall of 228,836 acres, this shortfall can be partially reduced through implementing sustainable land management practices, the use of simulations, and coordinated range scheduling. Fort Benning has determined that it can achieve the maximum feasible training benefit by acquiring approximately 82,800 acres of additional training land. Although the Proposed Action involves acquiring approximately 82,800 acres of additional training land, not all of this acreage would be utilized as training acres due to environmental constraints which would prohibit training capabilities within these areas.

Exacerbating the existing need for land acquisition is the MCoE JBO issued by the USFWS for the RCW, which requires the field training on the ARC to move off the current Fort Benning footprint to areas not inhabited by RCWs within five years of the training start. Without land acquisition, this JBO requirement would require the Army to pursue other options (e.g., reduce training requirements and supplement with simulators if approved or move the ARC to another installation). Land acquisition would allow the execution of this RPA and would also enable the Installation to move other training off the Installation to the newly acquired lands, alleviating the scheduling conflicts and training pressures, which are ongoing within existing Fort Benning training lands.

Acquisition of additional training land would improve the training capabilities at Fort Benning and would foster sustainable use as discussed in Section 1.4. Together, the acquisition of additional training land and existing maneuver land would provide maneuver space for two heavy maneuver battalions and elements of the MCoE to train simultaneously, thus better allowing unit commanders to train as they would fight. This additional training land and maneuver space would provide units with a greater variety of terrain on which to train and would allow a greater variety of training scenarios that would improve training realism. Additionally, the acquisition of additional training land would provide the ability to exercise unit formations, weapons systems, logistics, and command and control systems over extended and more realistic distances. This would support current and future training by the 3rd HBCT/3rd ID as well as the 75th Ranger Regiment without degrading MCoE training. Land acquisition would also enhance future ground maneuver training as the Army's doctrine and weapons systems evolve. See Section 2.4.1 for other options to land acquisition that were considered to fulfill the need for additional training areas.

1.3.2 PURPOSE

The implementation of the Proposed Action would reduce the Army's training land shortfall identified in the LURS; it would allow the MCoE to meet its training mission by retaining the capability to continue the ARC at Fort Benning; and it would permit tenant units to meet their training requirements at their home station. Army initiatives influencing Army training land requirements at Fort Benning are discussed in more detail in the sections that follow.

1.4 INSTALLATION SUSTAINABILITY

The Proposed Action is inclusive of guidance issued by the Secretary of the Army and the Army Chief of Staff on maintaining sustainable installations. On October 2004, the Secretary of the Army and Army Chief of Staff issued "*The Army Strategy for the Environment*" subtitled "*Sustain the Mission—Secure the Future.*" This strategy focuses on ensuring the long-term viability of training ranges and maneuver areas through proactive, forward-thinking management and environmental stewardship. The strategy focuses on the interrelationships of mission, environment, and community. The strategy strives to ensure that Army lands can be used in perpetuity to maintain the readiness of Army Soldiers for their combat

missions and deployments into operational theaters around the globe. A sustainable installation simultaneously meets current, as well as future mission requirements; safeguards human health; improves quality of life for Soldiers, Families, and civilian employees; and enhances and protects the natural environment. A sustained natural environment is necessary to allow the Army to train and maintain military readiness. This strategy is implemented by AR 200-1, *Environmental Protection and Enhancement*, which reinforces the Army's commitment to applying sustainable policies and practices to safeguard the environment (U.S. Army, 2007). The strategy builds upon the numerous environmental plans and policies that have been developed and implemented to protect environmental resources at Fort Benning. The training load Fort Benning must accommodate does not allow the Installation to sustain the training lands in a viable, long-term manner. The Proposed Action takes into account the need to rest and recover the land so as not to degrade its physical and biological properties with over-intensive use.

The Army recognizes that units executing training to maintain their overall readiness impact the training land. To manage training land in a sustainable manner, the Army has instituted land and environmental management programs to support sound natural resource management practices and provide stewardship of its training land. Fort Benning is committed to improving its environmental performance through continued progress toward its sustainability goals.

The impacts to land from military training are a particular focus of Fort Benning's sustainability effort. The Integrated Training Area Management (ITAM) program establishes a uniform land management program; elements of which include inventorying and monitoring land condition, integrating training requirements with land-carrying capacity while training to standard, educating land users to minimize adverse impacts, and prioritizing and implementing rehabilitation and maintenance projects. The ITAM is governed by AR 350-19, *The Army Sustainable Range Program*. Other important resource management programs and procedures are provided in the Installation's *Integrated Natural Resources Management Plan* (INRMP), the *Integrated Cultural Resources Management Plan* (ICRMP), the *Integrated Pest Management Plan* (IPMP), the *Endangered Species Management Plan for the Red-Cockaded Woodpecker*, the Forest Management Plan, watershed management plans, and the Fort Benning National Environmental Policy Act (NEPA) Program. These programs seek to optimize training while providing sustainable land management that ensures training land continues to be available to support the Army's mission. These programs would be applied in the management of newly acquired lands.

1.5 DECISION TO BE MADE AND FRAMEWORK FOR ANALYSIS

1.5.1 DECISION TO BE MADE

As stated in Section 1.3.1, the Army has determined that the acquisition of approximately 82,800 acres of additional land is necessary to meet the training needs of the MCoE and the tenant deployable units at Fort Benning. Of that acreage, 60,000 acres are required to support the heavy maneuver training for maneuver battalions of the 3rd HBCT/3rd ID. The remaining 22,800 acres would be used to support the ARC and other training that can be moved off the current Installation. The most pressing need is the acquisition of land to move the ARC field training off the Installation footprint, a requirement of the MCoE JBO issued by the USFWS. The SLC at Fort Knox uses approximately 34,000 acres, which was the original basis for the estimated 22,800-acre ARC requirement. The ARC Program of Instruction (POI) has recently been established, but the training support package acreage requirements are still being developed. Until these requirements are finalized, Fort Benning has determined that 22,800 acres is a reasonable estimate.

Funding for the acquisition of land for Fort Benning will be spread out over a number of years. Since the immediate driver for land acquisition is the requirement to move the ARC within five years of the training start, acquisition of sufficient lands for the ARC training would be the first priority for this action. The

acquisition of land to support the move of the ARC off Fort Benning dictates that the Army prepares NEPA documentation (i.e., this EIS) immediately.

The decision to be made by the Army is whether or not to carry out the acquisition and use of approximately 82,800 acres of land for training, and if so, to select the general areas for acquisition. The decision-maker would use the analysis presented in this EIS to assist and determine which alternative to implement. The decision would be announced in a ROD. After the ROD is signed by the Army, the Army would request that Congress provide land acquisition funding. With funding approval, the U.S. Army Corps of Engineers (USACE) would begin to acquire additional land.

1.5.2 EIS FRAMEWORK

The Army is preparing this EIS in compliance with its responsibilities under NEPA to assess the direct, indirect, and cumulative environmental and socioeconomic effects of the Proposed Action and alternatives for upgrading its capability to support training operations at Fort Benning through the acquisition of approximately 82,800 acres of land.

This EIS assesses the environmental and socioeconomic resources and potential impacts to those resources. Chapter 2 describes the alternatives taken forward for analysis, the alternatives considered but not taken forward for analysis, the screening criteria for selecting reasonable alternatives, and a discussion of the type of training that would be conducted on newly acquired lands. Chapter 3 provides an analysis of the environmental considerations and affected environment for the Proposed Action and each of the alternatives, and presents an analysis of the cumulative effects.

This EIS also serves as documentation of the measures the Installation is taking to comply with Section 106 of the National Historic Preservation Act, Title 16 United States Code (USC) 470 (NHPA Section 106). NHPA Section 106 requires that Federal agencies take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the undertaking. Fort Benning complies with all applicable cultural resource laws and regulations, and the Installation's ICRMP. The ICRMP addresses compliance with not only Section 106 of the NHPA, but also the Native American Graves Protection and Repatriation Act (NAGPRA), Archaeological Resources Protection Act (ARPA), NHPA Section 110, and other cultural resource management (CRM) mandates. To improve further efficiency in its CRM Program, Fort Benning has adopted the Army Alternate Procedures (AAP) for implementing Section 106 of the NHPA. The Historic Properties Component (HPC) of the ICRMP provides the Standard Operating Procedures (SOPs) that replace the NHPA Section 106 procedures to assess proposed actions and their potential effects on historic properties. The purpose of the AAP is to expedite the review of actions that might affect historic properties and leverage the NEPA process for coordination and consultation. Consultation with the appropriate State Historic Preservation Office (SHPO) and Federally-recognized Native American Tribes (Tribes) affiliated with the Fort Benning area will primarily be conducted through the NEPA process. It should be noted that Memoranda of Agreement between Fort Benning and other stakeholders are no longer used to document consultation and mitigation concerning historic properties; rather, NEPA documentation and the HPC steps are used to streamline the Section 106 process. Therefore, this EIS and related NEPA documents will be used to comply with the NHPA.

A description of the existing airspace usage and an assessment of potential airspace impacts within the proposed land acquisition areas under the assumption that the Army would employ aerial systems (e.g., helicopter insertions/training and Unmanned Aerial Systems [UASs]) training is presented in Section 3.3, Airspace. The actual ability of the Army to use any of the airspace for these activities in a newly acquired area would not be fully understood until the acquisition is well underway and the pattern of land acquisition is known. At that time, the Army would coordinate with the Federal Aviation Administration (FAA) to determine what, if any, change of airspace use would be pursued. Any substantial adjustment to restricted airspace would be subject to additional NEPA analysis.

This document analyzes and discloses the direct, indirect, and cumulative impacts associated with the expansion of the Fort Benning training land in an effort to meet the training requirements of units that train on the Installation. Additional, site-specific analysis will be required for training land use, trail construction, or siting and construction of specific facilities.

Potential effects to the following environmental and socioeconomic resources will be evaluated in this EIS:

- Land Use
- Airspace
- Air Quality
- Noise
- Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Socioeconomics and Environmental Justice
- Traffic and Transportation
- Utilities
- Hazardous and Toxic Substances and Waste
- Safety

1.5.3 LEGAL FRAMEWORK

A decision on whether to proceed with the Proposed Action rests on numerous factors such as mission requirements, schedule, sufficient funding, and environmental considerations. In addressing environmental considerations related to the implementation of the Proposed Action, the Army is guided by the relevant statutes (and their implementing regulations) and Executive Orders (EOs) that establish standards and provide guidance on environmental and natural resources management and planning. In addition, applicable state laws will be taken into account. Relevant statutes and EOs include but are not limited to the following:

- Clean Air Act (CAA)
- Clean Water Act (CWA)
- Energy Independence and Sustainability Act
- Noise Control Act
- Endangered Species Act (ESA)
- Migratory Bird Treaty Act (MBTA)
- National Historic Preservation Act
- Archaeological Resources Act
- Resource Conservation and Recovery Act (RCRA)
- Toxic Substances Control Act (TSCA)
- EO 11990, Protection of Wetlands
- EO 12088, Federal Compliance with Pollution Control Standards
- EO 12580, Superfund Implementation
- EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations
- EO 13045, Protection of Children from Environmental Health and Safety Risks
- EO 13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition
- EO 13123, Greening the Government Through Efficient Energy Management
- EO 13148, Greening the Government Through Leadership in Environmental Management
- EO 13175, Consultation and Coordination with Indian Tribal Governments
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

1.6 DOCUMENTS RELATED TO THIS ACTION

The following documents (incorporated by reference) contain previous environmental analyses of the Fort Benning Transformation, BRAC, and the evolution of day-to-day operations:

- Final Programmatic EIS for Army Transformation (USACE, 2002)
- Digital Multi-Purpose Range Complex EIS (Fort Benning, 2004a)
- Programmatic EIS for Army Growth and Force Structure Realignment (USAEC, 2007a)
- BRAC 2005 and Transformation Actions at Fort Benning, Georgia EIS (USACE, 2007)
- Maneuver Center of Excellence EIS (USACE, 2009)
- Land Use Requirements Study, Fort Benning, Georgia (Fort Benning, 2008e)
- Army Ranges and Training Land Program, Analysis of Alternatives Study, The Infantry Center, Fort Benning, Georgia (Fort Benning, 2008f)
- Department of the Army Major Land Acquisition Proposal for Fort Benning, Georgia (U.S. Army, 2009a)

1.7 PUBLIC INVOLVEMENT

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

Public participation opportunities with respect to this EIS and decision making on the Proposed Action are guided by Army NEPA Regulation (Title 32 of the Code of Federal Regulations (CFR), Part 651 (*Environmental Analysis of Army Actions*). The scoping process allows an opportunity for the public and interested stakeholders to identify the issues to be addressed in the EIS for a minimum 30-day scoping period. This EIS process began with the publication of a Notice of Intent to prepare the EIS in the *Federal Register* on June 4th, 2010. The scoping period for this EIS was June 4th to July 6th, 2010. During the scoping period, five public scoping meetings were held from June 14th through 18th, 2010, and an agency scoping meeting was held in June 14th, 2010. Comments from all interested persons were considered to promote open communication and enable better decision making. Received comments generally addressed potential effects regarding the land acquisition process, impacts to local tax base, use of eminent domain, recreational access to Army land for hunting and other uses, transportation impacts, and noise to private landowners. Appendix A contains scoping comments received during the scoping period. Appendix B contains agency comments received during development of the EIS.

Following the scoping period, this Draft EIS (DEIS) was prepared and filed with the U.S. Environmental Protection Agency (EPA), and the Army published a Notice of Availability (NOA) in the *Federal Register* and in newspapers in the vicinity of the Proposed Action. A 45-day comment period begins on the date the EPA announces the availability of the DEIS in the *Federal Register*. During the 45-day comment period, several public meetings will be held to provide an opportunity for the public, organizations, and regulatory agencies to present comments and information. A Final EIS is then prepared that addresses all relevant comments received on the DEIS. The Final EIS is filed with the EPA and made available to the public through a NOA publication in the *Federal Register*. A final decision on the Proposed Action, which is documented in a ROD, may be made after a 30-day waiting period. A ROD is a public document that states the decision, alternatives and factors considered, the environmentally preferred alternative, and the proposed mitigation adopted. The NOA of the ROD is published in the *Federal Register*. Once the ROD has been signed, the Army can immediately begin to implement the decision (CFR 651.45(j)(vi)(2)).

Throughout this process, the public may obtain information on the status and progress of the Proposed Action and EIS through the TLEP hotline at 706-545-8830 during normal business hours from 9 A.M. to 4 P.M. Eastern Standard Time. Written comments or requests for information may be mailed to the Fort Benning Public Affairs Office, c/o Monica Manganaro, 6460 Way Avenue, Building 2838, Fort Benning, GA 31905, or emailed to land.benning@us.army.mil. Fort Benning has also established a website which contains information updates and background on the TLEP. This website can be reached at: http://www.benning.army.mil/garrison/tlep.

1.8 COOPERATING AGENCIES

Per the Army NEPA Regulation, Fort Benning explored potential cooperating agencies but determined that Federal and state agencies with environmental expertise also have separate regulatory requirements for coordination, such as through permitting actions. Fort Benning invited the FAA to become a cooperating agency; however, clarification that the Proposed Action does not include any Special Use Airspace (SUA) modification requests, thus it was agreed that Fort Benning would coordinate with FAA outside of a cooperating agency role. In the future, however, Fort Benning may request SUA changes if training land is acquired. Fort Benning would comply with NEPA and request FAA Cooperating Agency status for any future SUA modification proposals related to the TLEP. Therefore, there are no cooperating agencies for this DEIS.

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2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section describes the Proposed Action, alternatives, and screening criteria used in the preparation of this EIS. The No Action Alternative, as required by NEPA (40 CFR 1502.14[d]), is also described. The Proposed Action is divided into four stages: 1) the acquisition of training land; 2) implementation of Fort Benning's resource management programs to sustain new training land; 3) the preparation of newly acquired land for training (e.g., site hardening, water crossings, establishment of basic road trail infrastructure necessary to enable maneuvers, etc.); and 4) conduct of maneuver training, non-live-fire training, and potential live-fire training. Each stage of implementation is described in this section. The section also describes why some alternatives were considered but were not carried forward for further analysis.

2.1.1 GENERAL

As discussed in Chapter 1, the Army has a need for additional training land to support Fort Benning's training mission. The land acquisition areas under consideration in this EIS are dictated in large part by the current geographic configuration of Fort Benning and surrounding communities. Optimally, approximately 82,800 acres would be acquired; however, it should be noted that any training lands acquired would improve Fort Benning's training capabilities.

2.1.2 FORT BENNING LOCATION

Fort Benning is an approximately 182,000 contiguous-acre installation located in west-central Georgia and east-central Alabama (see Figure 2.1-1). Approximately 169,260 acres are in Georgia (Muscogee and Chattahoochee counties) and approximately 12,740 acres are in Alabama (Russell County). Fort Benning is an integral part of the Columbus, Georgia, Metropolitan Statistical Area (MSA), which also includes Phenix City, Alabama. The Columbus MSA had a population of just under 200,000 people in the 2000 Census. The Fort Benning "Main Post" cantonment area is adjacent to Columbus, which spreads alongside Fort Benning's northwest boundary.

2.1.3 TRAINING LAND EXPANSION PROGRAM STUDY AREA

The TLEP study area includes areas contiguous to or near Fort Benning, which are capable of supporting military training. The TLEP study area includes land located within portions of Stewart, Chattahoochee, Marion, Webster, Muscogee, Talbot, and Harris counties in Georgia and in Russell County, Alabama (see Figure 2.1-1 and Section 2.3.3 for further discussion on the land identified by alternative). Baseline conditions and impacts to areas surrounding Fort Benning are described, as appropriate, in Chapter 3 based on the Region of Influence (ROI) for environmental resource areas. The ROI for impacts to biological and cultural resources would primarily occur within the footprints of land being considered for acquisition, but the ROI for impacts to other resource areas, such as socioeconomics, utilities, and transportation, can extend near and far beyond the parcels considered for acquisition depending on the nature of the potential impacts. Cumulative impacts involve a more broad analysis of resource areas, combining a historic perspective with present and anticipated future impacts to each resource area. Cumulative impacts to Fort Benning and surrounding areas are discussed in Chapter 3.

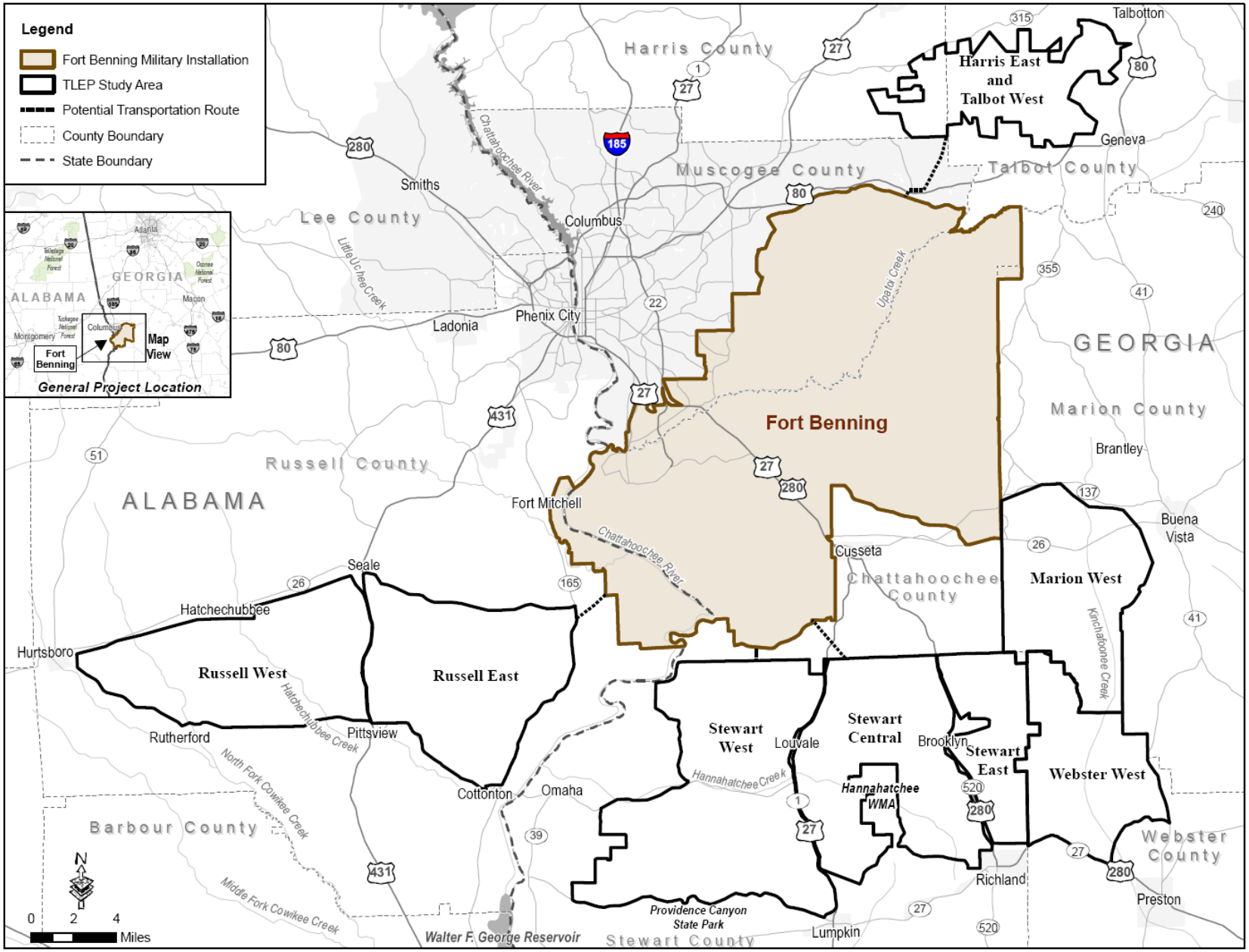

Figure 2.1-1. Fort Benning and TLEP Study Area Location Map

2.2 DESCRIPTION OF THE PROPOSED ACTION

2.2.1 PROPOSED ACTION

The U.S. Army at Fort Benning proposes to acquire approximately 82,800 acres for the expansion of training capability to support the training of the MCoE and deployable FORSCOM and USASOCOM units stationed at Fort Benning, Georgia. Training would be conducted by units equipped with Bradley fighting vehicles (BFVs), Stryker vehicles, and the "Army family of wheeled vehicles." Specific training activities, including equipment and vehicles, are discussed in Section 2.2.5.1. Details on the field training to be conducted in the acquired lands are in Section 2.2.5.2. Through the proposed acquisition, Fort Benning would be able to better support the training of the MCoE, FORSCOM, and USASOCOM tenant units simultaneously. If the decision is announced in a ROD to acquire training lands, the action would be accomplished in four stages:

1. The Federal acquisition of land;
2. Implementation of Fort Benning's resource management programs to sustain new training land;
3. The preparation of newly acquired land for training (site hardening, water crossings, and establishment of basic road trail infrastructure necessary to enable maneuvers, etc.); and
4. Conducting maneuver training, non-live-fire training, and live-fire training.

Site-specific NEPA analysis would be conducted for Stage 3's infrastructure improvements and construction and for Stage 4's training activities once specific parcels of land are identified for acquisition and site-specific activities are proposed. As a part of site-specific NEPA analysis, each component and segment of the Proposed Action would be submitted to the Environmental Management Division (EMD) within the Directorate of Public Works (DPW) using the Fort Benning Form 144R environmental review process (NEPA process) at the time it is proposed for implementation. This would include submission of each proposed design, construction activity (e.g., geo-tech, timber harvest, etc.), maintenance and training activity. By adhering to this process, this would ensure that any future changes in the locations of environmental resources (e.g., such as changes in the locations of the RCW), utilities, or other elements are addressed with the most current information available. This would equally ensure that significant adverse impacts are avoided. Finally, this process would take advantage of the locational flexibility of the Proposed Action. For example, a segment of cable could be relocated to the other side of the road or to within the road to avoid a resource impact at the time its installation is proposed. Given the nature of the Proposed Action, such flexibility is possible. Given the possibility of environmental constraints and the nature of significant environmental resources present at Fort Benning (e.g., the RCW, which moves over time), such flexibility is required still on newly acquired lands.

2.2.2 FEDERAL ACQUISITION OF LAND

Stage 1 of the Army's Proposed Action is to acquire approximately 82,800 acres of additional commercial and/or private land contiguous to or near Fort Benning. Acquisition of this land is contingent on funding and it is assumed acquisition will occur incrementally as funds become available. It is possible that the Army will only be able to acquire an area considerably smaller than the 82,800 acres required. There are numerous training and land utilization strategies that can be explored to utilize acreage of less than 82,800 acres. Fort Benning will conduct an assessment based on the location, size, proximity, contiguity, and training suitability of acquirable acreage to determine if it is feasible to acquire a quantity that is less than what is required to meet current training needs. The Army would proceed with that acquisition if it is determined the new parcel of land is sufficient to meet the training requirements described in Chapter 1.

As part of this action, the USACE would proceed with the acquisition of additional training land. This includes the completion of Environmental Condition of Property (ECP) assessments[1] for each parcel to be acquired. Easements for utility lines and roads (i.e., water, electric, telecommunications, oil and gas, public highways and rural public roads) exist within the TLEP study area. Property to be acquired would be subject to the terms of existing easements. Utilities and easements that serve residences not acquired would be left in place. Easements for public roads would be left outstanding until abandoned by the grantee maintaining the public road. In addition, various parcels within the TLEP study area are subject to existing mineral and timber rights. Preferably, the Army would acquire these rights along with the land. The Army would either lease or acquire transportation routes if non-contiguous lands are acquired.

The intent of all Army land acquisition is to negotiate openly with landowners, and the fundamental belief is that each acquisition should be accomplished through amicable negotiations. If terms cannot be agreed upon and negotiations fail, however, the Army must decide if acquiring the parcel of land in question is in the Army's best interest. If acquiring the land in question is deemed necessary by Fort Benning senior leadership and the Secretary of the Army, then the Secretary would recommend invoking *eminent domain* to the Department of Justice. Eminent domain is the inherent power of the government to take privately owned property and convert it to public use. The Fifth Amendment to the U.S. Constitution prohibits the government from taking land without just compensation. The Secretary of the Army's authority to bring eminent domain proceedings derives from Title 10 USC 2663. The use of eminent domain would be evaluated on a case-by-case basis, and would be employed only as a last resort, after making every effort to acquire the land by means of purchases from willing sellers.

2.2.3 IMPLEMENTATION OF RESOURCE MANAGEMENT PROGRAMS

As part of the Proposed Action, the Army would implement its existing land management and natural and cultural resource plans and programs on newly acquired land. These plans and programs include, but are not limited to the INRMP, ICRMP, IPMP, Endangered Species Management Components (ESMCs) and Gopher Tortoise Conservation Agreement, Forest Management Plan, Watershed Management Plans, and Fort Benning's ITAM and NEPA programs.

Portions of Stage 2 would occur prior to preparation of land for training and some portions would be implemented following the preparation of newly acquired land to sustain the land during Soldier training. Chapter 3 contains descriptions of these plans within the relevant resource areas.

Funding availability within the DA and DoD fluctuates from FY to FY. As such, these programs are implemented using available funds to provide the maximum benefit attainable to best meet the stated goals and objectives of each plan or program. Analysis within this document assumes that Fort Benning would experience an increase to current levels of funding due to the increased acreage and infrastructure on the acquired lands. Implementation of Fort Benning's resource management plans and programs would be carried forward onto newly acquired land over a period of years. The level of resourcing of these programs would fluctuate in accordance with Army budgeting priorities from year to year.

[1]The EPA and various Army regulations require an ECP assessment which provides information relative to the environmental condition of the property, focusing on the potential for ground and water contamination, to inform decision making regarding property transfer. The ECP assessment also assists in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction. Reporting requirements include incidences related or potentially related to the Archeological Resources Protection Act, Clean Air and Clean Water Acts, Comprehensive Environmental Compensation and Liability Act, DoD Policy on Radon, Endangered Species Act, Executive Order 11988 – *Floodplain Management*, Executive Order 11990 – *Protection of Wetlands*, Federal Insecticide, Fungicide, and Rodenticide Act, National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Residential Lead-Based Paint Hazard Reduction Act, Resource Conservation and Recovery Act (including Subtitle I on Underground Storage Tanks), Safe Drinking Water Act, Toxic Substances Control Act (Asbestos and Polychlorinated Biphenyls) and Unexploded Ordnance or Munitions and Explosives of Concern.

2.2.4 PREPARATION OF NEWLY ACQUIRED LAND

Stage 3 of the Proposed Action includes preparation of acquired land to Army training land so that it would be capable of supporting maneuver training. Preparation of the land for training would include, but is not limited to, the upgrade of existing road and trail networks, establishment of water crossings, site hardening at specific locations required to support training, silviculture techniques such as prescribed burning and forest thinning where necessary to improve the ability to support current and future military training, use of erosion control measures, and reforestation.

To the extent possible, the Army would attempt to utilize existing roads and trails in the land acquisition footprint. Some trails would be upgraded and surfaced with gravel or blacktop and utilized as main supply routes (MSRs) to support operations. The Army would implement thinning and clearing of trees and vegetation, along with soil grading, to create trail networks and combat trails, as well as to provide space for tactical assembly areas (TAAs) (approximately 100 meters (m) [328 feet] by 100m [328 feet]) and unit tactical operations centers and nodes for command and control operations. Some vegetation and over-story canopy would be left at various locations to provide adequate cover and concealment. The number of new trails and TAAs required would depend on the size and shape of the acquisition area.

Fort Benning would develop a road network to provide inter-compartmental movement. The Army would construct hardened water (e.g., stream) crossings where needed to facilitate the maneuvers of its units. Stream crossings would be necessary to provide flexibility and options for Soldiers conducting training, to enhance mobility, and to reduce impacts to the streambed and stream water quality. The number of water crossing sites would depend on the size of the land acquisition, and the number of streams, creeks, and surface water bodies in the land acquisition area. Development of water crossings would allow expanded operational scenarios for training exercises and a sufficient capability for cross-country maneuver that is protective of soils and water quality.

During Stage 3, Fort Benning would conduct necessary surveys to determine the quantity and quality of natural and cultural resources present on newly acquired land, and mark and map the locations of all sensitive resources.

The following surveys would be required during this stage (AR 200-1, 4-3, d(1), (r), 2007):

- Topography Survey
- Threatened & Endangered Species Survey
- Wetlands Survey (delineation for any infrastructure projects)
- Surface Water Survey
- Soils Survey
- Vegetation Communities Survey
- Flora and Fauna Survey
- Historic Properties/Cultural Resources Survey

2.2.5 ARMY TRAINING

During Stage 4 of the Proposed Action, the Army would begin to conduct training on new land and would continue to implement land management and natural and cultural resource plans and programs (see Section 2.2.3). Training would primarily include tracked, Stryker, and wheeled vehicle maneuver, vehicular training, and dismounted Soldier training conducted by the ARC, the 3rd HBCT/3rd ID, other tenant units, and Reserve Component units that habitually train on the Installation.

2.2.5.1 UNITS AND EQUIPMENT

The primary units that would utilize the newly acquired lands are the 3rd HBCT/3rd ID and the 75th Ranger Regiment. Other tenant units associated with the MCoE could also train on these lands as needed or required per their POI. Table 2.2-1 provides a more complete description of weaponry and equipment used by these units. The Army continually engages in the process of upgrading equipment and it is assumed that units stationed at Fort Benning would receive new equipment as a part of the Army's fielding plans. The specific units are described in further detail in the sections that follow.

Table 2.2-1. Equipment Assigned to the 3rd HBCT/3rd ID and Other Units Training at Fort Benning

Category	Equipment	Mission
Wheeled Vehicles	FMTV	Fills the Army's MTV requirements for mobility and resupply, and transportation of equipment and personnel.
	HEMTT	Provides heavy transport capabilities for re-supply of combat vehicles and weapons systems.
	HMMWV	Provides a common light tactical vehicle capability.
	Palletized Loading System	Performs line haul and unit resupply. Rapid movement of combat-configured loads of ammunition and all classes of supply, shelters, and containers.
Engineer Equipment	Dozers, Scrapers, Loaders, Excavators, Dump Trucks	Performs horizontal construction to ensure mobility and base support for strike, sustainment, and logistics forces.
Tracked Vehicles	Tanks, Bradley Fighting Vehicles, M113 Family of Vehicles, Recovery Vehicles	Provide mobility for the 3rd HBCT/3rd ID and the ARC.
Unmanned Aerial Systems	UAS	Used to support integral intelligence, reconnaissance, and target acquisition at distances of up to 125 km (78 miles); detects and identifies targets from a range of 3-5 km (1.8-3.1 miles) and offers automatic target tracking. Provides real-time data, intelligence, surveillance, and reconnaissance support for base perimeter defense and convoy protection.
Indirect Fire	Towed Howitzer and Ammunition Carriers	Provides long-range destructive, suppressive and protective indirect and direct field artillery fires.
	Mortars	Provides long- and medium-range indirect fire support.

Table 2.2-1. Equipment Assigned to the 3rd HBCT/3rd ID and Other Units Training at Fort Benning

Category	Equipment	Mission
Anti-Armor Weapons	Javelin Anti-Tank Missile	Provides a man-portable, highly survivable medium anti-tank weapon system.
	Tube-Launched, Optically-Tracked, Wire-Guided Missile System	Defeats threat armored vehicles and urban enclosed threats at extended ranges in all expected battlefield conditions.
Individual and Crew-Served Weapons	M2 .50-Caliber Machine Gun	Engages targets with accurate automatic direct fire (.50 caliber).
	MK19 Automatic Grenade Launcher	Engages targets with accurate automatic fire grenade (40mm).
	M240B Machine Gun	Engages targets with accurate direct automatic fire (7.62mm).
	M249 Squad Automatic Weapon	Engages targets with accurate direct automatic fire (5.56mm).
	M4/M16 Rifle	Engages targets with accurate direct fire (5.56mm).
	M9 Pistol	Engages targets with accurate direct fire (9mm).
	M203 Grenade Launcher	Engages targets with accurate grenade fire (40mm).

ARC = Army Reconnaissance Course; FMTV = Family of Medium Tactical Vehicle; 3rd HBCT/3rd ID = 3rd Heavy Brigade Combat Team, 3rd Infantry Division; HEMTT = Heavy Expanded Mobility Tactical Truck; HMMWV = High Mobility Multipurpose Wheeled Vehicle; km = kilometer; mm = millimeter; MTV=Medium Tactical Vehicle; UAS = Unmanned Aerial System

2.2.5.1.1 ARMY RECONNAISSANCE COURSE

The ARC course trains Soldiers annually. ARC training loads for FY 2011 and FY 2012 include a total of 10 classes with 64 students per class, or an annual training load of 640 students. Each class requires 31 training days per class which results in a total of 310 annual training days. Annual training loads, however, are subject to change based on the needs of the Army.

Ten of the 31 class training days are conducted in the field training areas. The course is designed to prepare Commissioned Officers and Noncommissioned Officers Staff Sergeant (SSG) and above to perform as leaders of reconnaissance platoons in today's modular force and to meet the challenges of the future. This course trains the increased skill sets required of all platoon-sized reconnaissance elements and all existing or transitioning reconnaissance organizations. The Soldier develops higher level fundamental understanding of unit commanders' critical information requirements, and how to find and communicate battlefield information about terrain, enemy, and populations. Field training conducted as a part of the POI includes the employment of BFVs, Stryker vehicles, and High Mobility Multipurpose Wheeled Vehicles (HMMWVs).

2.2.5.1.2 3RD HEAVY COMBAT BRIGADE TEAM, 3RD INFANTRY DIVISION

The 3rd HBCT/3rd ID consists of approximately 3,780 Soldiers divided into 2 combined arms battalions equipped with tanks and BFVs, a reconnaissance squadron, a fires battalion with 16 Paladin howitzers, a support battalion, and a special troops battalion. Authorized major equipment includes approximately 58 tanks, 120 BFVs, 64 armored Command post vehicles, 16 Paladin howitzers, 16 ammunition carriers, over 45 other tracked vehicles, over 600 wheeled support vehicles, and approximately 16 UAS. Wheeled vehicles include the Family of Medium Tactical Vehicles (FMTVs), Heavy Expanded Mobility Tactical Trucks (HEMTTs), and HMMWVs. All wheeled and tracked vehicles are capable of cross country movement. Weaponry includes rifles, pistols, machine guns, grenade launchers, missiles such as tube launched optically tracked wire command guided missile (TOW) and Javelin, 155mm artillery, and 120mm tank main guns.

2.2.5.1.3 75TH RANGER REGIMENT

The 75th Ranger Regiment at Fort Benning consists of a Regimental Headquarters element, the 3rd Battalion, 75th Ranger Regiment, and a Regimental Special Troops Battalion. These units are equipped with light wheeled vehicles, Stryker vehicles, and UAS. All wheeled vehicles are capable of cross country movement. Weaponry includes rifles, pistols, machine guns, grenade launchers, and shoulder launched munitions.

2.2.5.2 TRAINING ACTIVITIES

The following sections describe the training activities that would occur as part of maneuver training on new land.

2.2.5.2.1 NON-LIVE-FIRE MANEUVER TRAINING

Non-live-fire training employs the simulated effects of weapons systems such as the use of blank ammunition and pyrotechnics to simulate the signature and sound without projectiles launched from the weapon. Maneuver training involves the employment (positioning, array, formation) of forces in the battlespace (land, air) through movement in combination with weapon firing to achieve a position of advantage with respect to the enemy in order to accomplish the mission. In Fort Benning's case these are tactical exercises carried out on the ground and in the air in preparation for war and other contingency operations. Forms of maneuver include envelopment, turning movement, infiltration, penetration, and frontal attack.

Examples of typical maneuver battalion tactical operations are:

- Ground and Air Reconnaissance Operations
- Area, Convoy, Route Security Operations
- Offensive Operations (Attack, Movement to Contact)
- Defensive Operations (Battle Position; Strong Point; Perimeter)
- Stability and Civil Support Operations

Army units must conduct "combined-arms" training to ensure that all of the units' capabilities can be integrated and synchronized to execute missions under realistic operational conditions. Maneuver training consists of constituent units of the BCT and subordinate battalions collectively working together to integrate their combined capabilities and skills. At home station, battalions must conduct and rehearse maneuver training at every echelon from platoon through battalion level to ensure they can accomplish their mission essential tasks. Subordinate units such as squads, platoons, and companies may each conduct up to six weeks annually of sustainment training activities at each unit level.

Maneuver exercises train units to synchronize the execution of battle tasks, and shoot, move, and communicate on the battlefield. Maneuver training builds on all of the individual skills that Soldiers possess and tests each echelon of command of the battalion. Platoons, companies, and battalions conduct maneuvers to ensure unit proficiency at each successive level of command within a BCT. Maneuver training includes both on-road and off-road vehicular mounted and dismount training activities.

Table 2.2-2, taken from Field Manual (FM) 3-90.6, *Brigade Combat Team*, illustrates the types of maneuver operations that must be rehearsed by Army units.

Table 2.2-2. Training Tasks for Brigade Combat Teams

Alert and Deploy the Brigade	
Draw and Upload Basic/Operational Loads Conduct Soldier Readiness/Administrative/ Logistic Preparation for Overseas Movement Deploy Advance Parties or Liaison Officers	Move by Road or Rail to APOE or SPOE Upload Equipment at APOE or SPOE
Conduct Attack	**Conduct Defense**
Attack a Moving Enemy Attack a Stationary Enemy Movement to Contact	Conduct a Mobile Defense Conduct an Area Defense
Conduct Support Operations	**Conduct Stability Operations**
Domestic Support Operations Foreign Humanitarian Assistance	Peacekeeping Operations Combat Terrorism Support Counter-Drug Operations
Conduct Sustainment Operations	
Provide Medical Treatment and Evacuation (Air and Ground) Move by Air/Surface Transportation Manage Terrain	Recover and Evacuate Disabled Equipment Control Reconstitution of Subordinate Units Conduct Mortuary Affairs Operations

Source: Field Manual 3-90.6 Brigade Combat Team

APOE = Aerial Port of Embarkation; SPOE = Seaport of Embarkation

3rd HBCT/3rd ID. The 3rd HBCT/3rd ID primarily uses tracked vehicles for tactical maneuvers supported by light and medium wheeled vehicles. Vehicles would maneuver to and from designated locations, and tracked and wheeled vehicles would maneuver cross-country and on roads. Soldiers would disperse from the vehicles and conduct maneuvers on foot. Units would utilize engineer equipment for digging individual and crew-served weapons fighting positions and survivability positions and fortifications. Soldiers would frequently use dug-in fighting positions. Maneuver training would be conducted in squad through battalion size formations. Units would employ assigned UASs in support of the maneuver of ground forces. All of these maneuver training activities would be conducted on newly acquired land.

75th Ranger Regiment. The 75th Ranger Regiment primarily uses rotary winged aircraft, and light, medium, and heavy wheeled vehicles to conduct special operations training and sustainment operations. Wheeled vehicles would maneuver cross-country and on roads. Rangers would disperse from the vehicles/helicopters and conduct maneuvers on foot. Rangers would occasionally build and use dug-in fighting positions. Maneuver training would be conducted in squads through battalion-size formations. Ranger units would employ assigned UASs in support of the maneuver of ground forces. Maneuver training activities would be conducted on newly acquired land.

2.2.5.2.2 MANEUVER TRAINING ON ACQUIRED LANDS

The training activities the Army could potentially conduct on the newly acquired lands are listed in Table 2.2-3.

Table 2.2-3. Potential Maneuver and Training Activities on Newly Acquired Land

Type of Activity	Description	Typical Vehicle & Equipment Types
Cross-country Dismounted Maneuvers	Movement of troops on foot off-road or on unimproved trails. May include crossing of streams and wetland areas. May also include occasional, brief road guards to allow safe passage of troops.	Wheeled and tracked vehicles (when mounted and dismounted maneuvers occur simultaneously).
Cross-country Vehicle Maneuvers	Movement of wheeled and tracked vehicles off-road and on unimproved trails.	Wheeled and tracked vehicles with trailers.
Stream and Wetland Crossings	Fording of intermittent and perennial streams by personnel, and wheeled and tracked military vehicles at established crossing points.	Wheeled and tracked vehicles with trailers.
Road Maneuvers (mounted/dismounted)	Driver training and other road bound operations. May include occasional, brief road guards for safety.	Wheeled and tracked vehicles.
Blackout Driving	Nighttime driving without headlights (no vehicle lights or “cateye” lighting only).	Wheeled and tracked vehicles.
Vehicle Convoy Operations	Movement of wheeled and tracked vehicles along designated routes. May include occasional, brief road guards for safety.	Wheeled and tracked vehicles.
UAS	Employment of UAS in the ARC course and by tactical units in force on force training.	Various models of the current Army inventory of UAS.
Firing of Blank Ammunition	Engagements between small units during force-on-force maneuver training exercises.	M2 (.50 caliber) and below.
Use of Pyrotechnic/Artillery Simulation Devices	Simulation of direct/indirect artillery fires, use of smoke for screening/obscuring maneuver forces, and use of flares by designated personnel.	Various pyrotechnic/artillery simulation devices.

Table 2.2-3. Potential Maneuver and Training Activities on Newly Acquired Land

Type of Activity	Description	Typical Vehicle & Equipment Types
Simulated Chemical Defense Training	Movement along routes to perform simulated chemical detection task, including simulated decontamination of vehicles and equipment.	"Fox" chemical detection vehicles, chemical suites, decontamination equipment, and simulated chemical, biological training aids (pepper sauce).
Simulated Biological Defense Training	Use of BIDS, vehicles, and equipment to simulate detection of biological agents along routes and at fixed locations.	BIDS wheeled vehicles and towed generators (dissemination of biological stimulants and use of Micronaire backpack).
Breaching of Obstacles/Mine Clearance	Breaching and removing of obstacles and simulated mines.	Wheeled and tracked vehicles, anti-mine equipment, road plows.
Construction of Hasty Defense Positions	Excavation of individual fighting positions (foxholes) dug using hand tools. All positions to be filled in upon completion of training exercise.	Hand tools.
Construction of Limited Defensive Positions	Excavation of individual and two-person crew served fighting positions dug using mechanized equipment. All positions to be filled upon completion of training exercise.	Small emplacement excavator, dozers, other engineering/excavation equipment.
Construction of Deliberate Defenses	Excavation/construction of vehicle positions, ditches, berms, and bunkers.	Small emplacement excavators, dozers, other engineering/excavation equipment.
Emplacement of Obstacles	Placement of concertina wire and burial of simulated mines along unpaved roads. All wire and simulated mines to be recovered at completion of training.	Concertina wire, barbed wire, simulated mines.
Bivouacking/Establish-ment of Troop Assembly Areas	Establishment of an area where troops eat, rest overnight, and perform minor equipment and vehicle maintenance. May involve day and night movement of vehicles to and from site.	Tents, supplies, equipment, wheeled and tracked vehicles.

Table 2.2-3. Potential Maneuver and Training Activities on Newly Acquired Land

Type of Activity	Description	Typical Vehicle & Equipment Types
Communications and Surveillance Operations	Establishment of sites to coordinate communication and/or conduct surveillance of enemy forces.	Communications equipment, radio antennas, tents, radar equipment, camouflage nets, wheeled vehicles.
Establishment of Combat Support Areas and/or Field Hospitals	Stockpiling, loading/unloading of supplies, logistics, and maintenance of operations, and medical treatment of simulated causalities. Includes hasty defensive positions.	Tents, equipment, supplies, kitchen, laundry/shower units, ROWPUs, wheeled and tracked vehicles, forklifts, engineer equipment (stationary), helicopters.
Vehicle Maintenance Operations	Performance of basic repairs to wheeled and tracked vehicles under field conditions.	Tracked, wheeled, and recovery vehicles.
Vehicle/Helicopter Refueling	Transferring fuel from bulk containers/fuel tanks to tactical vehicles.	Fuel containers, wheeled and tracked vehicles and helicopters.
Vehicle Staging Assembly	Positioning of wheeled and tracked vehicles at fixed sites in preparation of other operations.	Wheeled and tracked vehicles and trailers.
Establishment of Aviation Assembly Areas	Tactical landing/securing of helicopters at a fixed location.	Helicopters, fuel trucks, wheeled vehicles.

ARC = Army Reconnaissance Course; BIDS = Biological Integrated Detection System; ROWPU = Reverse Osmosis Water Purification Unit; UAS = Unmanned Aerial System

The Army will coordinate with the FAA to determine the feasibility and requirements for the employment of UAS and helicopter operations within the airspace above any newly acquired land.

2.2.5.2.3 LIVE-FIRE TRAINING

Live-fire training at the newly acquired land would be limited to non-explosive small arms ammunition and pyrotechnic devices. This would include rifle and machine gun rounds up to .50-caliber. These bullets are inert, meaning they do not explode when they hit a target. They do not present the possibility of unexploded munitions within the Surface Danger Zones (SDZs). Pyrotechnic devices include simulation and illumination flares. The Army would establish SDZs to ensure safety and contain munitions within the boundaries of the Installation.

In the future, the Army might establish ranges on the newly-acquired lands for explosive ammunition such as artillery and mortars. To accomplish this, the Army would establish a "dudded impact area." This is an area in which rounds that do not properly explode may occur. People are generally prohibited from entering the area. Establishment of a dudded impact area would require extensive planning and a lengthy approval process. It would also be the subject of additional NEPA analysis.

2.2.5.3 ARMY TRAINING SUPPORT FACILITIES

Depending on the alternative selected for the acquisition of land, there may be a requirement to construct support facilities on the land. These facilities would be required due to the distance of the training land from the cantonment area where the classroom instruction is conducted and the vehicles and equipment used in the field training are stored and maintained. These facilities may include, but are not limited to, a building from which command and control over the field training is exercised; a temporary or permanent vehicle and maintenance facility; a refueling point; a building for after-action reviews; a covered mess facility; a latrine; a storage building; and an ammunition breakdown point where blank ammunition and pyrotechnics used during the field training will be stored. Since the site for the construction of these facilities will not be chosen as a part of this action, and since funding is not currently available for the construction of the facilities, appropriate NEPA documentation for the site-specific construction of facilities will be accomplished when and if funding is provided by the Army.

2.3 ALTERNATIVES

2.3.1 INTRODUCTION

To meet the Army's purpose and need for the Proposed Action, the Army is considering five acquisition alternatives, in addition to the No Action Alternative. Each of the alternatives includes the acquisition of approximately 82,800 acres of training land. The alternatives considered in this EIS are dictated in large part by the current geographic configuration of Fort Benning and where land may be available for acquisition by the Army. As described in Section 2.2, the Proposed Action considered in this EIS includes the implementation of Army resource management programs on the new land and the steps necessary for preparation of newly acquired land to Army training land.

2.3.2 SCREENING CRITERIA

The following criteria were used to determine whether or not an alternative would be considered viable and carried forth for further consideration within this EIS.

Training Viability. The alternative must provide sufficient land to support the field training of the ARC, one heavy maneuver battalion, and other training activities to doctrinal standards. The following factors impacting training were considered:

- Land contiguous to the current Installation boundary is preferred. If land is not contiguous, an access route to the land must be identified for acquisition. Land must not be land locked with no reasonable, fiscally-affordable option to access the land.
- In order to provide adequate maneuver space for the ARC, the desired minimum land parcel should be not less than 22,800 acres.
- Where possible, it is desired that large contiguous areas of commercial lands (e.g., timber holdings) be considered for acquisition as opposed to the purchase of many small parcels.
- Alternatives should avoid urban areas and housing development areas in order to reduce the impacts of training on the civilian community and to reduce the impacts of the civilian community on training (e.g., light pollution, noise complaints, etc.).
- Alternatives can contain imbedded properties or in-holdings, depending on whether the in-holding is in the center or the periphery of the alternative and its relative size. In-holdings could be of such magnitude and distribution that the alternative would lose its usefulness for military training.
- Alternatives that include lands with already established road and trail networks are desirable over lands with few established roads and trails.

- Alternatives should not include any lands with current SUA of which Fort Benning is not the using agency. The ARC and units training on the land must have the capability to employ fixed wing, rotary wing, and UAS over the land.
- Alternatives should avoid any lands where currently there are RCWs (a condition established in the RPA) or where there are large populations of other Federally-listed species.

Compatibility with the Fort Benning Army Compatible Use Buffer Program. Alternatives should avoid land in high priority (Priority 1) Army Compatible Use Buffer (ACUB) plan areas.

Economic Feasibility. The alternatives must be achievable within a reasonable cost. Alternatives that are prohibitively expensive or considerably more expensive to implement without commensurate increased benefit would be eliminated from detailed evaluation. This includes sites with high density of residential land owners. Also, excessive environmental cleanup costs of a contaminated site could preclude a site from consideration of acquisition.

Sustainability and Land Use Compatibility with Military Training. The alternatives should enhance or support the ability of Fort Benning units to conduct training. Alternatives that degrade the natural environment and cause significant adverse impacts without commensurate increased benefit would be eliminated from detailed evaluation. Alternatives should minimize the impacts to wetlands, threatened or endangered species, and cultural resources since armored tracked vehicles, Stryker vehicles, and Army wheeled vehicles must be able to traverse a majority of the acquisition area to conduct maneuvers. The land should be as remote as possible with a low population density to limit future encroachment impacts on military activities.

Public Relations. To the extent feasible, the alternatives would reflect positively upon the Army and enhance the relationship between the Installation and the surrounding community.

2.3.3 STUDY AREA BY ALTERNATIVE

As stated in Section 2.1.3, the TLEP study area contains a multi-county region within Georgia and Alabama. The TLEP study area has been organized into nine smaller county division land areas (e.g., Marion West, Stewart Central, etc.) to develop the alternatives and to help facilitate the discussions of the affected environments. Within this document, the overall multi-county study area is referred to as the "TLEP study area." Figure 2.1-1 (see Section 2.1.3) provides a reference to the TLEP study area and county division nomenclature.

For those alternatives not contiguous to Fort Benning, potential transportation routes have been identified. The proposed transportation routes would provide the Army with the ability to move troops and supplies between acquired non-contiguous land and Fort Benning. These routes were planned to avoid the use of existing public roadways for military convoys to the newly established training areas. The approximate minimum route width required to support the Proposed Action is 300 feet. The route lengths are discussed with each respective alternative (Sections 2.3.4 through 2.3.8) and within Chapter 3, when applicable.

The transportation routes presented within the EIS act as a comparative baseline for analyzing impacts within the EIS associated with those alternatives that are not contiguous. These routes have been approximated based on the required 300-foot minimum route width and to maximum avoidance of residential areas. The entire parcel being bisected by the proposed transportation route, however, may be acquired. In addition, the actual alignment, however, of the selected alternative may shift during the acquisition stage from the analysis of transportation routes presented within this EIS. Further environmental studies and additional NEPA analysis, if applicable, would be conducted during the acquisition process to further characterize impacts.

2.3.4 ALTERNATIVE 1: ACQUIRE LAND TO THE SOUTHEAST AND SOUTH OF FORT BENNING WITHIN STEWART, WEBSTER, AND MARION COUNTIES

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres of land areas within Marion, Webster, and Stewart counties, Georgia. The following county divisions are included in Alternative 1: Marion West (which is partially contiguous to Fort Benning), Webster West, and Stewart East (Figure 2.3-1). Because a portion of this alternative is contiguous to Fort Benning, no transportation route to newly acquired training lands would be required.

2.3.5 ALTERNATIVE 2: ACQUIRE LAND TO THE WEST OF FORT BENNING WITHIN RUSSELL COUNTY

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres of land areas within Russell County, Alabama. The following county divisions are included in Alternative 2: Russell West and Russell East (Figure 2.3-1).

These land areas are not contiguous to Fort Benning and would require the Army to obtain a route for access into the newly acquired training lands. Figure 2.3-1 depicts the location of a potential 1.8-mile transportation route, which is considered within this EIS analysis. The proposed transportation route would link Fort Benning to Alternative 2 and is located within Russell County. The Army would likely acquire access within the proposed transportation route.

2.3.6 ALTERNATIVE 3: ACQUIRE LAND TO THE SOUTH OF FORT BENNING WITHIN STEWART COUNTY

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres of land areas within Stewart County, Georgia. The following county divisions are included in Alternative 3: Stewart West and Stewart Central (Figure 2.3-1).

These land areas are not contiguous to Fort Benning and would require the Army to obtain a route for access into the newly acquired training lands. Figure 2.3-1 depicts the location of the potential transportation routes, which is considered within this EIS analysis. The proposed transportation routes to link Fort Benning to Alternative 3 located within Stewart County would consist of land within Chattahoochee County; an approximate 0.6-mile route to Stewart West and an approximate 2.4-mile route to Stewart Central are under consideration for this alternative. The Army would likely acquire access within the proposed transportation route.

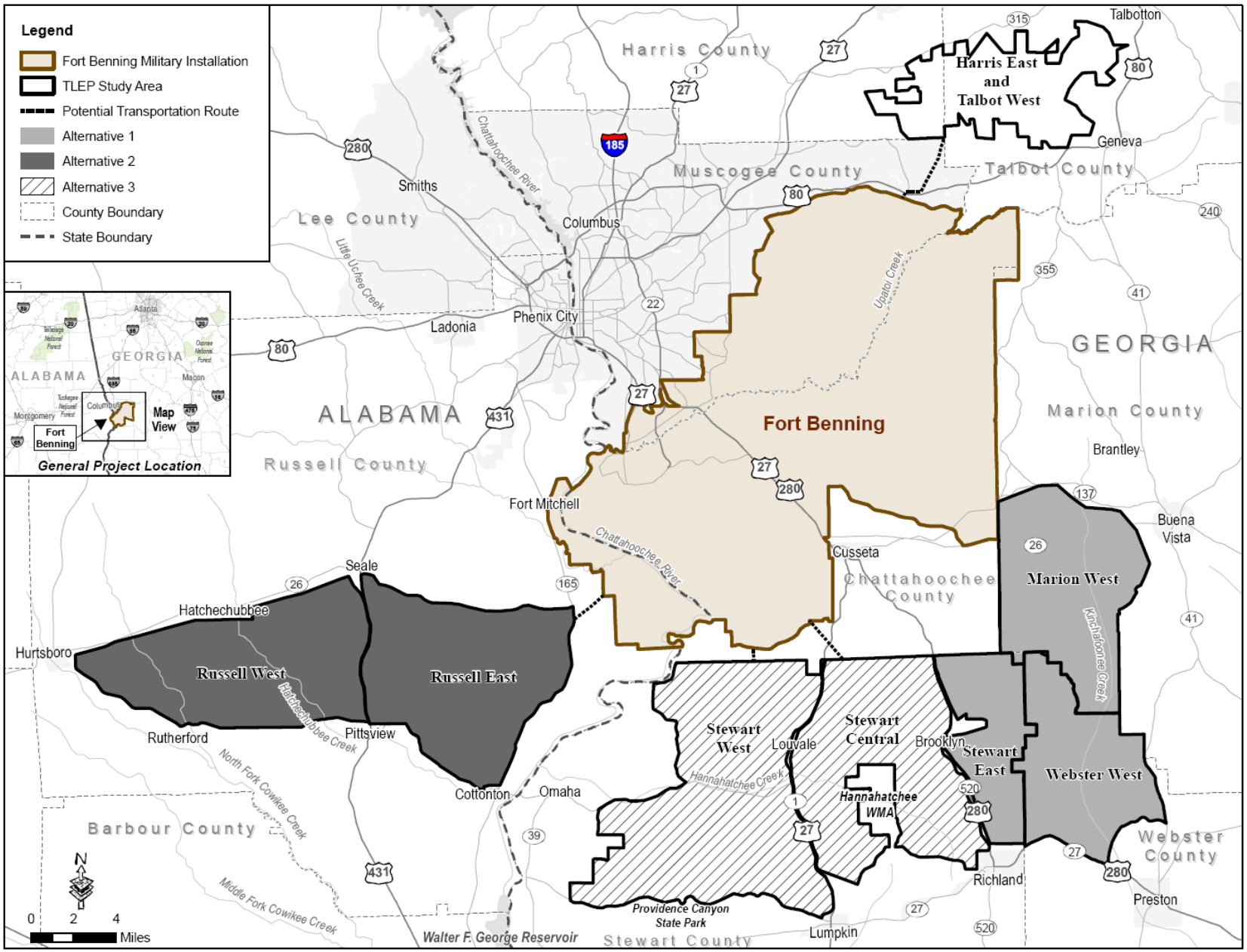

Figure 2.3-1. Alternatives 1, 2, and 3

2.3.7 ALTERNATIVE 4: ACQUIRE LAND TO THE SOUTH AND WEST OF FORT BENNING WITHIN RUSSELL AND STEWART COUNTIES

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres of land area within Russell County, Alabama and Stewart County, Georgia. The following county divisions are included in Alternative 4: Russell East and Stewart Central (Figure 2.3-2).

These land areas are not contiguous to Fort Benning and would require the Army to obtain a route for access into the newly acquired training lands. Figure 2.3-2 depicts the location of the potential transportation routes, which is considered within this EIS analysis. The proposed transportation routes to link Fort Benning to Alternative 4 located within Stewart County would consist of land within Chattahoochee County. An approximate 2.4-mile route to Stewart Central and an approximate 1.8-mile route to Russell East are under consideration for this alternative. The Army would likely acquire access within the proposed transportation routes.

2.3.8 ALTERNATIVE 5: ACQUIRE LAND TO THE SOUTH AND NORTH OF FORT BENNING WITHIN STEWART, HARRIS, AND TALBOT COUNTIES

During the public scoping meetings, one public comment requested that the Army include an additional area of consideration for land acquisition. Based on this public comment, Alternative 5 was added to this EIS after the Army determined it met the purpose and need of the Proposed Action and met the screening criteria in accordance with the Army NEPA Regulation (32 CFR 651.9(c)). This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres of land area within Stewart, Harris, and Talbot counties, Georgia. The following county divisions are included in Alternative 5: Stewart West, Harris East, and Talbot West (Figure 2.3-2).

These land areas are not contiguous to Fort Benning and would require the Army to obtain a route for access into the newly acquired training lands. Figure 2.3-2 depicts the location of the potential transportation routes, which is considered within this EIS analysis. The proposed transportation routes to link Fort Benning to Alternative 5 located within Stewart County (approximately 0.6 miles to Stewart West) would consist of land within Chattahoochee County. A transportation route (approximately 3.8 miles) through Muscogee County to Harris East and Talbot West are also under consideration for this alternative. The Army would likely acquire access within the proposed transportation routes.

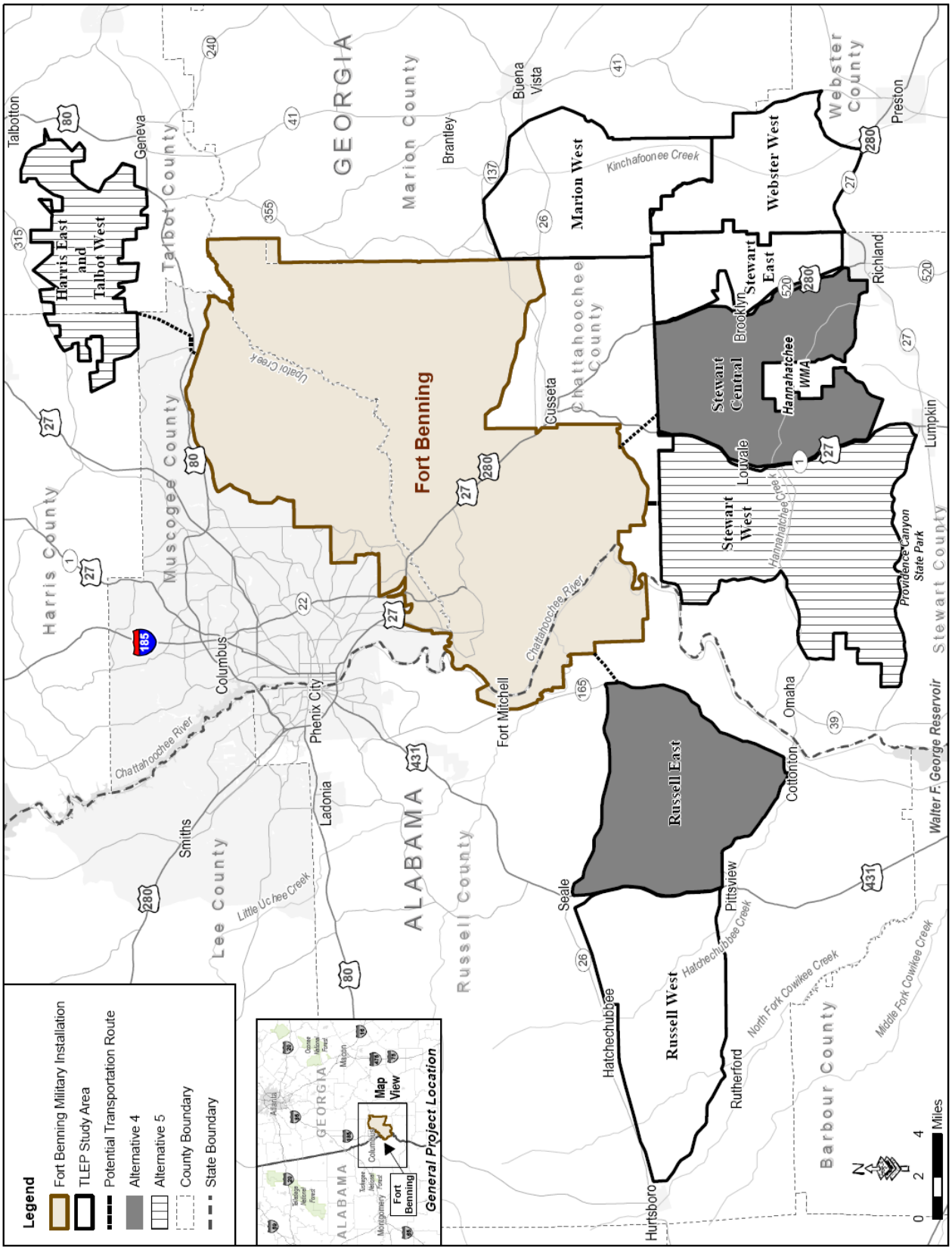

Figure 2.3-2. Alternatives 4 and 5

2.3.9 NO ACTION ALTERNATIVE: NO LAND ACQUISITION ACTION

The No Action Alternative would not include the acquisition of any land. Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options, such as conducting ARC training at another military installation or the use of mobile training teams. These other options are beyond the scope of this EIS. Changes in training will be the subject of future NEPA analysis and possibly additional consultation under the ESA.

The Installation would not be able to support the doctrinal maneuver requirements for operational units since additional land is required to do so. The capability requirement to train two battalions simultaneously with the MCoE training cannot be met on Fort Benning's existing land base. Given the existing condition, no scheduling solution could be developed, which can accommodate the doctrinal training requirements of Fort Benning's operational and deployable units. Units would, therefore, be constrained by a lack of available training land, and the inability to train Soldiers to standard will become progressively more pronounced as an increasing number of Soldiers attempt to meet their training requirements. Mounted and dismounted maneuver formations would need to be compressed to unrealistic sizes and training realism would diminish by virtue of the fact that units would need to train in unrealistic proximity. In particular, combat service and combat service support operations, to include logistics and supply, would be greatly compressed and would not allow realistic integration of these elements into combat training scenarios. Attempts to achieve correct distances and time with the use of simulations can help, but cannot replace the effect of Soldiers training over actual distances according to actual times. This would contribute to the inability of the tenant units to meet the ARFORGEN training requirements and would lead to less effective training and Soldiers that are not trained to a level that would be possible with additional maneuver land.

The No Action Alternative would reduce flexibility to implement sustainability practices and measures for continued use of the land on Fort Benning. It is projected that continued use of the land over time would lead to a negative trend in the amount of land suitable for training, and sustainability objectives would not be met. Due to a decreased ability to rehabilitate or reclaim training lands due to the heavy training load, the Installation can expect increased maintenance time and costs due to erosion problems and dust. It would also lead to an increased possibility of water quality degradation.

The No Action Alternative is required by the Council on Environmental Quality (CEQ) for consideration in NEPA analyses and provides the benchmark for comparison of the environmental impacts of other alternatives.

The No Action baseline at Fort Benning includes actions required to implement BRAC recommendations and establishment of the MCoE, as approved in the 2007 and 2009 NEPA documents. This includes projects that are approved, but not yet completed at the time this EIS is written. In other words, the Benning No Action baseline includes all approved BRAC and MCoE projects, including those to be built in the future.

2.3.10 DESIGNATION OF THE PREFERRED ALTERNATIVE

The Army has identified Alternative 3 (Stewart West and Stewart Central) as its Preferred Alternative. This was based on information in this EIS as well as factors relating to training suitability. Factors considered included proximity to Fort Benning, contiguous land parcels, low population density and large extent of commercial timber operations, suitability for training (slope and erodible soils), extent of utilities and existing road network, and airspace use. It should be noted, however, that any of the Proposed Action alternatives could ultimately be selected. All of the alternatives would meet the purpose and need of the Proposed Action.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

2.4.1 TRANSPORTING SOLDIERS AND EQUIPMENT TO OTHER ARMY INSTALLATIONS OR OTHER FEDERAL LAND HOLDINGS

This alternative calls for transporting tenant units from Fort Benning to other installations in the proximity of Fort Benning to conduct collective training at the battalion and BCT level. This would entail training tenant units at the individual and small unit collective levels and then transporting them to other training areas to conduct large-scale collective training at the battalion and brigade level. This alternative substantially increases resource requirements due to transportation costs and increases time needed to plan, mobilize, train, and reset the units. The Army's overall training land shortfall limits the ability to offset training loads to other locations due to competition from other units stationed at those locations. The closest Army installations to Fort Benning with training lands are Fort McClellan (133 miles), Fort Rucker (126 miles) and Fort Stewart (256 miles). Forts McClellan and Rucker do not have sufficient land to support battalion level maneuver. Fort Stewart, with two HBCTs and one IBCT, does not have surplus training land that could support Fort Benning collective training at the BCT level (USAEC, 2007a).

The Army also considered the possibility of conducting training events on other Federal land holdings within a 200 to 300 mile radius of Fort Benning. National Forests and the Department of Energy (DOE) Savannah River Site were considered, however, this alternative also increases resource requirements due to transportation costs and increases the time needed to plan, mobilize, train, and reset the units. The National Forests are not near rail download sites capable of supporting such a large scale operation. The restrictive and sensitive terrain of the National Forests is not conducive to heavy maneuver training and the employment of mechanized vehicles is not permitted at the DOE Savannah River Site.

The Army also considered conducting the field training portion of the ARC at another installation. ARC training, however, is progressive and the field training is spread throughout the course. It is not possible to put all of the field training into one time block due to the course progression. Additionally, the cost of transporting the Soldiers and equipment to and from the remote training site would be prohibitive and the time required for transporting Soldiers and equipment would lengthen the course.

2.4.2 USE VIRTUAL, CONSTRUCTIVE, AND GAMING TO REPLACE ALL ARMY RECONNAISSANCE FIELD 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 POI. Live training remains critical to overall conduct of the ARC POI and is the cornerstone of the Army's training doctrine.

2.4.3 CLEAR DUDDED IMPACT AREAS TO PROVIDE ADDITIONAL MANEUVER SPACE

The surface clearance of unexploded ordnance (UXO) from the A20 (9,271 acres) or K15 (5,511 acres) dudded impact areas, together comprising 14,782 acres, would provide additional acres for maneuver training. Both areas have been used extensively over the past 70 years as impact areas for dud-producing munitions. It would be expensive and time consuming to surface-clear the impact areas for maneuver training. The considerable cost and minimal benefit of a few thousand acres limits the viability of this

alternative. In addition, conversion of either of the impact areas to a maneuver area would be counter-productive to the training mission as impact areas and the live firing ranges that surround them are critical training resources that enable maneuver, artillery, aviation, and other units to rehearse training tasks, as well as enabling Soldiers to train on and qualify on their individual and crew served weapons. Without these ranges and impact areas, Soldiers would not meet tasks critical to the deployability of units and the MCoE and basic training units would not be able to train Soldiers and leaders to standard in live-fire tasks. There is insufficient space around just one of the impact areas in which the Installation could physically or safely construct and operate all the ranges to meet the live-fire training requirements of the MCoE and tenant units.

2.4.4 OTHER AREAS CONSIDERED FOR ACQUISITION

Other areas contiguous to or near Fort Benning beyond those discussed in Sections 2.3.4 through 2.3.8 were considered; however, they did not meet the screening criteria discussed in Section 2.3.2. Areas to the west and northwest are highly populated and developed and include the City of Columbus, Georgia, and Phenix City, Alabama. These areas were not considered reasonable for land acquisition as they would not avoid urban areas and housing developments as discussed in Section 2.3.2. Areas directly north and to the east occur within ACUB high priority areas and were, therefore, not considered suitable for acquisition per the screening criteria in Section 2.3.2. Large land areas directly to the south of Fort Benning within Chattahoochee County were not considered reasonable due to the public relation screening criteria; Fort Benning already occupies a large portion of Chattahoochee County and acquisition of additional lands within this county is considered highly unfavorable.

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3 AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 INTRODUCTION

This section describes the affected environment and environmental consequences of implementation of the Proposed Action on the alternatives identified. This chapter evaluates the potential environmental impacts to the proposed land acquisition area (referred to as the study area) and the potential environmental impacts of Army construction, training, and management on this land. The affected environment and associated potential environmental impacts have been determined using the criteria in the *Army NEPA Guidance Manual 2007* (USAEC, 2007b). Sections 3.2 through 3.14 discuss specific resource areas of concern. Section 3.15 contains a summary of potential environmental effects resulting from the Proposed Action and alternatives; Section 3.16 contains proposed mitigation for potential adverse environmental impacts; and Section 3.17 contains a summary of potential unavoidable adverse environmental effects.

3.1.1 VALUED ENVIRONMENTAL COMPONENTS

This chapter analyzes and discloses the potential impacts (direct, indirect, and cumulative) for the following resource areas (valued environmental components [VEC]):

- Land Use (Section 3.2)
- Airspace (Section 3.3)
- Air Quality (Section 3.4)
- Noise (Section 3.5)
- Soils (Section 3.6)
- Water Resources (Section 3.7)
- Biological Resources (Section 3.8)
- Cultural Resources (Section 3.9)
- Socioeconomics and Environmental Justice (Section 3.10)
- Traffic and Transportation (Section 3.11)
- Utilities (Section 3.12)
- Hazardous and Toxic Substances and Waste (Section 3.13)
- Safety (Section 3.14)

The Proposed Action of the Army acquiring additional land and the implementation of Army training and management activities would not affect the geology of the area nor would this action affect the generation and supply of regional energy. In accordance with Army NEPA Regulation 32 CFR 651 and the *Army NEPA Guidance Manual 2007*, if resources are not adversely impacted, then further discussion is not required in the EIS, thus additional discussion of these topics have not been considered further within this EIS.

3.1.2 DESCRIPTION OF BASELINE DATA AND SOURCES

The description of the affected environment was characterized using a combination of the following types of resources:

- Aerial photography: 2009 imagery maintained by the National Agriculture Program Mosaica, U.S. Department of Agriculture (USDA).
- Regional studies and maps: Natural Resources Conservation Service (NRCS) Soil Surveys, U.S. Geological Survey (USGS) watershed studies, the National Wetlands Inventory, Federal Emergency Management Agency (FEMA) floodplain mapping, USFWS Threatened and Endangered (T&E) Species Range Maps, vegetation maps, etc.
- Databases and archive records: SHPO historic properties, U.S. Census Bureau data, etc.
- Agency and public coordination: including written comments regarding location of resources within the study area.

In addition, previous NEPA studies were used to supplement discussions of the affected environment and to characterize regional resources such as air quality, airspace, watersheds, and noise. Fort Benning maintains an active inventory of on-Post resources. Previous NEPA studies' affected environment discussions have incorporated field-verified data and conditions using these inventories. As part of the acquisition process, Fort Benning would conduct an in-depth inventory of existing resources to determine requirements for management, restoration, or remediation requirements. Such inventories would include but are not limited to cultural resources, T&E species, and wetlands.

A ROI was determined for each resource area and was based on the type and extent of potential impacts to the affected resource. The ROI may be limited to the specific location (study area) of an alternative, including the surrounding area, or may include a larger area such as an entire watershed. The ROI was generally considered to include the TLEP study area and immediately adjacent residential, commercial, state, or Federally-owned land, unless otherwise noted in the specific resource of concern section.

3.1.3 APPROACH FOR ANALYZING IMPACTS

Each resource topic examines the potential impacts resulting from Federal acquisition (Section 2.2.2), Army management (Section 2.2.3), Army construction (Section 2.2.4) and Army training (Section 2.2.5) on the properties under consideration for acquisition based on the general type of training to be conducted and the general type of equipment to be used on the acquired land. Chapter 2 describes the anticipated type of Army management, construction, and training activities occurring within any newly acquired land. Specific locations for training activities and related construction of training infrastructure; however, would be determined based on the configuration, size, and location of the final land acquisitions. The impact discussions, therefore, contain a level of analysis that provides a discussion of potential type and intensity of potential impacts that could occur from Army related management, and the general type of construction and training activities. Site-specific future construction of training facilities and related site-specific training activities would be analyzed in future project-specific NEPA documents (at an appropriate level of analysis) once proposed locations and details are further developed following land acquisition.

3.1.3.1 THRESHOLDS OF SIGNIFICANCE

To maintain consistent evaluation of potential impacts in the EIS and in accordance with the Army NEPA Regulation, thresholds of significance were used for each resource. Although some thresholds have been designated based on legal or regulatory limits or requirements, others reflect discretionary judgment on the part of the Army in accomplishing its primary mission of military readiness, while also fulfilling their conservation stewardship responsibilities. Significance thresholds are discussed within each resource

area. Quantitative and qualitative analyses have been used, as appropriate, in determining whether, and the extent to which, a threshold would be exceeded. Based on the results of these analyses, this EIS identifies whether a particular potential impact would be adverse or beneficial, and to what extent. The following terms are used throughout this EIS as a convention to indicate the relative degree of severity of predicted potential impacts:

- ***Negligible.*** 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 mitigable to less than significant.
- ***Beneficial.*** The term used to indicate the action would benefit the VEC under consideration.

Somewhat different terms are used to describe the ROI for cultural resources. The ROI for cultural resources is referred to as the "Area of Potential Effect" (APE), consistent with NHPA Section 106 review and Fort Benning's ICRMP. During cultural resource reviews, Fort Benning assesses adverse effects on the identified cultural resources based on criteria found in the ICRMP and HPC. The determination typically results in a 'no adverse effect' or an 'adverse effect.' For the purposes of this EIS, a determination of adverse effects to cultural resources involving irretrievable or irreversible damage to a historic property that has not been evaluated, is listed, or is eligible/potentially eligible for listing on the National Register of Historic Places (NRHP) would be considered significant.

3.1.3.2 CUMULATIVE EFFECTS ANALYSIS METHODOLOGY

CEQ Regulations implementing NEPA defines a "cumulative impact" as follows:

> *Cumulative impact is the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable 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).*

EPA guidance to reviewers of cumulative impacts analyses further adds:

> *...the concept of cumulative impacts takes into account all disturbances since cumulative impacts result in the compounding of the effects of all actions over time. Thus, the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity (Federal, non-Federal or private) is taking the action (EPA, 1999).*

For the purposes of this EIS, potential significant cumulative impacts would occur if incremental impacts of the Proposed Action, added to the environmental impacts of past, present, and reasonably foreseeable actions, would exceed thresholds of significance for resources within the ROI. For the purposes of the cumulative impacts analysis, the Proposed Action's ROI is defined to include Fort Benning proper, as well as Russell County, Alabama and Stewart, Chattahoochee, Marion, Webster, Muscogee, Harris, and Talbot counties, Georgia. This eight-county ROI includes areas where the Proposed Action's effects would most likely contribute to cumulative environmental effects.

The Army considered a wide range of past, present, and reasonably foreseeable future actions by researching existing literature and contacting local area planners and state and Federal agencies to identify other projects in the ROI that could contribute to cumulative environmental effects. The Army considered other past, present, or foreseeable future actions regardless of whether the actions are similar in nature to the Proposed Action or outside the jurisdiction of the Army.

Cumulative effects are addressed within each resource section following the discussion of environmental consequences for each alternative. This analytical approach provides a more complete understanding of resource conditions that implementation of the Proposed Action might magnify, amplify, or otherwise exacerbate or cause beneficial or adverse effects (i.e., synergistic or countervailing effects; CEQ, 1997) to resources on a regional or temporal scale. Tables 3.1-1 through 3.1-9 list the past, present, and reasonably foreseeable Army actions, and other actions within the ROI, that were reviewed in conducting the cumulative effects analysis. The information in these tables represents a review of credible online sources, local planning documents, and communication with the local planning agencies having responsibility for, or jurisdiction over, lands or projects within the ROI. Only those projects that were determined to be reasonably foreseeable have been included in the tables for consideration in the cumulative impact analysis. "Reasonably foreseeable" is defined as those projects that are well-developed, in mature planning stages, and/or have funding secured. Conceptual projects, broad goals, objectives, or ideas listed in planning documents that do not meet the above criteria are not considered reasonably foreseeable for the purposes of this analysis.

Table 3.1-1. Past, Present, and Reasonably Foreseeable Fort Benning Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
MCoE Actions, BRAC and Transformation Actions (BRAC EIS and ROD 2007; MCoE EIS and ROD 2009).	Various proposed training and support facility projects at the Installation in support of BRAC 2005. Will collectively affect over 10,000 acres within the Installation. On-Post population increase by over 16,500 persons, resulting in a total population of over 50,000 persons.	Broad-scale effects within Fort Benning and ROI; resulted in JBO for RCW from the USFWS. Potential ***adverse*** effects to biological resources, cultural resources, and infrastructure. Potential ***positive*** impacts to socioeconomics.	x	x	x
Digital Multi-Purpose Range Complex (DMPRC EIS and ROD 2005).	Construction and use of a DMPRC at Fort Benning on approximately 1,800 acres of land.	***Adverse*** effects on water resources, biological resources, and noise.	x	x	x
Army Lodging, Warrior Training Center, and 3rd Infantry Division Brigade Combat Team Motorpool Expansion EAs/FNSIs (2010 - pending).	Construction of an 860-room, 5-story hotel (10 acres); upgrade of the existing Warrior Training Center for the GaANG (40 acres), and motorpool expansion and associated tank trail upgrade (239 acres).	***Adverse*** natural resources, HTMW, and infrastructure effects. Improved health and safety conditions for on-Post residents, visitors, and tenants, and ***positive*** socioeconomic effects.		x	x
Installation Information Infrastructure Modernization Program (2011-2013; I3MP EA/FNSI completed in November 2010); additional communications infrastructure may also be established at Fort Benning, as identified in that 2010 EA/FNSI.	I3MP action would affect up to 142 acres at Fort Benning, including underground fiber and communications towers.	***Positive*** utilities effects; ***adverse*** natural resources effects.	x	x	x

Table 3.1-1. Past, Present, and Reasonably Foreseeable Fort Benning Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
Potential future projects at Fort Benning, including a Tactical Unmanned Aerial Vehicle Hangar (FY 2014); Expansion of the 3rd Battalion 75th Headquarters (FY 2011).	Various minor additional training and support facility projects around Fort Benning.	***Adverse*** natural resources and infrastructure effects.		x	x

BRAC = Base Closure and Realignment Commission; DMPRC = Digital Multi-Purpose Range Complex; EA = Environmental Assessment; EIS = Environmental Impact Statement; FNSI = Finding of No Significant Impact; FY = Fiscal Year; GaANG = Georgia Army National Guard; HTMW = Hazardous and Toxic Materials and Waste; I3MP = Installation Information Infrastructure Modernization Program; JBO = Jeopardy Biological Opinion; MCoE = Maneuver Center of Excellence; ROD = Record of Decision; ROI = Region of Influence; RCW = Red-cockaded Woodpecker; USFWS = U.S. Fish and Wildlife Service

Table 3.1-2. Past, Present, and Reasonably Foreseeable Russell County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
CR-24/AL-165/Fort Benning Gate Upgrade (approximately 10.3 miles of road).	Russell County is proposing a 3-phase upgrade to the intersection of CR-24 and AL-165, the gate entrance from AL-165 to Fort Benning, as well as extensive work to CR-24, including widening, grading, upgrading drainage, and resurfacing. This project would improve connectivity between Fort Benning and Russell County, and would accommodate anticipated BRAC-induced growth in Russell County.	***Positive*** effects on traffic and transportation. Potential ***adverse*** impacts on natural/cultural resources, water resources, noise, and HTMW, notably during construction.		x	x

AL = Alabama State Highway; CR = County Road; BRAC = Base Closure and Realignment Commission; HTMW = Hazardous and Toxic Materials and Waste

Table 3.1-3. Past, Present, and Reasonably Foreseeable Stewart County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
N/A	N/A	N/A			

N/A = not applicable

Table 3.1-4. Past, Present, and Reasonably Foreseeable Chattahoochee County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
National Security Associates opened a security training facility.	National Security Associates recently opened a training facility (2007) adjacent to Fort Benning for military special operations and police tactical and special enforcement teams training.	Potential ***adverse*** impacts to traffic and transportation, natural/cultural resources, air, noise, and utilities. ***Positive*** effects on socioeconomics.	x		
Widened US-27 and 520/280 (Reed, 2011).	GDOT widened US-27 as well as 520/280 where these roads intersect just outside of Fort Benning	***Positive*** traffic and transportation effects.	x		
Increase tourism. Tourism currently brings in money, but will continue to market to increase positive financial impact (Lower Chattahoochee Regional Development Center, 2008a).	Chattahoochee County obtained River Bend Park in 2002 from the USACE. Emplaced electrical infrastructure; have plans for running water and sewer lines.	***Adverse*** traffic and transportation effects. Potential ***adverse*** impacts to natural, cultural, and water resources. ***Positive*** socioeconomic and utilities impacts.	x	x	x

GDOT = Georgia Department of Transportation; SR = State Route; US = U.S. Highway; USACE = U.S. Army Corps of Engineers

Table 3.1-5. Past, Present, and Reasonably Foreseeable Marion County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
N/A	N/A	N/A			

N/A = not applicable

Table 3.1-6. Past, Present, and Reasonably Foreseeable Webster County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
N/A	N/A	N/A			

N/A = not applicable

Table 3.1-7. Past, Present, and Reasonably Foreseeable Muscogee County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
N/A	N/A	N/A			

N/A = not applicable

Table 3.1-8. Past, Present, and Reasonably Foreseeable Harris County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Potential Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
Expand potable water capacity (River Valley Regional Commission, 2009).	Ongoing attempts to expand potable water capacity through an increase on the Water Withdrawal Permit for water withdrawal from the Chattahoochee River.	***Positive*** effects on utilities.	x	x	x

Table 3.1-9. Past, Present, and Reasonably Foreseeable Talbot County Actions

Potentially Contributing Project or Activity	Description of Activity	Nature of Effects	Time Frame		
			Pre-2010	2010-2012	2012-2017
Construction of new, 100-acre industrial park (Talbot County Chamber of Commerce, 2010).	Twelve tracts located next to GA-41 and 80.	***Adverse*** impacts to natural/cultural resources, air quality, noise, water resources, HTMW and utilities. ***Positive*** socioeconomic effects.		x	

GA = Georgia State Highway; HTMW = Hazardous and Toxic Materials and Waste

3.1.3.3 PROPOSED MITIGATION

Proposed mitigation has been identified based on the analysis of potential resource impacts for each respective resource area as applicable. Each resource area was evaluated by alternative for potential impacts in accordance with thresholds of significance as discussed in Section 3.1.3.1, together with cumulative effects (Section 3.1.3.2). Proposed mitigation was then identified as appropriate in accordance with NEPA Regulations (40 CFR 1508.20) and Army NEPA Regulation to: 1) Avoid the impact altogether by not taking a certain action or parts of an action; 2) Minimize the impacts by limiting the degree or magnitude of the action and its implementation; 3) Rectify the impact by repairing, rehabilitating, or restoring the affected environment; 4) Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the action; and/or, 5) Compensate for the impact by replacing or providing substitute resources or environments. Chapter 3.16 presents proposed mitigation. A mitigation and monitoring plan is currently being prepared based on the proposed mitigation. This plan will be included as an appendix to the Final EIS which will incorporate Agency and public input regarding proposed mitigation received during review of the DEIS.

3.2 LAND USE

3.2.1 AFFECTED ENVIRONMENT

This section provides an overview of existing Army land use plans and policies at Fort Benning (Section 3.2.1.1) along with military training activities within the Installation (Sections 3.2.1.2) that may be implemented on acquired land. This discussion is followed by a discussion of local (county) and regional land use plans (Section 3.2.1.3), a description of the current types of existing land uses within the TLEP study area (Section 3.2.1.4), a discussion of recreation areas and opportunities (Section 3.2.1.5) and a discussion on prime farmland within the TLEP study area (Section 3.2.1.6). Sections 1.4 and 2.2.3 briefly discuss sustainability and the types of resource management plans and programs which occur at Fort Benning. As stated in 2.2.3, these plans and programs would be implemented on newly acquired lands.

The ROI for land use encompasses the TLEP study area, Fort Benning, and the communities that surround the Installation. For purposes of this section, land use is defined by the primary land use (e.g., commercial timber, rural residential, or recreational) in the TLEP study area. Secondary land uses are discussed in subsequent sections (e.g., Section 3.8; Section 3.10).

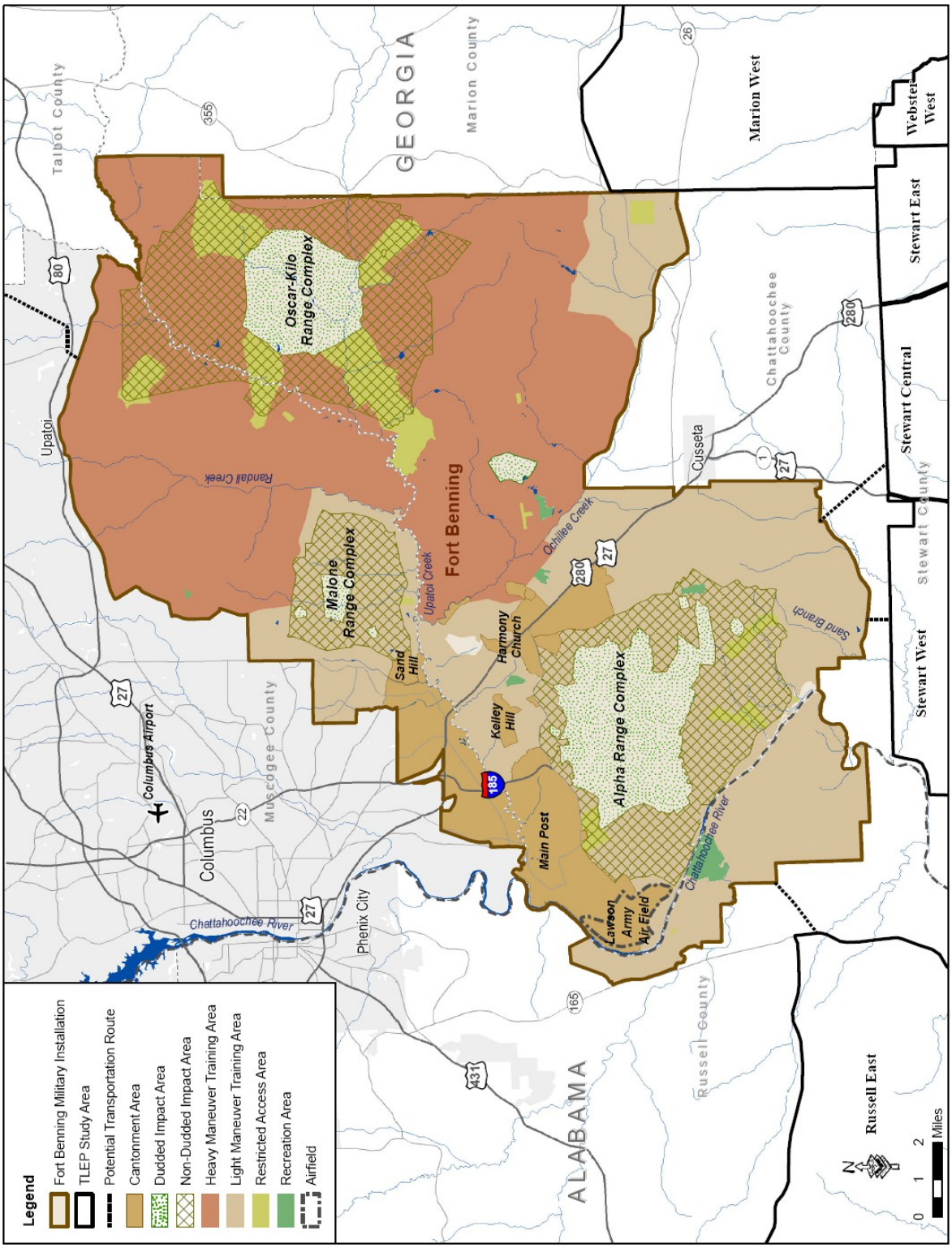
3.2.1.1 OVERVIEW

Fort Benning is approximately 182,000 contiguous acres that spans between Muscogee, Chattahoochee, and Russell counties. About 93 percent of the Installation is in Georgia, with the remaining portion located in Russell County, Alabama. Fort Benning land is used for military training (e.g., ranges, drop zones (DZs), landing zones, etc.), military administration, and land management activities. Of the currently-owned property, 141,471 acres (approximately 78 percent of the total land area) are designated for training. The training areas consist of 48,171 acres of light maneuver area primarily in the southwestern portion of the Installation; 62,958 acres of heavy maneuver area primarily in the northeastern portion of the Installation; and 30,342 acres of non-dudded impact area. There are also 15,554 acres (9 percent) of permanently dudded impact area. The dudded and non-dudded impact areas are concentrated in the northeast corner of Fort Benning (Kilo Range Complex), the southern portion (Alpha Range Complex), and near the western Installation boundary (Malone Range Complex). US-27/280 divides the northeastern and southwestern sections of Fort Benning. Figure 3.2-1 shows existing Fort Benning training assets and cantonment areas.

> A ***dudded impact area*** is an area that is known to contain unexploded live ammunition or a dud (explosive ammunition that has been fired, has failed to function as designed, and as a result is of a hazardous or unpredictable condition).
>
> ***Non-dudded impact areas*** are those that receive munitions that do not include high explosive or dud-producing ordnance (such as training rounds).

There are four cantonment areas within the installation boundaries: Main Post, Sand Hill, Kelley Hill and Harmony Church. The Main Post is the largest cantonment area, located adjacent to South Columbus, and is the primary activity center for the Installation. The Main Post contains the Post Headquarters, the Infantry School, a barracks complex (the Cuartels), Lawson Army Airfield (KLSF)[1], Martin Army Community Hospital (MACH), the Post Exchange, the Commissary, and Family housing areas. Sand Hill supports the Basic Combat Training and One Station Unit Training, in addition to barracks, dining halls, and associated classrooms. The Kelley Hill cantonment area is the current home to the 3rd HBCT/3rd ID and its associated barracks, the 75th Ranger Regiment, and the 11th Engineering Battalion. Harmony Church hosts the Ranger Training Brigade, the Continental United States Replacement Center, the Armor Center and School and the 81st Regional Readiness Command Equipment Concentration Site.

[1] 'KLSF' is the FAA-recognized airport code for Lawson Army Airfield; however, this airfield is also referred to locally as 'LAAF.'



Note: Training assets depicted on the figure represent conditions prior to the full implementation of BRAC and MCoE actions.

Figure 3.2-1. Existing Fort Benning Training Assets and Cantonment Area

Within the Installation, seven land use activities are recognized:

- Airfield
- Professional/Institutional
- Community
- Residential
- Troop
- Industrial
- Training and Ranges

Of the land uses listed above, the primary proposed land use within the acquired properties would be training areas and ranges. A discussion of the types of activities that currently occur on Fort Benning's existing training and ranges is included in Section 3.2.1.2.

The land use at Fort Benning is managed in accordance with the Real Property Master Plan (RPMP). Both long- and short-range components are included in the RPMP. Within the RPMP, training areas management is directed by the RTLP Development Plan. The RPMP is designed to be similar to the zoning ordinances of the local municipalities by providing recommendations for the functions that may be sited on the Installation. The goals of the RPMP plan are to ensure that:

- Conflicts among incompatible land uses are minimized or eliminated;
- The functional efficiency of operations on the Installation is improved;
- The appearance of the Installation is improved by buffering or relocating of unattractive industrial, utility, or maintenance functions; and
- Activities are sited properly both by function and by organization.

As part of the RPMP, Fort Benning prepared a five-year Strategic Plan to provide objectives that would further the Installation's overall goals. The objectives included developing compatible land uses within the Installation, maximizing current resources, preparing new land resources, increasing the training capacity of the land, promoting sustainable technologies, and adding additional Soldier and Family support facilities. The RPMP uses these objectives to guide the Installation goals. The goals attempt to reconcile the main mission of training and support at the Installation with the potential environmental impacts from the training events. Impacts to the land use and environment are minimized by using proper management plans to guide land use planning decisions.

3.2.1.2 TRAINING LAND

Fort Benning contains more than 200 field training and maneuver areas for Soldier training, post-BRAC and MCoE actions. Approximately 78 percent of the land at Fort Benning is used for training. Training operations include a variety of weapons systems from small arms to field artillery (USACE, 2007). The tenant, training units, and schools at the Installation require a variety of training areas. The training lands at Fort Benning include company, battalion, and heavy maneuvering training; live-fire training; personnel and equipment drops; and non-live-fire training (e.g., rappel towers and obstacle courses).

Most training activities at Fort Benning consist of personnel movement through wooded and open areas, moving wheeled vehicles over dirt and gravel roads, and establishing bivouac sites. The mechanized infantry and tank units are limited to the areas where the terrain is suitable for heavy vehicle movement. The training activities at these sites include driving tracked vehicles on tank trails, cross-country training, deployment training, which includes the use of helicopter drops for airborne training, and fording streams with heavy vehicles. The engineer units train by constructing and demolishing obstacles, assisting the river crossing operations, and supporting day-to-day operation and maintenance of the Installation (Fort

Benning, 2004a). The heavy maneuver training area is located in the northern section of Fort Benning, while the light maneuver training area is in the south. Light forces can use any of the maneuver training areas when they are available. Table 3.2-1 presents the maneuver training area type, size, and location at Fort Benning. A description of the Army training programs, units, and equipment is presented in Section 2.2.5.

Table 3.2-1. Types of Training Areas at Fort Benning

Training Type	Area Size (acres)	Approximate Location
Light Maneuver	48,171	Southwestern
Heavy Maneuver	62,958	Northeastern
Non-dudded Impact Area	30,342	Northeast and southern, surrounding the permanently dudded area
Permanently Dudded Impact Area	15,554	Northeast, southern, and western

Note: Acreages within the table represent conditions prior to the full implementation of BRAC and MCoE actions.
Source: USACE, 2006

Fort Benning also conducts extensive live-fire training activities. The two types of land use areas that receive live-fire ordnance are dudded and non-dudded impact areas. Access to dudded impact areas is restricted to mission essential activities and coordinated with the controlling range office prior to entry. Non-dudded impact areas can be used for maneuver training at the expense of ceasing live-fire training when the associated SDZs overlap with the training area. At Fort Benning, dudded and non-dudded impact areas are concentrated in three locations on the Installation: the Kilo Range Complex in the northeast corner of the Installation in the vicinity of the K-15 impact area, the Alpha Range Complex in the southern portion of the Installation in the vicinity of the A-20 impact area, and a smaller area in the Malone Range Complex in the western part of the Installation (USACE, 2007).

Table 3.2-2 presents the type, number, and description for each of the range area types. The collective live-fire range areas (i.e., Urban Assault, small Military Urban Terrain, and non-automated Infantry Platoon Battle Course) have the highest demand (USACE, 2007).

Table 3.2-2. Fort Benning Range Training Assets

Type of Range Area	Number	Description
Basic Marksmanship	38	Support the training requirements for pistols, rifles, machine guns (including submachine guns and grenades), shotguns, AT4s (light anti-armor weapons), and M203 grenade launchers.
Direct-fire gunnery	9	Designed for M1 series tank, M2 BFVs, M114 HMMWVs, and associated ordnance.
Collective live-fire	19	Squad-level and higher units have the opportunity to conduct maneuver operations using live ammunition M1 series tanks, M2 BFVs and M114 HMMWVs.
Indirect firing facilities	36	Support field artillery and mortar whose training requirements call for an approved firing point and an appropriate impact area.
Special live-fire ranges	7	Includes EOD range. Live hand grenades and non-live-fire facilities for bayonet training; hand-to-hand combat; mine warfare confidence, obstacle, rappelling, land navigation, and tracked vehicle drivers course; combat trail; and medium/heavy equipment training areas.

Source: USACE, 2007
BFV = Bradley Fighting Vehicle; EOD = Explosive Ordnance Division; HMMWV = High Mobility Multipurpose Wheeled Vehicle

During live-fire training activities, SDZs are created around the firing range and ordnance impact areas to protect personnel from the rounds that may ricochet during range operation. As the size and location of the SDZ is dependent on the training scenarios, the position is recalculated for each training event. During ongoing exercises, the SDZ is closed to all personnel not directly using the range. When a range is not in active use, however, the SDZ is open for maneuver training and land management activities.

Restricted access areas are used for certain training activities that are incompatible with maneuver training activities. Restricted areas such as live-fire ranges, maneuver infrastructure, airfields, and dudded impact areas are located on Fort Benning.

Other non-live-fire facilities such as rappel towers, obstacle courses, ammunition storage areas, and helicopter landing pads are dispersed throughout the Installation.

3.2.1.3 REGIONAL LAND USE PLANS

The ROI for regional land uses includes Russell County in Alabama, Stewart, Chattahoochee, Webster, Marion, Talbot, Harris, and Muscogee counties in Georgia. The land immediately around the Installation is low-density residential, agricultural or other use, industrial, and open space. The primary land use is for timber production. The closest urban center to Fort Benning is Columbus, Georgia, approximately eight miles north of the Main Post (USACE, 2007). Harris County is growing from increased development of the Columbus suburbs. Phenix City, Alabama, is located directly west from Columbus, across the Chattahoochee River. Talbot, Harris, and Muscogee counties (to the north), Marion County (to the west), and Webster and Stewart counties (to the south) have primarily agricultural, forested (timbered), or vacant land, with low-density residential, commercial, and public use spread through several small communities (USAEC, 2008). Russell County is very similar to the Georgia counties in overall land use characteristics.

In Alabama and Georgia, comprehensive planning is primarily conducted at the regional and local level, to ensure that local governments conform to the state's long-term goals and objectives. In Alabama, community planning is delegated to the county level or local jurisdiction (i.e., town or city). The Russell County Planning Commission was formed by Act No. 95-573 of the Alabama Legislature in 1995.

In Georgia, the Department of Community Affairs facilitates the writing of community plans and coordinates between the local governments and state agencies per the Georgia Department of Community Affairs Chapter 110-12-1, *Standards and Procedures for Local Comprehensive Planning "Local Planning Requirements*." The cornerstone of the coordinated planning program is the preparation of a long-range comprehensive plan by each local government in the state. This plan is intended to highlight community goals and objectives as well as determine how the government proposes to achieve those goals and objectives. The Georgia Department of Community Affairs designates levels of analysis appropriate for the county comprehensive plans. For the counties in the TLEP study area, Harris County is required to prepare an intermediate level comprehensive plan; and the remainder of the Georgia counties in the ROI are required to complete a basic level comprehensive plan (USACE, 2007). These comprehensive plans typically consist of three documents: the Community Assessment; Community Participation Plan; and the Community Agenda. The Community Assessment presents a detailed socioeconomic analysis of the county and its constituent cities. The Community Participation Plan outlines the procedures to incorporate community and stakeholder participation in the decision-making process. The Community Agenda provides a summary and plan for the county of the future. Below, the community plans as they relate to land use are discussed for each county in the TLEP study area.

Russell County, Alabama

Approximately 12,880 acres of Fort Benning (southwest of the Chattahoochee River) is within Russell County. Phenix City is the county seat and population center, located directly across the Chattahoochee River from the City of Columbus, Georgia. Russell County does not have a comprehensive land use plan, but is in the process of developing a plan and increasing its zoning authority. Within its jurisdiction,

Phenix City has a 2002 comprehensive plan and zoning rules for residential, commercial, agricultural, and industrial land uses.

The southwestern areas of Russell County are the most rural, with increased commercial and residential development existing around Fort Benning and Phenix City. One of the main land use issues is maintaining land use compatibility with the training and readiness activities at Fort Benning.

The fastest housing growth in Russell County is the community of Fort Mitchell which is south of Phenix City (The Valley Partnership Joint Development Authority, 2009e). The regional growth plan predicts that the areas to the northeast of Russell East and immediately around Fort Benning will have the greatest residential growth in the future (The Valley Partnership Joint Development Authority, 2009e). The farther away from the city boundaries, development is expected to occur immediately adjacent to the main roadways. Within the study area, this would occur primarily along State Route (SR)-431 which extends between Russell West and Russell East to Phenix City; however, no specific plans or projects for development within these areas have been identified.

Stewart County, Georgia

Stewart County is located directly south of Fort Benning. Lumpkin is the county seat, located at the intersections of US-27 and SR-27. Over 90 percent of the county is used for commercial timber farming (Stewart County, 2006). Two timber companies, St. Regis and Georgia Kraft, are the largest landowners in the county (USACE, 2006). Land used for agricultural purposes is also found within the county to a lesser degree. The county has updated the zoning to include industrial parks to be built outside of Richland (The Valley Partnership Joint Development Authority, 2009f). Stewart County also hosts several state parks and a wildlife management area (WMA), which are described in Section 3.2.1.5. Most of the housing in the county is detached single-family homes; however, the community assessment projects that mobile homes and trailers will become the main housing development in the county by 2025 (Stewart County, 2006).

Based on the community planning and assessment documents, the areas immediately around Lumpkin and Richland will have the greatest development (Stewart County, 2006). The projected developed areas are located within and along the southern border of Stewart East, Central, and West; however, no specific plans or projects for development within these areas have been identified. Development further away from the community centers is limited because of the limited access to highways, roads, and public utilities. Keeping growth closer to the main communities, however, supports the county goal to retain a rural character through most of the county (The Valley Partnership Joint Development Authority, 2009f).

Chattahoochee County, Georgia

Fort Benning comprises approximately 80 percent of Chattahoochee County, encompassing the northeast and northwest sections of the county's land. The City of Cusseta is the county seat, located southeast of the Installation border between SR-26 and US-27/280. The City of Cusseta and Chattahoochee County share the same comprehensive plan and community assessment. One of the primary land use issues in Chattahoochee County is maintaining land use compatibility with the training and force maintenance at Fort Benning (The Valley Partnership Joint Development Authority, 2009a). Other main issues include increasing commercial development while protecting natural resources, as commercial and industrial uses currently consist of less than one percent of the land use in the county (Lower Chattahoochee Regional Development Center, 2008a). The main commercial land use in the county is agriculture, which has resulted in a limited tax base for the county.

In the county comprehensive plan community assessment, the county determined that the land within 3,000 feet of the Fort Benning's boundary requires special attention. Encroachment of non-compatible land uses to military boundaries (e.g., residential), is a particular concern between the Installation and the county. Two areas, north of Riverbend Road in Western Chattahoochee County, and north of SR-26 have the greatest potential for land use conflicts with Fort Benning. The proposed transportation routes to

Stewart West and Stewart Central would intersect Riverbend Road. The transportation routes would be located in the western section of Chattahoochee, which is about seven miles southwest of Cusseta (Lower Chattahoochee Regional Development Center, 2008a).

Chattahoochee County has a rural character, with most of the residential areas consisting of single-family detached housing and some manufactured housing. A large-scale unit development community is being planned along Riverbend Road near the Installation, and another two subdivisions are planned east of Cusseta. To balance the land use, the county is seeking to purchase land along US-27 for industrial development (The Valley Partnership Joint Development Authority, 2009a).

Webster County, Georgia

Webster County is located southeast of Fort Benning and does not share a border with the Installation. Preston is the county seat, at the junctions of SRs 41 and 27/US-280. In 2004, Webster County and the Town of Preston wrote a Comprehensive Plan to help control and guide growth and development through 2014 (Webster County Commission & Town of Preston, 2004). The Comprehensive Plan was partially updated in 2009 (Unified Government of Webster County Board of Commissioners, 2009). The county's main land uses are rural, with agriculture and forested land covering over 85 percent of the county. Wetlands and scrub/shrub land makes up 12 percent. Pasture and farmland is concentrated in the southern half of the county (Webster County Commission & Town of Preston, 2004). The commercial and residential areas are concentrated around the major roads through town centers. Webster West is located about four miles northwest of Preston town center.

As of 2004, the main land use issue for Webster County was the relatively few available small parcels of land for purchase. In some cases, investors have purchased large tracts of land from timber companies so that they could subdivide the property for individual use. The scale of the purchases, however, is small in comparison to the size of the county; therefore, the county does not believe future land use would change substantially (Webster County Commission & Town of Preston, 2004). The partial update of the 2009 Comprehensive Plan determined that the location of greatest growth would likely be in the town of Weston along SR-520; however, no specific plans or projects for development within these areas have been identified. The route is heavily traveled, so some commercial businesses have been successful, although the commercial land use area has not increased. The Weston Town Center is located approximately eight miles south of Webster West.

Marion County, Georgia

Marion County is located directly east of Fort Benning. Buena Vista, located at the junction of SRs 137, 41 and 26, is the county seat and the only incorporated municipality in the county. Ninety percent of the county is undeveloped land, as either forest or agricultural land. Most of the development has occurred around Buena Vista, although suburban development has recently increased along the main state routes (The Valley Partnership Joint Development Authority, 2009c). The county is very rural, although a rural water system and additional zoning enforcement has been developed for the unincorporated areas of the county (Marion County Board of Commissioners, 2007).

Marion County and Buena Vista completed a 20-year comprehensive plan in 1995, with a partial update in 2007 (Marion County Board of Commissioners, 2007). A new, complete plan that is consistent with the Georgia Planning Act standards was planned to be released in 2010, but was not available during the preparation of this EIS. The main land use issues for Marion County are the lack of housing opportunities (affordable and single-family), the need for revitalization for areas in Buena Vista, and concern over uncontrolled growth (The Valley Partnership Joint Development Authority, 2009c). The plan anticipated that most development would occur where agriculture and forest properties would be converted to single-family residential development, which has the highest concentration within the northern third of the county around Sunnyside (Marion County Board of Commissioners, 2007). The predicted development area is north of Marion West, and separated by approximately 10 miles. Other, higher-cost developments

have been built along the northern border of the Buena Vista city limits. Marion West is located outside of, but directly west of the southwestern Buena Vista border. Marion County uses standard zoning codes for rural communities, including regulations for development and design of mobile home parks (The Valley Partnership, 2008).

The Marion County government participated with Fort Benning to produce the Joint Land Use Study in 2008. In the study, the northwestern border of Marion County was identified as an area of concern for noise and smoke because of its proximity to the K-15 impact area and existing ranges. The land use in the area is agricultural and residential (The Valley Partnership, 2008). In these areas, the updated county plan suggested that when selling their property, land owners must disclose the potential impacts from range training at Fort Benning (Marion County Board of Commissioners, 2007). The agricultural and rural residential areas described within the Joint Land Use Study are about 10 miles north of Marion West.

Talbot County, Georgia

Talbot County is located on the northeastern boundary of Fort Benning. Talbotton is the county seat, located in the center of the county where SRs 22, 41, and US-80 intersect. There are three other cities in the county, with Geneva located closest to Fort Benning. The county is primarily rural, with large open spaces and little commercial development. Agriculture, in the form of family farms, and commercial timber production are the main land uses (The Valley Partnership Joint Development Authority, 2009g). Commercial centers (e.g., shops and services) are spread throughout the county, but concentrated around the incorporated communities (Talbot County, 2010). Sand quarries are located in the southeastern section near Junction City (Talbot County, 2010). Talbot County uses local agricultural districts and a Transfer of Development Rights program to enforce the rural land use planning (Talbot County, 2010).

The county created a Comprehensive Plan in 2005, prior to the development of the Georgia community planning standards. A partial plan update is due in 2010, with a complete community plan revision to occur in 2015 (USACE, 2007). The plan update was not available during the preparation of this EIS. One of the land issues documented in the plan is to develop land uses that support the county economic development potential, in an effort to diversify the economic base of the county and the cities (Talbot County, 2010). The county is very rural, with agricultural and forest land uses. There is some development around the local communities, including Box Springs, an unincorporated area that is the closest Talbot County community to Fort Benning. Land use issues and goals identified in the Comprehensive Plan include maintaining the residential neighborhoods separate from competing land uses, and balancing the rural land use while encouraging additional development. Talbot West is located mid-county, approximately three miles southwest of Talbotton, one mile northwest of Geneva, and directly north of Box Springs. The Joint Land Use Study estimated that land use in Talbot West would experience low growth in the future (The Valley Partnership, 2008).

Most of the housing is currently concentrated on the western section of the county, and outside of Talbot West. The residential areas consist primarily of single-family homes; however, the number of mobile homes is rising in the county, alongside a decrease in multi-family housing. The county anticipates the most residential growth in the northeast section of the county, in the center of the county along SRs 315 and 208, and around the Fall Line Freeway (US-80) in the southwest (Talbot County, 2010); however, no specific plans or projects for development within these areas have been identified. These communities would be located along the northern and southern border of Talbot West, respectively.

Harris County, Georgia

Harris County is located north of Fort Benning and Columbus/Muscogee County. The county's land use is primarily agriculture, timber production, and some residential areas. Agricultural products include grape vines, livestock, and grain crops. There are also several state and local parks within the county.

The comprehensive plan predicted that most future development would occur below SR-315, in the southern third of the county (Lower Chattahoochee Regional Development Center, 2008b); however, no specific plans or projects for development within these areas have been identified. The Grove, a major mixed use development near the junction of SR-315 and Interstate (I)-185 was approved in 2007, so the future development would most likely look similar (e.g., single-family residential houses on 2-acre tracts of land). The Grove is located approximately 12 miles west of Harris East. Other development would also occur in the northwest section, and along the Chattahoochee River. The northern communities of Pine Mountain and Callaway Gardens were also developed to support increased tourism and vacation homes (USACE, 2006). These communities are about 15 miles northwest of Harris East. Although the county is encouraging economic growth, it also wishes to retain its rural character through its land use planning efforts (Lower Chattahoochee Regional Development Center, 2008b).

The main land use issues identified in the Comprehensive Plan are developing a land use system that retains green and open space, and integrating walking and biking opportunities within the current land use landscape (Lower Chattahoochee Regional Development Center, 2008b). The lack of commercial land use was also identified.

Muscogee County, Georgia

Columbus is the largest population center near Fort Benning. The primary land use concerns for Muscogee County and the City of Columbus are dealing with additional growth and shaping the land use so that a population increase is managed in line with the desired community character, and maintaining land use compatibility with activities at Fort Benning. The local government is using regional growth models to estimate the population increases throughout the county for the next 20 years (The Valley Partnership Joint Development Authority, 2009d). The model predicts population and development increases along the major highways, spreading north and northwest from the City of Columbus. The northern transportation route to Harris East would travel through the western panhandle of Muscogee County and bisect potential future development in the northwest; however, no specific plans or projects for development within these areas have been identified.

In 2008, the unified government of Columbus-Muscogee adopted their state-mandated comprehensive plan. The policies proposed in the plan focused on revitalization and redevelopment to minimize sprawl and maximize the efficiency of public services. The plan places preferences to redevelop existing Columbus neighborhoods and commercial districts over increasing development and suburbanization of the rural areas of the county (Columbus Consolidated Government, 2008). Included in the plan is a Future Land Use Map, which the city and county government will use to guide the overall vision of development in the county. The map breaks the county into 10 character areas based on their residential density, industrial use and land use goals. These character area goals range from becoming a regional tourist destination (Oxbow area) to historic communities (Bibb, Uptown, Midtown), to suburban and rural areas (northeast Columbus, West Panhandle). The Oxbow area and West Panhandle are within proximity to the proposed transportation routes through Chattahoochee County.

Regional Coordination

Communities near Fort Benning are required by the State of Georgia to investigate and make recommendations on proposed zoning decisions on land that is within 3,000 feet of a military base (Georgia Code 36-66-6). Alabama does not have a state code that regulates the zoning around military installations. The decision-making process ensures that zoning changes are compatible with nearby military land use. The main issues addressed for zoning land use, include:

- If the proposal will adversely affect the existing use or usability of nearby property;
- If the affected property has a reasonable economic use as currently zoned;
- If the proposed use could cause safety issues to such items as streets, transportation facilities, utilities, or schools;

- If a land use plan has been adopted and, if so, if the proposed change conforms with the policy and intent of the land use plan; and
- If there are existing or changing conditions that would affect the use of nearby property.

At least 30 days prior to a zoning hearing, the planning entity must request that the military commander provide "written recommendation and supporting facts relating to the proposed land use change." If the military commander does not submit a response by the date of the public hearing, then the proposed zoning change is presumed to not have an adverse effect. Any information received shall become part of the public record. One of the main land use goals under the Fort Benning RPMP is to work with the local jurisdictions to promote compatible land uses in areas around the Installation border. As such, Fort Benning participates with the Valley Partnership Joint Development Authority, a multi-governmental entity formed from local governments, including West Point, Manchester, Phenix City, and Chattahoochee, Harris, Marion, Muscogee, Talbot, and Taylor counties. The Valley Partnership Joint Development Authority coordinates the regional land use. The Joint Development Authority is managing two planning efforts, the Regional Growth Management Plan and the Fort Benning Joint Land Use Study. These tools provide options to minimize land use conflicts between Fort Benning and the surrounding communities.

To assist the communities in the land use zoning decisions, the Joint Land Use Study describes the land use and noise zones that the Army uses to predict the impacts from noise (The Valley Partnership, 2008). Section 3.5 describes the process of generating the noise zones and Fort Benning's current noise management policies. The Noise Zones and Land Use Planning Zone (LUPZ) maps are used within the Regional Growth Management Plans to minimize future land use conflicts.

Army Compatible Use Buffer

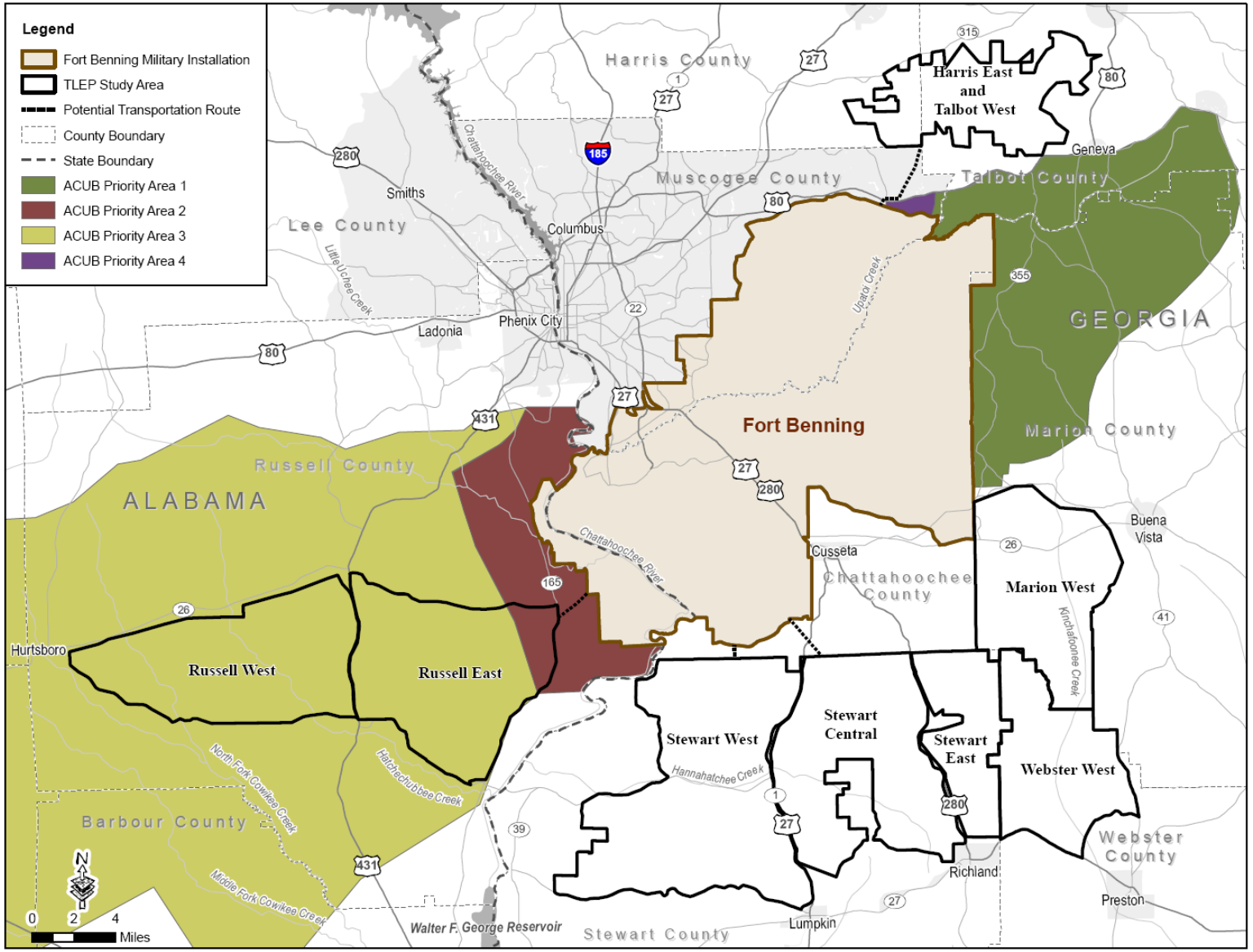
Through its partnership with The Nature Conservancy (TNC), Fort Benning actively pursues off-Post conservation measures, not only to buffer the Installation boundary from land uses incompatible with adjacent military training and land management, but also to protect and restore habitat for listed, imperiled, or at-risk species that impact Fort Benning's mission. The ACUB Program at Fort Benning was approved and funded by the Army in 2006. The properties under ACUB are either placed into conservation easement or are purchased by TNC or others and are then sold to conservation buyers encumbered with permanent easements. ACUB lands are not Federally owned; the Army holds only a contingency right to ensure that training buffer and conservation purposes are met. Figure 3.2-2 shows ACUB priority planning areas in relationship to Fort Benning and the TLEP study area. ACUB planning areas have been divided into priority areas, with Priority 1 areas having the highest priority. The ACUB priority areas were determined based upon estimates of conservation potential and encroachment buffer value. The ACUB areas were prioritized for planning purposes only and do not indicate that TNC will pursue any specific land areas nor that landowners in those areas are willing to place lands into conservation easements or TNC ownership.

3.2.1.4 REGIONAL LAND USES

There is no available geographic information systems (GIS) data for the designated land use types for the counties that surround Fort Benning. Therefore, land cover types (as mapped by the USDA) and land ownership information are used to infer the current land uses in the TLEP study area. The following 6 land use types (in italics) were inferred from the 14 USDA land cover categories (indicated in parentheses): *Urban/Developed Open Space* (Developed Open Space, Low and Medium Intensity Developed, and Bare Land); *Forest/Timber Production* (Deciduous/Mixed Forest and Evergreen Forest); *Scrub-Shrub/Past Timber Production/Timber Management* (Scrub/Shrub); *Agriculture* (Grassland/Herbaceous, Cultivated and Pasture/Hay); *Wetlands* (Woody Wetlands and Herbaceous Wetlands); and *Water* (Open Water).

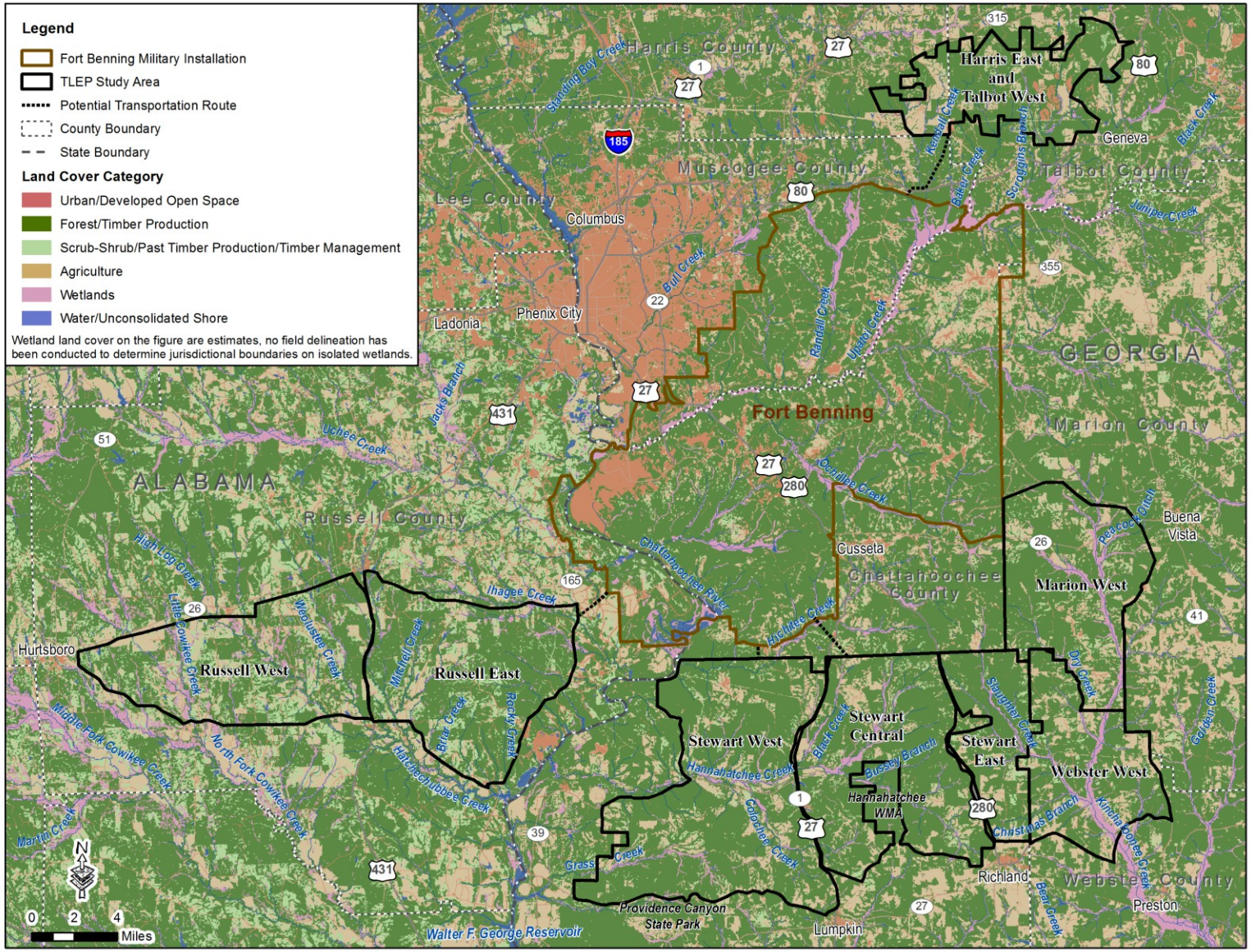
The majority of the land cover in the areas surrounding Fort Benning is identified as forested (56 to 72 percent), which includes upland hardwood, pine forests, and mixed vegetation forests. These areas are suitable for timber production. A smaller percentage of the land is covered in scrub-shrub (2 to 16 percent). Some of the forested areas within the region are likely under timber management and have either been timber harvested in the past or have the potential to be harvested in the future. Scrub-shrub areas are likely recently cleared from timber production. Marion and Webster counties both have hardwood and softwood mills to manage the timber harvests for the region (Georgia Forestry Commission, 2009). Stewart County produces the most timber products in the TLEP study area, with 16,858 thousand cubic feet of softwood and hardwood products produced in 2001 (Johnson and Wells, 2004). A smaller component (10 to 12 percent) of the land within the TLEP study area is used for agricultural practices. Agriculture in the region consists primarily of small, private farms and hay and grassland pasture for livestock. No major farming or crop operations occur within the TLEP study area. Urban, developed and open, non-agricultural space consists of 2 to 9 percent, with more developed areas in Russell and Chattahoochee counties. The distribution of land use types within the study area is depicted in Figure 3.2-3. Table 3.2-3 presents the land use acreage within the TLEP study area. The land uses in the TLEP study area are weighted towards the timber production and agricultural uses, as the screening criteria avoided urban areas and housing development areas.

In comparison, Table 3.2-4 presents the acreage and percentage of the land use within the entire counties (including land within Fort Benning) that are within the TLEP study area. In general, the TLEP study area contains a lower percentage of urban/developed space and higher percentages of forest and scrub-shrub.



Source: Fort Benning, 2011

Figure 3.2-2. Fort Benning ACUB Program Priority Planning Areas



Source: NRCS, 2001

Figure 3.2-3. Land Cover at Fort Benning and the Surrounding Region

Table 3.2-3. Land Use Percentages for the TLEP Study Area

Land Use Type	TLEP Study Area Location								Regional[1]
	Russell County		Stewart County			Webster County	Marion County	Harris County & Talbot County	
	West	East	West	Central	East	West	West	Harris East & Talbot West	
Urban/Developed Open Space	4	4	1	1	<1	2	2	5	5
Forest/Timber Production	50	68	77	76	75	63	71	69	63
Scrub-Shrub/Past Timber Production/Timber Management	20	14	3	3	4	3	4	3	6
Agricultural	16	9	15	14	15	21	15	21	19
Wetlands	10	4	4	5	4	11	9	2	6
Water	<1	1	<1	<1	1	<1	<1	<1	1
Approximate Acreage	40,500	40,800	57,100	40,100	16,800	25,700	33,300	24,500	1,425,953

Source: NRCS, 2001; 2006a; 2006b; 2006c; 2006e; 2009a; 2009b

[1]The combined land area of Russell, Stewart, Webster, Marion, Harris, and Talbot counties.

Table 3.2-4. Land Use Percentages in the TLEP Study Area Counties

Land Use Type	Russell	Stewart	Webster	Marion	Harris	Talbot
Urban/Developed Open Space	9	2	3	3	7	5
Forest/Timber Production	52	69	56	63	69	70
Scrub-Shrub/Past Timber Production/Timber Management	16	3	2	3	1	2
Agricultural	15	20	29	25	17	17
Wetlands	7	5	10	5	3	5
Water	1	1	<1	<1	3	<1
Total Acres	414,305	297,200	134,663	235,637	161,804	182,344

Source: NRCS, 2001; 2006a; 2006b; 2006c; 2006e; 2009a; 2009b

3.2.1.5 RECREATION

Fort Benning

The Sikes Act, 16 USC 670a, as amended in November 1997, requires public access to military installations to the extent that such use is subject to the military mission and the protection of fish and wildlife resources. Public access is subject to requirements deemed necessary to ensure safety and military security.

The recreation and leisure programs on Fort Benning are managed and administered by the Directorate of Communities (DCA), under the Morale, Welfare, and Recreation (MWR) Program. Undeveloped lands used for recreation areas at Fort Benning are called open space and can include golf courses, ball fields, or general use areas. Common recreational activities at the Installation include use of the pistol club range, bird watching, fishing, hunting, and hiking. As available land is a premium within the Installation, recreational areas are often located adjacent to training areas. Recreation areas at Fort Benning include Uchee Creek Recreation Area, Kings Pond Recreation Area, and Twilight Pond; all of which border training lands. The Community Recreation Division of the DCA manages the recreation areas. The MWR also sponsors fitness programs, child care programs, libraries, club activities, etc. within the cantonment areas.

The Uchee Creek Recreation Area, on the southwestern side of Fort Benning, is the most developed recreation area at the Installation. The recreation area includes the Uchee Creek Army Campground and Marina, a 385-acre park that contains a mixture of recreational vehicle sites, rustic cabins, chalets, and tent sites in addition to boat slips. Active duty and retired military personnel, DoD civilians, their Families, and other eligible personnel are allowed to use the facilities at the campground and marina. Other recreational areas at the park include docking facilities, an activity center, an archery range, basketball and volleyball courts, ball fields, picnic areas, playground equipment and shuffleboard courts (Fort Benning, 2010a).

Currently, only active duty and retired military, DoD employees working on or retired from Fort Benning, National Guardsman and Reservists residing around Fort Benning, and family members, and guests of the proceeding, are authorized to engage in hunting and fishing activities on-Post.

Fishing and recreational boating is allowed in the Chattahoochee River near undeveloped Installation lands. Fishing ponds are available to authorized personnel, as long as they obtain a permit from Fort Benning and a fishing license from the Georgia Department of Natural Resources (GDNR) or Alabama

Department of Conservation and Natural Resources (ADCNR) (USACE, 2007). Access to the fishing ponds is dependent on training area schedules. The DCA sponsors monthly fishing tournaments at the Uchee Creek Recreation Area (Fort Benning, 2010b).

TLEP Study Area

Recreation opportunities/areas in the counties around Fort Benning revolve around outdoor activities in parks, at Fort Benning, and other areas. County-run public parks often have mixed-use activities on-site, including tennis courts, ball fields, skateboard facilities, and locations available for picnics. Some parks have nature and fitness trails for public use. Golfing, camping, bird watching, boating, and other water activities are also popular in the region.

Game hunting occurs within the TLEP study area on WMAs, commercial timber lands, and on game preserves. The Georgia TLEP study area is located in the GDNR Game Management Region 5. Deer, feral hogs, wild turkeys, bobwhite quail, waterfowl, and various small game are the common game animals for hunting in the region. Hunting seasons depend on the type of weapon and prey. Deer hunting is permitted in the TLEP study area from mid-October through mid-January within both Georgia and Alabama. Archery, primitive weapons (powder gun), and deer hunting with dogs have their own season dates. Small game trapping is also allowed from December through February.

There are several public recreational areas in the TLEP study area counties; however, these are all located outside of the lands being considered for potential acquisition. In Stewart County, the Florence Marina State Park and Providence Canyon State Park are state-run recreational areas for the public's use. The Florence Marina State Park is situated at the northern edge of the Walter F. George Reservoir, along the border between Georgia and Alabama. It is adjacent to a natural deep-water marina and a lighted, accessible deep-water fishing pier. The state park has campsites, cottages, a picnic shelter and one group shelter. The park also hosts the Kirbo Interpretive Center, which instructs visitors on Native American, natural and local history (GDNR, 2010). Boating, geocaching (using a global positioning system (GPS) unit to find hidden objects), fishing, birding, and miniature golf are the most common activities at this state park. Florence Marina State Park is about two to three miles from the southwestern edge of Stewart West and four miles southeast of Russell East.

Providence Canyon State Park is 1,003 acres of park in western Stewart County. The park is known for its 150-foot gullies that formed from historic poor farming practices. The state park has two picnic shelters, two primitive group camping sites, and six backcountry camping sites. Primary activities in the park include hiking along three miles of managed trails or seven miles of backcountry trails, picnicking, and stargazing. The park schedules regular programs to showcase the geology or stargazing. The state park is located adjacent to Stewart West's southern border.

River Bend Park is the main recreation area in Chattahoochee County. The park is a public access facility on the shores of the Walter F. George Reservoir. Main activities at the park include boating, birding, and primitive camping. One of the development goals of Chattahoochee County is to develop more biking trails around Cusseta and on abandoned rail beds (Lower Chattahoochee Regional Development Center, 2008a). River Bend Park is located about 3.5 miles west of the proposed transportation route to the Stewart West. Stewart West also borders the southeastern edge of the park boundary.

The Sprewell Bluff State Outdoor Recreation Area is 1,372 acres and located in the northeastern edge of Talbot County, approximately 14 miles northeast of Talbot West. Main activities include boating, fishing, hiking, picnicking, and birding. The recreation area has a boat ramp, playground, horseshoe pit and a volleyball court.

F.D. Roosevelt State Park is 9,049 acres of wilderness in northern Harris County. The park has two lakes, extensive tent, trailer and recreational vehicle campsites, backcountry camping, cottages, picnic shelters, group shelters, and a rustic group campground. Main activities at the park include geocaching, hiking and backpacking along 42 miles of trails, fishing, boating, horseback riding, and stargazing. The park rangers

also organize annual deer hunts to keep the deer population in a manageable size. Nearby is Roosevelt's Little White House Historic Site, which has picnicking areas and tours of the site's buildings (GDNR, 2010). The state park is located about 15 miles north of Harris East. Harris County also contains part of Callaway Gardens.

Wildlife Management Areas

The Hannahatchee WMA, a 5,600-acre section of wilderness is located directly adjacent to Stewart Central in Stewart County (see Figure 3.2-3). The management area hosts camping facilities, a hunting check-in station, shooting range and dove fields. The GDNR Wildlife Resources Division manages the trails and roads on the Hannahatchee WMA. Recreational activities at the Hannahatchee WMA include pre-season scouting (hunting) and year-round hiking, picnicking, and canoeing. The unstaffed shooting range consists of a 175-yard and 35-yard range, and is restricted to handguns only. Horseback riding and bicycling are allowed on open and improved roads, and approved trails, but are closed during some hunting seasons. Hunting and fishing with a state license is also allowed in the Hannahatchee WMA. Deer, feral hog, and turkey are the main game animals in the Hannahatchee WMA.

3.2.1.6 PRIME FARMLAND

Prime farmland is protected under the Farmland Protection Policy Act (FPPA) of 1981. For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. The intent of the act is to minimize the extent to which Federal programs contribute to the unnecessary or irreversible conversion of farmland to non-agricultural uses. The act also ensures that Federal programs are administered in a manner that, to the extent practicable, would be compatible with private, state, and local government programs and policies to protect farmland. The NRCS is responsible for overseeing compliance with the FPPA and has developed rules and regulations for implementing the Act (7 CFR 658). Farmland does not include land already in or committed to urban development or water storage. Land with an urban land use (per 7 CFR 658, typically land with a density of 30 structures per 40-acre area), however, cannot be classified as prime farmland. Land that supports timber for logging and contains prime farmland or farmland soils of statewide importance is considered farmed land under the FPPA.

> ***Prime Farmland:*** Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses (the land could be cropland, pastureland, range-land, forest land, or other land, but not urban built-up land or water) (7 CFR 658).

As stated in Section 3.2.1.4, no land use data exists for the TLEP study, therefore, land cover types mapped by the USDA and land ownership information were used to infer the current land uses in the TLEP study area. As detailed land use information was not available, NRCS soils mapping was used to assess the distribution of soils protected under the FPPA, including the occurrence of prime farmland soils and farmland soils of statewide importance (see Appendix C regarding prime farmland soils or farmland soils of statewide importance classification for specific soil map units). Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources. Farming of these soils results in the least damage to the environment. Soils categorized as prime farmland soil usually receive an adequate and dependable supply of moisture from precipitation, the pH level of the soils is acceptable, and the soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slopes range mainly from 0 to 5 percent (7 CFR 658). Farmland soils of statewide importance include those that do not meet the criteria as prime farmland soils, but economically produce high yields of crops when treated and managed according to acceptable farming methods. Criteria for defining and delineating this land are determined by the appropriate state agency or agencies. Some may produce yields as high as prime farmland soils if conditions are favorable. These soils are identified

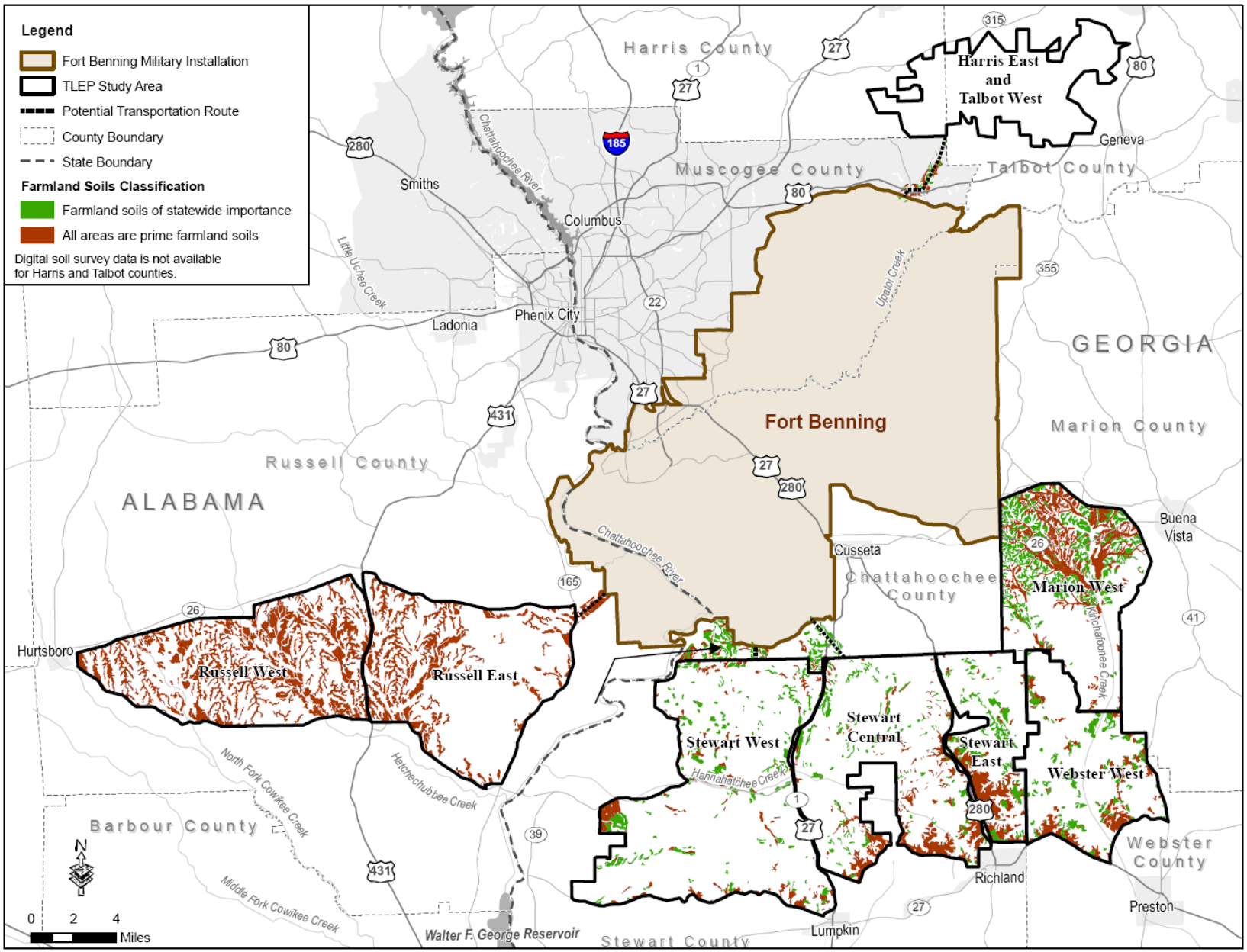
within the NRCS county soil surveys and within the TLEP study area occur within Stewart, Chattahoochee, Marion, and Webster counties.

Table 3.2-5 summarizes the extent of prime farmland soils and farmland soils of statewide importance within the TLEP study area. Areas that did not consist of those soil types are shown as "not classified." The alternative study areas with the highest percentage of prime farmland soils are Russell West (31 percent), Marion West (19 percent), Russell East (17 percent), and Stewart East (15 percent). The alternative study area with the highest percentage of farmland soils of statewide importance is Marion West (15 percent). The alternative study area with the largest amount of soils that are not classified as prime farmland or farmland of statewide importance are Stewart Central (86 percent), Webster West (83 percent), and Russell East (83 percent). Figure 3.2-4 shows the distribution of prime farmland soils and farmland soils of statewide importance within the TLEP study area.

Table 3.2-5. Prime Farmland Soils and Farmland Soils of Statewide Importance in the TLEP Study Area

TLEP Study Area Location	Farmland Soils Classification	Area (percentage)
Marion West	All areas are prime farmland soils	19
	Farmland soils of statewide importance	15
	Not classified	66
Stewart Central	All areas are prime farmland soils	10
	Farmland soils of statewide importance	4
	Not classified	86
Stewart East	All areas are prime farmland soils	15
	Farmland soils of statewide importance	10
	Not classified	75
Stewart West	All areas are prime farmland soils	4
	Farmland soils of statewide importance	5
	Not classified	91
Webster West	All areas are prime farmland soils	9
	Farmland soils of statewide importance	8
	Not classified	83
Russell East	All areas are prime farmland soils	17
	Not classified	83
Russell West	All areas are prime farmland soils	31
	Not classified	69
Harris East and Talbot West	Spatial data for Harris and Talbot County soil surveys is currently being developed by the NRCS and is not available for release and incorporation into this Draft EIS. The Final EIS will be updated with this information if it becomes available.	

TLEP = Training Land Expansion Program



Source: NRCS, 2001; 2006a; 2006b; 2006c; 2006e; 2009a; 2009b

Figure 3.2-4. Prime Farmland Soils and Farmland Soils of Statewide Importance within the TLEP Study Area

3.2.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to land use that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to land use would occur if the action substantially conflicts with a community or county comprehensive plan; if greater than 10 percent of a county's prime farmland soils and farmland soils of statewide importance would be converted to non-agricultural uses; or if the action would restrict access to public recreation areas.

3.2.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. Negligible impacts to land use would be anticipated for land within the TLEP study area; however, intensity of training and scheduling constraints would continue to occur at Fort Benning. This alternative would result in not moving the ARC field training off of Fort Benning to newly acquired land, requiring the Army to pursue other options as discussed in Section 2.3.9. Additionally, Fort Benning would not be able to support the doctrinal maneuver requirements for its operational units since additional land is required to do so; units would, therefore, be constrained by a lack of available training land, and the need to use work-arounds to train Soldiers to standard will become progressively more pronounced as an increasing number of Soldiers attempt to meet their training requirements.

3.2.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3). Table 3.2-6 presents the approximate acreage distribution of land use types within Alternative 1 if the maximum amount of land (i.e., 75,800 acres) was acquired. Forest and agricultural would be the primary land use affected through Army acquisition and preparation for training. Existing land use within Alternative 1 is similar to the rest of the region (see Tables 3.2-3 and 3.2-4).

Table 3.2-6. Alternative 1 Approximate Land Use Distribution

Land Use Type	Acreage
Urban/Developed Open Space	1,348
Forest/Timber Production	52,101
Scrub-Shrub/Past Timber Production/Timber Management	2,775
Agricultural	12,912
Wetlands	6,496
Water	168
Total	**75,800**

Source: NRCS, 2001; 2006a; 2009a

Overall, potential long-term adverse impacts to land use would occur from the implementation of Alternative 1. The primary impact would result from conflicts with the Marion and Stewart County comprehensive plans, removing private lands from recreational use, and converting prime farmland soils and farmland soils of statewide importance to Federal ownership and training land use.

3.2.2.2.1 FEDERAL ACQUISITION OF LAND

Marion, Webster, and Stewart counties have land use plans as ratified by their respective county government. Webster County is primarily rural; therefore, Alternative 1 would not affect county land use planning. The acquisition of Alternative 1 lands within Marion and Stewart counties, however, would conflict with county land use planning and future growth areas. The land use planning in these counties is based on predictive modeling for commercial and residential growth in the future. The City of Buena Vista, the Marion County seat, is located directly east of Marion West. New single-family residential developments have been constructed north and south of the city (Marion County Board of Commissioners, 2007) outside of Alternative 1. In Stewart County, most of the development is predicted to occur around the Richland and Lumpkin communities, and along SR-27, which connects the communities (Stewart County, 2006). Stewart East would encroach on the existing Richland residences. As these plans contain long-range growth planning, and no specific development related to these plans has been identified within the proposed locations for land acquisition, overall potential adverse impacts would be less than significant (minor to moderate adverse impacts).

Adverse impacts would also occur from withdrawal of land from recreational use. Hunting and outdoor recreation frequently occurs with permission of the land owner. Alternative 1 would involve acquisition of approximately 75,800 acres of land in Marion, Webster, and Stewart counties for Army training use. As a result, the recreational use for hunting and other activities would be curtailed on the property unless the Army chooses to allow public access within the newly acquired property (see Section 3.2.2.2.2 regarding Army management). As the implementation of Alternative 1 would not be anticipated to restrict access to public recreation areas, adverse impacts to recreation would be less than significant (minor to moderate adverse impacts).

An estimated 11,160 acres of prime farmland soils and 8,730 acres of farmland soils of statewide importance are associated with Alternative 1. Conversion of actively timbered or agricultural land that contains prime farmland soils or farmland soils of statewide importance would require a Land Evaluation and Site Assessment (LESA) review to establish a farmland conversion impact-rating score. Once Fort Benning has determined the parcels to be acquired, Fort Benning would coordinate with the NRCS to complete form AD-1006 (Farmland Conversion Impact Rating) for each individual parcel containing prime farmland soil and farmland soils of statewide in timbered/agricultural production. The form assesses non-soil related criteria such as the potential for impact on the local agricultural economy if the land converts to non-farm use, and the compatibility with existing agricultural use. According to NRCS soil survey data, Marion, Webster, and Stewart counties contain approximately 147,699 acres of prime farmland soils and 61,562 acres of farmland soils of statewide importance (NRCS, 2006a; 2009a; 2009b). Alternative 1 accounts for approximately 8 percent of the total prime farmland soils in these counties and 14 percent of farmland soils of statewide importance, which would represent a significant adverse impact to farmland soils of statewide importance as greater than 10 percent of county land with these farmland soils would be impacted.

3.2.2.2.2 ARMY MANAGEMENT

Newly acquired land would be managed for Army training land use and overall impacts due to Army management would be negligible. The additional acreage acquired would be added to the Army-owned land inventory maintained by DPW. Overall training land use within newly acquired land would be tracked by the Directorate of Plans, Training, Mobilization, and Security (DPTMS) to depict training area land and its availability to support training.

Adverse impacts to recreational opportunities may be reduced through providing public access and recreational opportunities within the newly acquired lands. Section 3.2.1.5 discusses existing recreation opportunities on Fort Benning and management of recreation areas which is primarily restricted to DoD cardholders. After training activities are implemented, this policy may be expanded to include non-DoD

cardholders on newly acquired lands to mitigate for the loss of recreational opportunities from Federal acquisition.

Army management of biological resources, including forest management, would likely create more suitable habitat for wildlife and increase wildlife species diversity and abundance. This would be an improvement for active (e.g., hunting) and passive (e.g., birdwatching) conditions within the newly acquired lands by increasing biological diversity compared to those lands that are currently managed for timber (see Section 3.8). Although the extent of recreational opportunities within the newly acquired land cannot be determined until later in the planning process, Fort Benning would continue to work with the local community to maximize hunting and other recreational opportunities in ways that are compatible with Fort Benning's need to meet Soldier training requirements to mitigate for the loss of recreational areas.

3.2.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

There would be minor, short-term adverse impacts to land use from construction and training infrastructure upgrades. Although the Army would endeavor to use existing trails and roads within Alternative 1, portions of the existing undeveloped forested and scrub-shrub areas would be cleared and prepared for training events. Some vegetation would be removed, the ground surface graded, and roads constructed or upgraded as needed. The impacts to land use would be reduced by upgrading existing infrastructure instead of creating new infrastructure, where feasible. The Fort Benning RPMP would be updated to reflect the acquisition of additional land and would guide the siting of facilities and management procedures to reduce the potential for conflicts on the adjacent land uses from Army training. In addition, land formerly managed for commercial timber production would be managed for training and for new native growth where construction activities are not planned. These activities would be compatible with the Army training land use designation that is planned for the newly acquired land.

3.2.2.2.4 ARMY TRAINING

Fort Benning units (e.g., the MCoE, 3rd HBCT/3rd ID, and the 75th Ranger Regiment) could conduct training on acquired land under the Proposed Action. Training at the newly acquired property would include tracked, Stryker, and wheeled vehicle, maneuver, vehicular training, and dismounted Soldier training units that habitually train on the Installation. Table 2.2-1 (see Section 2.2.5.1) describes the equipment used by the units that could train at the new locations under the Proposed Action. As stated in Chapter 2, the establishment of new UXO/dudded impact areas within the newly acquired lands is not part of the current Proposed Action; however, this may be a future action which would require follow-on NEPA analysis.

Army training would cause potential long-term and localized minor adverse impacts to land use through training-related disturbances such as soil erosion (see Section 3.6). The additional land, however, would ease existing scheduling conflicts between Fort Benning tenant units and allow ARC training to move off the existing Fort Benning footprint.

As previously stated, Georgia Code 36-66-6 requires notice of future development involving zoning changes within 3,000 feet of military installations to avoid land use conflicts between an installation and its surrounding communities. Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified. Extending the ACUB plan to areas around the newly-acquired training land could also help to minimize long-term land use conflicts. Overall land use conflicts, therefore, are anticipated to be minor to moderate.

3.2.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, conversion, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3). Table 3.2-7 presents the approximate acreage distribution of land use types within Alternative 2 if the maximum amount of land (i.e., 81,300 acres) was acquired. Similar to Alternative 1, the changes to land use are not anticipated to affect the overall regional composition of land use shown in Table 3.2-3; however, prime farmland soils would be involved. Timber forests and agriculture would be the primary land use affected through Army acquisition and conversion of land use for training.

Table 3.2-7. Alternative 2 Approximate Land Use Distribution

Land Use Type	Acreage[1]
Urban/Developed Open Space	3,252
Forest/Timber Production	47,994
Scrub-Shrub/Past Timber Production/Timber Management	13,812
Agricultural	10,152
Wetlands	5,682
Water	361
Total	**81,300**

Source: NRCS, 2001; 2006b

[1]Acreage values include the potential transportation route to Russell East.

Impacts to land use would be similar to those described under Alternative 1 (Section 3.2.2.2) and would result in negligible impacts from Army management, short-term minor adverse impacts from construction, and long-term minor to moderate adverse impacts from training. Also similar to Alternative 1, adverse impacts would occur from acquisition as a result of recreational land use withdrawal, while a potentially significant adverse impact would occur from conversion of greater than 10 percent of county prime farmland into Army training use.

Similar to Alternative 1, adverse impacts to recreational opportunities may be reduced through providing public access and recreational opportunities within the newly acquired lands. After training activities are implemented, existing Fort Benning recreation policies may be expanded to include non-DoD cardholders on newly acquired lands to mitigate for the loss of recreational opportunities from Federal acquisition.

Unlike the counties affected by Alternative 1, Russell County does not have a comprehensive land use plan; therefore, no impacts would occur to local county planning. The county, however, was included in the Valley Partnership Regional Growth Plan for the areas around Fort Benning. The plan predicts that development would primarily occur around Phenix City, but also extending down SR-431, which bisects Russell West and Russell East. As this plan contains long-range growth planning, and no specific development related to this plan has been identified within the proposed locations for land acquisition, overall potential adverse impacts would be minor to moderate.

Additionally, adverse impacts could occur to adjacent landowners during training activities within the newly acquired land. Although Alabama does not have a law requiring coordination of rezoning near military installations, residential land uses around the Installation lands during training would potentially be an incompatible land use due to factors such as noise and smoke generated during training. Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified.

Extending the ACUB plan to areas around the newly-acquired training land could also help to minimize long-term land use conflicts.

An estimated conversion of 19,490 acres of prime farmland soils into Army training land would occur from implementation of Alternative 2. Similar to Alternative 1, the conversion of actively timbered or agricultural land that contains prime farmland would require a LESA review, completion of form AD-1006, and coordination with NRCS. Russell County contains 103,016 acres of prime farmland soils (NRCS, 2006b). The prime farmland soils in Alternative 2 account for approximately 19 percent of the total prime farmland soils in Russell County, which would constitute a significant adverse impact.

3.2.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, conversion, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3). Unlike the other alternatives, Alternative 3 is larger (97,200 acres) than the approximately 82,800 acres of new training lands being considered as part of the Proposed Action. As only a portion of Alternative 3 would be acquired, a scale factor was used to determine the potential for land use to be affected in Stewart County. A scaling factor of 0.85 (ratio between the 82,800 acres and the 97,200-acre total of Alternative 3) determined the estimated acreage composition of land use likely within an 82,800-acre land area associated with Alternative 3 (Table 3.2-8). The land use distribution for Alternative 3 is similar to the other alternatives. Most of the land use is weighted towards forest/timber production and agriculture within Alternative 3, which reflects the dominance of timber farming occurring in Stewart County. Scrub-shrub/past timber production/timber management and urban/developed open space inhabits a relatively lesser percentage of land use for this alternative.

Table 3.2-8. Alternative 3 Predicted Land Use Distribution

Land Use Type	Estimated Acreage[1,2]
Urban/Developed Open Space	921
Forest/Timber Production	63,430
Scrub-Shrub/Past Timber Production/Timber Management	2,305
Agricultural	12,283
Wetlands	3,759
Water	101
Total	**82,800**

Source: NRCS, 2001; 2009a

[1]Predicted acreage is based upon the maximum land acquisition scenario of 82,800 acres, using a scaling factor of 0.85.

[2]Acreage values include the two potential transportation routes through Chattahoochee County.

Impacts to land use would be similar to those described under Alternative 1 (Section 3.2.2.2) and would result in negligible impacts from Army management, short-term minor adverse impacts from construction, and long-term minor to moderate adverse impacts from training. Also similar to Alternative 1, adverse impacts would occur from acquisition as a result of the withdrawal of recreational land from use and potentially significant adverse impacts would occur from conversion of farmland soils of statewide importance into Army training use.

Similar to Alternative 1, adverse impacts to recreational opportunities may be reduced through providing public access and recreational opportunities within the newly acquired lands. After training activities are implemented, existing Fort Benning recreation policies may be expanded to include non-DoD cardholders on newly acquired lands to mitigate for the loss of recreational opportunities from Federal acquisition.

Stewart County's land use plan anticipates that most of the growth would occur in the state highway corridor between Richland and Lumpkin. By implementing Alternative 3, the growth of these communities could be restricted from extending to the north as indicated in the county land use plan. As this plan contains long-range growth planning, and no specific development related to this plan has been identified within the proposed locations for land acquisition, overall potential adverse impacts would be minor to moderate.

In addition, sections of Richland and Lumpkin are located within a half of mile of Alternative 3 borders, which would potentially place the existing communities in conflicts with training activities. Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified. Extending the ACUB plan to areas around the newly-acquired training land could also help to minimize long-term land use conflicts.

Stewart Central surrounds the Hannahatchee WMA to the north, east, and west. Although the Federal acquisition of Stewart Central would not limit the public use of the Hannahatchee WMA, training could increase conflicts with the rural and remote land use of the WMA, constituting moderate adverse impacts to recreation.

An estimated 5,350 acres of prime farmland soils and 3,790 acres of farmland soils of statewide importance are associated with Alternative 3. Similar to Alternative 1, conversion of actively timbered or agricultural land that contains prime farmland soils or farmland soils of statewide importance would require a LESA review, completion of the form AD-1006, and coordination with NRCS. According to NRCS soil survey data, Stewart County contains approximately 70,853 acres of prime farmland soils and 21,982 acres or farmland soils of statewide importance (NRCS, 2009a). Alternative 3 accounts for approximately 8 percent of the total prime farmland soils and 17 percent of farmland soils of statewide importance in Stewart County, which would represent a significant adverse impact to farmland soils of statewide importance as greater than 10 percent of county land with these farmland soils would be impacted.

3.2.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, conversion, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Impacts to land use would be similar to those described under Alternative 1 (Section 3.2.2.2) and would result in negligible impacts from Army management, short-term minor adverse impacts from construction, and long-term minor to moderate adverse impacts from training. Also similar to Alternative 1, adverse impacts would occur from acquisition as a result of the withdrawal of recreational land from use. Unlike Alternatives 1, 2, and 3, impacts from conversion of prime farmland and farmland of statewide importance into Army training use would be less than significant (moderate). Similar to Alternative 1, adverse impacts to recreational opportunities may be reduced through providing public access and recreational opportunities within the newly acquired lands. After training activities are implemented, existing Fort Benning recreation policies may be expanded to include non-DoD cardholders on newly acquired lands to mitigate for the loss of recreational opportunities from Federal acquisition.

Table 3.2-9 presents the approximate acreage distribution of land use types within Alternative 4 if the maximum amount of land (i.e., 80,900 acres) was acquired. Similar to the other alternatives, the changes to land use are not anticipated to affect the overall regional composition of land use shown in Table 3.2-3. Timber forests and agriculture would be the primary land use affected through Army acquisition and conversion into training.

Table 3.2-9. Alternative 4 Approximate Land Use Distribution

Land Use Type	Acreage[1]
Urban/Developed Open Space	2,033
Forest/Timber Production	58,220
Scrub-Shrub/Past Timber Production/Timber Management	6,915
Agriculture	9,286
Wetlands	3,637
Water	809
Total	**80,900**

Source: NRCS, 2001; 2006b; 2009a

[1]Acreage values include the potential Stewart Central transportation route through Chattahoochee County.

As stated under Alternative 3, Stewart County's current land use plan anticipates that most of the growth would occur in the state highway corridor between Richland and Lumpkin. By implementing Alternative 4, the growth of these communities could be restricted from extending to the north. As stated under Alternative 2, Russell County does not have a comprehensive land use plan; however, the county was included in the Valley Partnership Regional Growth Plan for the areas around Fort Benning. The plan predicts that development would extend down SR-431, near Alternative 2. As these plans contain long-range growth planning, and no specific development related to these plans has been identified within the proposed locations for land acquisition, overall potential adverse impacts would be minor to moderate.

Additional impacts could occur to adjacent landowners during training activities within the newly acquired land. Residential land uses around the Installation lands during training may be an incompatible land use due to factors such as noise and smoke generated during training. Stewart Central also surrounds the Hannahatchee WMA to the north, east, and west. As discussed in Alternative 3, public access to the recreational facilities at the WMA would not be restricted from the transition of Stewart Central to lands under Army use; however, there could be increased conflicts with the rural and remote land use of the WMA. Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified. Extending the ACUB plan to areas around the newly-acquired training land could also help to minimize long-term land use conflicts.

An estimated 10,945 acres of prime farmland soils and 1,605 acres of farmland soils of statewide importance are associated with Alternative 4. Similar to the other Proposed Action alternatives, conversion of actively timbered or agricultural land that contains prime farmland would require a LESA review, completion of the form AD-1006, and coordination with NRCS. According to NRCS soil survey data, Russell and Stewart counties combined contain approximately 173,870 acres of prime farmland soils (NRCS, 2006b; 2009a) and Stewart County contains approximately 21,982 acres of farmland soils of statewide importance. The prime farmland soils in Alternative 4 account for approximately 6 percent of the total prime farmland soils in the counties and 7 percent of farmland soils of statewide importance in Stewart County, which would represent a moderate adverse impact as less than 10 percent of county land with these farmland soils would be impacted.

3.2.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, conversion, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3). Table 3.2-10 presents the

approximate acreage of land use types within Alternative 5 if the maximum amount of land (i.e., 81,600 acres) was acquired. Similar to the other alternatives, the changes to land use is not anticipated to affect the overall regional composition of land use shown in Table 3.2-3. Timber forests and agriculture would be the primary land use affected through Army acquisition and conversion into training.

Table 3.2-10. Alternative 5 Approximate Land Use Distribution

Land Use Type	Acreage[1]
Urban/Developed Open Space	1,795
Forest/Timber Production	60,835
Scrub-Shrub/Past Timber Production/Timber Management	2,445
Agricultural	13,685
Wetlands	2,775
Water	65
Total	**81,600**

Source: NRCS, 2001; 2009a

[1]Acreage values include the potential Stewart West transportation route through Chattahoochee and Harris East and Talbot West transportation route through Muscogee counties.

Impacts to land use would be similar to those described under Alternative 1 (Section 3.2.2.2) and would result in negligible impacts from Army management, short-term minor adverse impacts from construction, and long-term minor to moderate adverse impacts from training. Also similar to Alternative 1, adverse impacts would occur from acquisition as a result of the withdrawal of recreational land from use. Unlike the other alternatives, impacts from conversion of prime farmland and farmland of statewide importance into Army training use cannot be quantified as soils data for Harris and Talbot counties is unavailable.

Similar to Alternative 1, adverse impacts to recreational opportunities may be reduced through providing public access and recreational opportunities within the newly acquired lands. After training activities are implemented, existing Fort Benning recreation policies may be expanded to include non-DoD cardholders on newly acquired lands to mitigate for the loss of recreational opportunities from Federal acquisition.

As described in Alternative 3, the City of Lumpkin in Stewart County is one of the communities with the most anticipated future growth. The southeast corner of Stewart West abuts the Lumpkin city limits. By implementing Alternative 5, the growth of the community could be restricted from extending to the north. In addition, sections of Lumpkin are located within a half of mile of the Alternative 5 border, which could place the existing communities in potential land use conflicts with the new training land facilities. The development in Harris County is concentrated at the intersection of I-185 and SR-315, to the west of Harris East. Most of the land is uninhabited within Talbot West, so it is unlikely that the alternative would affect development in the county's closest communities (Talbotton and Geneva). As these plans contain long-range growth planning, and no specific development related to these plans has been identified within the proposed locations for land acquisition, overall potential adverse impacts would be minor to moderate.

Additional impacts could occur to adjacent landowners during training activities within the newly acquired land. Residential land uses around the Installation lands during training may be an incompatible land use due to factors such as noise and smoke generated during training. Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified.

Extending the ACUB plan to areas around the newly-acquired training land could also help to minimize long-term land use conflicts.

An estimated 2,320 acres of prime farmland soils and 2,870 acres of farmland soils of statewide importance are associated with Alternative 5 (within Stewart West). This acreage, however, does not account for the potential for prime farmland within Harris East and Talbot West. As stated in Section 3.2.1.6, no digital data is available for either Talbot or Harris counties; therefore, prime farmland soils cannot be quantified within these portions of Alternative 5. The percentage of prime farmland soils in these counties is likely similar to that of Muscogee and Marion County (covering approximately 34 percent of the county). The Final EIS will be updated with this information if it becomes available. Similar to the other alternatives, conversion of actively timbered or agricultural land that contains prime farmland would require a LESA review, completion of the form AD-1006, and coordination with NRCS.

3.2.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts by the Proposed Action (Alternative 1, 2, 3, 4, or 5) for land use. The list of past, present, and foreseeable future activities considered within the cumulative impacts analysis to land use is presented in Section 3.1.3.2. The cumulative impact on the regional and local land use would not be increased over the previously stated impacts and overall potential cumulative adverse impacts to land use would be moderate. Future development of private land adjacent to newly acquired land could be impacted from future Army training. As shown in Section 3.1.3.2, limited foreseeable future industrial and residential development is planned to occur in proximity to the alternatives. Stewart, Marion, and Webster counties do not contain any proposed activities that would change the land use from the current land comprehensive plans. Russell County has anticipated additional growth due to BRAC and MCoE actions and the implementation of either Alternatives 2 or 4 could prevent growth along the western edge of Route 165 and on both sides of Route 431 around Russell West and Russell East. Sufficient land, however, exists in Russell County to accommodate additional development and the new training areas. Chattahoochee County is attempting to increase tourism by taking control of the River Bend Park, with the anticipation of encouraging hotels and other tourism-related development along the major routes (Lower Chattahoochee Regional Development Center, 2008a). Stewart West would be located adjacent to the River Bend Park, which could create land use conflicts to the area that Chattahoochee is trying to develop if Alternatives 3 or 5 is implemented.

Existing Fort Benning land use planning has avoided adjacent (non-Army) land use conflicts through siting projects in accordance with the RPMP and NEPA analyses. Land acquired under the Proposed Action would be transferred to Federal ownership for military training use and future actions would use similar siting guidance under the RPMP. Within Georgia, areas occurring within 3,000 feet of newly established boundaries would be subject to Georgia Code 36-66-6 which could impact future zoning and development within these locations. Fort Benning, however, would continue to participate in regional planning organizations to facilitate and support compatible land uses with the local communities. These actions would serve to reduce the potential for significant cumulative effects. No large-scale projects or proposals have been identified in Section 3.1.3.2 that would remove large areas of land from prime farmland use.

3.2.4 PROPOSED MITIGATION

Fort Benning would update the RPMP and continue to participate in the local regional land use authority (e.g., The Valley Partnership) and assist the local communities in land use planning. These actions may help identify specific future mitigation measures as specific Army training areas and activities are identified. In addition, mitigation for loss of recreation lands would be accomplished through Fort Benning's continued work with the local community to maximize other recreational opportunities in ways that are compatible with Fort Benning's need to meet unit training requirements.

3.3 AIRSPACE

3.3.1 AFFECTED ENVIRONMENT

This section provides an overview of airspace in the TLEP study area (Section 3.3.1.1) and existing airspace components at Fort Benning (Section 3.3.1.2) that could be affected by the acquisition and use of additional land near Fort Benning. This discussion is followed by a description of the current level of airspace use and management within the TLEP study area (Section 3.3.1.3). The ROI for airspace is shown in Figure 3.3-1which includes airspace above the TLEP study area and above Fort Benning, and the Federal airways which traverse the TLEP study area. Although the Army is not proposing changes to airspace use and classification under the Proposed Action, Section 3.3.3 includes a discussion of potential future airspace use and potential required changes to airspace classification which the Army may pursue with the FAA. Before establishing any SUA such as Restricted Areas (RA), Fort Benning in conjunction with the FAA would conduct further NEPA studies.

3.3.1.1 OVERVIEW

Airspace is the four-dimensional area (space and time) that overlies a nation and which comes under its jurisdiction. Airspace consists of both controlled and uncontrolled areas. Controlled airspace and the constructs created to help manage it are known as the National Airspace System (NAS). This system is "…a common network of U.S. airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information and services; rules, regulations and procedures; technical information; and manpower and material" (FAA, 2002). Navigable airspace is the region above the minimum altitudes of flight prescribed by FAA regulations, and includes airspace needed to ensure safety in the launch, recovery, and transit of the NAS (49 USC 40102). Congress has charged the FAA with responsibility for developing plans and policies for the use of navigable airspace and its establishment, designation, or modification necessary to ensure the safety of aircraft and its efficient use (49 USC 40103(b); FAA Order 7400.2, 2008). The FAA also regulates military operations in the NAS through the implementation of FAA Order JO 7400.2G, *Procedures for Handling Airspace Matters* and FAA Order 7610.4, *Special Operations*. The latter was jointly developed by the DoD and FAA to establish policy, criteria, and specific procedures for air traffic control (ATC) planning, coordination, and services during defense activities and special military operations. The use of airspace and airfields by Army organizations is also strictly defined in AR 95-2 *Airspace, Airfields/Heliports, Flight Activities, Air Traffic Control, and Navigational Aids.*

> ***Airspace Management*** is defined as the direction, control, and handling of flight operations in the navigable airspace that overlies the geopolitical borders of the U.S. and its territories.

Different classifications of airspace are defined by different types of altitude measurements. These are commonly referred to throughout this section and include the following:

- ***Above Ground Level (AGL).*** This type of measurement is the distance above the earth and is used at lower elevations in Class-G airspace (defined later within this section), approach/departure (A/D) situations, or any condition that typically resides in the area between surface and 1,200 feet AGL or occasionally higher.
- ***Mean Sea Level (MSL).*** This measurement is defined as the altitude of the aircraft above MSL as defined by altimeter instrumentation.
- ***Flight Level (FL).*** FL is for airspace higher than 18,000 feet above MSL up to and including FL600. To obtain FL, the altimeter is set at the International Standard Atmosphere (ISA) and

described by dropping the last two digits. FL600 is comparable to 60,000 feet above MSL with the ISA setting.

Controlled airspace is defined as a limited section of airspace of defined dimensions within which ATC is provided to Instrument Flight Rules (IFR) and to Visual Flight Rules (VFR) traffic. IFR and VFR are the two modes of flying that can generally be described as follows:

- ***IFR*** refers to a method of air travel that relies on instrumentation rather than visual reference, and which is always under the direction of ATC to provide proper separation of aircraft. As aircraft traverse the sky from launch at one airport to recovery at another, every movement is directed by the ATC of authority for each given area. Control is transferred from one ATC to another as aircraft cross jurisdictional lines defined on Aeronautical charts published by the FAA (see Figure 3.3-1).
- ***VFR*** refers to a method of air travel that relies primarily on visual reference (dead reckoning) for location and safe separation of aircraft while in Class-G or Class-E Airspace or as granted by ATC within their defined areas of control. VFR flying is inherently subject to weather conditions.

> ***Aeronautical Charts*** represent airspace features and conditions relative to ground features as a mechanism to control the private, public, and commercial use of that airspace as a means to reduce the likelihood of accidents (see Figure 3.3-1).

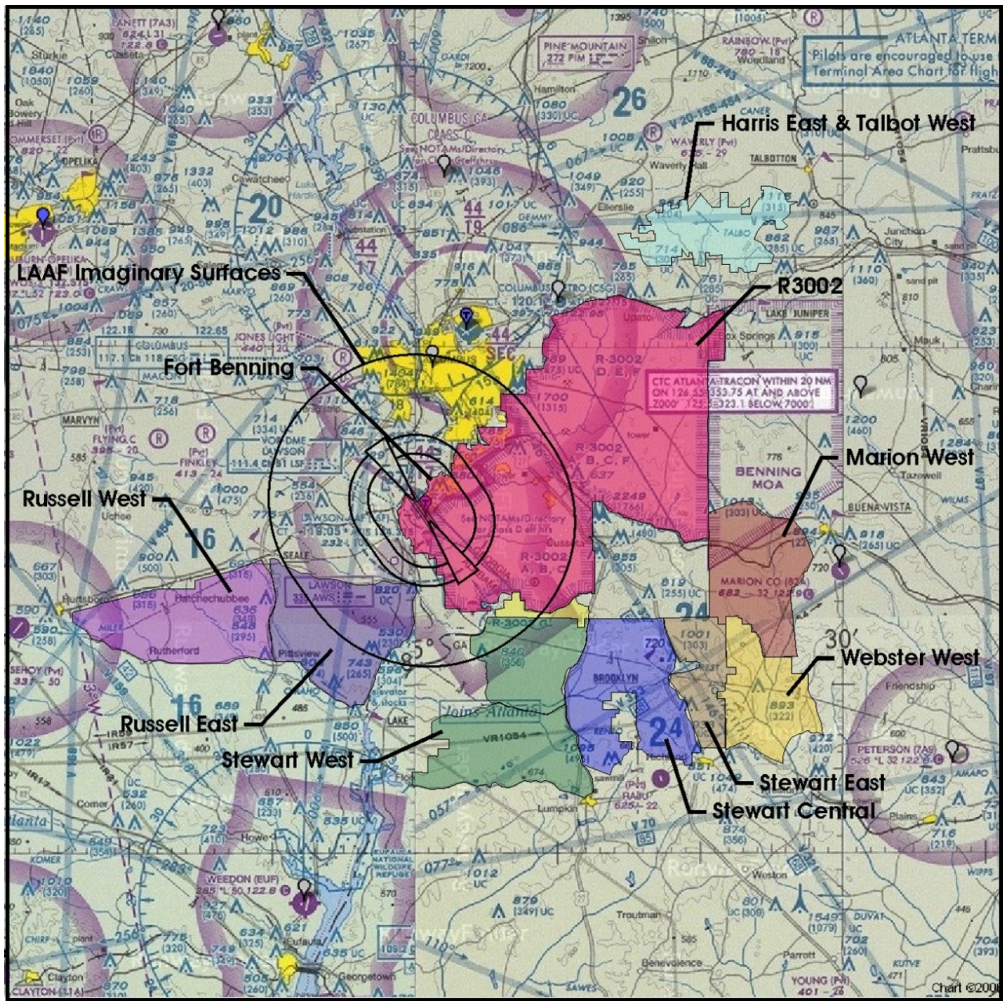
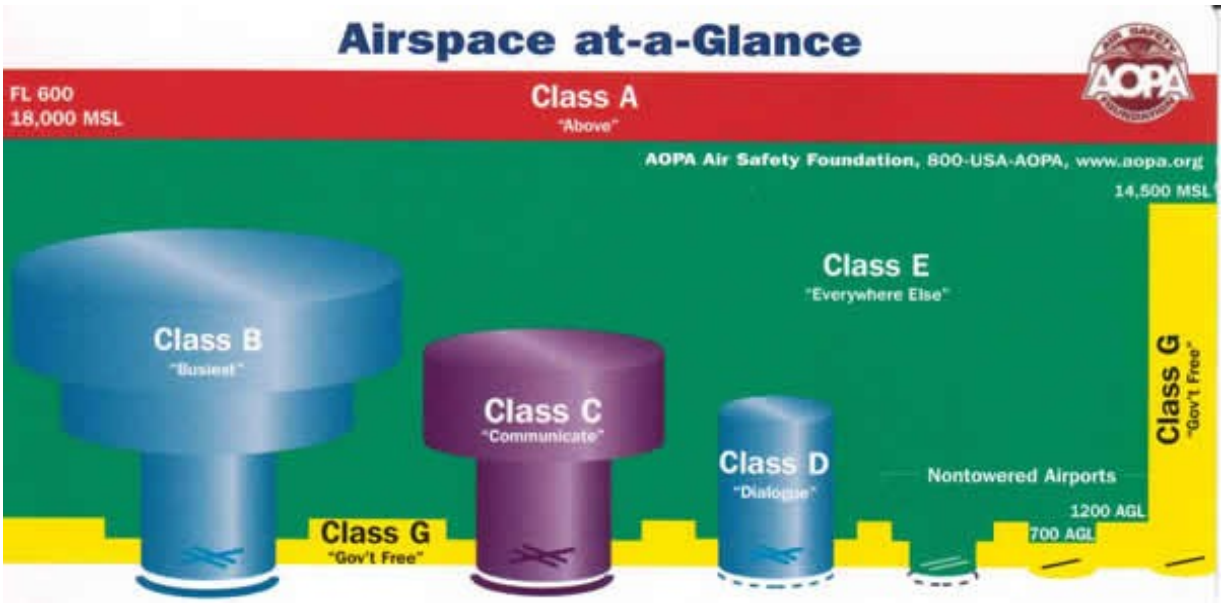


Figure 3.3-1. Aeronautical Chart of the TLEP Study Area

Controlled airspace has a set of classifications indicated on aeronautical charts to include classes A through G as listed below (see Figure 3.3-2):

- ***Class-A airspace*** refers to the region between 18,000 feet above MSL and FL600 above the contiguous U.S. All traffic in this airspace is IFR. The airspace is dominated by commercial traffic using jet routes between 18,000 feet above MSL and FL450.
- ***Class-B airspace*** is typically associated with larger airports as a control mechanism for the large number of sorties and types of aircraft. It is typically configured in multiple layers resembling an upside down wedding cake. The first layer (inner circle) is typically from surface to 10,000 feet above MSL. This circle could be in the range of 10 nautical miles (NM) to 20 NM in diameter. The next circle might be 30 NM and extend from 1,200 feet AGL to 10,000 feet above MSL. The outer circle lies outside of the second and may extend from 2,500 feet AGL to 10,000 feet above MSL. Aircraft must be equipped with specialized electronics that allow ATC to track accurately their altitude, heading, and speed. They are also required to maintain radio communication while in the airspace and are given direction as to altitude, heading, and speed at all times.
- ***Class-C airspace*** is associated with medium-sized airports and is the most common class for airports with control towers, radar approach control, and a certain number of IFR operations. While each is specifically tailored to the needs of the airport, a typical Class-C configuration consists of an inner circle of 5 NM extending from surface to 4,000 feet AGL and an outer circle of 10 NM extending from 1,200 feet AGL to 4,000 feet AGL. Aircraft must have an operable radar beacon transponder with automatic altitude reporting equipment and are required to maintain radio communication while in the airspace. They are given direction as to altitude, heading and speed at all times.
- ***Class-D airspace*** is associated with smaller airports that have an operational control tower. They typically have a single circle of 5 to 10 NM that extends from surface to 2,500 feet AGL. Aircraft may not operate below 2,500 feet AGL within 4 NM of Class-D airspace at an indicated airspeed of more than 200 knots. Pilots must establish and maintain two-way radio communication with ATC for separation services. It is not uncommon for these airfields to have set hours of operation for ATC. Outside of these times, the area reverts to uncontrolled airfield status requiring pilots to fly VFR using "see and avoid" techniques and make radio addresses for all actions.
- ***Class-E airspace*** is any controlled airspace which is not Class A, B, C, or D. It extends upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace. Class-E airspace is also used by transiting aircraft to and from the terminal or an en route environment normally beginning at 1,200 feet AGL to above 18,000 feet above MSL. Class-E airspace ensures that IFR traffic remains in controlled airspace when approaching aircraft within otherwise classified airspace or when flying on Victor airways (see Section 3.3.1.2.4 regarding definition of Victor airways). Federal airways have a width of 4 statute miles on either side of the airway centerline and occur between 700 feet AGL and above 18,000 feet above MSL.
- ***Class-G airspace*** is otherwise uncontrolled airspace that has not been designated as Class A, B, C, D, or E. IFR aircraft do not operate in Class-G airspace with the possible exception of aligning an approach or departure on an IFR Flight Plan. This is done at their own risk, as ATC has no knowledge of VFR activity in these areas.



Source: AOPA Air Safety Foundation.

Figure 3.3-2. Airspace Classification Diagram

There is also SUA of defined dimensions wherein activities must be confined because of their nature, or wherein limitations may be imposed upon aircraft operations that are not part of those activities. The primary purpose of the SUA program is to establish/designate airspace in the interest of National Defense, security and/or welfare. These include RAs and Military Operations Areas (MOAs). RAs are three-dimensional sections of airspace that prescribes limitations on the operation of aircraft within them and by their nature are not compatible to non-participating aircraft, such as commercial, private, or general aviation while activated, thereby allowing execution of national defense or military training and test operations. MOAs are three-dimensional sections of airspace established outside positive control areas to separate/segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. MOAs are established to contain certain military activities such as air combat maneuvers, air intercepts, and acrobatics.

3.3.1.2 AIRSPACE COMPONENTS

The components of the airspace ROI for this EIS include KLSF, Sectors A-G of the R3002 RA at Fort Benning, and the Benning MOA. There are also several commercial and small private airports (see Section 3.3.1.2.6 for further descriptions) in this area, including: Columbus Metropolitan Airport (CSG), Raju Airport, private use (05GA), Jones Light Aviation Airport, private use (AL56), Peterson Field Airport (7A9), Weedon Field Airport (KEUF), Sehoy Airport, private use (AL05), Flying C's Plantation Airport, private use (AL51) and Finkley Farm Airport, private use (2AL8). The ROI contains Federal airways as this location is near many major airline hubs, including Atlanta International. The following Victor routes traverse the ROI (centered on a Very High Frequency Omni-Directional Range/Tactical Aircraft Control [VORTAC] located near CSG): V-321, V-241, V-454, V-58; (centered on a VORTAC located at Weedon Field Airport) V-323, V-241, V-159; and (intersecting V-159 and V-4554) V-168. To complete the airspace picture, there are also several very large MOAs located approximately 30 NM south of this site supporting Moody Air Force Base (AFB) and Tyndall AFB, which extend over the Gulf of Mexico. While these MOAs are extensive in area, there are only two small RAs associated with them. Figure 3.3-3 represents a simplified version of the Sectional (Figure 3.3-1) depicting relevant airspace components, including R3002 RA Sectors, the MOA, Victor routes, and regional airfields.

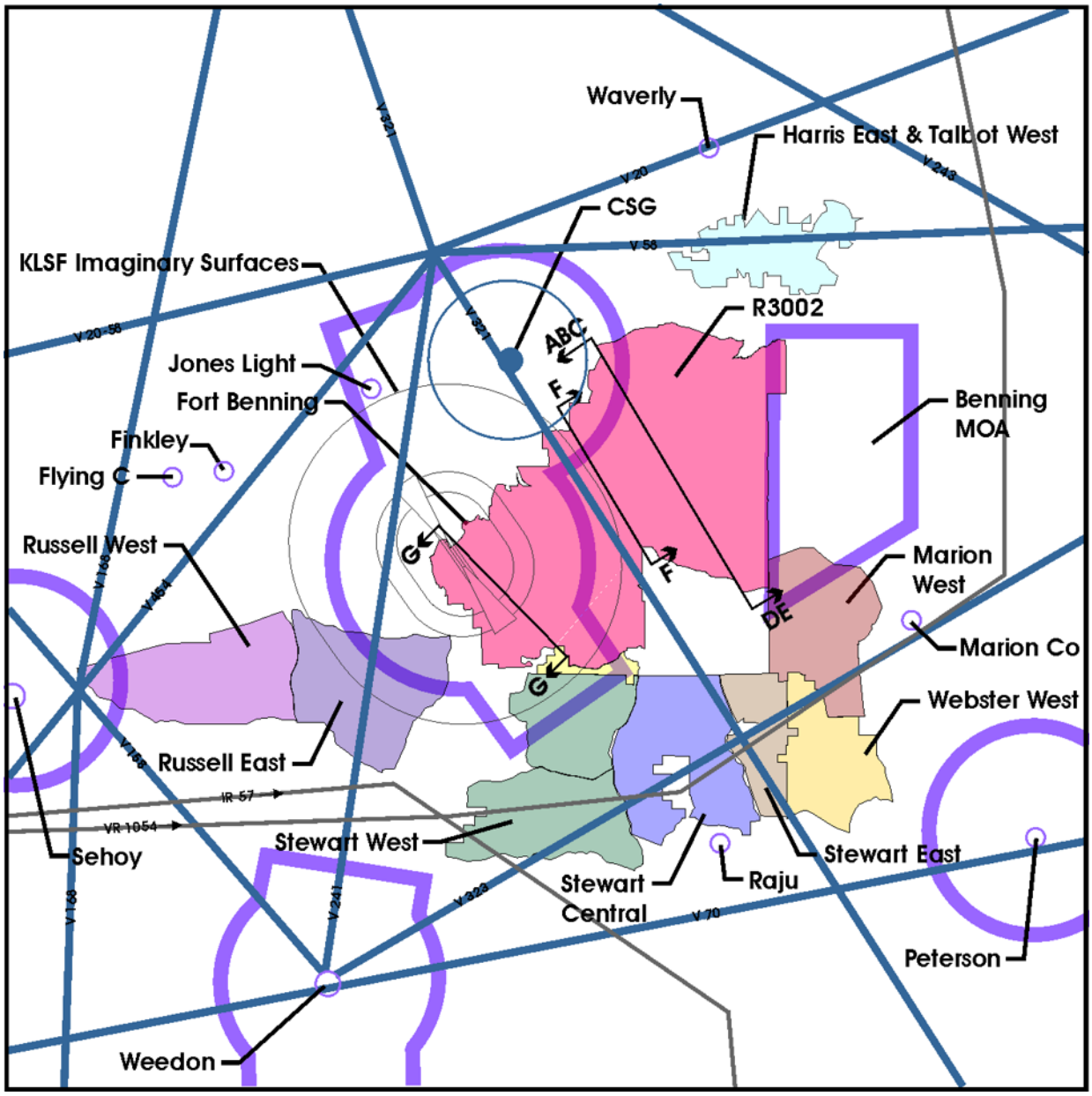


Figure 3.3-3. Airspace Components Associated with the TLEP Study Area

3.3.1.2.1 MILITARY AIRFIELDS

Lawson Army Airfield. KLSF is the hub for all military aircraft operations in and around Fort Benning to include the use of R3002, with an average of approximately 15,300 hours per year. This is a military-use only airfield with a single runway (15-33) width of 150 feet and a length of 10,000 feet. KLSF ATC manages the Class-D airspace and all airfield activities 16 hours per day, 5 days per week with exceptions posted through Notice to Airmen (NOTAM). The airfield remains open during the hours the control tower is not operational through base operations which maintains an advisory service and flight management service. Atlanta Terminal Radar Approach Control (TRACON) provides part-time A/D services in situations when KLSF ATC is non-operational. The permanently stationed aircraft at the Installation include 4 UH-60 Blackhawk helicopters of the Flight Company, 2-29th Infantry Regiment, and 1 medical evacuation (MedEvac) Helicopter operated by a private medical contractor. There are typically 2 C-130

Hercules aircraft continuously at the Installation to support Airborne training. These are rotational units from around the world on temporary duty (TDY). Other airfield/airspace activity involves transient, training, and deployment flights.

The KLSF Class-D airspace is a 4.2-mile radius circle from surface up to 2,700 feet above MSL. The airspace surrounding Columbus, Georgia Metropolitan Airport became Class D airspace on January 13, 2011, at 0901 UTC, replacing the Class C airspace which was previously in effect. According to CSG Airspace Management Office, this reduces their area of control to just the inner 5 NM circle. Outside of this inner circle is a Class-E bubble that encircles both KLSF and CSG with an extension for the Runway 33 approach corridor of KLSF. This Class-E airspace is 12 NM from CSG and 9 NM from KLSF and extends from 700 feet AGL to 18,000 feet above MSL around KLSF's Class-D airspace and up to the floor of CSG's Class-C airspace, which is 1,700 feet above MSL on the southwest half and 1,900 feet above MSL on the northeast half. This Class-E airspace is under the control of Atlanta Air Route Traffic Control Center (ARTCC).

The KLSF runway (15-33) is required to maintain specific imaginary surfaces that traverse the area in support of safe launch and recovery operations. Imaginary surfaces establish maximum height limitations for fixed or mobile obstacles surrounding the airfield. These are dictated by Unified Facilities Criteria (UFC) 3-260-01, *Airfield and Heliport Planning and Design*.

3.3.1.2.2 RESTRICTED AREAS

The R3002 RA is composed of seven sectors of varying three-dimensional configurations as follows:

- ***R3002-A.*** A geographic division of approximately one third the lower southwest portion of the Installation extending from surface to 4,000 feet above MSL.
- ***R3002-B.*** The same geographic division of the Installation as Sector A extending from 4,000 feet above MSL to 8,000 feet above MSL.
- ***R3002-C.*** The same geographic area as Sectors A and B extending from 8,000 feet above MSL to 14,000 feet above MSL.
- ***R3002-D.*** A geographic division of approximately one third the upper northeast portion of the Installation extending from surface to 8,000 feet above MSL.
- ***R3002-E.*** The same geographic division of the Installation as Sector D extending from 8,000 feet above MSL to 14,000 feet above MSL.
- ***R3002-F.*** A geographic area including all of Sectors D, E, and a portion of Sectors A, B, and C extending from 14,000 feet above MSL to 25,000 feet above MSL.
- ***R3002-G.*** A geographic area abutting Sectors A, B, and C to the southwest extending from surface to 14,000 feet above MSL.

These areas are turned on and off as required for scheduled live-fire exercises. These restricted airspace activations and deactivations are planned by the Installation (Range Control and the Airspace Manager) then requested of the FAA, which subsequently informs pilots via NOTAMs of their status. Air activities include close air support (CAS), rescue, parachute drop, intelligence, surveillance, and reconnaissance (ISR), and inert bomb drop training. Activating portions of the R3002 involves careful scheduling between KLSF ATC, Range Control, the Joint Terminal Attack Controllers (JTACs) of the two Air Support Operations Squadrons (ASOSs), and the FAA. The FAA alerts non-military pilots of range activations through the use of NOTAMs. Activation times are intermittent, 0600-0200 daily or other times by NOTAM with 6 hours notification in advance. One or more sectors are typically activated every day of the week and frequently on weekends as well. When a sector is activated, no commercial or private aircraft can enter that specific three-dimensional area. All military aircraft using the area are controlled either by KLSF ATC, Range Control, or temporarily by JTACs for bombing runs. Sector-F

extends well into Class-A airspace, which creates an unusual circumstance for IFR traffic. Atlanta ARTCC directs traffic around or over the area when activated. Sector-G is aligned with the KLSF A/D corridor and is rarely activated because of the subsequent disruption to airfield operations. No airfield launch or recovery flights through the sector are allowed when activated. This is also the site of the primary DZ (Fryar DZ) for Airborne training. This means that the majority of DZ sorties are conducted in unrestricted airspace. This occurs within the KLSF Class-E airspace beginning at the surface and is under control of KLSF ATC with the exception of the approach pattern, which crosses over Stewart West.

There are several established VFR routes for rotary wing traffic defined and managed by the Fort Benning Air Traffic and Airspace Officer and Range Control to navigate around and through the Installation without conflicting with other ongoing training activities. These are referred to by color, including: Brown Route (Figure 3.3-4), Green Route (Figure 3.3-5), Orange Route (Figure 3.3-6) Purple Route (Figure 3.3-7) and Red Route (Figure 3.3-8).

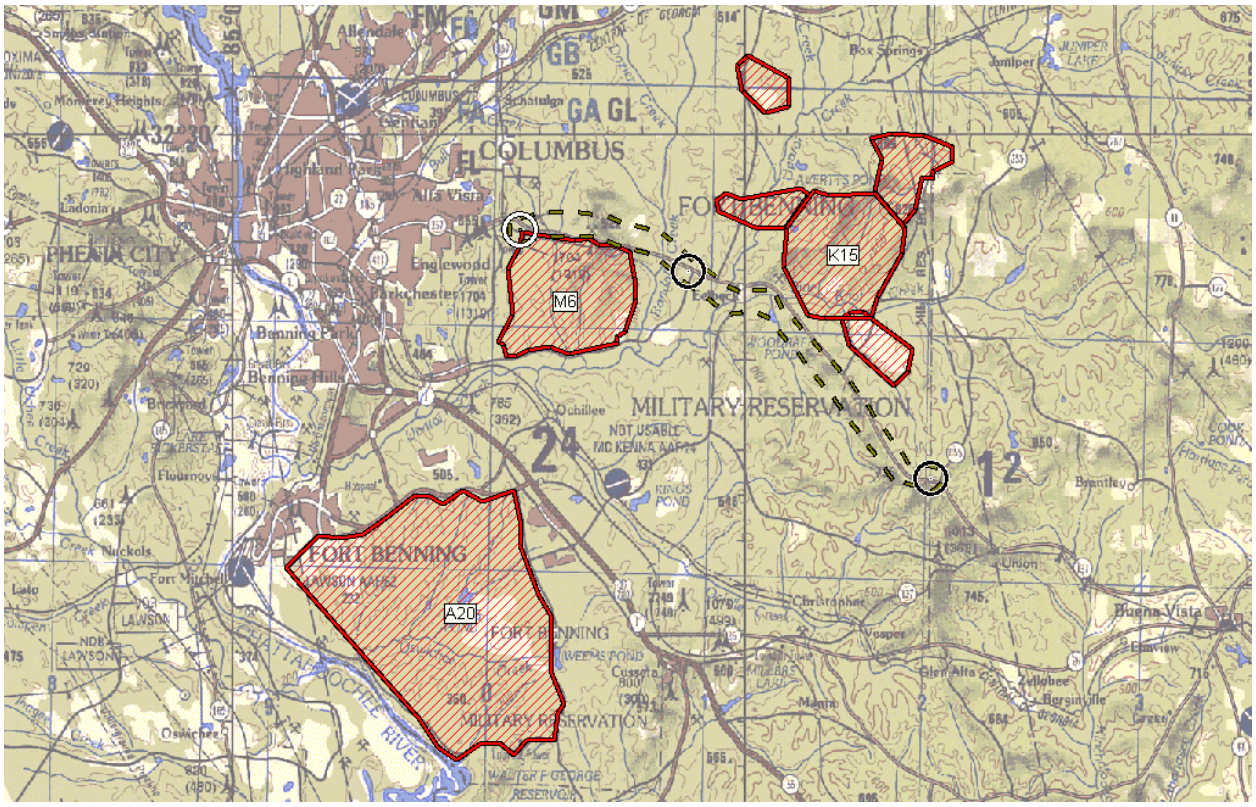


Figure 3.3-4. Brown Route

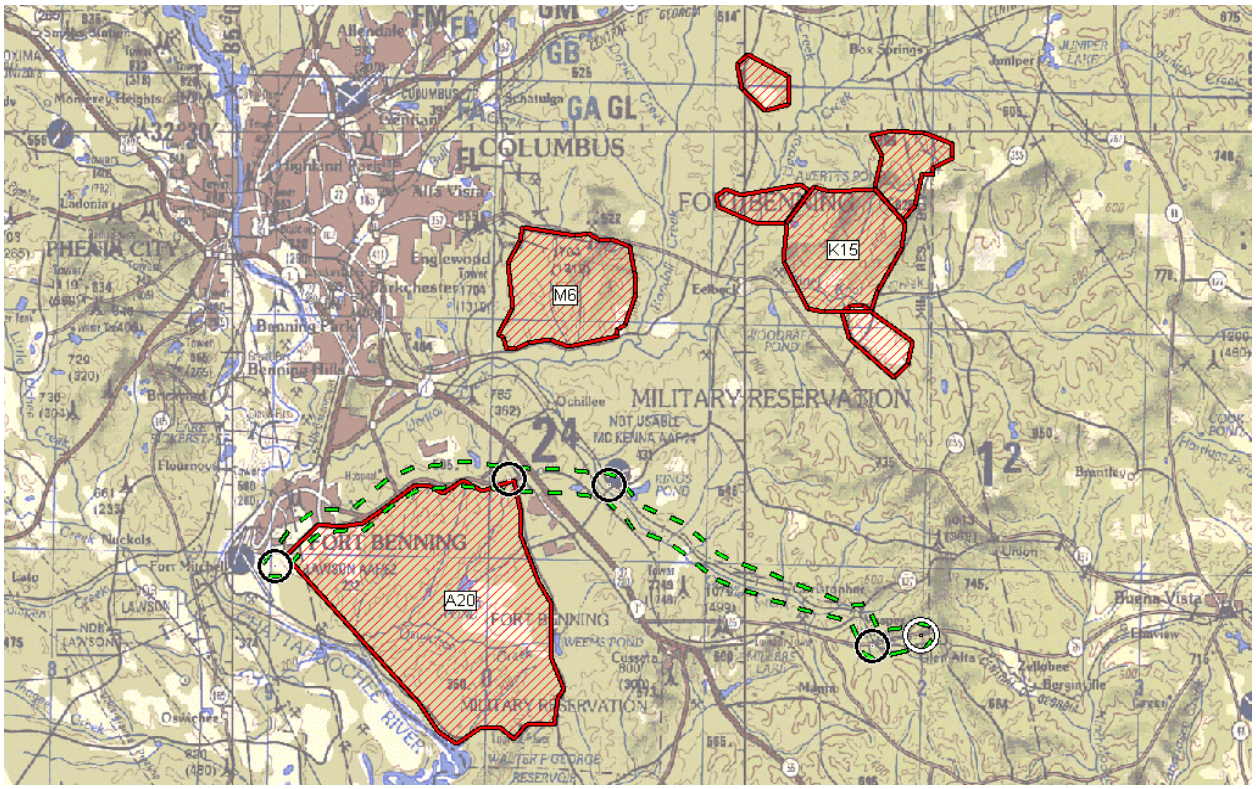


Figure 3.3-5. Green Route

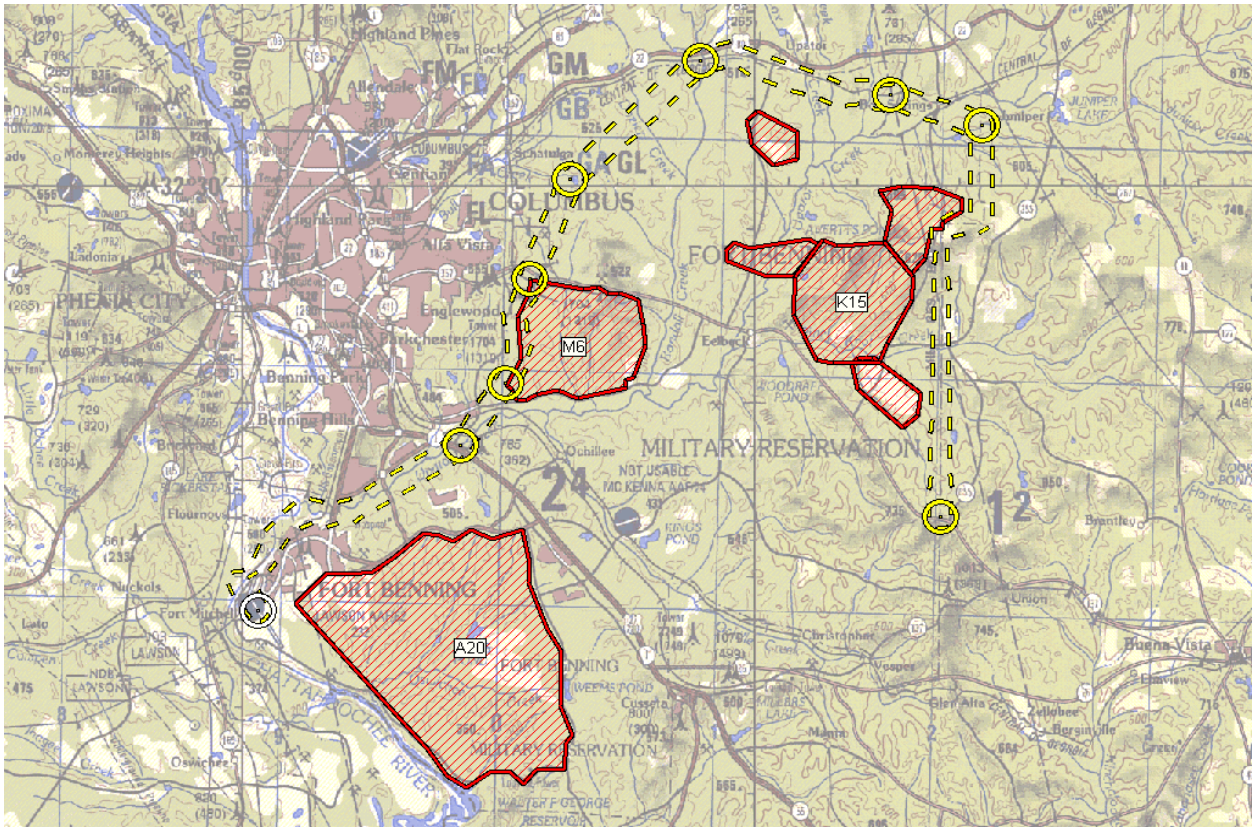


Figure 3.3-6. Orange Route (Depicted in Yellow for Clarity)

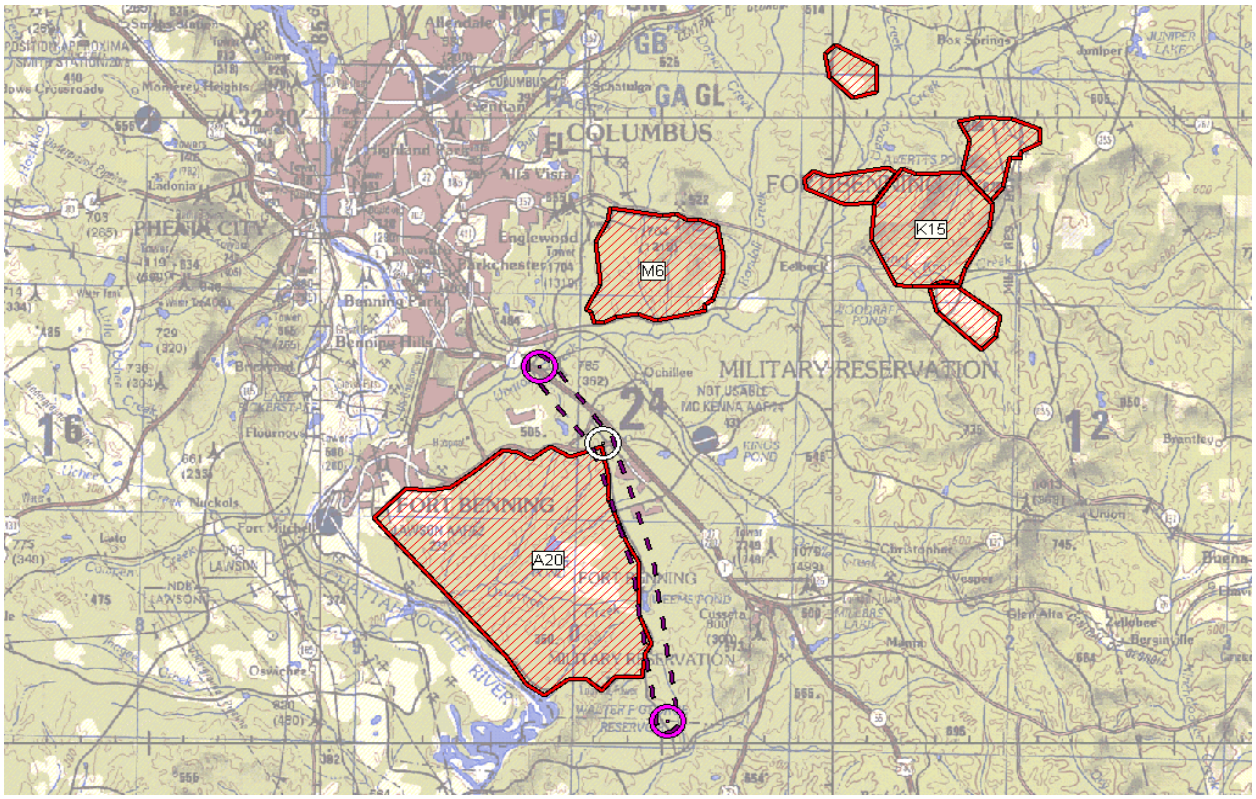


Figure 3.3-7. Purple Route

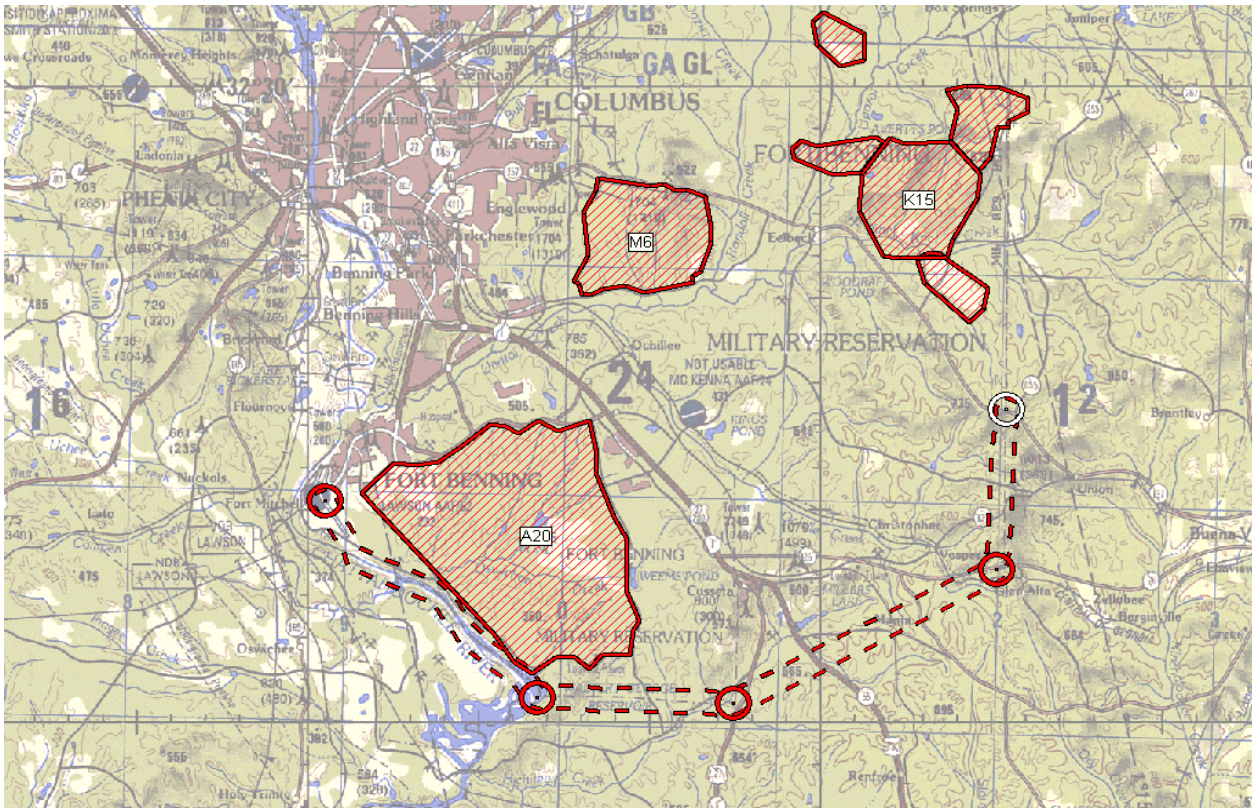


Figure 3.3-8. Red Route

Within Fort Benning are a variety of specific use training areas that overlap in geographic area and are carefully scheduled by Range Control. Those that affect airspace include: live-firing that penetrates Class A airspace and utilizes dudded impact areas, such as firing of Howitzers; CAS; UAS flight area; DZs; and the Maneuver Battle Lab's "Air Box," which is used to test experimental equipment and systems. Users of this airspace and these training areas expressed consternation over the congestion and a need for a larger area to operate. The FAA has established a 3-mile lateral no-fly buffer surrounding the RA and a 1,000-foot vertical buffer for all unassociated air activities in the vicinity.

3.3.1.2.3 MILITARY OPERATIONS AREAS

The Benning MOA exists to help reduce the likelihood of interaction between military aircraft and public, private, or commercial aircraft by identifying the area to VFR traffic that it is highly used by military aircraft and by redirecting IFR traffic safely through or away from that area. The area is contiguous with the eastern boundary of the R3002 and extends from 500 feet AGL up to and including 8,000 feet above MSL. Times of activation are 0800-1800 daily and other times by NOTAM. The area is under the control of Atlanta ARTCC, with handoffs to JTACs and Range Control upon entering the Installation. Primary users include but, are not limited to the U.S. Air Force, U.S. Navy, Marines, and other agencies that use the MOA as a holding/loiter area prior to conducting CAS type missions while awaiting clearance on the range. Sorties are typically run on the K-15 impact area due to the proximity of this asset to that range. The 15th and 17th ASOS attest that the MOA is inadequate for this purpose due to the difficulties of staying within its boundaries for certain fixed wing aircraft, including F-15, F-16, F/A-18, A-10, and F-22 (Personal Communication, Benson and Hamlin, 2010). These aircraft require a larger turning radius in order to safely remain within this perimeter.

3.3.1.2.4 FEDERAL AIR CORRIDORS

Victor airways are Federal air corridors that are established for IFR traffic by VOR or VORTAC navigational aids (beacons) strategically located throughout the U.S. They provide established traffic routes between 700 feet AGL and 18,000 feet above MSL in what is considered Class-E airspace. They also have an established width of four miles on either side of the airway centerline. The following are Victor airways that traverse the ROI:

- ***V-321***. The Victor-321 Federal Air Corridor runs at a heading of 146 degrees. It stretches between the VORTACs located near CSG and the Southwest Georgia Regional Airport. This route traverses all but Sector G of the R3002, which would result in considerable limitations as to its usefulness when those sectors are activated. It also traverses Stewart East.
- ***V-241***. The Victor-241 route runs at a heading of 87 degrees and stretches between the CSG VORTAC and the Weedon Field Airport VORTAC. It traverses a portion of the KLSF Class-D airspace and the outer ring of CSG. It also runs through the middle of Russell East.
- ***V-454.*** The Victor-454 route runs at a heading of 218 degrees and stretches between the CSG VORTAC and an unidentified intersection with other Victor routes in the Moody MOA. It traverses the far western edge of Russell West.
- ***V-58***. The Victor-58 route runs at a heading of 86 degrees and stretches between the CSG VORTAC and the Middle Georgia Regional Airport VORTAC. It traverses the middle of Harris East and Talbot West.
- ***V-323***. The Victor-323 route runs at a heading of 57 degrees and stretches between the Weedon Field Airport VORTAC and the Middle Georgia Regional Airport VORTAC. It traverses the lower corner of Stewart West, the middle of Stewart Central, the middle of Stewart East, the upper corner of Webster West, and the lower tip of Marion West.

- ***V-159***. The Victor-159 route runs at a heading of 318 degrees and stretches between the Weedon Field Airport VORTAC and the Moton Field Municipal Airport VORTAC. It is part of a 3-way intersection at the very tip of Russell West with V-168 and V-454.
- ***V-168***. The Victor-168 runs at a heading of 360 degrees to that same intersection and then at 190 degrees from that point to the Lagrange VORTAC. It is part of the 3-way intersection at the very tip of Russell West with V-159 and V-454.

3.3.1.2.5 MILITARY TRAINING ROUTES

Military Training Routes (MTRs) are either instrument routes identified by "IR" before the number or visual routes identified by "VR" before the number. A four digit route number identifies an operational area from surface to 1,500 feet AGL. A three digit route number indicates an operational area from surface to at least one step above 1,500 feet AGL. MTRs are typically 10 statute miles wide and are individually owned and operated by a military installation in the area. MTRs do not restrict use by IFR or VFR civilian traffic but are identified, high-speed military routes. Military traffic may exceed the FAA limitation of 250 knots below 10,000 feet above MSL by squawking a mode C transponder code of '4000'. The following MTR traverses the ROI:

- ***VR-1054***. This is a MTR that operates below 1,500 feet AGL under VFR conditions. It encompasses the entire Installation continuing up and around the Lagrange Airport and the Sylacauga Airport further northwest. For a short distance it coincides with V-323. This route traverses the center of Stewart West, the lower one fourth of Stewart Central, the center of Stewart East, top corner of Webster West, and the lower corner of Marion West.

3.3.1.2.6 COMMERCIAL AIRPORTS

The following contains information regarding commercial airports that are located within the ROI:

Columbus Metropolitan Airport (CSG). CSG is a prominent commercial airport within the ROI. It maintains a Class-D airspace with an inner circle of 4.5 NM radius that extends from surface to 2,900 feet above MSL. The northeast segment is roughly one quarter of the circle and extends from 1,900 feet above MSL to 4,400 feet above MSL. The southwest (roughly) half extends from 1,700 feet above MSL to 4,400 feet above MSL. This segment intersects the Class-D airspace of KLSF causing a natural conflict of control. None of the TLEP study area intersects CSG's controlled airspace. All air traffic within the CSG controlled airspace is managed by Atlanta TRACON, which is also responsible for all traffic in the area outside of CSG, KLSF, or the R3002 airspace. This reduces the number of handoffs required as aircraft transit the area. This airfield averages 99 operations per day.

Raju Airport (05GA). Raju is a private airport with minimal capacity. It is in uncontrolled Class-G airspace with no tower or ATC. All traffic is VFR and primarily for a single individual aircraft. The end of Runway 36 is less than 2 NMs from the lower edge of Stewart Central. Operational usage figures are unknown for this airport.

Jones Light Aviation Airport (AL56). Jones Light Aviation Airport is a private airfield for single engine and ultralight aircraft. It consists of a modest grass strip surrounded by the Class-E airspace bubble of CSG with no tower or ATC. All traffic is VFR. The airfield is also located beneath the outer circle of CSG's airspace requiring aircraft to remain below 1,700 feet above MSL without giving control to Atlanta TRACON. This limits ultralight flights as they typically have no radio. Operational usage of this airport is unknown; however, it supports five single engine aircraft and two ultralight aircraft based at the airport.

Peterson Field Airport (7A9). Peterson Field is a small public airport with a single grass strip runway. It is within a non-concentric, approximately 7.5 NM radius Class-E bubble that is connected to the Jimmy Carter Regional Airport's bubble and under the control of their ATC. This airfield is equipped with Very

High Frequency Omni-Directional Range - Distance Measuring Equipment (VOR-DME) and GPS instrument landing systems. It handles approximately 42 air operations per week.

Weedon Field Airport (KEUF). Weedon Field is a mid-sized public airport with a single paved runway. It resides within a 7.5 NM radius Class-E bubble with north and south A/D extensions. This airport sees approximately 100 air operations per day ranging from ultralights to multi-engine airplanes, helicopters, and jets. It is outfitted with VOR-DME and GPS instrument landing systems and is home to the VORTAC associated with Victor routes V-323, V-241, and V-159 discussed previously. There is no control tower or ATC.

Sehoy Airport (AL05). The Sehoy Airport is a small private airport with a paved runway located 25 miles east of KLSF in Alabama. It sees approximately 22 air operations per month. It resides within a 7.5 NM radius Class-E airspace. There is no control tower or ATC and all air traffic is VFR. The western tip of Russell West intersects the Class-E bubble.

Flying C's Plantation Airport (AL51). The Flying C's Plantation Airport is akin to a person using a flat spot in his backyard for personal aviation. It is a private airfield within uncontrolled Class-G airspace with no control tower and no ATC. All air operations are VFR and primarily consist of ultralight flights. Operational usage of this airfield is unknown; however, it supports two ultralight aircraft based at the airport.

Finkley Farm Airport (2AL8). The Finkley Farm Airport is within a few miles of the Flying C's Plantation Airport. It is a private airfield within uncontrolled Class-G airspace with no control tower or ATC. All traffic is VFR and primarily for a single individual. Operational usage of this airfield is unknown; however, it supports one single engine aircraft based at the airport.

3.3.1.3 AIRSPACE USE AND MANAGEMENT

The ROI is under the control and management of three separate but integrated organizations of Fort Benning, including KLSF Approach, Range Control, and the JTACs of the 15th and 17th ASOS. The primary control mechanism is Lawson Approach or the KLSF ATC. They receive handoffs of commercial and private aircraft from Atlanta and New Orleans ARTCC as they traverse the Class-D and Class-E airspace surrounding KLSF. The ARTCCs also route commercial air traffic around the R3002 when activated. KLSF ATC via the Air Traffic and Airspace Officer works in concert with Range Control for all flight activities within the R3002. The 15th and 17th ASOS handles coordination and rectification of Air Force training flights within the R3002 and Benning MOA in order to ensure safe separation of activities. The JTACs assigned to 15th and 17th ASOS coordinate with ARTCC or Atlanta Approach prior to the aircraft arriving in R3002 or Benning MOA and contact Doughboy Advisory to designate the airspace as "Hot with Aircraft." They communicate with Range Control and directly with units on the ground for check fires as these aircraft transit the area. All proposed acquisition areas lie outside of the R3002 and Benning MOA and only a portion of Marion West overlaps the Benning MOA.

3.3.1.3.1 UNMANNED AIRCRAFT SYSTEM OPERATIONS

Various units and activities at Fort Benning operate UAS in R3002. These aircraft reside at the unit's Company Operations Facility (COF) or the Tactical Equipment Maintenance Facility (TEMF) and are transported to specified areas within the Installation for training flights. UAS vehicles are not allowed to operate freely in non-restricted airspace because they do not have "see and avoid" capability, which the FAA has determined to be necessary in VFR airspace. Training is currently conducted within designated SUA and is restricted within a restricted operating zone which allows unencumbered training flights to meet mission essential training goals.

The Installation has determined that there is no immediate need for any Tier III or Extended Range Multipurpose (ERMP) UAS such as the Global Hawk, Predator or Gray Eagle (Personal Communication,

Cerdedo, 2010). These aircraft require an established airfield for launch and recovery as well as direct connection to restricted airspace to avoid the burdensome operational requirements established by the FAA. KLSF and the adjacent R3002 are unique to the Army in having the ideal condition for these operations.

UAS operations are conducted in a designated area generally defined by the following sectors of the R3002: O12-O13, L1-L6, M3, J3-J5, T1-T7, E1-E8, C1-C2, 11-14, D7-D12 & D17. This covers a ground area of approximately 24,969 acres. It extends from surface to 18,000 feet above MSL. This is a large area that may be activated or deactivated in segments according to the type of aircraft being flown and the parameters of the training mission. It is obvious that if fully activated, this would significantly limit the usefulness for other ground and air activities. As UAS operations become more prevalent and/or a required component of unit training, additional restricted airspace for dedicated UAS flights would be needed.

3.3.1.3.2 MANEUVER BATTLE LAB TESTING

The Maneuver Battle Lab at Fort Benning conducts experimental testing on a variety of vehicles, including UAS. Tests are conducted within what is referred to as the "Air Box." This is essentially the same UAS training area extending from surface to no more than 5,000 feet AGL. No other activities, either ground or air, are conducted in this defined area during these test periods. This again is a limitation to not only ground-based activities, but also traditional UAS training flights.

3.3.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to airspace that could result from the alternatives described in Section 2.3. This section addresses the environmental consequences of expanded training land to airspace associated with each alternative. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to airspace would occur from a substantial infringement on current private and commercial flight activities. The following sections analyzes potential airspace impacts of the Proposed Action alternatives in relation to expanded ground training capabilities, and identifies current deficiencies in airspace within the No Action Alternative. Section 3.3.3 identifies future modification potentials to SUA, which would become possible due to Federal ownership of additional land associated with the Proposed Action and which address existing operational deficiencies identified within the No Action Alternative. The Army would work with the FAA to determine the feasibility of conducting military aircraft operations in any newly acquired area and follow-on NEPA analysis would be required for any airspace redesignation.

The Transformation BRAC EIS and MCoE EIS previously established environmental impacts as a result of restationing actions and increase in training on Fort Benning. The TLEP proposed action does not include any additional restationing or increases in training activities. This analysis assumes the same level of training but with additional area to conduct the training.

The net result of land expansion would be a dispersion of those existing activities over a larger area. Certain training activities require aerial support and others are specifically for air combat or reconnaissance units.

3.3.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional lands to support the MCoE and Fort Benning training requirements would not occur. Implementation of the No Action Alternative would result in the continued operational deficiencies of the MCoE and Fort Benning. Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options, such as conducting ARC training at another military installation or the use of mobile training

teams. These other options are beyond the scope of this EIS. Although Fort Benning has a highly active and diverse airspace, adequate separation of all ground-based and airborne activities is currently well-managed. Additional air activity within the R3002 is not recommended due to the overall density of activity. The following section discusses the No Action Alternative impacts to current airspace operations. Overall, for this alternative, there would be negligible impacts to airspace.

3.3.2.1.1 ARMY MANAGEMENT

Airspace management would not be directly affected by the No Action Alternative and would continue as currently operated.

3.3.2.1.2 PREPARATION OF NEWLY ACQUIRED LAND

No construction or upgrade of infrastructure would be conducted by the Army within the TLEP study area under the No Action Alternative; therefore, the No Action Alternative would have no impact on airspace.

3.3.2.1.3 ARMY TRAINING

UAS training would continue to be conducted within designated areas of the R3002 with minor adverse impact under the No Action Alternative. Without potential for expansion of the RAs, unescorted UAS training flights would remain within designated areas and times that would be required to be integrated with all other user activities. Launch and recovery are primarily conducted at the Lee DZ, from which aircraft are flown within the designated UAS training boundary.

3.3.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Overall potential impacts resulting from implementation of Alternative 1 would have a moderate adverse effect on airspace without a concurrent expansion of the RA. Section 3.3.3 discusses potential impacts resulting from future expansion of the RA. Both ground and air traffic can access Alternative 1 areas without the use of non-Fort Benning lands and associated airspace. Regular VFR and IFR traffic would continue unaffected, including the two commercial airways, V-323 and V-321.

Training within the newly acquired lands would be limited from certain live-fire activities. Additionally, any activities requiring air support would result in those flights operating in unrestricted VFR airspace (i.e., military aircraft would be exposed to potential conflict with privately operated aircraft in that airspace). Although those military flights are typically at low altitudes and low speeds, they potentially expose the public to unsafe conditions via interaction with military training activities. IFR traffic, including that on the Victor airways, however, can be safely de-conflicted by Atlanta ARTCC, minimizing safety impacts.

3.3.2.2.1 FEDERAL ACQUISITION OF LAND

Ownership or designated use of airspace does not necessarily follow acquisition of land and requires FAA approval. The Army could acquire a segment of land without affecting airspace use so long as the subsequent use of that land does not result in air-to-ground activity in excess of 700 feet AGL. This would exclude hazardous operations which are only permissible in RAs. Acquisition of the land, however, would enable the Army in the future to coordinate with the FAA regarding conversion of airspace to restricted use (see Section 3.3.3). Impacts to airspace, therefore, from acquisition would be negligible.

3.3.2.2.2 ARMY MANAGEMENT

Expansion of training lands under Alternative 1 could impact the airspace management of the V-321 and V-323 commercial air corridors, however, the majority of non-military flights over these areas would be transitory in nature. Airspace management would continue as presently conducted with an increased level of responsibility for Atlanta ARTCC to manage IFR flights in uncontrolled airspace. The majority of military CAS flights would be conducted in VFR at low altitudes. Commercial IFR traffic along the two Victor airways could experience moderate adverse impacts if they are held to higher elevations through this area by Atlanta ARTCC as a means of conflict management. This scenario could result in longer flights or flying at altitudes higher than currently required.

3.3.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

No dudded impact areas are currently planned on the expansion property; however, this could occur in the future (see Section 3.3.3). This does not imply, however, that there would not be live-fire areas or even a temporary dud area. Any live-fire ranges that fire projectiles above 700 feet AGL would require the establishment of an RA. An RA would also be required for the establishment of UAS launch and recovery airfields or targeting devices. Any construction activities involving vertical structures over 200 feet would require coordination with the FAA. Notwithstanding these elements, there would be negligible impacts to airspace with preparation of newly acquired land under Alternative 1.

3.3.2.2.4 ARMY TRAINING

Army training activities would be considerably limited under Alternative 1 without expansion of the RA. Only ground-based small arms fire below 700 feet AGL would be possible. Additionally, CAS flights, if deemed necessary, would be forced to operate in airspace with other VFR traffic creating a potentially hazardous situation for both military and civilian aircraft. This potentially hazardous situation, however, would be deconflicted by airspace management (see Section 3.3.2.2.2). Military flights would enter the area from the Red Route or other more direct paths established over public and privately held properties. New routes could be established throughout the expansion area which would reduce but not eliminate the conflict causing minor adverse impacts.

3.3.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Overall potential impacts to airspace resulting from implementation of Alternative 2 would be similar to Alternative 1 with the exception of the additional travel distance required between KLSF and the new training lands. The eastern-most edge of Russell East intersects the southern edge of KLSF's Class-D bubble allowing a controlled transition to the training area, albeit over non-Federal properties. From this point on, however, CAS flights would be primarily conducted in Class G unrestricted airspace with other public and private VFR traffic. A small corner of Russell East is also within the Class-E bubble providing some level of control over that area. Russell East is also situated in conflict with V-241 and the primary A/D corridor of Weedon Field Airport. Without an established RA over this training land, there would be little impact to existing traffic patterns, resulting in potential minor adverse effects.

3.3.2.3.1 FEDERAL ACQUISITION OF LAND

Similar to Alternative 1, Federal acquisition of land would have negligible impacts on airspace activities unless ground activities resulted in penetration of that airspace above 700 feet AGL. This would exclude hazardous operations which are only permissible in RAs. Acquisition of the land, however, would enable

the Army in the future to coordinate with the FAA regarding conversion of airspace to restricted use (see Section 3.3.3).

3.3.2.3.2 ARMY MANAGEMENT

Expansion of training lands under Alternative 2 could impact the airspace management of the V-168, V454, and V-241 commercial air corridors. Airspace management of this alternative would be primarily through the New Orleans ARTCC, with the exception of the small corner of Russell East that lies within the KLSF Class-E airspace bubble, which would be managed by the KLSF ATC. Air traffic crossing the line between Alabama and Georgia would potentially need to transition control between Atlanta ARTCC, KLSF ATC, and New Orleans ARTCC. ATC handoffs are a normal function of IFR flying, but excessive transfer of control between the many management agencies could complicate otherwise routine sorties. This would primarily impact flights traversing the airspace outside of the KLSF Class-E bubble between the new training lands and existing Fort Benning constituting the potential for moderate adverse impacts to airspace users.

3.3.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

Similar to Alternative 1, no dudded impact areas are currently planned on the expansion property; however, this could occur in the future (see Section 3.3.3). This does not imply, however, that there would not be live-fire areas or even a temporary dud area. Any live-fire ranges that fire projectiles above 700 feet AGL would require the establishment of an RA. An RA would also be required for the establishment of UAS launch and recovery airfields or targeting devices. Any construction activities involving vertical structures over 200 feet would require coordination with the FAA. Notwithstanding these elements, there would be negligible impacts to airspace with preparation of newly acquired land under Alternative 2.

3.3.2.3.4 ARMY TRAINING

The airspace impact of Army training relative to Alternative 2 is similar to Alternative 1 with the additional effect of increased travel distance to the training area over public and privately held properties. If CAS flights are deemed necessary, they would be required to regularly traverse the distance between the airfield and newly acquired land over the public and privately held properties between the two constituting a moderate adverse impact. This would be strictly commuter traffic through VFR airspace within the KLSF Class-E bubble, and therefore, these flights would pose a minimal risk to public safety. Because of the geographic separation of Alternative 2 and the existing Fort Benning, training activities would also be functionally separated, all CAS would originate from KLSF and would be required to go along established color routes to training areas.

3.3.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Overall potential impacts to airspace resulting from implementation of Alternative 3 are similar to Alternative 1. Without Marion West, however, there would not be a contiguous relationship between the existing Fort Benning training lands and Alternative 3, creating similar conditions described in Alternative 2. V-323 also traverses a portion of this alternative. No adverse impacts, however, would occur to V-323 if there is no associated RA expansion concurrent with the land expansion (see Section 3.3.3).

3.3.2.4.1 FEDERAL ACQUISITION OF LAND

Similar to Alternative 1, Federal acquisition of land would have negligible impacts on airspace activities unless ground activities resulted in penetration of that airspace above 700 feet AGL. This would exclude hazardous operations which are only permissible in RAs. Acquisition of the land, however, would enable the Army in the future to coordinate with the FAA regarding conversion of airspace to restricted use (see Section 3.3.3).

3.3.2.4.2 ARMY MANAGEMENT

Airspace management of Alternative 3 would match the conditions described for Alternative 1 causing moderate adverse impacts. If during the course of using Stewart West, however, a military flight path took its aircraft over the Alabama state line, a control handoff between Atlanta ARTCC and New Orleans ARTCC would be necessary. This would be an unlikely occurrence and not a major event in day-to-day air operations for Alternative 3. A portion of Stewart Central lies very near the Raju Airport; however, with no RA expansion, there would be no impact on the Raju Airport.

3.3.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

Similar to Alternative 1, no dudded impact areas are currently planned on the expansion property; however, this could occur in the future (see Section 3.3.3). This does not imply, however, that there would not be live-fire areas or even a temporary dud area. Any live-fire ranges that fire projectiles above 700 feet AGL would require the establishment of an RA. An RA would also be required for the establishment of UAS launch and recovery airfields or targeting devices. Any construction activities involving vertical structures over 200 feet would require coordination with the FAA. Notwithstanding these elements, there would be negligible impacts to airspace with preparation of newly acquired land under Alternative 3.

3.3.2.4.4 ARMY TRAINING

The airspace impact of Army training relative to Alternative 3 is similar to Alternative 1 with the additional minor adverse impact as a result of a separation between the existing Fort Benning training lands and Alternative 3. This would require CAS flights, if deemed necessary, to traverse an area of public and privately held properties in the course of everyday training exercises, assuming that exercises could be conducted across Chattahoochee County via a transportation route.

3.3.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3). Because Alternative 4 is comprised of two separate areas in two separate states, the impact to airspace is a complication of spanning multiple control mechanisms, including New Orleans ARTCC, Atlanta ARTCC, and KLSF ATC.

3.3.2.5.1 FEDERAL ACQUISITION OF LAND

Similar to Alternative 1, Federal acquisition of land would have negligible impacts on airspace activities unless ground activities resulted in penetration of that airspace above 700 feet AGL. This would exclude hazardous operations which are only permissible in RAs. Acquisition of the land, however, would enable the Army in the future to coordinate with the FAA regarding conversion of airspace to restricted use (see Section 3.3.3).

3.3.2.5.2 ARMY MANAGEMENT

Without a newly established RA over the land associated with Alternative 4, the impact of airspace issues regarding airspace management would be limited to public control of CAS flights in support of ground training exercises and/or flying VFR in the same uncontrolled airspace with other non-military aircraft. Expansion of training lands under Alternative 4 could impact the airspace management of the V-241, V-321, and V-323 commercial air corridors. De-conflicting Victor route intersecting traffic would need to be managed by the appropriate regional control mechanism, either New Orleans ARTCC or Atlanta ARTCC, which could cause moderate adverse impacts to airspace users.

3.3.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

Similar to Alternative 1, no dudded impact areas are currently planned on the expansion property; however, this could occur in the future (see Section 3.3.3). This does not imply, however, that there would not be live-fire areas or even a temporary dud area. Any live-fire ranges that fire projectiles above 700 feet AGL would require the establishment of an RA. An RA would also be required for the establishment of UAS launch and recovery airfields or targeting devices. Any construction activities involving vertical structures over 200 feet would require coordination with the FAA. Notwithstanding these elements, there would be negligible anticipated impacts to airspace with preparation of newly acquired land under Alternative 4.

3.3.2.5.4 ARMY TRAINING

The airspace impact of Army training relative to Alternative 4 is similar to Alternative 2 which includes the additional effect of increased travel distance to the training area over public and privately held properties. If CAS flights were deemed necessary, they would operate in VFR with other non-military flights, posing the same hazards as outlined in Alternative 1 with the addition of a far larger area to cover between the multiple training land areas and the issue of airspace control mechanisms. This translates into a moderate adverse impact compared to Alternative 1.

3.3.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Alternative 5 has a similar situation as Alternative 4 with the same overall impact to airspace activities; however, the added separation between the two areas would result in less ideal configurations for airspace use. Both alternatives contain lands that are geographically separated from the other and from existing Fort Benning training lands. Both have Victor air corridors traversing the airspace above the land with similar impacts to CAS flights in support of ground training.

3.3.2.6.1 FEDERAL ACQUISITION OF LAND

Similar to Alternative 1, Federal acquisition of land would have negligible impacts on airspace activities unless ground activities resulted in penetration of that airspace above 700 feet AGL. This would exclude hazardous operations which are only permissible in RAs. Acquisition of the land, however, would enable the Army in the future to coordinate with the FAA regarding conversion of airspace to restricted use (see Section 3.3.3).

3.3.2.6.2 ARMY MANAGEMENT

Similar to the other alternatives, without a newly established RA over the land associated with Alternative 5, the impact of airspace issues regarding airspace management would be limited to public control of CAS flights in support of ground training exercises and/or flying VFR in the same uncontrolled airspace with other non-military aircraft. Expansion of training lands under Alternative 5 could impact the airspace management of the V-58 and V-323 commercial air corridors. De-conflicting Victor route intersecting traffic would need to be rectified by the Atlanta ARTCC Area of Responsibility, which could cause moderate adverse impacts to airspace users.

3.3.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

Similar to Alternative 1, no dudded impact areas are currently planned on the expansion property; however, this could occur in the future (see Section 3.3.3). This does not imply, however, that there would not be live-fire areas or even a temporary dud area. Any live-fire ranges that fire projectiles above 700 feet AGL would require the establishment of an RA. An RA would also be required for the establishment of UAS launch and recovery airfields or targeting devices. Any construction activities involving vertical structures over 200 feet would require coordination with the FAA. Notwithstanding these elements, there would be negligible impacts to airspace with preparation of newly acquired land under Alternative 5.

3.3.2.6.4 ARMY TRAINING

Similar to Alternatives 2 and 4, if CAS flights were deemed necessary, they would operate in VFR with other non-military flights posing the same hazards as outlined in Alternative 1 with the addition of a far larger area to cover between the multiple training land areas and the issue of airspace control mechanisms. This translates into a moderate adverse impact over Alternative 1.

3.3.3 CUMULATIVE IMPACTS

The following sections discuss cumulative impacts by the Proposed Action alternatives within the ROI for airspace. As previously mentioned, the Proposed Action does not involve a proposal to establish an RA. This cumulative effects analysis, therefore, considers the potential cumulative effects to airspace if the Army were to decide to change airspace use in the future. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is provided in Section 3.1.3.2. Overall, projects identified within Section 3.1.3.2 would have negligible impacts to airspace.

In general for all alternatives, a consistent number of air training operations spread out over a larger area due to increased Army land holdings would likely result in de-densification of those activities, which would be considered a beneficial cumulative impact to overall military related airspace operations. Most air training and live-fire activities, however, would remain within the RAs due to the inherent safety and control provided. In order to benefit from a considerable density reduction due to increased Army land holdings, the RA would need to be expanded.

As previously stated, CSG has recently converted from a Class-C to a much reduced Class-D airspace, which is the result of decreased level of commercial and private aircraft flying into and out of the region. Besides the CSG airspace conversion, no current or future foreseeable projects have been identified that would impact regional airspace. Expansion of the RA, if pursued by the Army, would limit the public's use of the airspace for private or commercial traffic. This would include air traffic on Victor routes as well as approaches/departures of CSG and other private airfields in the ROI. The use of Victor airways is expected to decrease or be eliminated completely by 2015 when the FAA plans to implement "Next-Gen" air transportation system. That system would allow aircraft to fly point-to-point using GPS navigational

aids rather than following Victor routes to their destinations. It is a system of air traffic management rather than ATC.

It is anticipated that the designation of an RA above newly acquired land would result in moderate adverse cumulative effects. The actual ability of the Army to use any of the airspace in a newly acquired area, however, would not be fully understood until the acquisition is well underway and the pattern of land acquisition is known. At that time, the Army would coordinate with the FAA to determine what, if any, change of airspace use would be pursued. Sections 3.3.3.1 through 3.3.3.5 discuss potential cumulative impacts by Proposed Action alternative. Section 3.3.4 contains mitigation measures including those which could be considered to avoid adverse impacts if an RA is granted.

3.3.3.1 ALTERNATIVE 1

Overall, airspace would have potential moderate adverse impacts. Cumulative impacts associated with the specifics of Alternative 1 involve the potential future conflict presented by increased CAS flights in uncontrolled airspace with public, private, and commercial VFR and Victor route traffic through the site. If an RA expansion is granted, the VFR traffic conflict would be resolved but the Victor route would become unusable below the established height of the activated RA. Additionally, the configuration of these lands would result in an unconventional restricted airspace that would present limitations on its usefulness for certain types of training activities.

This alternative would be the most beneficial for airspace use as it is the only alternative with a contiguous connection to the existing training range/RA. Consequently, it also overlaps a portion of the Benning MOA, which could allow for an expansion of the R3002 RA and/or the Benning MOA. Both ground and air traffic can access this space without use of public or privately held land and associated airspace above.

Expansion of the RA could adversely impact V-323 and V-321 traffic; however, there are many alternative routes that this traffic could use instead to minimize significant impacts to civil and commercial aviation. If an expansion of the R3002 is granted, this would be managed by Range Control and KLSF ATC as an extension of their current operations, resulting in an increased level of activity to manage. If a dudded impact area is established, Air Force JTACs would manage de-confliction of bombing runs with ground activities.

If established as restricted airspace, CAS could transition directly from the existing Installation to this area without having to transit through uncontrolled airspace. An additional UAS training area could be established, which would have the impact of reducing congestion on the existing Installation, increasing training opportunities, and reducing conflicts between the many training activities. To avoid the Victor airways, a segment of Marion West, Webster West, or both could be used for maximum flexibility of airspace operations.

3.3.3.2 ALTERNATIVE 2

The overall potential moderate adverse impacts of Alternative 2 are similar to those identified for Alternative 1 including lack of controlled separation between future CAS flights and public, private, and commercial VFR and Victor route traffic. The site location creates issues of separation between the existing Fort Benning training lands and Alternative 2 with the net result being a discontinuity of training exercises. This could be deemed a positive attribute if adequate space is obtained for specific exercises to be conducted on the newly established training areas.

One beneficial impact is the physical overlap of the proposed Alternative 2 acquired lands to the KLSF Class-D and Class-E airspace bubbles. If the entire area over the new lands were converted to RA, this would allow flights originating from KLSF and between the existing Installation and newly established training areas to fly under ATC management without fear of conflict by non-cooperative aircraft.

In the event that an RA was to be granted, a significant adverse impact could occur to traffic patterns, both for Weedon Field and the V-241. If an RA is granted, typical CAS air traffic would be able to transit through the KLSF Class-D airspace, but UAS traffic could not without a Certificate of Airworthiness and either a qualified observation plane, ground observation stations or a Certificate of Waiver or Authorization. Given the fact that Fort Benning currently only flies Tier I & II UAS, this would most likely result in the establishment of a separate UAS launch and recovery site within the new RA. Significant adverse impacts could be reduced if an RA is established to the west of Victor-241 and east of Victor-454, reducing conflicts. This configuration, however, could considerably limit the RA size and usefulness for military operations, as well as extending the distance between future training areas and KLSF.

3.3.3.3 ALTERNATIVE 3

The overall potential moderate adverse impacts defined for Alternative 3 are similar in nature to those described for both Alternative 1 and 2 with regards to lack of controlled separation between future CAS flights and public, private, and commercial VFR and Victor route traffic. The training land separation issue also reflects a similar situation as described in Alternative 2 except that the proposed newly acquired lands would only be connected by the Class-E airspace bubble of KLSF. The physical distance between the existing Installation and newly established training areas, however, is much less with Alternative 3 than Alternative 2, resulting in a reduced exposure time for transiting aircraft.

If the RA is expanded, it could pose impairment to commercial and private air operations on that route. In order for aircraft to make straight-line southern approaches to KLSF or the Fryar DZ, the RA would need to be deactivated to allow aircraft transit through the airspace without conflict from other air activities, much as the existing Sector G of the R3002 operates now. The resulting impact would be either a rarely activated RA or a requirement for Runway 33 approaches to come from the southwest and bank into the approach corridor from approximately 3 NMs out. The Class-E A/D corridor for KLSF covers a portion of the gap within Chattahoochee County, which could, however, provide the control necessary via KLSF ATC to allow the two separated RAs to essentially function as one. This also means, however, that the Runway 33 approach would run diagonally through the center of Stewart West from corner to corner. Commercial and private traffic would have to be rectified with range training activities if the RA is extended to include this new area. It would most likely be considered an extension of Sector G of the R3002, which is typically left unactivated for the sake of ongoing airfield operations. This is also the same path as the Fryar DZ, which is the primary Airborne parachute training area.

A portion of Stewart Central lies very near the Raju Airport, which could potentially cause some minor conflict with approach and departure activities. This is a very small, private, single-user airport that would at the most require an individual to redirect his or her route immediately east or west around the expanded RA if desiring a northerly flight path.

3.3.3.4 ALTERNATIVE 4

Both of the separated land areas identified for Alternative 4 are part of other alternatives already discussed. The overall potential moderate adverse impacts are relative to those portions of those alternatives (Alternatives 2 and 3). Specific negative impacts include the separation of land areas across two states and multiple control agencies.

3.3.3.5 ALTERNATIVE 5

The overall potential moderate adverse impacts of Alternative 5 are similar in nature to those identified under Alternative 3 which involves Stewart West. The exception lies with Harris East and Talbot West to the north; however, circumstances of separation and the potential adverse impacts of establishing an RA are similar to those already discussed for the other alternatives.

3.3.4 PROPOSED MITIGATION

The following mitigation measures are potential measures that the Army could choose to enact to reduce the potential for adverse impacts to airspace presented within Section 3.3.2. Applicable to all alternatives (until an expansion of RA is pursued), any new training areas would be utilized for training activities not requiring airspace above the Class-G floor of 700 feet AGL while the existing Installation focuses on training activities that require restricted airspace, such as UAS launch, recovery and flight training, maneuver training CAS, parachute training and live-fire including mortar and howitzers rounds, and air-to-ground bombing. This separation would help to eliminate some of the overlap currently experienced in range usage, thereby assuring maximum utilization of assets.

As previously stated, changes to airspace are not part of the Proposed Action but are a desired future action. Once Fort Benning has selected a preferred alternative identifying land areas to acquire as part of the Proposed Action and has completed its ROD, the Army would then decide whether to request a change in airspace use from the FAA. The configuration of acquired lands along with existing Army land holdings would dictate any airspace request change, which would drive specific mitigation measures in coordination with the FAA. The following measures have been identified as possible mitigation measures that could be considered by Fort Benning if change of airspace designation is pursued with the FAA.

Alternative 1. The minor negative impacts of this alternative could not be completely mitigated; however, a substantial improvement could be accomplished through establishment of the new lands as an RA. Mitigation of the potential conflicts between Victor route traffic and CAS flights could be accomplished by requesting a change to the parameters of the Victor routes to establish a floor at 1,500 feet above MSL (or higher) and requiring all CAS flights in the area to operate below that level; or those flights could simply operate as all other VFR traffic taking individual responsibility for conflict resolution.

Alternative 2. A similar condition exists with this alternative regarding the Victor route traffic, which could be handled in the same manner as Alternative 1. The issue regarding the separation of the training lands could be managed by KLSF ATC as the gap between the two areas is within their Class-D and Class-E airspace bubbles. Once outside of that controlled airspace, however, all flights would be subject to VFR flying with all other public, private, and commercial traffic unless converted to restricted airspace.

Alternative 3. Local airspace management would provide necessary mitigation as described for Alternatives 1 and 2. The issue of conflict between CAS flights in support of ground training activities, KLSF A/D, and Fryar DZ flight corridors could be de-conflicted by establishing operational protocols that require aircraft on these flight paths to maintain a pre-specified altitude (such as 1,500 feet above MSL) while traversing the training areas, then drop down as needed for DZ or landing. Concurrently, CAS flights would be required to stay below that height limitation. The potential issue of encroachment on Raju Airport could be mitigated by disallowing CAS flights in that area; thereby allowing Raju Airport users a wider berth for A/D activities. Alternatively, flights in vicinity of that airfield could simply operate as all other VFR traffic taking individual responsibility for conflict resolution.

Alternatives 4 and 5. There are similar circumstances and mitigation opportunities for Alternatives 4 or 5 as described for the alternatives above. Similar conditions concerning Victor route traffic de-confliction could be managed as described for Alternative 1. The greatest distance separating the land areas that make up these alternatives and the distance of those lands from the existing Installation and KLSF could only be spanned flying VFR with all other public, private, and commercial traffic.

3.4 AIR QUALITY

3.4.1 AFFECTED ENVIRONMENT

This section provides an overview of the National Ambient Air Quality Standards (NAAQS) and the attainment status of the region (Section 3.4.1.1). Existing Fort Benning and regional air emissions are discussed (Section 3.4.1.2) to provide a background of the types of emissions and related activities that could potentially occur within the land area under consideration for acquisition. This discussion is followed by a description of the current types of emissions existing within the TLEP study area (Section 3.4.1.3), permitting requirements (Section 3.4.1.4) and climate and greenhouse gases (GHGs) (Section 3.4.1.5). The ROI for air quality encompasses the Columbus-Phenix City Interstate air quality control region (AQCR) (i.e., the airshed containing Fort Benning, the TLEP study area, and adjacent properties).

3.4.1.1 NATIONAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS

EPA Region 4, the Alabama Department of Environmental Management (ADEM), and the GDNR Environmental Protection Division (GEPD) regulate air quality on Fort Benning. The CAA (42 USC 7401–7671q), as amended, gives the EPA the responsibility to establish the primary and secondary NAAQS (40 CFR 50) that designates acceptable concentration levels for 6 criteria pollutants: particulate matter (PM_{10} and $PM_{2.5}$), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O_3), and lead. Short-term standards (i.e., 1-, 8-, and 24-hour periods) have been established for pollutants contributing to acute health effects, while long-term standards (i.e., annual averages) have been established for pollutants contributing to chronic health effects. Each state has the authority to adopt standards more strict than those established under the Federal program; however, the states of Alabama and Georgia accept the Federal standards.

Federal regulations designate areas that have concentrations of one or more of the criteria pollutants that exceed the NAAQS as *nonattainment* areas. Federal regulations designate AQCRs with levels below the NAAQS as *attainment* areas. Muscogee, Chattahoochee, Marion, Webster, Harris, Stewart, Talbot, and Russell counties (and, therefore, Fort Benning and the TLEP study area) are all within the Columbus-Phenix City Interstate AQCR (AQCR 004) (40 CFR 81.58). The EPA has designated all the above-mentioned counties and Fort Benning as in attainment for all criteria pollutants (40 CFR 81.301 and 40 CFR 81.311).

Although Fort Benning and the TLEP study area are presently designated by the EPA as in attainment for all criteria pollutants, a portion of Muscogee County is classified as a maintenance area[1] for lead. This classification is due to a lead smelting and battery production facility (GNB Industrial Power, Inc.) for an area defined within a radius of 2.3 kilometers from the facility's center. Although the facility is within the ROI, neither Fort Benning nor the TLEP study area falls within the maintenance area. In addition, the EPA recently proposed to strengthen the 8-hour ozone NAAQS. The most recent data (2007-2009) indicate that Muscogee County would be a nonattainment area under the newly proposed 8-hour NAAQS. In general, elevated levels of O_3 in Muscogee County are attributable to higher population density and associated background air emissions due to general increases in vehicle traffic, lawn maintenance, and other human activities. No other counties in the area are expected to be designated nonattainment areas under the newly proposed 8-hour NAAQS.

[1] A maintenance area is any geographic region of the U.S. previously designated nonattainment and subsequently redesignated to attainment subject to the requirement to develop a maintenance plan under Section 175A of the CAA.

Clean Air Act Conformity. The 1990 amendments to the CAA require Federal agencies to ensure that their actions conform to the State Implementation Plan (SIP) and general conformity rules in a nonattainment area. General Conformity Regulations have been established in response to Section 176 of the CAA. They ensure that Federal activities conform to the SIP, ensuring that Federal activities do not cause or contribute to new violations of NAAQS; that actions do not cause additional or worsen existing violations of or contribute to new violations the NAAQS; and that attainment of the NAAQSs is not delayed. Since the areas evaluated under each of the alternatives under consideration are currently designated in attainment for all criteria pollutants, general conformity does not apply at this time.

3.4.1.2 REGIONAL AND INSTALLATION-WIDE EMISSIONS

CAA Section 110 requires each state to submit a SIP, which provides for the implementation, maintenance, and enforcement of the primary and secondary ambient air quality standards. The intent of the CAA is for states to submit SIPs that, upon approval by the EPA, will allow the states to regulate air pollution within their borders. SIPs must include enforceable emissions limitations, provide for monitoring, and prohibit emissions that will contribute to the nonattainment of a standard. Alabama and Georgia have approved SIPs to address the requirements of the CAA (ADEM, 2010a; GEPD, 2010). Table 3.4-1 presents total annual baseline emissions for the counties in the TLEP study area in tons per year (tpy).

Table 3.4-1. Total Annual Emissions for Counties in the TLEP Study Area

Point Source Emissions (tpy)						
County[1]	**CO**	**VOC**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Chattahoochee	*<none>[2]*					
Harris	85.3	12.3	199.0	0.0	0.0	0.0
Marion	5.1	184.1	3.2	0.2	27.3	13.8
Muscogee	322.0	186.5	20.3	0.0	201.6	97.2
Russell	5,656.1	1,800.0	2,662.4	7,324.1	807.7	681.3
Stewart	*<none>[2]*					
Talbot	*<none>[2]*					
Webster	39.4	175.0	43.0	2.0	28.5	12.9
Total	6,107.9	2,358.0	2,927.9	7,326.3	1,065.1	805.2
Nonpoint+Mobile Source Emissions (tpy)[3]						
County	**CO**	**VOC**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Chattahoochee	2,590.4	494.8	363.6	22.2	658.4	139.3
Harris	18,360.5	2,888.6	1,839.9	276.2	3,761.6	932.1
Marion	4,908.0	886.1	484.8	226.5	1,697.7	425.6
Muscogee	44,227.6	8,883.8	5,648.0	1,893.7	3,081.9	683.3
Russell	32,460.4	6,868.3	2,757.5	890.2	5,148.5	1,733.9
Stewart	8,670.2	1,649.7	575.1	131.2	2,071.7	754.6
Talbot	5,970.5	1,057.1	882.2	83.0	1,529.6	405.3
Webster	3,212.5	591.1	300.1	56.0	1,192.5	342.4
Total	120,400.1	23,319.5	12,851.2	3,579.0	19,141.9	5,416.6

Table 3.4-1. Total Annual Emissions for Counties in the TLEP Study Area

Total Emissions (tpy)						
County	**CO**	**VOC**	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Chattahoochee	2,590.4	494.8	363.6	22.2	658.4	139.3
Harris	18,445.8	2,900.9	2,038.9	276.2	3,761.6	932.1
Marion	4,913.1	1,070.3	488.1	226.7	1,725.0	439.4
Muscogee	44,549.6	9,070.3	5,668.3	1,893.7	3,283.5	780.5
Russell	38,116.5	8,668.3	5,419.9	8,214.3	5,956.2	2,415.2
Stewart	8,670.2	1,649.7	575.1	131.2	2,071.7	754.6
Talbot	5,970.5	1,057.1	882.2	83.0	1,529.6	405.3
Webster	3,251.9	766.1	343.1	58.0	1,221.0	355.4
Total	126,508.0	25,677.5	15,779.1	10,905.3	20,206.9	6,221.8

Source: EPA, 2010b. Air Data Tier Emissions Report, the most recent data from 2002.

[1] Table gives information for the entire county not just the county sections in the study area. Chattahoochee and Muscogee Counties do not include emissions from Fort Benning.

[2] Point source emissions for Chattahoochee, Stewart, and Talbot Counties are not appreciable and smaller than those tracked by the EPA Air Database.

[3] The EPA Air Data Tier Emissions Report does not include estimated emission for prescribe burning activities.

CO = carbon monoxide; NO_X = nitrogen oxides; PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

Fort Benning is designated as a major stationary source of air pollutants and operates under a Title V Operating Permit (No. 9711-215-0021-V-02-0). The Title V permit was renewed in August 2008 and is in effect for 5 years. The permit includes a list of emission sources, applicable regulations, emissions limits, and monitoring and record-keeping requirements. The permit is modified as needed to account for the addition or removal of pollutant sources. Sources of criteria pollutants or hazardous air pollutants (HAPs) at Fort Benning include generators, boilers, firefighting equipment, fuel storage tanks, landfills, parts cleaners, range operations, rock crushers, a veterinary crematory, wood chippers, woodworking, and spray paint booths.

Prescribed Burning and Smoke Management. In addition to these stationary source emissions, Fort Benning generates air pollutants from prescribed fire activities as part of their ongoing ecosystem management program. Table 3.4-2 at the end of this section presents the actual emissions and the potential to emit (PTE) for Fort Benning for the year 2009. Prescribed burning is the largest single source of criteria pollutant emissions on the Installation. Although prescribed burning is an appreciable source of air emissions, it is a critical management tool for fire-dependent natural communities, and its benefits are well understood. It reduces naturally occurring fuels within forest areas, helping to prevent catastrophic wildfires; it provides an affordable, environmentally sound method for preparing an area for seeding or planting; it helps to control or eliminate some disease in pines or other species; it is an efficient and economical tool for improving the habitat for certain wildlife species; and it is an irreplaceable process in maintaining biological diversity and balance.

The Georgia and Alabama Forestry Commissions administer each state's Smoke Management Plans (SMPs), which detail the states' basic frameworks of procedures and requirements for managing smoke from prescribed fires. The purpose of each SMP is to minimize the public health and environmental impacts of smoke intrusion into populated areas from fires; to avoid significant deterioration of air quality and potential NAAQS violations; and to avoid visibility impacts in Class I areas while utilizing fire in a controlled manner which enhances natural resource management and provides benefits to the ecosystem. As outlined in the SMP, prescribed burning is necessary to maintain healthy ecosystems and in many

cases to meet requirements of the ESA. For example, the RCW is Federally-endangered, and Federal property managers must use prescribed fire to enhance its recovery. Prescribed fire is also an important tool to maintain habitat for popular and economically important game species, such as the northern bobwhite, wild turkey, and white-tailed deer.

These plans were developed with cooperation from Federal military installations, Federal land managers associated with the USFWS, the United States Forest Service, the National Park Service, and groups and associations representing environmental interests or private individuals. The plans address how best to achieve national clean air objectives while improving the quality of wildland ecosystems through the use of prescribed fire. Some of the requirements outlined in the SMP include open burning permitting, training requirements, interagency coordination, smoke mitigation, and public notification. Fort Benning's prescribed burning activities are conducted in full compliance with these plans as they apply within each state.

Table 3.4-2. 2009 Installation-Wide Emissions

Installation-Wide Actual Emissions (tpy)							
	NO_x	**SO_2**	**CO**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**HAP**
Stationary Sources[1]	3.5	0.5	29.0	18.0	11.2	11.2	6.9
Area Sources[3]	1,109.1	328.6	33,682.3	2,793.2	6,151.4	4,723.7	41.5
Total	**1,112.6**	**329.1**	**33,711.3**	**2,811.2**	**6,162.6**	**4,734.9**	**48.4**
Installation-Wide Potential to Emit (tpy)							
	NO_x	**SO_2**	**CO**	**VOC**	**PM_{10}**	**$PM_{2.5}$**	**HAP**
Stationary Sources[1]	211.6	77.4	174.1	55.4	36.4	36.4	18.8
Area Sources[2]	1,109.1	328.6	33,682.3	2,793.2	6,151.4	4,723.7	41.5
Total	**1,320.7**	**406.0**	**3,3856.4**	**2,848.6**	**6,187.8**	**4,760.1**	**60.3**

Source: Fort Benning, 2010c

[1] Examples of stationary sources include boilers and generators.

[2] Area source information pertains to prescribed burning only.

*CO = carbon monoxide; HAP = hazardous air pollutant; NO_X = nitrogen oxides; PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound*ioxide; tpy = tons per year; VOC = volatile organic compound

3.4.1.3 EMISSIONS WITHIN THE TLEP STUDY AREA

The land being considered for acquisition is largely rural, low density residential, and predominantly undeveloped. As previously discussed, all properties in the TLEP study area are in attainment with all Federal, state, and local air quality regulations. Residential and commercial properties may contribute small amounts of air emissions from fuel storage tanks, generators, and other minor or insignificant stationary sources. Personal and commercial vehicle traffic in the TLEP study area also contributes to the current regional air quality. There are no major stationary sources for air emissions in the TLEP study area. The largest industrial source of air emissions is timber-harvesting equipment, including heavy-duty diesel vehicles and a mix of gasoline- and diesel-powered support equipment. Prescribed burning, an area source, also occurs in the TLEP study area; however, data regarding the emissions are not available.

3.4.1.4 PERMITTING REQUIREMENTS

Air permitting is required for many industries and facilities that emit regulated pollutants. Based on the size of the emissions units and type of pollutants emitted (criteria pollutants or HAPs), GDNR and ADEM set permit rules and standards for emissions sources.

Construction Permits. The air quality permitting process begins with the application for a construction permit. There are three types of construction permits available through the GDNR or ADEM for the construction and temporary operation of new emissions sources: Major New or Modified Source Construction Permits in Nonattainment Areas (Nonattainment New Source Review [NNSR]); Prevention of Significant Deterioration (PSD) permits in attainment areas; and Minor New Source Construction Permits (Minor New Source Review). NNSR permits are required for new major sources or modifications in nonattainment areas. All areas associated with the Proposed Action are within attainment; therefore, NNSR would not apply.

Attainment areas are managed under the PSD program of the CAA. The goal of this program is to prevent the degradation of air quality, while at the same time allowing for moderate economic growth. Thresholds requiring a PSD permit are outlined in Table 3.4-3. PSD review and permitting is required for stationary sources emitting 100 tpy of any regulated pollutant for any of the 26 named PSD source categories. One of the named source categories is fossil fuel boilers that individually or in combination at a single facility total more than 250 million British Thermal Units per hour (MMBtu/hr) heat input. For all other sources not in the 26 named source categories, PSD review is required if the source emits 250 tpy or more of any regulated pollutant. Sources subject to PSD are typically required to complete Best Available Control Technology (BACT) review for criteria pollutants, predictive modeling of emissions from proposed and existing sources, and public involvement.

Table 3.4-3. Major Modification Thresholds of Criteria Pollutants

Pollutant	New Major Source (tpy)[1]	Major Modification to an Existing Source (tpy)
CO	250 (100)	100
NO_x	N/A	N/A
SO_2	250 (100)	40
PM	250 (100)	25
PM_{10}	250 (100)	15
$PM_{2.5}$	250 (100)	10
VOCs	N/A	N/A

Source: 40 CFR 52

[1]PSD review and permitting is required for sources emitting 100 tpy of any regulated pollutant for fossil fuel boilers (or combination of them) totaling more than 250 MMBtu/hr heat input.

CO = carbon monoxide; N/A = not applicable; NO_X = nitrogen oxides; PM_{10} = particulate matter with an aerodynamic diameter of 10 microns or less; $PM_{2.5}$ = particulate matter with an aerodynamic diameter of 2.5 microns or less; SO_2 = sulfur dioxide; tpy = tons per year; VOC = volatile organic compound

In addition, PSD provides rigorous safeguards to prevent deterioration of the air quality in Class I areas as specified in 40 CFR 51.166(e) (EPA, 2010a). The PSD program designates EPA Mandatory Class I areas as all international parks, all national wilderness areas, and national memorial parks that exceed 5,000 acres, and all national parks that exceed 6,000 acres in existence on August 7th, 1977. The closest PSD Class I area is the Okefenokee Wilderness Area approximately 150 miles to the east of the TLEP study area. Other areas include the Sipsey Wilderness Area, Alabama, as well as Cohotta and Wolf Island Wilderness Areas, Georgia. All of these Class I areas are located more than 150 miles away and it would be unlikely that they would be affected by emissions generated within the ROI; therefore, effects to Class I areas are not further considered in this air quality analysis.

A Minor New, Modified, and certain Major Source Construction Permit (or Minor New Source Review permit) would be required to construct minor new sources and minor modifications of existing sources. The New Source Review permitting process typically takes four to five months to complete. Sources subject to Minor New Source Review could be required to complete a BACT review for each criteria pollutant, Maximum Available Control Technology (MACT) review for regulated HAPs and designated

categories, predictive air dispersion modeling, and establish procedures for measuring and recording emissions and process rates.

Operating Permits. Under state and Federal Title V regulations, a Title V Significant Permit Modification is required for facilities whose increase in emissions exceeds the thresholds outlined in Table 3.4-3. In addition, a Significant Permit Modification would be required if it became necessary to establish Federally-enforceable limitations to reduce potential emissions below the thresholds. A minor permit modification would be required if emissions were below the thresholds and a Federally-enforceable limit was not necessary. Submission of an application for these permit modifications would be required within one year of the first operation of a new emissions source (40 CFR Part 52).

Other Requirements. In addition to the permitting requirements to construct and operate new or modified emissions sources, New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) set emissions control standards for categories of new stationary emissions sources of both criteria pollutants and HAPs. The NSPS process requires the EPA to list categories of stationary sources that cause or contribute to air pollution that might reasonably be anticipated to endanger public health or welfare. The NSPS program sets uniform emissions limitations for many industrial sources such as boilers and stand-by generators. As part of the NESHAPs, new stationary sources whose PTE HAPs exceeds either 10 tpy of a single HAP, or 25 tpy of all regulated HAPs, would be subject to MACT requirements (40 CFR Part 52).

3.4.1.5 CLIMATE AND GREENHOUSE GASES

The climate in the region is characterized by hot summers and mild winters. Precipitation is evenly distributed throughout the year, the wettest month being March with approximately six inches of precipitation, and the driest month being October with approximately three inches of precipitation. January, historically the coldest month, has an average regional temperature of 31.6 degrees Fahrenheit (°F). July, historically the warmest month, has an average regional temperature 89.6 °F and can fluctuate by cooling 22 °F from day to evening (Idcide, 2010).

GHGs are components of the atmosphere that trap heat relatively near the surface of the earth; and therefore, contribute to the greenhouse effect and global warming. Most GHGs occur naturally in the atmosphere, but increases in their concentration result from human activities such as the burning of fossil fuels. Global temperatures are expected to continue to rise as human activities continue to add carbon dioxide (CO_2), methane, NO_3, and other greenhouse (or heat-trapping) gases to the atmosphere. Human health, agriculture, natural ecosystems, coastal areas, and heating and cooling requirements are examples of climate-sensitive systems. Some observed changes include shrinking of glaciers, thawing of permafrost, later freezing and earlier break-up of ice on rivers and lakes, lengthening of growing seasons, shifts in plant and animal ranges, and earlier flowering of trees (EPA, 2010a; IPCC, 2007).

Federal agencies, states, and local communities address global warming by preparing GHG inventories and adopting policies that will result in a decrease of GHG emissions. EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance* (October 5th, 2009), outlines policies intended to ensure that Federal agencies evaluate climate change risks and vulnerabilities, and to manage the short- and long-term effects of climate change on their operations and mission. The EO specifically requires Federal agencies to measure, report, and reduce their GHG emissions from both their direct and indirect activities. Direct activities include sources the agencies own and control, and from the generation of electricity, heat, or steam they purchased. Indirect activities include their vendor supply chains, delivery services, and employee travel and commuting. The Army, and therefore, Fort Benning, is in the process of inventorying its GHG emissions and setting reduction goals for the year 2020 as outlined in the EO (EPA, 2010a).

3.4.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential environmental impacts to air quality that would result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant adverse impact to air quality would occur if an alternative threatened the attainment status of the region, had substantial GHG emissions, or led to a violation of any Federal, state, or local air regulation.

3.4.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. There would be no construction or upgrade of training infrastructure within the areas associated with the Proposed Action, and both the level and location of existing training activities would remain unchanged. There would be no change in either direct or indirect emissions of criteria pollutants, HAPs, or GHGs; therefore, this alternative would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS.

3.4.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Alternative 1 would have short-term minor and long-term moderate adverse effects on air quality. These effects would be primarily due to combustion emissions from prescribed burning activities, additional on- and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. All new direct and indirect sources of air emissions would be located within newly acquired lands including Marion West, Webster West, and Stewart East. Alternative 1 would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation. Impacts associated with GHG and regulatory requirements that apply to all components of Alternative 1 are outlined below.

Emissions from Army prescribed burning would be partially offset by any amount of existing burning activities within the TLEP study area that would stop during the land acquisition process. The actual levels of current prescribed burning and related emissions on new lands are unknown at this time; however, it is assumed that prescribed burning from timber management occurs within the TLEP study area, as well as occasional wildfires. This analysis assumes a reasonable worst-case scenario that the current off-Post prescribed burning activities and subsequent emissions are minute compared to the resource management practices that would be implemented under Alternative 1 and the amount of emissions offset would be negligible. Using this scenario, regardless of the amount of actual existing burning that would end, it is unlikely that the net emissions would change appreciably or the level of impact under NEPA would change to less than moderate.

GHGs and Global Warming. There would be no appreciable emissions of GHGs associated with any component of Alternative 1. There would be no increase in the total number of personnel or the number of vehicles at Fort Benning. Essentially, the same GHG emissions will be spread out over a larger area, and therefore, not add to the global climate change phenomenon. The Armor School and ARC are new to Fort Benning, but their emissions are currently occurring at Fort Knox. The net change to the global phenomenon will not change. There may be some changes due to increased prescribed burning on new land. This is discussed below.

The DoD has committed to reduce GHG emissions from non-combat activities by 34 percent by 2020 (DoD, 2010). The Army is committed to continue to act in accordance with EO 13514 within the framework of the DoD-wide efforts to reduce GHG emissions. Inventorying GHG emissions at all Federal agencies, including the Army, is part of the current stage of the process. The Army, as part of the DoD, has begun inventorying direct and indirect emissions of GHGs, and determining its role in the overall process. This is both in response to, and consistent with, the guidelines put forth in EO 13514. It is not expected that any of the activities outlined herein would interfere with the DoD's ability to meet their goal. In addition, the CEQ recently released draft guidance on when and how Federal agencies should consider GHG emissions and climate change in NEPA analyses. The draft guidance includes a presumptive effects threshold of 27,563 tons (25,000 metric tons) of CO_2-equivalent emissions from a proposed action on an annual basis (CEQ, 2010). The GHG emissions associated with Alterative 1 fall well below the CEQ threshold.

3.4.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a minor beneficial effect on air quality. Upon the initial acquisition of land, current sources of emissions on newly acquired land such as timber harvesting, residential heating, automobile traffic, and lawn maintenance equipment would end. There would be no direct or indirect emissions under the direct control of the Army associated with the Federal acquisition of land.

3.4.2.2.2 ARMY MANAGEMENT

Implementation of resource management programs would have long-term moderate adverse effects. These effects would be due to forest management and particularly prescribed burning on newly acquired lands. These effects would be somewhat offset by the reduction of existing Fort Benning emissions, as well as the reduction of current sources of emissions on newly acquired land, such as residential heating, automobile traffic, and land maintenance equipment.

The INRMP has components that directly affect air quality, including timber management, fire management, and environmental compliance. Timber harvesting, prescribed burning, and other resource management activities would be implemented under this plan on newly acquired lands. As outlined in Section 3.8.1.3, these resource management activities would have beneficial effects to biological resources and health and safety.

Prescribed burning is the largest source of air emissions for both criteria pollutants and HAPs at the existing Installation and is likely to be for the newly acquired lands. Because of the substantial area of land being acquired, emissions associated with prescribed burning in the newly acquired lands are expected to be as much as 50 percent of those currently on the existing Installation. Both actual and potential emissions associated with prescribed burning on the newly acquired lands would be between several hundred and several thousand tpy depending on the criteria pollutant. These effects would be moderate. There are likely some existing prescribed burning activities being performed within the study area by both timber management groups and private citizens. The levels of current burning and wildfires on new lands are unknown at this time, and it is assumed they are minute compared to the resource management practices that would be implemented under Alternative 1. This is a reasonable worst-case approach, and regardless of the amount of actual existing burning that is currently taking place, it is unlikely that the level of impact would change.

Notably, according to EPA AP-42 13.1, *Wildfires and Prescribed Burning,* emission factors for nearly all of the fuel carbon (greater than 99.9 percent) from prescribed burning activities would be converted to CO_2 during the combustion process. Unlike fossil fuels, such as natural gas and fuel oil, CO_2 emitted from prescribed burning is generally not counted as a GHG because it is considered part of the short-term

CO_2 cycle, as it does not introduce any new carbon that did not come directly from the atmosphere (EPA, 1995a).

Emissions for other criteria pollutants would be generated by on-road and non-road vehicles engaged in timber harvesting and in the general maintenance required with implementing all resource management programs throughout the areas associated with the Proposed Action. The Pest Management Plan and ITAM program do not have components that directly affect air quality, and implementing these plans would have negligible effects. The Fort Benning NEPA Programs would help ensure compliance with all Federal, state, and local air regulations in the newly acquired lands. These activities would be outside of Muscogee County, which is expected to become a nonattainment area under the newly proposed 8-hour NAAQS.

3.4.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Preparation of newly acquired land would have short- and long-term minor adverse effects. Alternative 1 would require earth-moving operations to construct and upgrade the training infrastructure on Alternative 1 properties to ensure mobility and base support for strike, sustainment, and logistics forces. Heavy-duty vehicular equipment including dozers, scrapers, loaders, excavators, and dump trucks would perform the necessary activities that may involve excavation, clearing, and grubbing. During the construction and upgrade phases, these vehicles would generate exhaust and fugitive dust emissions, causing temporary increases in both criteria pollutants and GHGs. Boilers for heating and standby generators would likely be installed at the newly constructed support facilities. The exact nature of the stationary sources, however, would be determined after selection of a TLEP alternative. Subsequent NEPA analysis and comprehensive air quality analysis would be conducted, where necessary, to determine the impact of future proposed support facilities within the newly acquired lands. Alternative 1 would be outside of Muscogee County, which is expected to become a nonattainment area under the newly proposed 8-hour NAAQS.

There would be new stationary sources of air emissions, such as boilers and stand-by generators, associated with Alternative 1 that would require appropriate Title V permit coverage. New Source Review, NSPS, NESHAP and all other regulatory requirements associated with stationary sources would apply. Fort Benning would comply with other applicable regulatory requirements such as through the use of compliant practices and/or products. These requirements appear in the Georgia Administrative Code (GAC) 391-3-1 – Air Quality Control. They include, but are not limited to the following:

- Control of Open Burning and Incineration (GAC 391-3-1-.02(5))
- Control of Fugitive Particulate Emissions (GAC 391-3-1-.02(1(n)))

Specifically, no person shall handle, transport, or store any material in a manner which may allow unnecessary amounts of air contaminants to become airborne. Reasonable measures would be required to prevent unnecessary amounts of particulate matter from becoming airborne. Such precautions may include use of water for control of dust, paving of roadways and maintaining them in a clean condition, and covering open equipment when transporting material likely to become airborne.

3.4.2.2.4 ARMY TRAINING

Implementation of Army training would have long-term minor adverse effects. These effects would be due to additional use of both on- and off road training vehicles throughout the new training areas. Air emissions associated with Army training would not threaten the attainment status of the region or violate any Federal, state, or local air regulations.

The exact configuration of the new training areas is unknown at this time. Although, there would be no increase in the number of troops, vehicles, or equipment when compared to the No Action Alternative, air emissions would increase on newly acquired and adjacent properties due to the shift of some training

activities to the new land. In general, training activities would be situated within the newly acquired lands and expanded over a wider area when compared to the No Action Alternative. All activities outlined in Table 2.2-3 (see Section 2.2.5.2.2) would require some ground or aerial support vehicles either in the transportation of troops or during training itself. The support vehicles would generate some amount of both criteria pollutants and GHGs. This would result in more miles traveled for both on- and off-road vehicles during maneuver training and a subsequent increase in vehicular exhaust and fugitive dust emissions. Regardless of the ultimate configuration, these effects would be less than significant (minor to moderate adverse impacts).

There would be no increase in the overall annual amount or frequency of simulated artillery firing, pyrotechnic detonations, or the use of obscurants or flares at Fort Benning and as projected under the BRAC and MCoE increases. A proportionate amount of these training activities, however, would take place on the newly acquired properties. The risk of starting unintentional wildfires and subsequent smoke and particulate emissions due to these activities as they are currently conducted would be offset at a one-to-one ratio on the newly acquired lands. These effects would be negligible.

Once operational, emissions due to live-fire training activities on the newly proposed properties would occur. Primary emissions from ordnance detonation and small arms fire are CO, CO_2, and PM. Ultralow levels of methane, lead, and other HAPs would also be emitted. Live-fire training activities are generally considered insignificant sources of air emissions and are not heavily regulated. Initially, all live-fire training activities would be transferred on a one-to-one basis from the existing Installation. There would be no net change in emissions from these activities. Section 3.4.1.1 addresses the pending nonattainment status of Muscogee County. All other areas associates with the action are currently and would continue to be attainment areas. Any training activities currently being conducted in Muscogee County that were relocated to the new areas would constitute a net benefit to air quality, specifically through the movement of emissions out of the pending non-attainment area.

3.4.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Alternative 2 would have short-term minor and long-term moderate adverse effects on air quality. Overall potential effects on air quality would be similar in both nature and overall level to those described under Alternative 1 (Section 3.4.2.2). These effects would be primarily due to combustion emissions from prescribed burning activities, additional on-and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. As with Alternative 1, Alternative 2 would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation.

3.4.2.3.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 2 would have minor beneficial effects on air quality. Current sources of emissions such as timber harvesting, residential heating, automobile traffic, and lawn maintenance equipment within Russell East, Russell West, and the transportation route would be discontinued.

3.4.2.3.2 ARMY MANAGEMENT

As with Alternative 1, implementation of resource management programs under Alternative 2 would have long-term moderate adverse effects on air quality. These effects would be due to forest management and prescribed burning within Russell East and Russell West. These effects would be somewhat offset by the

reduction in existing Fort Benning emissions, as well as the reduction of current sources of emissions on newly acquired land such as residential heating, automobile traffic, and land maintenance equipment. The nature and level of effects from implementing the INRMP, Pest Management Plan, and Fort Benning's ITAM and NEPA programs would be identical to those outlined under Alternative 1. These effects would be moderate.

3.4.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

Similar to Alternative 1, preparation of newly acquired land under Alternative 2 would have short- and long-term minor adverse effects on air quality. As with Alternative 1, both on-road and non-road vehicles would generate exhaust and fugitive dust emissions, causing temporary increases in both criteria pollutants and GHGs. There would be new stationary sources of air emissions, such as boilers and stand-by generators, associated with Alternative 2 that would require appropriate Title V permit coverage.

3.4.2.3.4 ARMY TRAINING

As with Alternative 1, implementation of Army training under Alternative 2 would have long-term minor adverse effects on air quality. As with Alternative 1, these effects would be due to additional use of heavy vehicles throughout the new training areas. Specific effects associated with non-live-fire and live-fire training would be identical to those outlined under Alternative 1. All new direct and indirect emission sources associated with Army training would be located within Russell East and Russell West, and the transportation route. Air emissions associated with Army training would not threaten the attainment status of the region or violate any Federal, state, or local air regulations. These effects would be minor.

3.4.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Alternative 3 would have short-term minor and long-term moderate adverse effects on air quality. Overall potential effects on air quality would be similar in both nature and overall level to those described under Alternative 1 (Section 3.4.2.2). These effects would be primarily due to combustion emissions from prescribed burning activities, additional on-and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. As with Alternative 1, Alternative 3 would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation.

3.4.2.4.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, and for similar reasons, Federal acquisition of land under Alternative 3 would have minor beneficial effects on air quality. Current sources of emissions such as timber harvesting, residential heating, automobile traffic, and lawn maintenance equipment within Stewart West, Stewart Central, and the transportation route would end.

3.4.2.4.2 ARMY MANAGEMENT

As with Alternative 1, implementation of resource management programs under Alternative 3 would have long-term moderate adverse effects on air quality. These effects would be due to forest management and prescribed burning within Stewart West and Stewart Central. These effects would be somewhat offset by the reduction in existing Fort Benning emissions, as well as the reduction of current sources of emissions on newly acquired land such as residential heating, automobile traffic, and land maintenance equipment.

Effects from implementing the INRMP, Pest Management Plan, and Fort Benning's ITAM and NEPA programs would be identical to those outlined under Alternative 1. These effects would be moderate.

3.4.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, and for similar reasons, preparation of newly acquired land under Alternative 3 would have short- and long-term minor adverse effects on air quality. As with Alternative 1, both on-road and non-road vehicles would generate exhaust and fugitive dust emissions, causing temporary increases in both criteria pollutants and GHGs. There would be new stationary sources of air emissions, such as boilers and stand-by generators, associated with Alternative 3 that would require appropriate Title V permit coverage.

3.4.2.4.4 ARMY TRAINING

As with Alternative 1, implementation of Army training under Alternative 3 would have long-term minor adverse effects on air quality. As with Alternative 1, these effects would be due to additional use of both on- and off-road training vehicles throughout the new training areas. Similar to Alternative 2, no additional level of impacts are anticipated from the transportation route. Specific effects associated with non-live-fire and live-fire training would be identical to those outlined under Alternative 1. Air emissions associated with Army training would not threaten the attainment status of the region or violate any Federal, state, or local air regulations. These effects would be minor.

3.4.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Alternative 4 would have short-term minor and long-term moderate adverse effects on air quality. Overall potential effects on air quality would be similar in both nature and overall level to those described under Alternative 1 (Section 3.4.2.2). These effects would be primarily due to combustion emissions from prescribed burning activities, additional on-and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. As with Alternative 1, Alternative 4 would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation.

3.4.2.5.1 FEDERAL ACQUISITION OF LAND

Similar to Alternative 1, Federal acquisition of land under Alternative 4 would have minor beneficial effects on air quality. Current sources of emissions such as timber harvesting, residential heating, automobile traffic, and lawn maintenance equipment within Russell East and Stewart Central, and the transportation routes would end.

3.4.2.5.2 ARMY MANAGEMENT

As with Alternative 1, implementation of resource management programs under Alternative 4 would have long-term moderate adverse effects on air quality. These effects would be due to forest management and prescribed burning within Russell East and Stewart Central. These effects would be somewhat offset by the reduction in existing Fort Benning emissions, as well as the reduction of current sources of emissions within Russell East and Stewart Central such as residential heating, automobile traffic, and land maintenance equipment. Effects from implementing the INRMP, Pest Management Plan, and Fort Benning's ITAM and NEPA programs would be identical to those outlined under Alternative 1. These effects would be moderate.

3.4.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land under Alternative 4 would have short- and long-term minor adverse effects on air quality. As with Alternative 1, both on-road and non-road vehicles would generate exhaust and fugitive dust emissions, causing temporary increases in both criteria pollutants and GHGs. There would be new stationary sources of air emissions, such as boilers and stand-by generators, associated with Alternative 4 that would require appropriate Title V permit coverage.

3.4.2.5.4 ARMY TRAINING

As with Alternative 1, implementation of Army training under Alternative 4 would have long-term minor adverse effects on air quality. As with Alternative 1, these effects would be due to additional use of both on- and off-road training vehicles throughout the new training areas. Similar to Alternative 2, no additional level of impacts are anticipated from the transportation route. Specific effects associated with non-live-fire and live-fire training would be identical to those outlined under Alternative 1. Air emissions associated with Army training would not threaten the attainment status of the region or violate any Federal, state, or local air regulations. These effects would be minor.

3.4.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Alternative 5 would have short-term minor and long-term moderate adverse effects on air quality. Overall potential effects on air quality would be similar in both nature and overall level to those described under Alternative 1 (Section 3.4.2.2). These effects would be primarily due to combustion emissions from prescribed burning activities, additional on-and off-road vehicle use, and fugitive particulate emissions from construction on the newly acquired lands. As with Alternative 1, Alternative 5 would not threaten the attainment status of the region, would not have substantial GHG emissions, or lead to a violation of any Federal, state, or local air regulation.

3.4.2.6.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 5 would have minor beneficial effects on air quality. Current sources of emissions such as timber harvesting, residential heating, automobile traffic, and lawn maintenance equipment within Harris East, Talbot West and Stewart West, and the transportation routes would end.

3.4.2.6.2 ARMY MANAGEMENT

As with Alternative 1, implementation of resource management programs under Alternative 5 would have long-term moderate adverse effects on air quality. These effects would be due to forest management and prescribed burning within Harris East, Talbot West and Stewart West. These effects would be somewhat offset by the reduction in existing Fort Benning emissions, as well as the reduction of current sources of emissions within Harris East, Talbot West and Stewart West such as residential heating, automobile traffic, and land maintenance equipment. Effects from implementing the INRMP, Pest Management Plan, and Fort Benning's ITAM and NEPA programs would be identical to those outlined under Alternative 1. These effects would be moderate.

3.4.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land under Alternative 5 would have short- and long-term minor adverse effects on air quality. As with Alternative 1, both on-road and non-road vehicles would generate exhaust and fugitive dust emissions, causing temporary increases in both criteria pollutants and GHGs. There would be new stationary sources of air emissions, such as boilers and stand-by generators, associated with Alternative 5 that would require appropriate Title V permit coverage.

3.4.2.6.4 ARMY TRAINING

As with Alternative 1, implementation of Army training under Alternative 5 would have long-term minor adverse effects on air quality. As with Alternative 1, these effects would be due to additional use of both on- and off-road training vehicles throughout the new training areas. Similar to Alternative 2, no additional level of impacts are anticipated from the transportation route. Specific effects associated with non-live-fire and live-fire training would be identical to those outlined under Alternative 1. Unlike Alternative 1, the transportation route going to Harris East and Talbot West would be through Muscogee County and there would be a minute amount of training vehicle emission within the pending non-attainment area. There would be no new stationary or on-road vehicle emissions in Muscogee County. Air emissions associated with Army training would not threaten the attainment status of the region or violate any Federal, state, or local air regulations. These effects would be minor.

3.4.3 CUMULATIVE IMPACTS

The Proposed Action would have short-term minor and long-term moderate adverse cumulative effects on air quality. By directly inventorying all emission in a nonattainment region and monitoring concentrations of criteria pollutants in attainment regions, the states of Georgia and Alabama take into account the effects of all past and present emissions in their states. This is done by putting a regulatory structure in place designed to prevent air quality deterioration for areas that are in attainment with the NAAQS and to reduce common or criteria pollutants emitted in nonattainment areas to levels that will achieve compliance with the NAAQS (EPA, 2010c). This structure of rules and regulations are contained in the SIP. SIPs are the regulations and other materials for meeting clean air standards and associated CAA requirements. SIPs include:

- State regulations that EPA has approved;
- State-issued, EPA-approved orders requiring pollution control at individual companies; and
- Planning documents such as area-specific compilations of emissions estimates and computer simulations (modeling analyses) demonstrating that the regulatory limits assure that the air will meet air quality standards (EPA, 2010d).

The SIP process applies either specifically or indirectly to all sources of air emissions associated with the projects outlined in Section 3.1.3.2 and all activities in the region. No large-scale projects or proposals have been identified in Section 3.1.3.2 that, when combined with the Proposed Action, would threaten the attainment status of the region, would have substantial GHG emissions, or would lead to a violation of any Federal, state, or local air regulation. There are no new appreciable sources of direct or indirect emissions associated with any of the alternatives. There would be small increases in emissions from the expansion of maneuver training activities and associated vehicular use. Estimated emissions from prescribed burning activities would be appreciable. Therefore, the Proposed Action would have moderate adverse cumulative effects on air quality. Although there would be an increase in emissions associated with the alternatives, training on new land would introduce long-term incremental beneficial effects on air quality by displacing training activities outside of Muscogee County to areas that are not expected to be designated nonattainment under the new 8-hour ozone NAAQS.

3.4.4 PROPOSED MITIGATION

No mitigation measures for air quality would be required. The direct, indirect, and cumulative effects associated with air quality for all alternatives would be minor to moderate. No activities outside compliance with existing regulations, permits, and plans would be required to reduce the level of effect to less than significant.

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3.5 NOISE

3.5.1 AFFECTED ENVIRONMENT

This section provides an overview of noise regulations and definitions (Section 3.5.1.1), the military noise environment and land use compatibility (Section 3.5.1.2), existing noise conditions at Fort Benning that could be introduced to the newly acquired lands, and the existing noise environment within the TLEP study area (Section 3.5.1.3). The ROI for noise encompasses the land within the TLEP study area, Fort Benning, and communities close enough to be reasonably affected by training noise (also referred to as operational noise).

3.5.1.1 NOISE DEFINITIONS AND REGULATORY AUTHORITY

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. *Noise* is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Human response to noise varies depending on the type and characteristics of the noise, the distance between the noise source and the receptor, receptor sensitivity, and time of day. Noise can interfere with communication, awaken people from sleep, or in some cases damage hearing. Noise is often generated by activities essential to a community's quality of life, such as construction, vehicular traffic, and security-related activities (Harris, 1998).

Sound varies in intensity and frequency. Sound pressure levels (SPL), described in decibels (dB), are used to quantify sound intensity. The decibel is a logarithmic unit that expresses the ratio of a SPL to a standard reference level. The Hertz is used to quantify sound frequency. The human ear responds differently to different frequencies. *A-weighting*, described in A-weighted decibels (dBA), approximates this frequency response to express better the perception of sound by humans. Generally, a change in noise level of three dBA is barely perceptible to most listeners. A scale relating sounds encountered in daily life to their approximate dBA values is provided in Table 3.5-1. *C-weighting*, described in C-weighted decibels (dBC), is similar to A-weighting, except it incorporates more low-frequency noise. C-weighting is predominately used to describe noise that has a component of rumble or the potential for noise-induced vibrations. It has been used traditionally to describe extreme impulse-type sounds, such as the sounds from large-caliber weaponry and military explosives (FICUN, 1980).

Table 3.5-1. Common Sound Levels[1]

Outdoor	Sound level (dBA)	Indoor
Snowmobile	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringing telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: Harris, 1998

[1]Sound level provided is as generally perceived by an operator or a close observer of the equipment or situation listed.

dBA = A-weighted decibel

Noise issues are generally regulated at the state and local level, but the EPA retains authority (through Title IV of the CAA, The Noise Control Act of 1972, and The Quiet Communities Act of 1978) to investigate and study noise and its effect, disseminate information to the public regarding noise pollution and its adverse health effects, respond to inquiries on matters related to noise, and evaluate the effectiveness of existing regulations for protecting the public health and welfare (EPA, 2010e). State regulations listed in the Georgia Department of Community Affairs noise ordinance (5-3-7.4 Noise) limit noise pollution in terms of public disturbance. The use or operation of construction equipment in or near a residential vicinity is restricted between the hours of 10:00 P.M. and 7:00 A.M. Creation of noise near hospitals, schools, courts, religious congregations, and any institution is restricted during their hours of operation. Alabama has no state-wide noise ordinance that sets not-to-exceed levels for noise.

3.5.1.2 THE MILITARY NOISE ENVIRONMENT AND LAND USE COMPATIBILITY

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

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

The metric used in defining noise zones for small-arms ranges is peak level (dBP). Peak level is the maximum instantaneous sound level that occurs during an acoustic event. In the case of small arms, it is the maximum instantaneous sound level made by a given weapon at a given distance. Peak level for small-arms weapons is strongly correlated with community annoyance. Other metrics used by the Army to quantify the noise environment at Army installations are the C-weighted and A-weighted day-night average sound levels (CDNL and ADNL). Day-night average sound level (DNL) is a time-weighted average sound energy over a 24-hour period; a 10-dB penalty is added to the nighttime levels (10 P.M. to 7 A.M.). These characteristics make it a useful descriptor for continuous noise, such as a busy highway, aircraft noise, or the ongoing components of repetitious blast noise. Table 3.5-2 outlines noise limits and zones for land use planning for small arms firing, aircraft, and large-caliber weapons firing and military explosives operations.

Table 3.5-2. Noise Limits for Noise Zones

Noise Zone	General Level of Noise	Small-Arms	Aircraft (ADNL)	Large-Caliber Weapons (> 20 mm) and Military Explosives (CDNL)	Recommended Uses
LUPZ	Low	N/A	60 - 65 dBA	57 - 62 dBC	Noise-sensitive land uses acceptable
I	Low	< 87 dBP	< 65 dBA	< 62 dBC	
II	Moderate	87–104 dBP	65–75 dBA	62–70 dBC	Noise-sensitive land uses normally not recommended
III	High	> 104 dBP	> 75 dBA	> 70 dBC	Noise-sensitive land uses not recommended

Source: U.S. Army, 2007

ADNL = A-weighted day-night average sound level; CDNL = C-weighted day-night average sound level; dBA = A-weighted decibel; dBC = C-weighted decibel; dBP = peak level; LUPZ = Land Use Planning Zone; mm =millimeter; N/A = not applicable

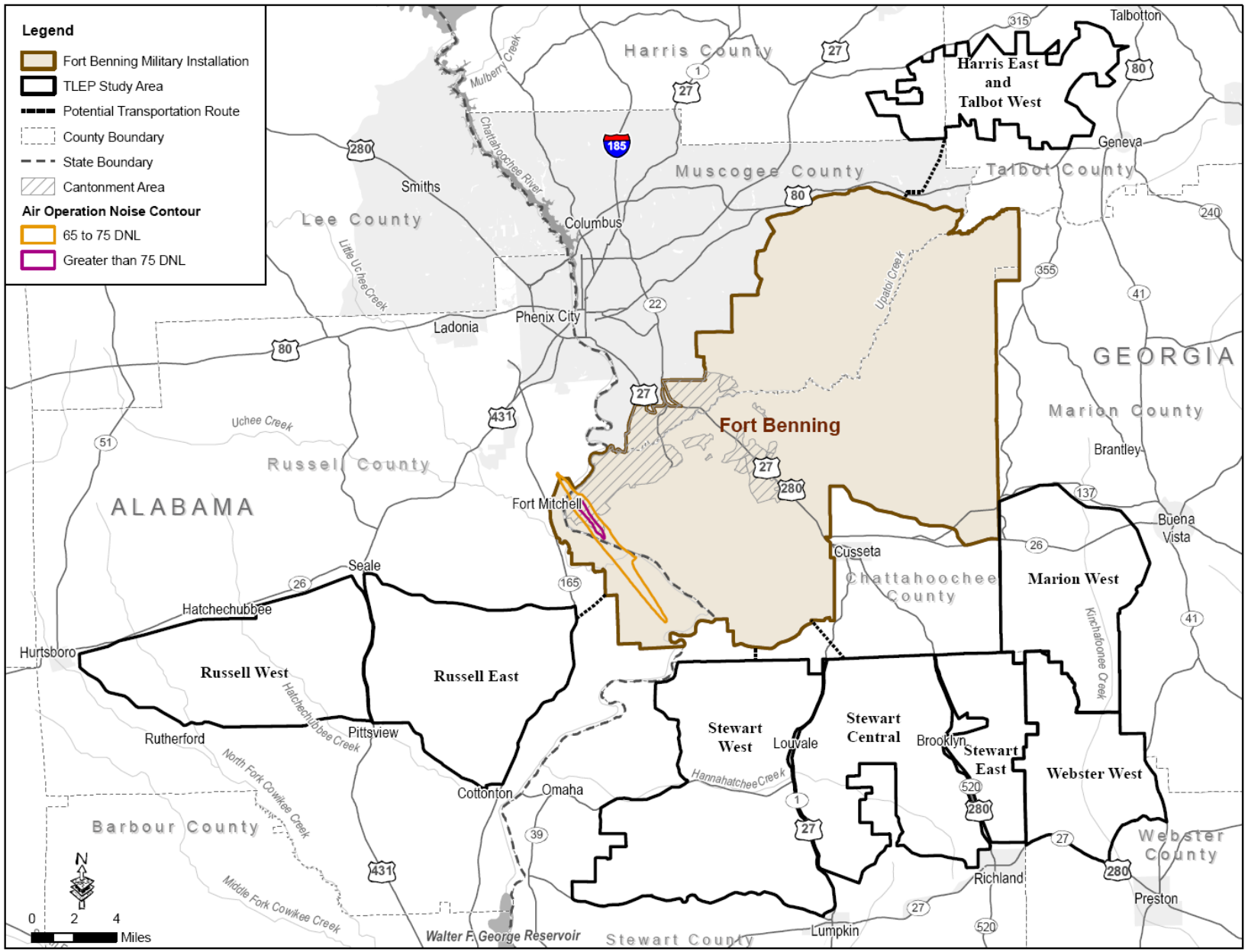
3.5.1.3 EXISTING CONDITIONS

3.5.1.3.1 FORT BENNING

Primary sources of noise come from training activities: small-arms, large-caliber and military explosives noise, and aircraft. Figures 3.5-1 through 3.5-3 show the Operations Noise Contours for Fort Benning's training activities. The noise generated by military aircraft and weapons extends to areas outside the Installation boundary. The noise from industrial-type operations and the movement of heavy military vehicles does not have a considerable effect on the surrounding civilian communities or military housing areas (Fort Benning, 2007a). Fort Benning has no existing activities that conflict with local standards and guidelines related to human health and safety.

KLSF is Fort Benning's only airfield. KLSF noise levels are presented to provide the overall Fort Benning noise environment (Figure 3.5-1). Both fixed- and rotary-wing tactical aircraft operate out of KLSF. Fixed-wing aircraft are used for airborne jump training and helicopters for troop and cargo lift training. Both types fly on established routes and within restricted military airspace. Noise contours associated with KLSF extend off-Post in South Columbus and small portions of Russell, Stewart, and Chattahoochee counties. While encroachment into these areas is minimal, the potential for incompatible uses grows with increased development on these lands. Because the BRAC/Transformation and MCoE actions are spurring growth in communities adjacent to Fort Benning, the importance of continuing existing efforts to work with local governments to plan for compatible development is essential (see Section 3.2 regarding community land use planning). None of the alternatives would change baseline noise conditions at KLSF; therefore, it is not carried forward for further analysis.

The existing small-caliber weapons noise contours are shown in Figure 3.5-2. Common Army small-arms are the M16 rifle (5.56-millimeter [mm] ammunition), the M240 (7.62 mm) and M249 (5.56 mm) machine guns, and the 0.50-caliber machine gun. The small-arms noise zones are predominately contained within the Installation. The small-arms noise Zone II (as described in Table 3.5-2) extends beyond the northern boundary of the Installation by about 0.4 miles and beyond the eastern boundary by about 1 mile. Noise Zone III (as described in Table 3.5-2) extends beyond the eastern boundary of the Installation less than 0.1 mile. The existing large-caliber weapons CDNL contours are shown in Figure 3.5-3. The large-caliber noise zones are predominately contained within the Installation. Large-caliber noise Zone II extends beyond the northern boundary about two miles. Noise Zone III extends 0.7 miles beyond the eastern boundary. Intense activities occasionally lead to complaints, particularly when artillery firing takes place at night. Noise complaints are documented and investigated.



Source: USACE, 2009

Figure 3.5-1. Air Operation Noise Contours

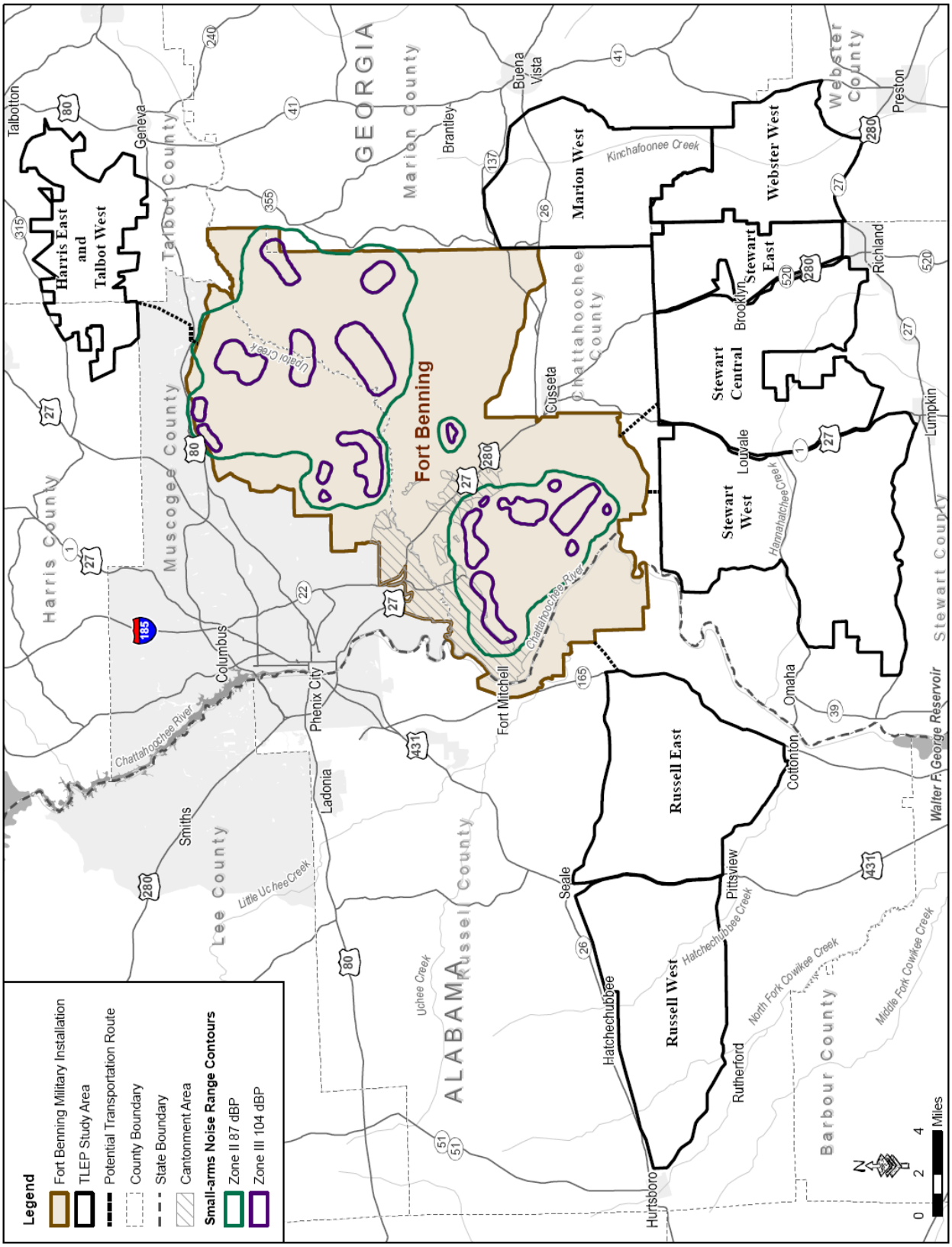
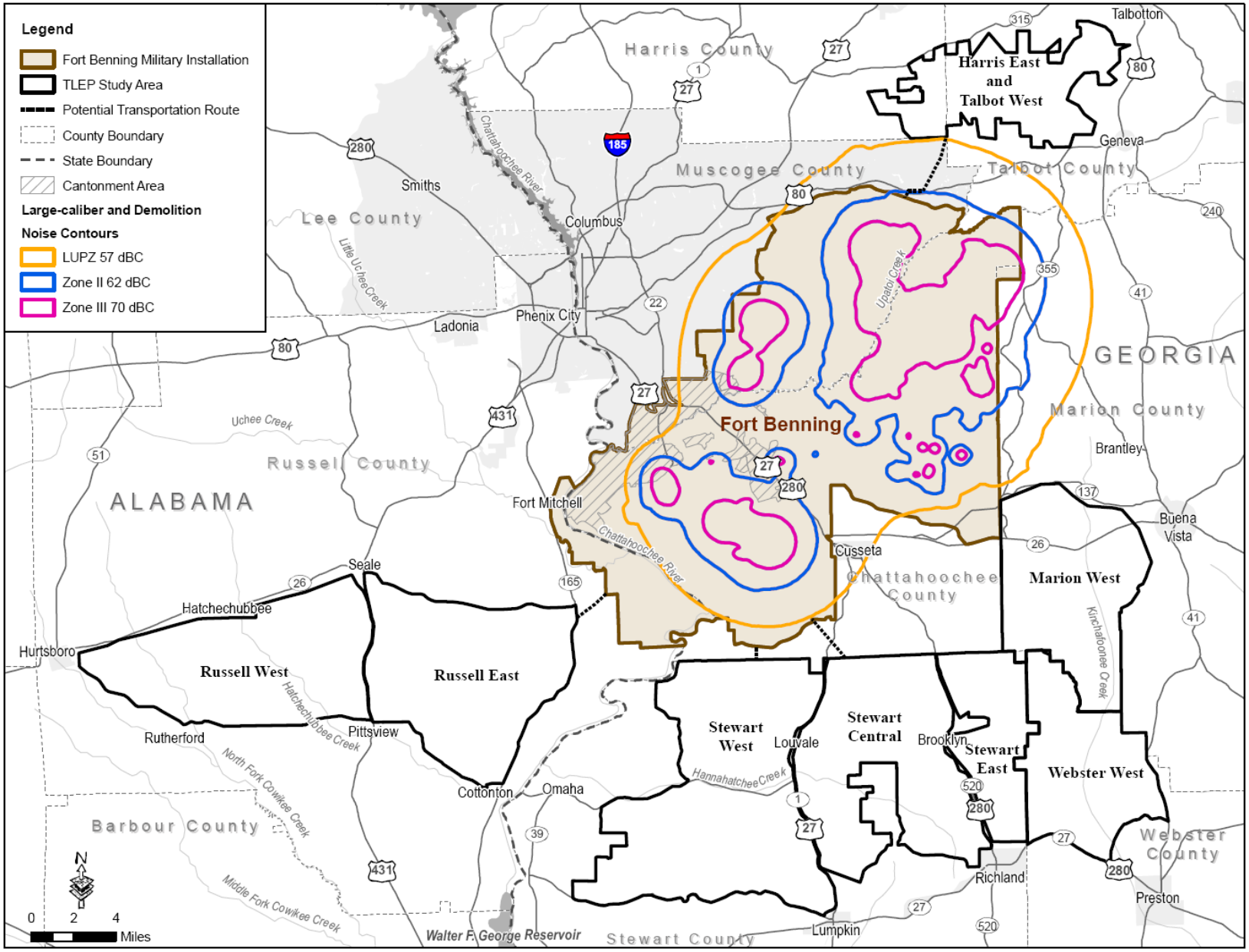


Figure 3.5-2. Small-arms Range Noise Contours



Source: USACE, 2009

Figure 3.5-3. Large-caliber and Military Explosives Noise Contours

Fort Benning's *Installation Operational Noise Management Plan* (IONMP) outlines policies and procedures for managing noise impacts to the surrounding communities (USACE, 2009). The IONMP presents recommendations to the surrounding counties/municipalities for adopting both a noise disclosure and noise easement ordinance for areas within the noise zones, as well as within a planning area adjacent to the Fort Benning boundary. These planning efforts encourage nearby communities to adopt ordinances that promote land use that is compatible with the noise produced at Fort Benning, including noise reduction features in new buildings where appropriate. The objectives of the IONMP are:

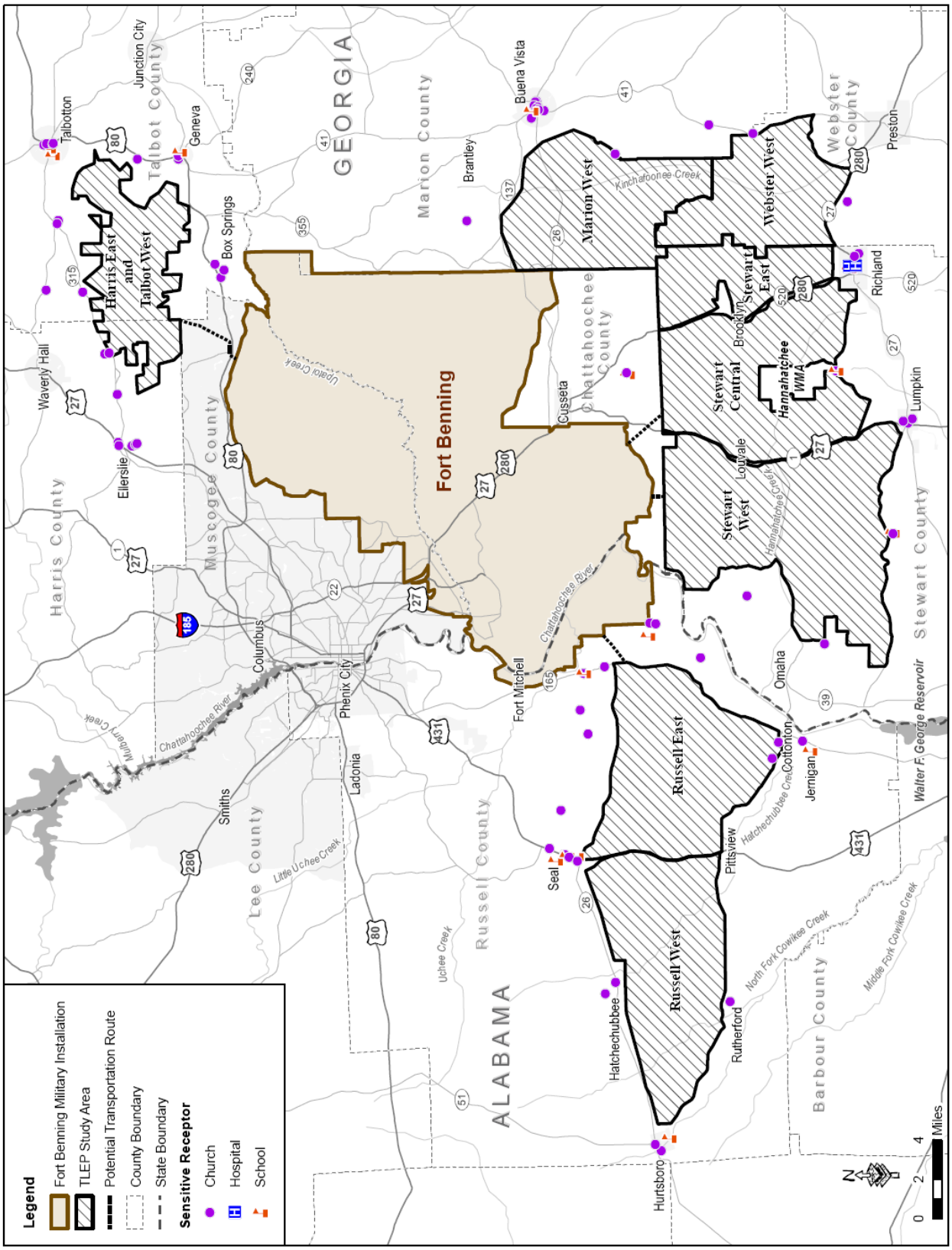
- Educate military and civilian communities and improve communications between the two;
- Manage noise complaints to reduce the potential for conflict between Fort Benning and the surrounding communities;
- Assess the compatibility of the noise environment with the existing and proposed land uses;
- Mitigate the noise, and where feasible, increase land use compatibility; and
- Outline noise abatement procedures.

Fort Benning implements noise complaint procedures to address individual concerns. Civilian noise complaints are relayed to the Environmental Division, as well as to the units who generated the noise and to the Installation Command. If necessary, investigation and further corrective action follows (Fort Benning, 2007a).

3.5.1.3.2 EXISTING NOISE WITHIN THE TLEP STUDY AREA

Existing non-military sources of noise within the TLEP study area include local road traffic, aircraft overflights, timber harvesting activities, and natural noises such as leaves rustling and bird vocalizations. The largest contributors of non-military noise within the TLEP study area are from highway traffic and timber harvesting. Roads throughout the TLEP study area that provide a constant source of vehicle traffic noise are Clarke Duncan Highway, I-185, US-22/80, and County Road (CR)-355. These roads are the primary thoroughfares providing regional access to the newly acquired land. There are many secondary roads throughout the areas associated with the Proposed Action supporting commercial, private, and off-Post traffic attributable to military and support personnel (see Section 3.11 for additional information on nearby roadways). Timber harvesting noise is primarily from the use of chainsaws, heavy equipment, and trucks. Heavy equipment generates a sound level of approximately 70 dBA at a distance of 100 feet, and would be audible for approximately 2 miles. Timber harvesting is sporadic at any given stand, lasting 2 to 3 weeks, every 10 or more years.

Existing noise levels (DNL and equivalent sound level [L_{eq}]) were estimated for the areas associated with the Proposed Action using the techniques specified in the *American National Standard Quantities and Procedures for Description and Measurement of Environmental Sound Part 3: Short-term Measurements with an Observer Present* (ANSI, 2003). Figure 3.5-4 shows all churches, schools, and hospitals within two miles of the TLEP study area. In addition to the ones shown there are several communities and hundreds of individual residences close to the study area. Table 3.5-3 outlines the estimated background noise levels within the areas associated with the Proposed Action absent of military training, and the communities adjacent to the TLEP study area that would likely have a higher concentration of sensitive noise receptors such as residences. Notably, Muscogee County has a considerably higher population density and associated background noise due to general increases in vehicle traffic, lawn maintenance, and other activities.



Note: Sensitive receptors were identified through Google Earth®

Figure 3.5-4. Sensitive Noise Receptors near the TLEP Study Area

Table 3.5-3. Estimated Background Noise Levels at Nearby Noise-Sensitive Areas

County	Communities Adjacent to the TLEP Study Area	Estimated Existing Sound Levels (dBA)			Description
		ADNL	L_{eq} (daytime)	L_{eq} (nighttime)	
Chattahoochee, Harris, Marion, Russell, Stewart, Talbot, Webster	Hatchechubbee, Hurtsboro, Seale, Pittsview, Loflin, Holy Trinity, Lumpkin, Richland, Buena Vista, Preston, Waverly Hall, Geneva, Ellerslie	45	43	37	Very Quiet Suburban and Rural Residential
Muscogee	-	50	48	42	Quiet Urban and Normal Suburban Residential

Source: ANSI, 2003
ADNL = A-weighted day-night average sound level; dBA = A-weighted decibel; L_{eq} = equivalent sound level

All TLEP study areas are completely within noise Zone I for aircraft, small arms, and large caliber noise (Figures 3.5-1 through 3.5-3). Although, these areas and their uses are completely compatible with the existing noise environment, military noise occasionally can be heard throughout the area. Depending on the type of training operation and the weather (i.e., the prevailing wind speed and direction), it is likely that military jet craft, small arms training, and large caliber training is audible at any location through the area at one time or another. In general, areas to the south and west of the Installation such as Russell and Stewart counties would experience more aircraft noise from KLSF, and areas to the north and east of the Installation such as Harris, Talbot, and Marion counties would experience more large-caliber and military explosives noise. The majority of military noise events at these locations can be described as audible but distant. Military noise at these locations may be loud enough to interfere with verbal communications and produce sleep awakening, but would not be loud enough to be highly annoying to a substantial portion population.

3.5.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of potential impacts to the noise environment that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant noise impact would result in the violation of any applicable Federal, state, or local noise ordinance or would generate training noise that would annoy communities (i.e., Zone III) along the perimeter of the newly acquired lands.

3.5.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of land to support the Fort Benning training requirements would not occur. In addition, no acquisition of land would occur within the areas associated with the Proposed Action for Army management. Existing noise conditions within the areas associated with the Proposed Action would remain unchanged and existing conditions would remain as described in Section 3.5.1.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of

this EIS. Changes in training and associated potential impacts to the noise environment would be the subject of future NEPA analysis.

3.5.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Alternative 1 would have short- and long-term adverse effects on the noise environment. These effects would be primarily due to noise from construction activities, the use of heavy vehicles, UASs, CAS, and helicopters during training. All new sources of noise would be located within Marion West, Webster West, and Stewart East. Increases in noise would not create areas of incompatible land use or violate any Federal, state, or local noise ordinance.

3.5.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a minor beneficial effect on the noise environment. Upon the initial acquisition of land, existing sources of noise on newly acquired land such as timber harvesting, automobile traffic on select roadways, and lawn maintenance equipment would end. There would be no military training noise associated with the Federal acquisition of land.

3.5.2.2.2 ARMY MANAGEMENT

Army management, and particularly management under the IONMP, would have long-term minor beneficial effects. All policies and procedures for managing noise outlined in the IONMP would be implemented on the newly acquired lands. Most applicable is the "Fly Neighborly Program" component of the IONMP, which trains Army helicopter pilots on how to reduce the potential for noise complaints when flying in developed areas. Key aspects of the program include noise complaint management, control procedures for helicopter operations, and establishment of a nominative minimum altitude of 1,000 AGL for populated and sensitive areas. Implementing the INRMP, Pest Management Plan, and Fort Benning's ITAM program would have negligible effects on noise.

3.5.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

The preparation of newly acquired land would have a short-term minor adverse effect. Individual pieces of heavy equipment typically generate noise levels of 80 to 90 dBA at a distance of 50 feet (Table 3.5-4). With multiple items of equipment operating concurrently, noise levels can be relatively high during daytime periods at locations within several hundred feet of active construction sites. The zone of relatively high construction noise levels typically extends to distances of 400 to 800 feet from the site of major equipment operations. Locations more than 800 feet from construction sites seldom experience appreciable levels of construction noise. The vast majority of construction and infrastructure activities would take place well within the newly acquired lands. Although unlikely, it would be possible for residences closer than 800 feet to the perimeter of Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East to experience appreciable amounts of construction noise. Given the temporary nature of construction activities and that most of these activities would be far from any sensitive noise receptors, this impact would be minor. In addition, trucks transporting materials to and from construction sites would have a negligible impact on the noise environment.

Table 3.5-4. Noise Levels Associated with Outdoor Construction

Construction Phase	dBA L_{eq} at 50 feet from Source
Ground Clearing	84
Excavation, Grading	89
Foundations	78
Structural	85
Finishing	89

Source: EPA, 1971
dBA = A-weighted decibel; L_{eq} = equivalent sound level

Although construction-related noise impacts would be temporary in duration and minor, the following BMPs would be performed to reduce further any realized noise impacts:

- Construction would primarily occur during normal weekday business hours, and
- Construction equipment mufflers would be properly maintained and in good working order.

Construction noise would dominate the soundscape for all on-site personnel. Construction personnel, and particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with Federal health and safety regulations.

3.5.2.2.4 ARMY TRAINING

Army training would have minor adverse effects on the noise environment, with the potential for significant adverse effects if live-fire activities were conducted. The minor adverse effects would be due to changes in military vehicle, helicopter, and UAS support during maneuver training exercises to the newly acquired areas. Alternative 1 does not include any additional jet aircraft operations, small arms training, artillery, or military explosives activities at Fort Benning. There would be no changes in aircraft, small arms, or large caliber noise zones.

Noise from Military Vehicles. Military vehicle maneuvers would occur along unpaved roads and various off-road areas on the newly acquired land. Vehicle maneuvers would occur during both daytime and nighttime hours, making vehicle noise an issue of concern for maneuver training close to Alternative 1 boundaries where residential land uses, school sites, or other sensitive land uses may be nearby. Noise data are not readily available for most military vehicles; however, ground-based training vehicles (Table 3.5-5) are substantially quieter than other sources of military noise including aircraft, small arms, and heavy artillery.

Military vehicles, dominated by HMMWVs, light trucks, and medium trucks, would produce noise levels comparable to construction equipment and heavy trucks. The BFV is a tracked vehicle that has a larger engine (500 horsepower) and is heavier (25 to 33 tons) than the Stryker (which has a 350 horsepower engine and weighs 19 to 20 tons). The Stryker vehicle is expected to generate drive-by noise levels a few decibels higher than levels produced by typical multi-axle heavy trucks. Maximum sound level for Army tactical vehicles at both 50 and 100 feet is outlined in Table 3.5-5.

Table 3.5-5. Maximum Sound Levels for Army Tactical Vehicles

Equipment Type	Maximum Sound Level (dBA)	
	50 feet	100 feet
Howitzer M109	95.6	91.6
D-8K Dozer	92.2	86.5
M548 Ammo Carrier	85.0	79.0
M88 Recovery Vehicle	96.8	91.5
M113 Personnel Carrier	86.8	81.9
ABLV Bridge Launcher	95.9	90.5
M1A1 Tank	89.4	84.9

Source: ANG, 2000
dBA = A-weighted decibel

Traffic patterns and corresponding noise levels along on-Post roadways and along military vehicle trails would change to accommodate training. Overall volumes and vehicle speeds, however, are generally low for these types of roadways. As a result, noise increments attributable to vehicle traffic would not constitute a really perceptible change in the existing noise environment. Vehicle speeds are low during most maneuver activities and vehicles tend to be relatively dispersed during off-road maneuvers, maneuver activities would be expected to produce hourly average noise levels of less than 55 dBA at a distance of about 500 feet, with brief peaks of 65 to 70 dBA. Such noise levels would not cause significant noise effects at off-Post, noise-sensitive land areas during daytime hours. These noise levels would be more disturbing during nighttime hours.

If a road were established along the perimeter of Alternative 1, traffic activities would be clearly audible, but not loud, to residences within 400 feet. In general, these activities would be barely perceptible (i.e., just above background levels) at distances of 0.5 and 1 miles. Unlike Alternatives 2-5, this alternative would not generate traffic noise from a transportation route because it is contiguous to the current Fort Benning.

Noise from Helicopters and UASs. It is likely that new helicopter routes and landing zones would be established to allow rotorcraft to travel to and from Alternative 1 and support ground maneuver training activities. No changes to noise zones would be expected due to changes in helicopter operations at Fort Benning. Newly introduced individual overflight noise from helicopters would generate distinct acoustical events having minor effects. These individual overflights would have the potential from time-to-time to annoy residents and other sensitive receptors under the flight path. These effects would be minor.

For common Army helicopters, several hundred operations over a one-day period would be needed to generate noise Zone II levels at a point directly below the flight track. Under the vast majority of helicopter routes, aircraft operations are far below the levels needed to generate noise Zone II levels. The Army is cognizant that operations below this level could lead to complaints or generate annoyance in surrounding communities. Therefore, even though operational levels for the support helicopters associated with the action would be too low to generate Zone II levels, individual overflight levels have been considered herein.

A good predictor of annoyance at airfields and training routes with 50 to 200 operations per day is the maximum sound level. The maximum sound levels for U.S. Army aircraft are listed in Table 3.5-6. In general, Army helicopters flying at 1,000 feet AGL would highly annoy between 13 and 20 percent of individuals directly under its flight path (Table 3.5-7). Given the limited number, relatively low noise levels, and sporadic nature of helicopter operations, these effects would be minor.

Table 3.5-6. Maximum Sound Level from Helicopters and UASs

Slant Distance (feet)	Helicopter Model						UAS
	AH-1	AH-64	CH-47D	OH-58D	UH-1	UH-60	Shadow UAS[1]
200	93	92	97	89	91	91	85
500	85	83	89	80	83	82	76
1,000	78	77	83	74	76	76	70
2,000	72	70	76	67	70	69	63
5,000	61	59	67	56	60	58	52
10,000	52	50	59	47	52	48	43

Sources: USAF, 2007; USACHPPM, 2003
[1]Overall sound level during run-up used as a reasonable worst-case for in-flight operations.
UAS = Unmanned Aerial System

Table 3.5-7. Percentage of Population Highly Annoyed from Aircraft Noise

Maximum Sound Level (dBA)	Percentage Highly Annoyed
70	5
75	13
80	20
85	28
90	35

dBA = A-weighted decibel

Noise associated with the operation of UASs would be comparable to small armored ground vehicles such as HMMWVs and medium trucks in the field. Because of their relatively low levels of noise, they are not commonly accounted for in determining the effects of training activity noise on communities and individuals living adjacent to Army installations. The very small increase in the activity from changes in UAS operations would translate into negligible (i.e., not distinguishable from existing) changes in the overall noise environment.

In general, UASs are quieter, normally operate at much higher altitudes, and are used less frequently than helicopters. As with helicopters, no changes to existing areas of incompatible land use (Zone II) would be generated due to changes in UAS operations at Fort Benning. Individual UAS overflights would generate distinct acoustical events having minor effects. The loudest part of a UAS's landing and takeoff cycle is the run-up before takeoff. One common UAS used for tactical reconnaissance during ground maneuver training has a noise level of approximately 85 dBA at 204 feet during its run up operations; this level was used as a reasonable worst-case for in-flight operations. Once a UAS reaches approximately 3,000 feet AGL, it would no longer be heard on the ground (Roop, 2004). Because of the airspace restrictions and their limited levels of noise, no residences, communities, or sensitive noise receptors would experience any notable change to the overall noise environment due to changes in UAS activities.

Live-Fire Training. At this time, the Army is uncertain as to the exact nature of training that would occur on any land acquired. Therefore, noise impacts resulting from live-fire training in the newly acquired areas is discussed in programmatic terms for the purpose of this EIS. Noise due to live-fire training activities on the newly proposed properties may include small arms, heavy artillery, and military

explosives type training. In general, the nature of and the overall level of noise associated with these activities would be similar to those on the existing Installation. The training noise resulting from live-fire activities could highly annoy communities along the perimeter of the newly acquired lands and could result in incompatible uses, constituting a potential significant adverse impact. Subsequent NEPA analysis and comprehensive noise modeling would be conducted, where necessary, to determine the impacts of specific activities on the selected alternative area.

3.5.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Alternative 2 would have short- and long-term adverse effects on the noise environment. As with Alternative 1, these effects would be primarily due to noise from construction activities, the use of heavy vehicles, UASs, CAS, and helicopters during training. All new sources of noise would be located within Russell East, Russell West, and the transportation route. Similar to Alternative 1, increases in noise would not create areas of incompatible land use or violate any Federal, state, or local noise ordinance.

3.5.2.3.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 2 would have minor beneficial effects on the noise environment. Existing manmade sources of noise such as timber harvesting, automobile traffic, and lawn maintenance equipment would be reduced within Russell East, Russell West, and in the transportation routes.

3.5.2.3.2 ARMY MANAGEMENT

As with Alternative 1, Army management, and particularly management under the IONMP, would have long-term minor beneficial effects. All policies and procedures for managing noise outlined in the IONMP including the "Fly Neighborly Program" would be implemented on the newly acquired lands. Implementing other management programs would have negligible effects on noise.

3.5.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land would have short-term minor adverse effects. Although unlikely, it would be possible for residences closer than 800 feet to the perimeter of Russell East, Russell West, and along the transportation route to experience appreciable amounts of construction noise. Given the temporary nature of construction activities and that most of these activities would be far from any sensitive noise receptors, this impact would be minor.

3.5.2.3.4 ARMY TRAINING

As with Alternative 1, Army training would have minor adverse effects on the noise environment, with the potential for significant adverse effects if live-fire activities were conducted. Under Alternative 2, the minor adverse effects would be confined to areas in and around Russell East, Russell West, and the transportation route. These effects would be due to changes in military vehicle, helicopter, and UAS support during maneuver training exercises on the newly acquired land. As with Alternative 1, live-fire training would have the potential for significant noise impacts.

Unlike Alternative 1, traffic between the existing Installation and the newly acquired lands would increase noise levels along the proposed transportation route. Traffic activities would be clearly audible,

but not loud, to residences within 400 feet. In general, these activities would be barely perceptible (i.e., just above background levels) at distances of 0.5 and 1 miles.

3.5.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Alternative 3 would have short- and long-term adverse effects on the noise environment. As with Alternative 1, these effects would be primarily due to noise from construction activities, the use of heavy vehicles, UASs, CAS, and helicopters during training. All new sources of noise would be located within Stewart West, Stewart Central, and the transportation route. Increases in noise would not create areas of incompatible land use or violate any Federal, state, or local noise ordinance.

3.5.2.4.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 3 would have minor beneficial effects on the noise environment. Existing manmade sources of noise such as timber harvesting, automobile traffic, and lawn maintenance equipment would end within Stewart West, Stewart Central, and the transportation routes.

3.5.2.4.2 ARMY MANAGEMENT

As with Alternative 1, Army management, and particularly management under the IONMP, would have long-term minor beneficial effects. All policies and procedures for managing noise outlined in the IONMP would be implemented on the newly acquired lands. Implementing other management programs would have negligible effects on noise.

3.5.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land would have a short-term minor adverse effect. Although unlikely, it would be possible for residences closer than 800 feet to the perimeter of Stewart West, Stewart Central, and along the transportation route to experience appreciable amounts of construction noise. Given the temporary nature of construction activities and that most of these activities would be far from any sensitive noise receptors, this impact would be minor.

3.5.2.4.4 ARMY TRAINING

As with Alternative 1, Army training would have minor adverse effects on the noise environment, with the potential for significant adverse effects if live-fire activities were conducted. Under Alternative 3, the minor adverse effects would be confined to areas in and around Stewart West, Stewart Central, and the transportation route. These effects would be due to changes in military vehicle, helicopter, and UAS support during maneuver training exercises to the newly acquired areas. As with Alternative 1, live-fire training would have the potential for significant noise impacts.

Unlike Alternative 1, traffic between the existing Installation and the newly acquired lands would increase noise levels along the proposed transportation route. Traffic activities would be clearly audible, but not loud, to residences within 400 feet. In general, these activities would be barely perceptible (i.e., just above background levels) at distances of 0.5 and 1 miles.

3.5.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama, and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Alternative 4 would have short- and long-term adverse effects on the noise environment. As with Alternative 1, these effects would be primarily due to noise from construction activities, the use of heavy vehicles, UASs, CAS, and helicopters during training. All new sources of noise would be located within Russell East, Stewart Central, and the transportation route. Increases in noise would not create areas of incompatible land use or violate any Federal, state, or local noise ordinance.

3.5.2.5.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 4 would have minor beneficial effects on the noise environment. Existing manmade sources of noise such as timber harvesting, automobile traffic, and lawn maintenance equipment would end within Russell East, Stewart Central, and in the transportation routes.

3.5.2.5.2 ARMY MANAGEMENT

As with Alternative 1, Army management, and particularly management under the IONMP, would have long-term minor beneficial effects. All policies and procedures for managing noise outlined in the IONMP would be implemented on the newly acquired lands. Implementing other management programs would have negligible effects on noise.

3.5.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land would have a short-term minor adverse effect. Although unlikely, it would be possible for residences closer than 800 feet to the perimeter of Russell East, Stewart Central, and along the transportation route to experience appreciable amounts of construction noise. Given the temporary nature of construction activities and that most of these activities would be far from any sensitive noise receptors, this impact would be minor.

3.5.2.5.4 ARMY TRAINING

As with Alternative 1, Army training would have minor adverse effects on the noise environment, with the potential for significant adverse effects if live-fire activities were conducted. Under Alternative 4, the minor adverse effects would be confined to areas in and around Russell East, Stewart Central, and the transportation route. These effects would be due to changes in military vehicle, helicopter, and UAS support during maneuver training exercises on the newly acquired land. As with Alternative 1, live-fire training would have the potential for significant noise impacts.

Unlike Alternative 1, traffic between the existing Installation and the newly acquired lands would increase noise levels along the proposed transportation route. Traffic activities would be clearly audible, but not loud, to residences within 400 feet. In general, these activities would be barely perceptible (i.e., just above background levels) at distances of 0.5 and 1 miles.

3.5.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Alternative 5 would have short- and long-term adverse effects on the noise environment. As with Alternative 1, these effects would be primarily due to noise from construction activities, the use of heavy vehicles, UASs, CAS, and helicopters during training. All new sources of noise would be located within Stewart West, Harris East, Talbot West, and the transportation route. Increases in noise would not create areas of incompatible land use or violate any Federal, state, or local noise ordinance.

3.5.2.6.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, Federal acquisition of land under Alternative 5 would have minor beneficial effects on the noise environment. Existing manmade sources of noise such as timber harvesting, automobile traffic, and lawn maintenance equipment would end within Stewart West, Harris East, Talbot West, and in the transportation routes.

3.5.2.6.2 ARMY MANAGEMENT

As with Alternative 1, Army management, and particularly management under the IONMP, would have long-term minor beneficial effects. All policies and procedures for managing noise outlined in the IONMP including the "Fly Neighborly Program" would be implemented on the newly acquired lands. Implementing other management programs would have negligible effects on noise.

3.5.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, preparation of newly acquired land would have a short-term minor adverse effect. Although unlikely, it would be possible for residences closer than 800 feet to the perimeter of Stewart West, Harris East, Talbot West, and along the transportation route to experience appreciable amounts of construction noise. Given the temporary nature of construction activities and that most of these activities would be far from any sensitive noise receptors, this impact would be minor.

3.5.2.6.4 ARMY TRAINING

As with Alternative 1, Army training would have minor adverse effects on the noise environment, with the potential for significant adverse effects if live-fire activities were conducted. Under Alternative 5, the minor adverse effects would be confined to areas in and around Stewart West, Harris East, Talbot West, and the transportation route. These effects would be due to changes in military vehicle, helicopter, and UAS support during maneuver training exercises on the newly acquired land. As with Alternative 1, live-fire training would have the potential for significant noise impacts.

Unlike Alternative 1, traffic between the existing Installation and the newly acquired lands would increase noise levels along the proposed transportation route. Traffic activities would be clearly audible, but not loud, to residences within 400 feet. In general, these activities would be barely perceptible (i.e., just above background levels) at distances of 0.5 and 1 miles.

3.5.3 CUMULATIVE IMPACTS

The Proposed Action would add an incremental increase in noise to currently undeveloped areas. These cumulative effects would be due to changes in military vehicle use and concentrated human activities within the newly acquired lands. The list of past, present, and foreseeable future activities considered within the cumulative impacts analysis of the noise environment is presented in Section 3.1.3.2. For the most part, the noise environment would not be affected by the contributing activities identified. Both historically and currently, logging, highway noise, and military activity have been the primary contributors to the noise environment within and surrounding the areas associated with the Proposed Action. As indicated in Section 3.1.3.2, little development activity is projected within the TLEP study

area and the region remains relatively rural and undeveloped. The amount of noise sensitive receptors within the region, therefore, is unlikely to increase within the near future. No large-scale projects or proposals have been identified in Section 3.1.3.2 that, when combined with the Proposed Action, would create areas of incompatible land use or violate any Federal, state, or local noise ordinance; therefore, minor adverse cumulative impacts to noise would be anticipated.

3.5.4 PROPOSED MITIGATION

As training activities, infrastructure, and facilities are proposed in the future, subsequent NEPA analysis and comprehensive noise modeling would be conducted which will more specifically address potential noise impacts, where necessary, to determine the specific impacts of those activities. Mitigation measures, if required, would be determined at that time.

3.6 SOILS

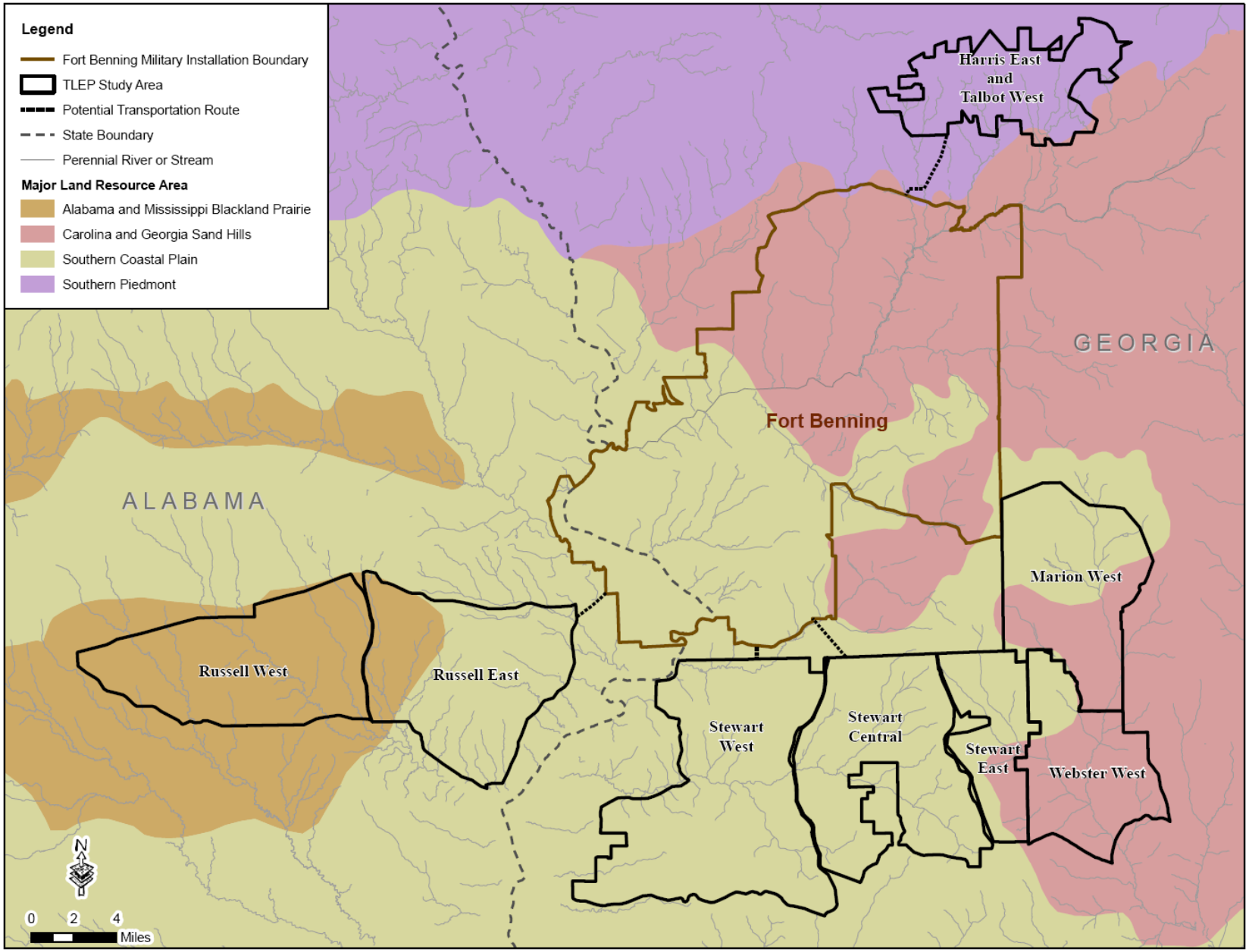
3.6.1 AFFECTED ENVIRONMENT

The following sections discuss major land resource areas (MLRAs) and erosive soils within the TLEP study area (Sections 3.6.1.1 and 3.6.1.2). The majority of the ROI is located within areas covered by the following published soil surveys: Chattahoochee and Marion County Soil Survey (NRCS, 2006a), Russell County Soil Survey (NRCS, 2006b), Stewart County Soil Survey (NRCS, 2009a), and Webster County Soil Survey (NRCS, 2009b). The Talbot County Soil Survey (1913) is out of print, and there are no tabular data available for either Talbot or Harris counties. These counties soil resources are, therefore, not described at the same level as the other counties. The ROI for soil resources encompasses the entire TLEP study area.

3.6.1.1 MAJOR LAND RESOURCE AREAS

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

The ROI falls entirely within Land Resource Region (LRR), the South Atlantic and Gulf Slope Cash Crop, Forest, and Livestock Region. This region extends from Northern Virginia to Texas, and consists of generally smooth Atlantic and Gulf Coast marine terraces and the hilly piedmont area. Elevation ranges from 80 to 655 feet (25 to 200 meters) on the coastal plain and from 330 to 1,310 feet (100 to 400 meters) in the piedmont. Local relief typically ranges from 10 to 100 feet (3 to 30 meters) on the coastal plain and from 20 to 200 feet (6 to 60 meters) in the piedmont. The geologic material consists of very thick deposits of sandy to clayey marine sediments on the coastal plain and Precambrian and Paleozoic metamorphic and igneous rocks in the piedmont. LRR-P is divided into a number of MLRAs. The following four MLRAs occur within the TLEP study area and are further described within this section: Carolina and Georgia Sand Hills, Southern Piedmont, Alabama and Mississippi Blackland Prairie, and Southern Coastal Plain (NRCS, 2006d). Figure 3.6-1 and Table 3.6-1 shows the distribution of the four MLRA's within the TLEP study area. Appendix C contains a more detailed analysis of soils within the TLEP study area including classification of soil order, great groups, and a complete listing of the soils and their properties at the soil series level (sixth and most detailed category).



Source: ANSI, 2003

Figure 3.6-1. Major Land Resource Areas within the TLEP Study Area

Table 3.6-1. Percent Distribution of Major Land Resource Areas within the TLEP Study Area

TLEP Study Area Location	Southern Coastal Plain	Carolina and Georgia Sand Hills	Southern Piedmont	Alabama and Mississippi Blackland Prairie
Russell West				100
Russell East	73			27
Stewart West	100			
Stewart Central	100			
Stewart East	76	24		
Webster West	19	81		
Marion West		44	56	
Harris East and Talbot West		3	97	

Source: NRCS, 2006d

TLEP = Training Land Expansion Program

Carolina and Georgia Sand Hills

The Carolina and Georgia Sand Hills (MLRA 137) is in a transitional zone between the true Piedmont and the Coastal Plain. This area is a dissected, rolling to hilly upland. Many of the more dissected areas have stabilized dunes, resulting in very irregular slopes. Elevation ranges from 165 to 660 feet (50 to 200 meters), increasing gradually from south to north. Local relief is mainly 10 to 20 feet (3 to 6 meters), but a few hills are 80 to 165 feet (25 to 50 meters) above the adjacent areas.

Southern Piedmont

The Southern Piedmont (MLRA 136) is almost entirely within the Piedmont Upland Section of the Piedmont Province of the Appalachian Highlands. This area is a rolling to hilly upland with a well-defined drainage pattern. Streams have dissected the original plateau, leaving narrow to fairly broad upland ridgetops and short slopes adjacent to the major streams. The valley floors are generally narrow and make up about 10 percent or less of the land area. The associated stream terraces are minor. Elevation ranges from 330 to 1,310 feet (100 to 400 meters).

Alabama and Mississippi Blackland Prairie

The Alabama and Mississippi Blackland Prairie (MLRA 135A) is in the East Gulf Coastal Plain Section of the Coastal Plain Province of the Atlantic Plain. The northern part of the area is a slightly elevated plain that is hilly, and the separate southwestern part is locally known as the Jackson Prairie portion of the East Gulf Coastal Plain Section in Mississippi. Elevation ranges from 100 to 590 feet (30 to 180 meters). Local relief is mainly 50 to 100 feet (15 to 30 meters).

Southern Coastal Plain

The Southern Coastal Plain (MLRA 133A) extends from Virginia to Louisiana and Mississippi, but it is almost entirely within three sections of the Coastal Plain Province of the Atlantic Plain. The northern part is in the Embayed Section, the middle part is in the Sea Island Section, and the southern part is in the East Gulf Coastal Plain Section. This area is strongly dissected into nearly level and gently undulating valleys and gently sloping to steep uplands. Stream valleys generally are narrow in their upper reaches but become broad and have widely meandering stream channels as they approach the coast. Elevation ranges from 80 to 655 feet (25 to 200 meters), increasing gradually from the lower Coastal Plain northward.

Local relief is mainly 10 to 20 feet (3 to 6 meters), but is 80 to 165 feet (25 to 50 meters) in some of the more deeply dissected areas.

3.6.1.2 EROSIVE SOILS

The TLEP study area generally covers a geographic area where erosive soils can easily become a management issue. The counties within the TLEP study area have different parameters used for estimating soil erosivity within their respective soil surveys. Parameters include erodible land for Russell County, runoff potential for Stewart and Webster counties, and K-values for Chattahoochee and Marion counties. These parameters are further described later within this section. While these parameters cannot be compared directly to each other, they do provide a good background for analyzing erosion potential. Soil erosion potential is summarized in Tables 3.6-2 through 3.6-4. Figure 3.6-2 displays the soil erosion characteristics within the TLEP study area. As spatial data for Harris and Talbot County soil surveys is currently being developed by the NRCS and is not available for, data estimating the susceptibility to soil erosion are not available for these counties. The Final EIS will be updated with this information if it becomes available. The Muscogee County data, however, indicates that approximately 56 percent of the transportation route through Muscogee County to Harris East and Talbot West is on highly erodible soils (see Figure 3.6-2).

Highly erodible land (HEL) and potentially highly erodible land (PHEL) ratings are available for Russell County and have been summarized in Table 3.6-2. The HEL rating uses a calculation for an erodibility index that takes into account each soil's erodibility and soil loss tolerance. The soil erodibility is estimated using the Universal Soil Loss Equation that combines a rainfall and runoff factor (R), a susceptibility to water erosion factor (K), and a combined effect of slope length and steepness factor (LS). The soil loss tolerance (T-value) represents the maximum annual rate of soil erosion that could take place without causing a decline in long-term productivity. The erodibility index for sheet and rill erosion is represented by the formula EI=RKLS/T (UDEL, 2010). Russell West has 48 percent HEL and 21 percent PHEL. Russell East has 65 percent HEL and 11 percent PHEL.

HEL and PHEL ratings were not available for any other county in the TLEP study area; however, Stewart and Webster counties soil survey reports have calculated a runoff potential that gives a similar indication of the potential erodibility of the those portions of the TLEP study area. The potential soil erodibility for the Stewart and Webster portions of the TLEP study area are listed in Table 3.6-3. High runoff potential ranges from 27 percent in Webster West to 68 percent in Stewart West. Medium runoff potential ranges from 4 percent in Stewart West to 19 percent in Stewart East.

Runoff potential was not available for Chattahoochee and Marion counties, but K-values for each soil map unit are available, and are listed in Table 3.6-4. The K-value represents inherent erodibilities of soils based on soil properties such as soil texture, organic matter, structure, and permeability (Troeh, 1991). K-values range between 0.02 and 0.69, with the lower number indicating a decrease in erodiblility. The K-value does not take into account the slope of the land, but topographic relief of the area is shown on Figure 3.6-4. Soil erodibility typically increases as slope percent and length increases and soil cover decreases. Marion West has a total of 31 percent of the land having K-values greater than 0.2. HEL/PHEL, runoff potential, and K-values at the soil series level are listed in Appendix C.

Table 3.6-2. Soil Highly Erodible Land within Russell West and East

TLEP Study Area Location		Soil Property / Designation (percent)		
		Highly Erodible Land	Potentially Highly Erodible Land	Not Highly Erodible Land
Russell County	West	48	21	31
	East	65	11	24

Table 3.6-3. Soil Runoff Potential within Stewart West, Central, East, and Webster West

TLEP Study Area Location		Soil Property / Designation (percent)			
		High Runoff Potential	Medium Runoff Potential	Low Runoff Potential	Very Low/Negligible Runoff Potential
Stewart County	West	68	4	11	17
	Central	62	11	15	12
	East	28	19	41	12
Webster County	West	27	10	48	15

Table 3.6-4. Soil K-values within Marion West

TLEP Study Area Location		Soil Property / Designation (percent)			
		K equal to or smaller than 0.1	K equal to or smaller than 0.2; greater than 0.1	K equal to or smaller than 0.3; greater than 0.2	K greater than 0.3
Marion County	West	34	35	22	9

K-value = susceptibility to water erosion factor

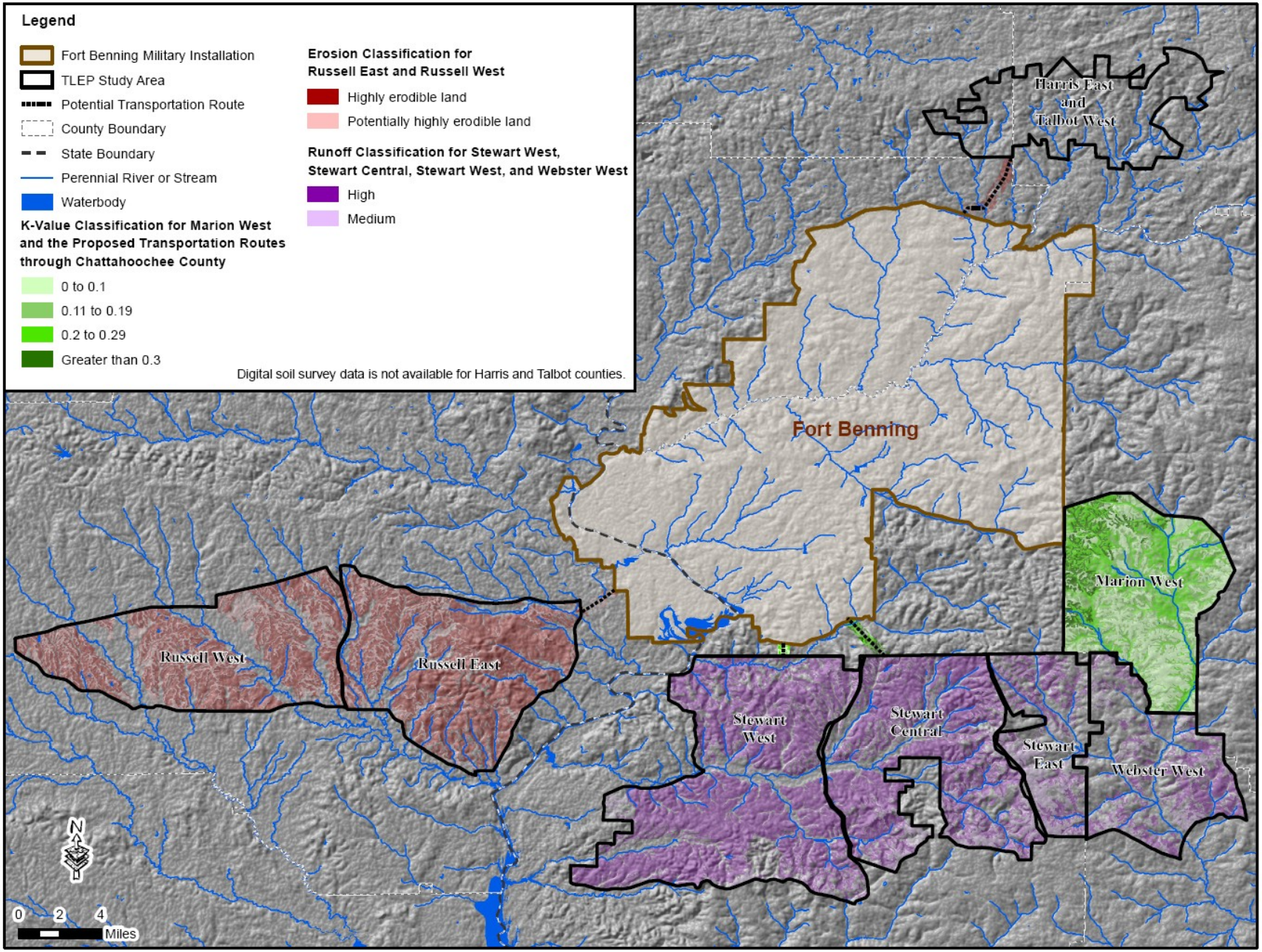


Figure 3.6-2. Soil Erosion Characteristics within the TLEP Study Area

3.6.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to soil resources that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to soils from training activities would occur if substantial soil loss or compaction precluding the reestablishment of vegetation within two growing seasons or a violation of applicable Federal or state law, regulation, or permit occurs. Table 3.6-5 provides a comparison of acres of erodible soils by Proposed Action alternative. Impacts to soil resources by alternative are detailed in Sections 3.6.2.1 through 3.6.2.6

Table 3.6-5. Erodible Soil Characteristics by Proposed Action Alternatives

Alternative	Highly Erodible Soils (acres)	High Runoff Potential (acres)	K-value greater than 0.3 (acres)	Percentage of Alternative
1		11,594	2,975	19
2	44,902		10	55
3		54,220[1]	49[1]	66
4	25,733	24,953	58	63
5	75	38,836[2]	1[2]	68[2]

[1]Alternative 3 contains more acreage than the approximately 82,800 acres proposed for acquisition, therefore, this value represents a predicted acreage based upon the maximum land acquisition scenario of 82,800 acres, using a scaling factor of 0.85.

[2]No erosion values are available for Harris East/Talbot West; and therefore, these values include only those for Stewart West and the transportation routes.

K-value = susceptibility to water erosion factor

3.6.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. Most of the area (70 to 80 percent) would remain in timber production using traditional clear-cutting practices. Short- and long-term impacts to soils are minor to moderate depending on the scale and frequency of the harvesting, the type of yarding techniques used, and location and number of logging roads and skid trails, among other factors (EPA, 1993).

Clear-cut logging operations can be detrimental to soil quality as harvest and site preparation severely disturb the forest litter and organically enriched topsoil, compact the soil, and strip the land of vegetative cover, which in turn causes soil erosion during precipitation events. In particular, when large, sloped areas are cleared, accelerated soil erosion is caused not just by the detachment of the soil particles from raindrop impacts, but also from sheet and rill erosion from sediment-laden water accelerating down the hillsides. Depending on the harvesting technique, up to 29 percent of soil surface disturbance has been observed during clear-cutting (EPA, 1993). Log transport also causes high amounts of soil disturbance. Tractor logging is the most popular system of transporting logs for loading at the log yard. Forest of slopes less than 30 percent grade is usually logged by tractor (Troeh, 1991). Tractor logging drags the log and creates erodible skid trails along the forest floor. It also creates compacted soils characterized by high bulk density, effectively stunting plant root growth. Short-term effects include disturbance and erosion of soil during timber harvest, and long-term effects include soil compaction and accelerated rill and gully erosion caused by exposed soils before a new tree canopy and forest litter layer develops.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to soils would be the subject of future NEPA analysis.

3.6.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Short- and long-term term minor adverse effects would be expected from implementing this alternative. Direct effects on soils would occur as a result of both infrastructure upgrades and construction, and maneuver and training proposed in any newly acquired lands associated with Alternative 1. The following sections describe how the different activities in the Proposed Action would affect soil resources under Alternative 1.

3.6.2.2.1 FEDERAL ACQUISITION OF LAND

Impacts on soils from Federal acquisition of land under Alternative 1 are expected to be negligible.

3.6.2.2.2 ARMY MANAGEMENT

The short- and long-term effects of Army management of the natural resources within Alternative 1 would in general be beneficial to soil resources compared to the No Action Alternative due to implementation of Fort Benning's natural resource management programs (see Section 3.6.2.2.2). For example, highly sensitive areas of HEL and/or steep slopes currently in highly soil-disturbing silviculture production (Section 3.6.2.1) would be managed according to up-to-date soil conservation principles under Fort Benning's management programs. Alternative 1 contains either potentially or highly erodible soils, which would greatly benefit from being converted from traditional clear-cut timber production to land managed for training use which would include managed forest land. The following is a list of resource management programs that would be implemented on newly acquired lands as part of the Proposed Action along with potential impacts to soil resources within Alternative 1 resulting from Army management. The programs that would directly affect soils in Alternative 1 include:

- ***INRMP.*** Under the INRMP, measures to conserve or correctly manage soils that are highly susceptible to erosion would be performed after approval and when funding is available. The INRMP would be updated to incorporate newly acquired lands associated with Alternative 1, thereby identifying areas of soil erosion caused by current and past land uses. Implementation of the soil conservation and management measures discussed in the INRMP would also be analyzed in the NEPA document required to support INRMP updates. Areas of high and medium runoff potential (Webster West and Stewart East) and high K-values combined with steep slopes (Marion West) would be managed for sustainable use. A program under the INRMP, such as the designation of Unique Ecological Areas, is one strategy in which areas can be more intensely managed. Along with the INRMP, the following regulations and policies would be adhered to help ensure that soil types and erodibility are considered in the site selection process:
    - Comply with the Georgia Erosion and Sedimentation Act of 1975 and CWA (Georgia State Clean Water Laws). This includes obtaining a land disturbance permit or NRCS assistance if more than 1 acre is disturbed.
    - Require the use of NPDES BMPs (e.g., reseeding disturbed areas and use of protective layering over soils; see Section 3.7.2.2.3) for all soil rehabilitation activities that may

occur during construction and maintenance projects, site restoration, and forest management activities.
    - Submit the Fort Benning Form 144R to initiate the NEPA process. This would include submission of each proposed design, construction activity (e.g., geo-tech, timber harvesting, etc.), maintenance, and training activity. This would provide the most current information available of the locations of environmental resources and leverage the locational flexibility of the Proposed Action.
- ***ITAM.*** The objective of the ITAM program is to support sound resource management practices to provide stewardship of land assets while sustaining those assets to support training and other Installation missions. The ITAM program's goals include optimal sustained use of lands (including soil resources) for the execution of realistic training, integrated training and other mission requirements for land use with sound natural resources management, and advocate proactive conservation and land management practices. The use of Land Condition Trend Analysis plots, like the ones developed on Fort Benning land, is an example of adaptive management monitoring methods that would help Fort Benning evaluate management of newly acquired land and make adjustments if needed. This would apply to monitoring effects of training on soil resources and monitoring of erosion. Areas experiencing non-sustainable use would be evaluated and prescriptions would be applied for sustainable soil uses as funding is available.
- ***Watershed Management Plans.*** This program is used as a framework for monitoring erosion, and is based on a watershed inventory. Under this program, watershed management plans would be updated or developed for all subwatersheds on any newly acquired land where ground-disturbing military activities would occur. The implementation of these plans would include the monitoring, rehabilitation and maintenance prioritization of sites having erosion problems from both current and historical use.
- ***Road/Trail Closures***. Under Fort Benning management, badly eroding roads or trails on newly acquired land would be subject to closure. Maintenance during such closures may include stabilization by smoothing, installation of turnouts, constructions of check dams, and seeding and mulching.

3.6.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

During training/facility planning stages of newly acquired land, on-site surveys of soil resources, topography, and surface cover would be conducted by the Army to further identify and characterize sensitive areas, such as highly eroded and/or exposed soils, and areas would be stabilized or preserved in accordance with Fort Benning's soil conservation programs (Section 3.6.2.2.2). In addition, areas for upgraded trail/road networks and Army training and maneuvering would be identified based on soil suitability for construction and maneuvering.

The upgrade and construction of road and trail networks (including establishment of water crossings), site hardening at specific locations, silviculture techniques including prescribed burning and forest thinning, and possible construction of buildings would be expected to increase runoff and soil erosion potential during construction. Short-term and minor adverse impacts from these activities include exposure, disturbance, and erosion of soils due to vegetation removal. Impacts on soils would in general be limited to areas where construction would occur, and would depend on several factors including slope, the degree of erodibility of the soils, and degree and length of exposure without cover. Short-term impacts due to preparation of newly acquired land are generally expected to be minor due to phasing of the construction and compliance with Georgia National Pollutant Discharge Elimination Standards (NPDES) requirements, including implementation of NPDES BMPs such as installment of broad-based dips on permanent roads with more than three percent grade, stabilization of exposed soils on shoulders of roads

located within streamside management zones (SMZs), wetlands, or stream crossings, and avoiding slopes greater than 10 percent grade by following contours. When construction is done in areas of highly erodible soils, however, impacts may be moderate depending on conditions such as slope, surface cover, and degree and duration of exposed soils. Site clearing for training exercises would generally follow Georgia NPDES requirements, which recommend that on 11 to 20 percent sloped soils with moderate to severe erosion potential, strips of untreated areas or windrows should be left to slow water and soil movement, and on 21 to 30 percent sloped soils with severely erosive soils, only low-intensity mechanical methods that follow the contour should be used.

Long-term adverse impacts include grading, compaction, and creation of impermeable surfaces on expanded portions of existing trails, on new trails and roads, and on areas where buildings are to be constructed. Soils adjacent to new low-stream crossings would become compacted; however, erosion of soils adjacent to existing stream crossings are expected to be reduced and erosion of soils adjacent to new and existing stream crossings are expected to be minor due to the use of conservation practices such as hardened water crossings. Long-term adverse impacts from preparation of newly acquired land are expected to be reduced to minor due to implementation of Fort Benning's comprehensive soil conservation programs (Section 3.6.2.2.2).

Potential adverse impacts on soils would generally be reduced by the use of appropriate BMPs for controlling runoff and erosion during and following construction. See Section 3.6.2.2.2 for a listing of soil conservation management practices. Additionally, the Army would identify environmentally preferred siting and design options for proposed projects within newly acquired land, including those to reduce overall soil erosion and disturbance to soils susceptible to erosion. Facilities would be sited to avoid areas of steep slopes and utilize BMPs and engineering structural practices to reduce impacts to highly erodible soils.

3.6.2.2.4 ARMY TRAINING

Overall, potential adverse impacts to soils from training activities are expected to be minor to moderate. Soil conservation and restoration practices discussed within Section 3.6.2.2.2 would be implemented to avoid the potential for significant adverse impacts. Adverse impacts of maneuver training would mostly be associated with the temporary but long-term compaction, disturbance, and exposure of soils from the off-road and unimproved trail use of wheeled and tracked vehicles. In particular, the use of tanks, BFVs, and M113 vehicles would compact, disturb, and expose soils within designated maneuver areas and along established trails and roads.

Due to the programmatic nature of the Proposed Action, quantification of soil impacts resulting from Army training on newly acquired lands is not feasible. As stated in Section 2.2.5.1, training units (e.g., the ARC, the 3rd HBCT/3rd ID, and the 75th Ranger Regiment) would be expected to use the newly acquired land in addition to existing Fort Benning land. Generally speaking, the potential for adverse impacts to soils would be increased with increasing soil erodibility and are further discussed within this section.

In a study by Dilustro et. al., (2002), on relationships between soil texture, land-use intensity, and vegetation on Fort Benning land, it was found that the most frequent and abundant disturbance features on Fort Benning included active and remnant trails, roads, and vehicle tracks or trails. In another soil study done on Fort Benning training land, it was found that soil quality was not affected on light military-use sites. On moderate, and heavy maneuver sites (such as heavy mechanized maneuver training), it was found that soil quality was decreased using factors such as bulk density soil carbon and particulate organic matter (Garten et. al., 2003). In addition to degrading soil quality, training exercises would cause disturbance and exposure of the soils, which in turn would increase the probability of erosion of soil particles during precipitation events and cause a loss of topsoil and sedimentation of waterways. Wheeled and tracked vehicle activities would disrupt vegetative cover and the top inches of forest litter and topsoil

structure making the areas affected by training more susceptible to erosion and topsoil loss. In addition, tracks created by vehicles off-road and on unimproved trails and roads increase the probability of accelerated and channeled water runoff, in turn increasing rill and gully erosion on and off the trails. Impacts due to wheeled and tracked vehicle activities would, therefore, be minor to moderate depending on the intensity of use. The potential for significant disturbance to soils would occur in heavily used sites containing highly erodible soils and steep slopes. These impacts, however, would be reduced through Army management (see Section 3.6.2.2.2).

Excavation of soils would take place during training exercises using construction of dug-in fighting positions, hasty and/or limited defenses, or deliberate defenses, and would increase the probability of erosion and disturb the pedogenic (soil forming) horizonization in the soils, effectively changing the classification of those soils. This type of impact, however, would be on a small scale and localized, and the pits would be filled in after the training exercises. Compaction of soil would also be expected on sites used for bivouacking, communication and surveillance operations, and support areas, including field hospitals and vehicle and helicopter maintenance stations. Areas adjacent to these sites could also experience an increased potential for erosion due to the increased human activity introduced from these activities. After training events, however, disturbed soils would be graded, seeded, and returned as close to its natural state as possible (see Section 3.6.2.2.2) resulting in minor adverse impacts.

Significant impacts would be further avoided by selecting areas for maneuvering activities on stable soils where feasible; this avoidance would be implemented in the planning stages of training facilities in the newly acquired lands. In general, training on highly erodible soils and potentially highly erodible soils would have a greater potential to cause adverse impacts to soils integrity and susceptibility to erosion.

All three counties in Alternative 1 have relatively low percentages of erodibility (Table 3.6-5) compared to the other Proposed Action alternatives, allowing for a greater chance of avoiding large areas of highly erodible soils during training. The use of BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas, along with adherence to existing management plans (see Section 3.6.2.2.2), would reduce soil resource impacts from Army training to minor.

3.6.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Overall potential impacts to soil resources would be minor to moderate and similar to those described under Alternative 1 (Section 3.6.2.2) as long as heavy maneuver training is avoided in the eastern portion of Russell East due to the presence of highly erodible soils (see Section 3.6.2.3.4).

3.6.2.3.1 FEDERAL ACQUISITION OF LAND

Impacts on soils from Federal acquisition of land under Alternative 2 are expected to be negligible.

3.6.2.3.2 ARMY MANAGEMENT

Fort Benning would apply the same resource management programs (Section 3.6.2.2.2) discussed under Alternative 1. Impacts to soil resources, therefore, are expected to be beneficial.

3.6.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

Short- and long-term impacts from preparation of newly acquired land under Alternative 2 are expected to be similar to those under Alternative 1, with the exception of the additional construction of a permanent

transportation route required to link Fort Benning to Russell East. The additional construction of a permanent transportation route would add additional impacts to soils where these transportation routes are established. Overall potential impacts to soil resources from Army construction, however, would remain minor and similar to those discussed under Alternative 1 as facilities would be sited to avoid areas of steep slopes and highly erodible soils where feasible.

3.6.2.3.4 ARMY TRAINING

Army training exercises affecting soil resources would be similar to those described under Alternative 1. Training exercises conducted within Russell East would have a higher impact on soils since 65 percent of Russell East is mapped as HEL compared to 48 percent in Russell West. In particular, the southeastern portion of Russell East is mapped almost exclusively as HEL and is dominated by steep terrain (Figure 3.6-2). Due to the high erosion potential and steep terrain within the southeastern portion of Russell East, heavy maneuver training sites within this area may preclude long-term and sustainable use, resulting in the potential for significant adverse impacts. The adherence to Fort Benning resource management plans (Section 3.6.2.2.2) and BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas, and focusing heavy maneuver training outside of locations containing steep terrain and high erosion potential (e.g., the southeastern portion of Russell East), would reduce potential short- and long-term adverse impacts to moderate levels.

The use of an established transportation route would be anticipated to have negligible impacts to soil resources from Army training. Use of this transportation route would be restricted to the designated trail.

3.6.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Overall potential impacts to soil resources would be minor to moderate and similar to those described under Alternative 1 (Section 3.6.2.2) as long as heavy maneuver training is avoided in the southern portion of Stewart West (see Section 3.6.2.4.4). In general, the potential for significant impacts to soils would be higher compared to Alternatives 1 and 2 due to a higher amount of erosive soils and steep slopes (see Table 3.6-5). Similar to the other alternatives, however, adverse impacts would be reduced to moderate levels through avoiding heavy maneuver training in areas of steep slopes and high erosion potential and from implementation of Fort Benning resource management plans and use of BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas.

3.6.2.4.1 FEDERAL ACQUISITION OF LAND

Impacts on soils from Federal acquisition of land under Alternative 3 would be negligible.

3.6.2.4.2 ARMY MANAGEMENT

Fort Benning would apply the same resource management programs (Section 3.6.2.2.2) discussed under Alternative 1. Impacts to soil resources, therefore, are expected to be beneficial.

3.6.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

Short- and long-term impacts from preparation of newly acquired land under Alternative 3 would be similar in type but have a higher potential for significant impacts compared to those under Alternative 1 due to higher levels of erosive soils and steeper slopes. Also, the additional construction of a permanent

transportation route linking Fort Benning to Stewart West and to Stewart Central would add additional impacts to soils where these transportation routes are established. Overall potential impacts to soil resources from Army construction, however, would remain minor and similar to those discussed under Alternative 1 as facilities would be sited to avoid areas of steep slopes and utilize BMPs and engineering structural practices to reduce impacts to highly erodible soils.

3.6.2.4.4 ARMY TRAINING

The type of Army training exercises affecting soil resources would be similar to those described under Alternative 1. Training exercises conducted within Alternative 3, however, would have a higher impact on soils compared to Alternatives 1 and 2, since 62 to 68 percent of Alternative 3 is mapped as soil with a high runoff potential. In particular, the southern portion of Stewart West and central and northern portions of Stewart Central are characterized by highly erodible soils and steep slopes. Due to the high erosion potential and steep terrain within these areas, establishment of heavy use training sites within this area may preclude long-term and sustainable use resulting in the potential for significant adverse impacts. The adherence to Fort Benning resource management plans (Section 3.6.2.2.2) and BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas, and focusing heavy maneuver training outside of areas containing steep slopes and high erosion potential (e.g., central and northern portions of Stewart Central), would reduce potential short- and long-term adverse impacts to moderate levels.

The use of established transportation routes would be anticipated to have negligible impacts to soil resources. Use of these transportation routes would be restricted to roads and trails.

3.6.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama, and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Overall types of impacts to soil resources would be minor to moderate and similar to those described under Alternative 2 (Section 3.6.2.3). Alternative 4 contains the same HELs identified under Alternative 2 within Russell East.

3.6.2.5.1 FEDERAL ACQUISITION OF LAND

Impacts on soils from Federal acquisition of land under Alternative 4 would be negligible.

3.6.2.5.2 ARMY MANAGEMENT

Fort Benning would apply the same resource management programs (Section 3.6.2.2.2) discussed under Alternative 1 to Alternative 4 lands under consideration. Impacts to soil resources are expected to be beneficial.

3.6.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

Short- and long-term impacts from preparation of newly acquired land under Alternative 4 are expected to be similar in type but have a higher potential for significant impacts compared to those under Alternative 1 due to higher levels of erosive soils and steeper slopes located within the eastern part of Russell East. Also, the additional construction of a permanent transportation route linking Fort Benning to Stewart Central and Russell East would add additional impacts to soils where these transportation routes are established. Overall potential impacts to soil resources from Army construction, however, would remain minor and similar to those discussed under Alternative 1 as facilities would be sited to avoid areas of

steep slopes and utilize BMPs and engineering structural practices to reduce impacts to highly erodible soils.

3.6.2.5.4 ARMY TRAINING

The type of Army training exercises affecting soil resources would be similar to those described under Alternative 2. Training exercises conducted within Alternative 4 lands, however, would have a higher impact on soils compared to Alternatives 1 and 2, and similar to Alternative 3, since 62 percent of Stewart Central is mapped as soil with a high runoff potential, and 65 percent of Russell East is mapped as HEL due to the highly erodible soils and steep slopes. Due to the high erosion potential and steep terrain within the eastern portion of Russell East and central and northern portions of Stewart Central, establishment of heavy maneuver training sites within this area may preclude long-term and sustainable use, resulting in the potential for significant adverse impacts. The adherence to Fort Benning resource management plans (Section 3.6.2.2.2) and BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas, and focusing heavy maneuver training outside of areas characterized by steep terrain and high erosion potential (e.g., the eastern portion Russell East and the central and northern portions of Stewart Central), would reduce potential short- and long-term adverse impacts to moderate levels.

The use of established transportation routes would be anticipated to have negligible impacts to soil resources from Army training. Use of these routes would be restricted to roads and trails.

3.6.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Overall potential impacts to soil resources in Stewart West would be minor to moderate and similar to those described under Alternative 3 (Section 3.6.2.4) as long as heavy maneuver training is avoided in the southern portion of Stewart West (see Section 3.6.2.6.4). Impacts to soil resources in Harris East and Talbot West cannot be assessed since spatial soil survey data is not available. This discussion, therefore, focuses potential impacts to soil resources within the Stewart West portion of Alternative 5. The Final EIS will be updated with this information if it becomes available. If the Army were to proceed with implementation of Alternative 5, as discussed in Section 3.6.2.2.3, the Army would perform on-site surveys of soil resources, topography, and surface cover to further identify and characterize sensitive areas, such as highly eroded and/or exposed soils, and stabilize or preserve them in accordance with Fort Benning's soil conservation programs. For Alternative 5, this would include areas not currently surveyed by the NRCS in Harris and Talbot counties.

3.6.2.6.1 FEDERAL ACQUISITION OF LAND

Impacts on soils from Federal acquisition of land under Alternative 5 are expected to be negligible.

3.6.2.6.2 ARMY MANAGEMENT

Fort Benning would apply the same resource management programs (Section 3.6.2.2.2) discussed under Alternative 1. Impacts to soil resources, therefore, are expected to be beneficial.

3.6.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

Short- and long-term impacts from preparation of newly acquired land to soil resources in the Stewart West portion of Alternative 5 are expected to be similar to those under Alternative 3 due to the levels of

erosive soils and steeper slopes within Stewart West. The additional construction of permanent transportation routes linking Fort Benning to Stewart West and from Fort Benning to Harris East and Talbot West would add additional impacts to soils where these routes are established. Overall potential impacts to soil resources from Army construction, however, would remain minor and similar to those discussed under Alternative 1 where these routes are established. Also similar to the other alternatives, facilities would be sited to avoid areas of steep slopes and utilize BMPs and engineering structural practices to reduce impacts to highly erodible soils.

3.6.2.6.4 ARMY TRAINING

The type of Army training exercises affecting soil resources would be similar to those described under Alternative 3. Training exercises conducted within Stewart West would have a higher impact on soils compared to Alternatives 1 and 2, since 68 percent of Stewart West is mapped as soil with a high runoff potential. In particular, the southern portion of Stewart West is characterized by highly erodible soils and steep slopes. Due to the high erosion potential and steep terrain within the southern portion of Stewart West, establishment of heavy maneuver training sites within this area may preclude long-term and sustainable use resulting in the potential for significant adverse impacts. The adherence to Fort Benning resource management plans (Section 3.6.2.2.2) and BMPs, such as identification and correct management of highly erosive soil areas or designation of Unique Ecological Areas, and focusing heavy maneuver training outside of areas characterized by steep terrain and high erosion potential (e.g., the southern portion of Stewart West), would reduce potential short- and long-term adverse impacts to moderate levels.

The use of established transportation routes would be anticipated to have negligible impacts to soil resources from Army training. Use of these routes would be restricted to roads and trails.

3.6.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts by the Proposed Action (Alternatives 1, 2, 3, 4, and 5) within the ROI for soils. The list of past, present, and foreseeable future activities considered within the cumulative impacts analysis to soil resources is presented in Section 3.1.3.2. For the most part, regional and local land soil resources would not be adversely affected by the contributing activities. Exceptions to this are the MCoE Actions, BRAC and Transformation Actions, and the Digital Multi-Purpose Range Complex (DMPRC), all being implemented on Fort Benning lands, in which impacts to soil resources are managed under existing Fort Benning management practices as described in Section 3.6.2.2.2. As shown in Section 3.1.3.2, little change in land use and development is anticipated within the surrounding area outside of Fort Benning. In addition, logging activities within the region would continue to produce moderate adverse impacts to regional soil resources similar to those discussed in Section 3.6.2.1; however, newly acquired lands under Army management would benefit soil resources (Section 3.6.2.2.2), reducing cumulative effects from regional actions to minor. It is expected that, over time, soils that became depleted and eroded under the current timber production would slowly build up organic matter and a healthier ecosystem in the topsoil when managed correctly.

Additional beneficial cumulative effects include the decrease of soil disturbance intensity and erosion on Fort Benning lands that are currently highly utilized, or are projected under BRAC and MCoE actions to be highly utilized, for maneuver training. The amount of current and projected Maneuver Impact Miles[1] would be distributed over both currently used and newly acquired maneuver land allowing the pressure on existing maneuver lands to decrease.

[1] The Maneuver Impact Mile was developed by the Army in collaboration with scientists from the NRCS, the Construction and Engineering Research Laboratory, and USAEC. The Maneuver Impact Mile methodology is a scientifically-based methodology that has been uniquely developed for the Army to understand the increases in training load that occurs in association with unit stationing. The methodology incorporates the number of vehicles, vehicle weights, ground contact pressures, operational training requirements, and other factors to best capture the training load associated with an Army unit and its vehicle fleet.

3.6.4 PROPOSED MITIGATION

No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.

3.7 WATER RESOURCES

3.7.1 AFFECTED ENVIRONMENT

The following sections describe the surface water and floodplains (Section 3.7.1.1), groundwater and aquifer characteristics (Section 3.7.1.2), and wetland resources (Section 3.7.1.3) within the TLEP study area. These sections also contain a brief synopsis of Army management regarding water resources that would be implemented on any new land acquired by the Army. The ROI for water resources encompasses surface waters, floodplains, groundwater aquifers, and wetlands within the TLEP study area.

3.7.1.1 SURFACE WATER AND FLOODPLAINS

A ***watershed*** is a land area bounded by topography that drains water to a common destination. Watersheds drain, capture, filter, and store water and determine its subsequent release.

Surface water systems are typically defined in terms of watersheds. A watershed divides the landscape into hydrologically defined areas whose biotic and abiotic components function interactively. The watershed can be large or small because every waterway (stream, tributary, wash, and river) has an associated watershed and smaller watersheds combine to form larger watersheds. The watershed boundary will more or less follow the drainage divide or the highest ridgeline around the stream channels, which will meet at the bottom or lowest point of the land where water flows out of the watershed, commonly referred to as the mouth of the waterway. Any activity that affects water quality, quantity, or rate of movement at one location within a watershed has the potential to affect the characteristics of locations downstream.

Watersheds are delineated into hydrologic units by the USGS using a nationwide system based on surface hydrologic features. The USGS has divided and sub-divided into successively smaller hydrologic units that are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged within each other, from the smallest (cataloging units) to the largest (regions). This system divides the U.S. into 21 regions, 221 subregions, 378 accounting units, and 2,262 cataloging units. Each hydrologic unit is identified by a unique hydrologic unit code (HUC) consisting of two to eight digits based on the four levels of classification in the hydrologic unit system (USGS, 2009b). The cataloging unit is the hydrologic unit representing the watershed level, therefore, this will be the hydrologic unit discussed within this EIS.

Surface waters (such as streams and creeks) that are periodically subject to flooding during intervals of overbank flow create a relatively broad and flat valley area immediately adjacent to the waterbody known as a floodplain. Floodplain areas are divided into 2 types: 100-year floodplains and 500-year floodplains. The 100-year floodplain is regulated by FEMA and is defined as typically dry land that has a 1 percent or greater chance of flooding each year; the 500-year floodplain is defined as land that has a 0.2 percent chance of a flooding each year (FEMA, 2010c).

Floodplain management is achieved under the CWA Section 401/404 permit process. Permit decisions are made by the USACE in conjunction with the involved states, in this case with the GDNR Watershed Protection Branch and the ADEM Water Division. State Section 401 water quality certification is mandatory for all projects requiring a Federal Section 404 Wetland Permit. Section 401 water quality certification indicates that a project is consistent with the state's water quality standards. Short- and long-term impacts to water quality and water-related uses are evaluated in the Section 401 certification review.

3.7.1.1.1 CHARACTERISTICS OF SURFACE WATER AND FLOODPLAINS IN THE TLEP STUDY AREA

The TLEP study area, as well as the existing Fort Benning training areas, intersect four watershed basins as described by the national USGS system, which are defined by the following cataloging unit HUCs: Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003), Kinchafoonee-Muckalee basin (HUC 03130007), Middle Chattahoochee-Lake Harding basin (HUC 03130002), and Upper Flint basin (HUC 03130005) (USGS, 2009a) (see Figure 3.7-1).

The basins are characterized by a warm and humid, temperate climate. Average annual precipitation in the basins, primarily as rainfall, is approximately 45 to 55 inches per year (USGS, 1986). The basins contain parts of the Piedmont, Blue Ridge, and Coastal Plain physiographic provinces. The ecological transition between the Piedmont, Blue Ridge and Coastal Plain occurs along the northern boundary of Fort Benning. This geologic feature results in a unique character of the rivers and creeks. The boundary between the Piedmont and Coastal Plain Provinces is known as the Fall Line. This boundary approximately follows the contact between crystalline rocks of the Piedmont Province and the unconsolidated Cretaceous and Tertiary sediments of the Coastal Plain Province. As implied by the name, streams flowing across the Fall Line can undergo abrupt changes in gradient, which are marked by the presence of rapids and shoals. Geomorphic and flow characteristics of streams differ between the Piedmont and Coastal Plain Provinces.

In the Coastal Plain, streams typically lack the riffles and shoals common to streams in the Piedmont, and exhibit greater floodplain development and increased sinuosity (USGS, 2010). The Piedmont streams generally flow in a southerly direction on Fort Benning, while Coastal Plain streams generally flow from east to west on the Georgia side and west to east on the Alabama side of the Installation. Ultimately, the surface waters drain toward the Chattahoochee River, which designates the state line between Georgia and Alabama.

The Chattahoochee River dominates the surface water regime at Fort Benning and within the ROI. The Chattahoochee River arises as a cold-water mountain stream in the Blue Ridge Province at altitudes above 3,000 feet and flows 430 miles to its confluence with the Flint River in Lake Seminole (Browns Guide to Georgia, 2008). The river drains an area of 8,770 square miles and is the most heavily used water resource in Georgia. Thirteen dams are located along the main stem of the Chattahoochee River. Dam construction began in the early 1800s on the Chattahoochee River above the Fall Line at Columbus, Georgia, to take advantage of natural gradients for power production. Annual flow has not been appreciably altered by the system of dams, although storage is used to augment flows during periods of low flow (GDNR, 1997). In contrast to the Chattahoochee River, the majority of the surface waters in the TLEP study area remain free flowing. Figure 3.7-2 shows the surface water features, including streams, creeks, lakes, and ponds located on the current Installation as well as those located within the TLEP study area.

EO 11988, *Floodplain Management*, directs Federal agencies to avoid, to the extent possible, adverse impacts associated with the modification of floodplains and to avoid support of floodplain development when there is a practicable alternative. The EO 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. According to the Flood Insurance Rate Maps (FIRMs) accessed through the FEMA website, there are several FEMA-designated floodplains and floodways located within the TLEP study area (see Figure 3.7-2). These areas fall within "Zone A," which is an area determined to be within the 100-year floodplain. This floodplain information was verified utilizing the FEMA flood maps indicated in Table 3.7-1 (FEMA, 2010c).

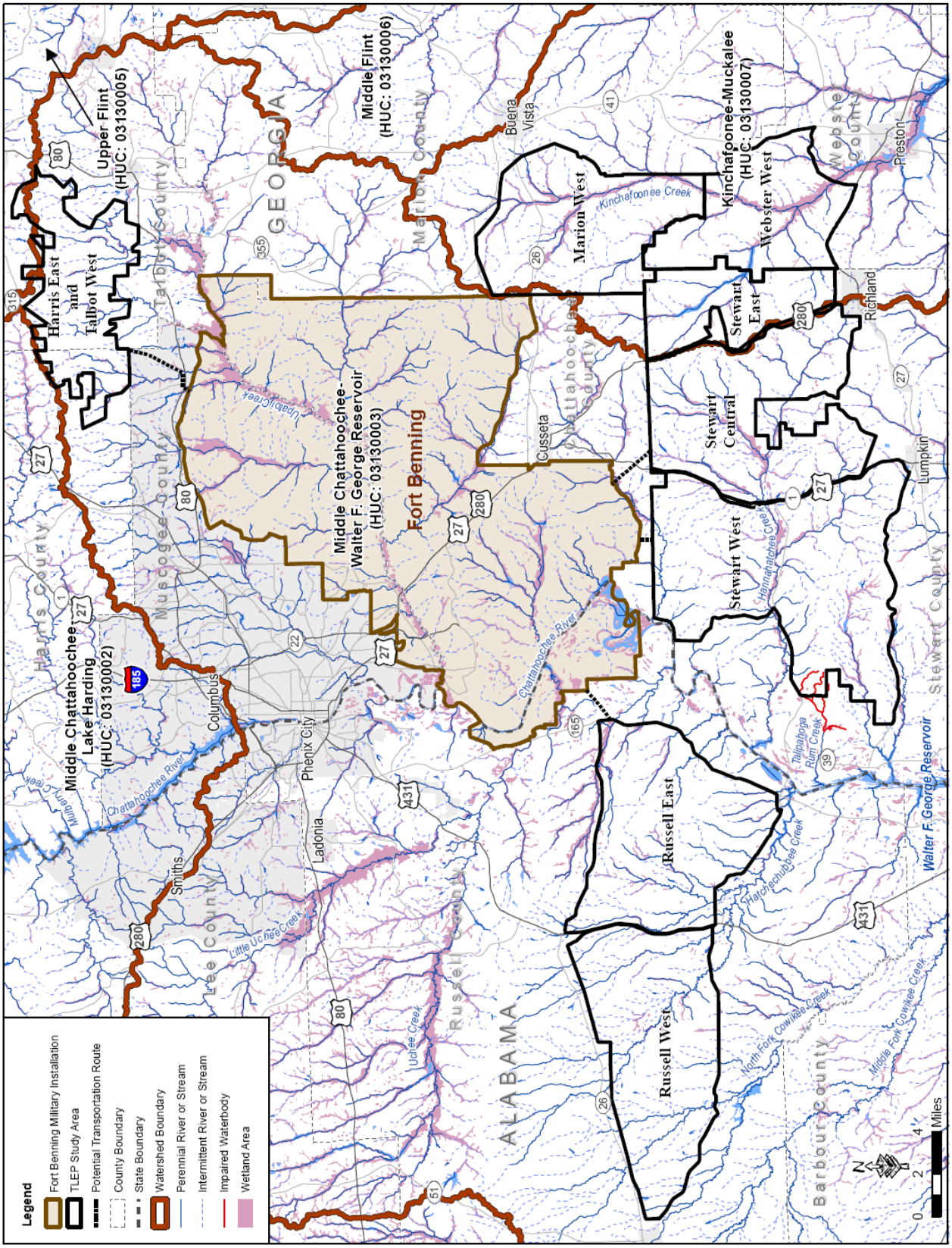


Figure 3.7-1. Watersheds in the TLEP Study Area

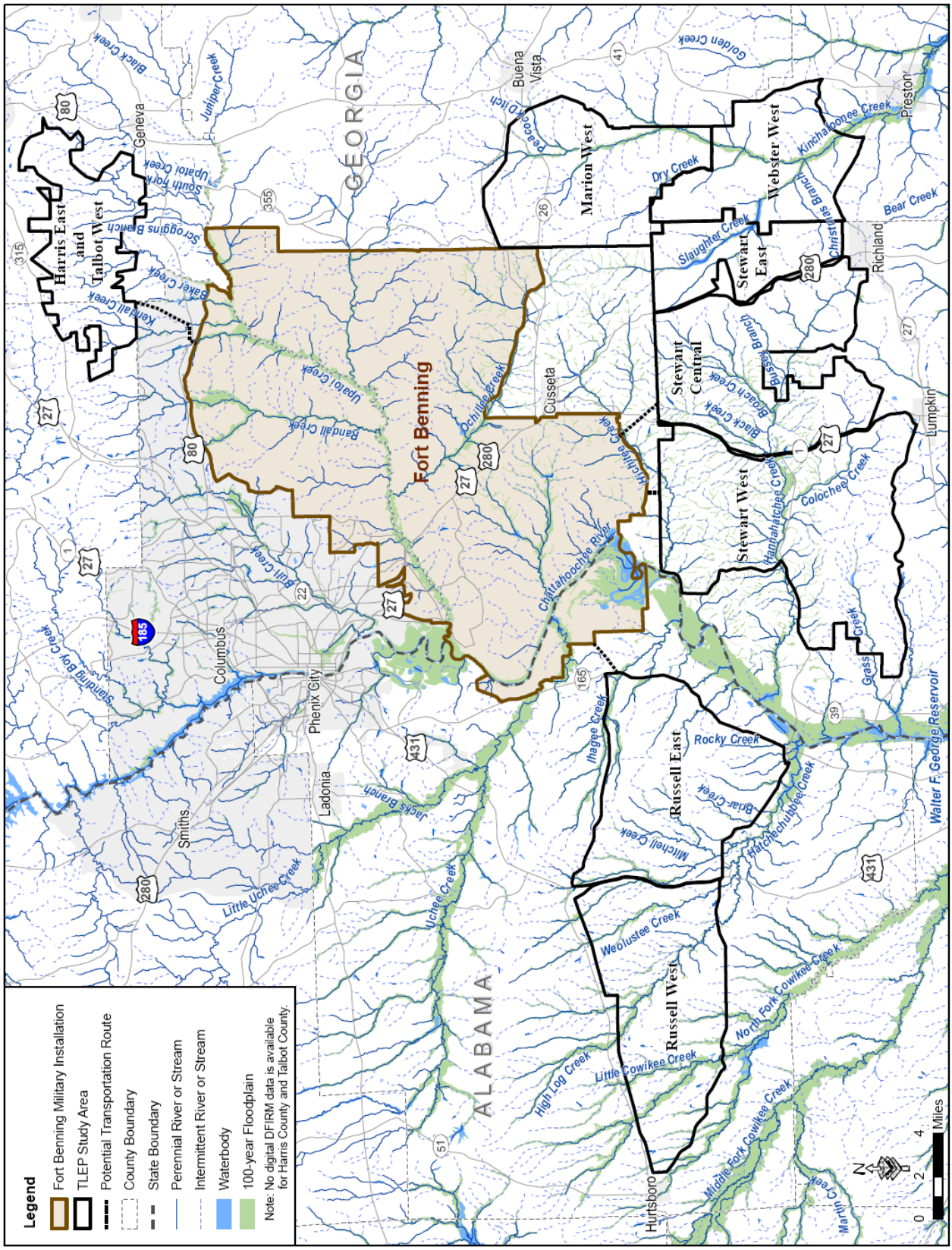


Figure 3.7-2. Surface Waters and Floodplains in the TLEP Study Area

Table 3.7-1. FEMA Maps Utilized within the TLEP Study Area

TLEP Study Area Location	FEMA Map Number	FEMA Panel Number	Date of Map
Russell West	01113C0275C, 01113C0375C, and 01113C0400C	275 of 500, 375 of 500, and 400 of 500	July 22, 2010
Russell East	01113C0275C, 01113C0290C, 01113C0295C, 01113C0400C, and 01113C0425C	275 of 500, 290 of 500, 295 of 500, 400 of 500, and 425 of 500	July 22, 2010
Stewart West	13259C0035B, 13259C0040B, 13259C0045B, 13259C0055B, 13259C0065B, 13259C0150B and 13259C0155B	35 of 295, 40 of 295, 45 of 295, 55 of 295, 65 of 295, 150 of 295, and 155 of 295	September 3, 2010
Stewart Central	13259C0060B, 13259C0065B, 13259C0070B, 13259C0080B, and 13259C0090B	60 of 295, 65 of 295, 70 of 295, 80 of 295, and 90 of 295	September 3, 2010
Stewart East	13259C0080B, 13259C0085B, and 13259C0095B	80 of 295, 85 of 295, and 95 of 295	September 3, 2010
Webster West	13307C0010A1 13307C0085A1 13307C0020A, 13307C0050A, 13307C0105A, and 13307C0110A	20 of 125, 50 of 215, 105 of 215, and 110 of 215	August 18, 2009
Marion West	13197C0195A, 13197C0200A, and 13197C0275A	195 of 300, 200 of 300, and 275 of 300	May 20, 2010

Table 3.7-1. FEMA Maps Utilized within the TLEP Study Area

TLEP Study Area Location	FEMA Map Number	FEMA Panel Number	Date of Map
Harris East and Talbot West	I303380275A, 1303960275B, and 1303960300B	275 of 275, 275 of 325, and 300 of 325	December 5, 1990 and August 19, 1997

Source: FEMA, 2010c

FEMA = Federal Emergency Management Agency; TLEP = Training Land Expansion Program

Table 3.7-2 provides the estimated extent of each surface water type that occurs within each alternative study area. Acreage calculations of floodplains were completed for alternative study areas where digital FEMA data was available. See Sections 3.7.1.1.2 through 3.7.1.1.10 for individual discussions including the extent of floodplains for each alternative study area. Overall, Stewart West has the most miles of streams and creeks and Stewart Central has the most acreage of ponds and lakes. Russell West contains the most 100-year floodplains, accounting for 13 percent of the land cover.

Table 3.7-2. Surface Water Features within the TLEP Study Area

TLEP Study Area Location	Surface Water Type/Floodplain			
	Perennial Stream/Creek (miles)	Intermittent Stream/Creek (miles)	Pond/Lake (acres)	100-Year Floodplain Acres (percent cover)
Russell West	48	87	81	5,122 (13)
Russell East	67	52	21	2,702 (7)
Stewart West	50	116	44	3,947 (7)
Stewart Central	46	72	119	2,854 (7)
Stewart East	18	18	48	831 (5)
Webster West	33	15	49	1,899 (7)
Marion West	26	59	24	1,762 (5)
Harris East and Talbot West[1]	37	35	>1	--

Source: USGS, EPA, ESRI, 2006; FEMA, 2010a; FEMA, 2010b; FEMA, 2010d; FEMA, 2010e

[1]Digital FEMA data not available for Harris or Talbot counties.

TLEP = Training Land Expansion Program

3.7.1.1.2 RUSSELL WEST

Russell West is completely located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003) and contains a total of 135 miles of streams and creeks. The streams and creeks that have floodplains associated with them throughout Russell West include: tributaries to Hurtsboro Creek, Little Cowikee Creek, High Log Creek, Hatchechubbee Creek, and Weolustee Creek (see Figure 3.7-2). These waterways flow from northwest to southeast throughout Russell West until they ultimately drain into the Chattahoochee River. The floodplains total 5,122 acres, which represents 12.7 percent of Russell West land cover. The floodplains also appear to be evenly distributed throughout Russell West. There are an additional 81 acres of pond and lakes located throughout Russell West, which represents 0.2 percent of the land cover.

3.7.1.1.3 RUSSELL EAST

Russell East is completely located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003) and contains a total of 119 miles of streams and creeks. The streams and creeks that have floodplains associated with them throughout Russell East include: Watermelon Creek, Silver Run, Mitchell Creek, Dry Creek, Rocky Creek, Buck Creek, Briar Creek and tributaries to Carneyhead Branch (see Figure 3.7-2). These waterways flow from northwest to southeast throughout Russell East until they ultimately drain into the Chattahoochee River. The floodplains are concentrated along the edges of Russell East and according to FIRM mapping do not appear to cross the central portion. The floodplains total 2,702 acres, which represents 6.6 percent of Russell East land cover. There are an additional 21 acres of lakes and ponds, which represent 0.05 percent of the land cover.

3.7.1.1.4 STEWART WEST

Stewart West is completely located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003). Stewart West contains the most streams and creeks of all study areas under consideration for acquisition totaling 166 miles. Stewart West also contains the largest land area at approximately 57,100 acres. The streams and creeks that have floodplains associated with them throughout Stewart West include: Hannahatchee Creek and its tributaries, Black Creek's tributaries, Colochee Creek and its tributaries, Grass Creek, Hollman Creek and its tributaries, and Hichitee Creek and its tributaries (see Figure 3.7-2). These waterways flow from east to west into Hichitee Creek, Grass Creek, and Hannahatchee Creek, and ultimately drain into the Flint River. The central portion of Stewart West is dominated by floodplains. The north portion of Stewart West contains more floodplains compared to the southern portion of Stewart West. The floodplains total 3,947 acres, which represents 6.9 percent of Stewart West land cover. There are an additional 44 acres of ponds and lakes that represent 0.08 percent of the land cover.

3.7.1.1.5 STEWART CENTRAL

Stewart Central is completely located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003) and contains a total of 118 miles of river and stream. The streams and creeks that have floodplains associated with them throughout Stewart Central include: Black Creek and its tributaries, Broach Creek and its tributaries, Hannahatchee Creek and its tributaries, Bussey Branch, and Chamblers Branch (see Figure 3.7-2). As a majority of the tributaries also have floodplains associated with them, it appears a good portion of Stewart Central is covered by floodplains. They are also distributed evenly throughout Stewart Central. The floodplains total 2,854 acres, which represents 7.1 percent of the study area. The waterways throughout Stewart Central flow from east to west into Broach Creek and Hannahatchee Creek and ultimately drain into the Flint River. There are an additional 119 acres of ponds and lakes. Even though Stewart Central has the most ponds and lakes, it represents only 0.3 percent of the land cover.

3.7.1.1.6 STEWART EAST

Stewart East is completely located within the Kinchafoonee-Muckalee basin (HUC 03130007). Stewart East contains the least amount of streams and creeks totaling only 36 miles. Stewart East also contains the smallest land area at approximately 16,800 acres. The streams and creeks that have floodplains associated with them throughout Stewart East include: Slaughter Creek and its tributaries, Sand Branch, and Little Slaughter Creek and its tributaries. These waterways flow from west to east into Slaughter Creek and Kinchafoonee Creek and ultimately drain into the Flint River. The floodplains appear to be concentrated in the central and northern portion of Stewart East and run in a northwest direction (see Figure 3.7-2). The floodplains total 831 acres, which represents 4.9 percent of Stewart East land cover. There are an additional 48 acres of ponds and lakes, which represent 0.3 percent of the land cover.

3.7.1.1.7 WEBSTER WEST

Webster West is completely located within the Kinchafoonee-Muckalee basin (HUC 03130007) and contains a total of 48 miles of river and stream. The streams and creeks that have floodplains associated with them throughout Webster West include: Slaughter Creek, Dry Creek, and Kinchafoonee Creek (see Figure 3.7-2). These waterways flow generally in a southerly direction and ultimately drain into the Flint River. These floodplains are concentrated through the center of Webster West and appear to run north and south. The floodplains total 1,899 acres, which represents 7.4 percent of Webster West land cover. There are an additional 49 acres of lakes and ponds, which represent 0.2 percent of the land cover.

3.7.1.1.8 MARION WEST

The majority of Marion West is located within the Kinchafoonee-Muckalee basin (HUC 03130007). A small western portion of Marion West (approximately two percent) is located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003). Marion West contains a total of 85 miles of river and stream. The streams and creeks that have floodplains associated with them throughout Marion West include: Dry Creek, Kinchafoonee Creek, and Peacock Ditch (see Figure 3.7-2). These waterways flow generally in a southerly direction and ultimately drain into the Flint River. These floodplains are concentrated on the east side of Marion West and appear to run north and south. The floodplains total 1,762 acres, which represents 5.3 percent of Marion West land cover. There are an additional 24 acres of lakes and ponds, which represents 0.07 percent of land cover.

3.7.1.1.9 HARRIS EAST AND TALBOT WEST

Harris East and Talbot West are located within three basins. The majority of Harris East and Talbot West is located within the Middle Chattahoochee-Walter F. George Reservoir basin (HUC 03130003); approximately five percent is located within the Upper Flint basin (03130005) and less than one percent is located within the Middle Chattahoochee-Lake Harding basin (HUC 03130002). Harris East and Talbot West contain a total of 72 miles of river and stream. The streams and creeks that have floodplains associated with them throughout Harris East and Talbot West include: Baker Creek, Scroggins Branch, Blackman Branch, South Fork Upatoi Creek, and Randall Creek (see Figure 3.7-2). These waterways are distributed evenly throughout Harris East and Talbot West in a north and south direction. They flow in a southerly direction where they drain into Upatoi Creek. Upatoi Creek then flows through the existing Installation and eventually drains into the Chattahoochee River on the western boundary of the Installation. The lower west corner of Harris East and Talbot West appears to contain the most floodplains. There is less than one acre of ponds and lakes throughout Harris East and Talbot West, which is the lowest occurrence within the TLEP study area.

3.7.1.2 NATURAL AND SCENIC RIVERS

According to the National Wild & Scenic Rivers database (http://rivers.gov/wildriverslist.html), no natural or scenic rivers exist within the TLEP study area.

3.7.1.3 SURFACE WATER QUALITY

Sedimentation to surface waters is a water quality issue of concern due to the highly erodible nature of much of the TLEP study area soils (see Section 3.6). Whenever soil is disturbed, the potential for erosion or transport of sediment to streams and riverine habitats exist.

Water quality standards are issued by the GDNR, Watershed Protection Branch, the ADEM, and by the EPA under the Federal Safe Drinking Water Act (SDWA) and the CWA. Section 303(d) of the CWA requires states to identify and develop a list of impaired waterbodies where technology-based and other required controls have not provided attainment of water quality standards. Section 305(b) of the CWA requires states to assess and report the quality of their waterbodies. The states of Georgia and Alabama

have combined their 303(d) and 305(b) lists into one report referred to as the Integrated Report. This report displays the health of all waterbodies within each state.

The Integrated Report identifies those waterbodies that are impaired and do not meet designated uses and establishes total maximum daily loads (TMDLs) for the pollutants of concern. The TMDL process establishes allowable pollutant loadings or parameters for a waterbody and allows water quality controls to be developed to reduce pollution and to restore and maintain water quality. The allowable load established by a TMDL suggests stream water quality would improve over time at such a level to maintain the stream's designated use. No set "allowable" level has been established for the impaired streams with segments on Fort Benning; instead, the Installation utilizes management practices, as outlined in the GDNR guidance for TMDLs. Nonpoint source pollution within the TLEP study area comes from various sources, including urban development and runoff, mining, land conversion from forest to pasture, free ranging livestock, road construction, agriculture, and septic tanks. Impaired segments of surface waters do exist within the four watersheds discussed in Section 3.7.1.1.1; however, only one impaired water (Talipahoga Rum Creek) exists within the TLEP study area. Table 3.7-3 displays the impaired surface water segment in Stewart West and its respective parameter of concern, which occurs within the Middle Chattahoochee-Walter F. George Reservoir watershed.

Table 3.7-3. Listed Impaired Waterbodies

Watershed	Stream Reach ID	Waterbody	TLEP Study Area Location	Parameter of Concern	Potential Source of Impairment
Middle Chattahoochee-Walter F. George Reservoir	59 (Headwaters to Bradley Lake Tributary)	Talipahoga Rum Creek[1]	Stewart West	Biota Impacted-Macroinvertebrate Community	Nonpoint Source

Source: GDNR, 2008

[1]Approximately 3 miles of this stream is impaired within Stewart West which includes three unnamed headwater tributaries, each approximately 1-mile in length.

Note: No TMDL has been established for Talipahoga Rum Creek; it is anticipated that the TMDL will be drafted by 2017.

Fort Benning has designated watershed management units (WMUs) to use as a framework for monitoring water quality and erosion, watershed restoration projects, and other management activities. The WMUs were created by considering both the stream surface drainage network and an appropriate unit size for management purposes. The units are large enough for planning purposes but small enough to monitor. The watershed delineation for Fort Benning also includes areas outside the Installation boundary that have close enough hydrologic connection to the Installation. Fort Benning is composed of 27 WMUs, 15 of which occur completely or almost completely within the boundaries of the Installation (Fort Benning, 2001).

Surface water resources within Fort Benning are subject to contamination from oil spills, pesticide residue, fired munitions residue, and untreated sewage bypass. These potential contamination sources are controlled and minimized by the implementation of Fort Benning Spill, Prevention, Control, and Countermeasure (SPCC) Plan, Fort Benning Installation Spill Contingency Plan, Storage Tank Management Plan, Stormwater Pollution Prevention Plan (SWPPP), and the NPDES permit requirements to prevent sewage bypasses. Nonpoint sources, more specifically sedimentation, however, are the primary pollutant sources of concern for surface water resources at Fort Benning. Consequently, much of the Installation's water resources management is closely related to minimizing and repairing erosion caused primarily by construction projects and to a lesser degree by military activities.

Stormwater Management

Stormwater on Fort Benning drains via culverts, ditches, swales, natural seepage, and overland flow. Stormwater discharge at the Main Post and cantonment areas drains directly or indirectly into nearby surface waters (Fort Benning, 2004b). Fort Benning complies with the provisions of the CWA and state regulations to manage stormwater, both of which are stipulated in AR 200-1, *Environmental Protection and Enhancement*, as well as GDNR NPDES and ADEM NPDES rules and regulations. For projects that are under one acre of disturbance and do not require an NPDES permit, Fort Benning uses a basic Erosion, Sediment, and Pollution Control Plan, which corresponds to state regulations. Fort Benning currently has approximately 50 activities that are identified as "industrial activities" subject to the requirements of the Stormwater Regulations under the CWA. To prevent environmental deterioration due to these activities, and to maintain compliance with the states of Georgia, Alabama, and the CWA, Fort Benning has a SWPPP in place. The SWPPP provides protection for the water sources of Fort Benning by monitoring stormwater discharge and implementing BMPs. Stormwater management is performed by training all personnel in identified areas in the use of BMPs to prevent rainwater runoff carrying oil and fuel from contaminating surface water resources. The primary pollution control measures are inspection, awareness of potential circumstances for spills, and selection of adequate storage locations. In addition, Fort Benning must comply with Section 438 of the Energy Independence and Security Act of 2007, which directs Federal agencies sponsoring development or redevelopment over 5,000 square feet in size to use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of water flow.

Nonpoint pollutant loading comprises a wide variety of sources not subject to point source control via NPDES permits. The most significant nonpoint sources are those associated with precipitation, runoff, and erosion, which may move pollutants from the land surface to waterbodies. Both rural and urban land uses can contribute significant amounts of nonpoint pollution.

Sediment and Erosion Regulations

The Georgia Water Quality Act (1964) established a standard of not more than a 25 nephelometric turbidly units (NTUs) difference between water samples above a land disturbing activity and water samples below the activity. The ADEM rules and regulations prohibit more than a 50 NTUs difference between upstream and downstream measurements. Fort Benning actively manages sedimentation in conformity with both these standards.

***Nephelometric turbidity unit**:* A unit measuring the lack of clarity of water, most commonly used by water and sewage treatment plants.

Fort Benning contracts with the NRCS to conduct inventories and evaluations of erosion sites, develop and implement rehabilitation contracts, provide technical inspection during construction of rehabilitation projects, and conduct follow-up evaluations. The Fort Benning Soil Conservationist assists the NRCS, military units, and the DPW on erosion projects that are larger than one acre. Fort Benning requires the use of BMPs for all soil disturbing activities that may occur during construction, demolition and maintenance projects, site restoration, and forest management activities (Fort Benning, 2001).

In Georgia, the Erosion and Sedimentation Act (Official Code of Georgia Annotated [OCGA] 12-7-1) implements stream buffer regulations. Any proposed land disturbing activity within a 25-foot buffer of a stream would require a GEPD stream buffer variance. Alabama has no requirements for stream buffers relating to construction activities; however, water quality is regulated through Alabama's NPDES program and certain cities have amended their zoning ordinances to include stream buffers to further protect waterways. Georgia and Alabama use the authority delegated to them under Federal stormwater regulations (40 CFR 122, 123 and 124) to regulate land disturbing activities. A NPDES General Permit is required from the GDNR or ADEM for all land disturbing projects or activities that exceed one acre or, if

less than one acre, is part of or adjacent to a larger common plan of disturbances that eventually will exceed one acre of total disturbance.

3.7.1.4 GROUNDWATER AND AQUIFERS

Drinking water supplies are monitored and protected under the *National Primary Drinking Water Regulations* (40 CFR 141), the *National Secondary Drinking Water Regulations* (40 CFR 143), the ADEM, and the *Georgia Water Rules for Safe Drinking Water* (40 CFR 141, Subpart O). Through the SDWA, the EPA sets standards for public water systems to provide safe drinking water to its consumers by limiting the levels of contaminants in drinking water. The SDWA also allows the EPA to establish regulations and guidelines for protecting precious drinking water resources. In order to comply with provisions outlined in the SDWA and the Primary Drinking Water Regulations, the Columbus Water Works (CWW) conducts sampling of all drinking water supply systems on Fort Benning, as they are owned and operated by the CWW. In addition, Fort Benning employs a Wellhead Protection Plan (WHPP). This plan provides management of land surface around a well where activities might result in contamination of the groundwater drawn by the well. AR 200-1 addresses the availability, conservation, and protection of water resources and ensures that drinking water provided by the Army meets standards specified in the SDWA and in applicable state and local regulations. AR 200-1 establishes policies, procedures, and standards for the conservation, management, and restoration of land and natural resources.

All of the TLEP study area except for Harris East and Talbot West are located on top of the Southeastern Coastal Plain aquifer system. Harris East and Talbot West are located on top of the Piedmont and Blue Ridge crystalline rock aquifers. 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. There are two types of aquifers in the Coastal Plain: unconfined and confined. The unconfined aquifers are hydraulically interconnected to surface water bodies and the two form a single system; the confined or artesian aquifers, however, are buried and hydraulically isolated from surface water bodies.

A ***confined/artesian aquifer*** is bounded above and below by formations of distinctly lower permeability than that of the aquifer itself. An aquifer containing confined groundwater.

An ***unconfined aquifer*** is located in a permeable formation where the water table is free to rise and fall depending on factors such as the amount of rainfall.

The regional direction of groundwater flow in the Coastal Plain is from north to south; however, local flow directions vary, especially in the vicinity of streams and areas having large groundwater withdrawals (GDNR, 1997). Streams and creeks in the Coastal Plain Province commonly are deeply incised into underlying aquifers and receive substantial amounts of groundwater discharge. In northern areas of the Coastal Plain aquifer where unconfined aquifers are used for water supply, ground and surface water are closely interconnected and pumpage of groundwater reduces stream flow at a ratio approaching 1:1. Further south, however, the sediments progressively deepen; eventually, the aquifers become confined and the ground and surface water regimes are only poorly interconnected. Where this happens, pumpage from wells no longer affects stream flow. The unconfined aquifers in the Coastal Plain have average pollution susceptibility. The confined aquifers, because they are buried and isolated, are less susceptible to pollution from activities at the land surface.

Harris East and Talbot West are located north of the Fall Line (discussed in 3.7.1.1.1). Here, the Chattahoochee River Basin is underlain by bedrock, and groundwater is contained within the Piedmont and Blue Ridge crystalline rock aquifers. The Piedmont aquifer system is characterized by relatively low-yielding wells. It is commonly believed that groundwater in this part of the state is not sufficient to support municipal supplies and industrial uses. Groundwater is stored in a mantle of soil and saprolite (decomposed rock) and transmitted to wells via fractures or other geologic discontinuities in the crystalline bedrock. These crystalline rocks have similar hydraulic characteristics and are mapped as one aquifer. In general, pumpage of groundwater reduces stream flow at a 1:1 ratio. In the Piedmont, the

decomposed rock or saprolite contains considerable clay that acts as a barrier to groundwater pollution. As a result, groundwater in this section of the Chattahoochee basin has below average pollution susceptibility. Currently, the crystalline rock aquifers are used primarily for private water supplies and livestock watering (GDNR, 1997).

The area surrounding Fort Benning, including the TLEP study area, has a low-density population and generally rural landscape. As there is not a lot of infrastructure outside of county seats and other cities, many residents rely on domestic supply wells for potable water. The presence of public supply, irrigation, observation, and monitoring wells is not uncommon throughout the TLEP study area. Coordination with the ADEM Drinking Water Branch and the GDNR was used to determine the presence of public water systems as defined by the EPA within the TLEP study area. The ADEM and GDNR do not regulate or maintain information on private drinking water wells. For security reasons the actual location of the public water wells is not disclosed; however, the number of public water wells located within the alternative study areas was available for review. Table 3.7-4 displays the number and name of wells located within each alternative study area.

Table 3.7-4. Public Water Wells within the TLEP Study Area

TLEP Study Area Location	Number of Public Water Wells	Name of Well
Russell West	1	Hurstboro Well 3
Russell East	1	Ft. Mitchell Well 4
Stewart West	0	N/A
Stewart Central	0	N/A
Stewart East	1	N/A
Webster West	0	N/A
Marion West	0	N/A
Harris East and Talbot West	0	N/A

Source: Personal Communication, Laughlin, B. 2010 and Stapel, J. 2011

3.7.1.5 WETLANDS

Wetlands occur throughout the TLEP study area, and generally include swamps, marshes, bogs, and similar areas (USACE, 1987). Wetlands are protected under Section 404 of the CWA (33 USC 1251 et seq. [1972]), which requires permitting of certain activities (i.e., the placement of structures and/or fill material) occurring within the boundaries of wetlands meeting certain criteria and confers regulatory authority to the USACE. The USACE has regulatory authority over wetlands adjacent to surface waters considered "traditional navigable waters," as well as wetlands adjacent to non-navigable tributaries to traditional navigable waters. These non-navigable tributaries are relatively permanent with flow typically occurring year-round or that is seasonal continuous (e.g., typically for three months) (EPA, 2007).

> The USACE defines ***wetlands*** as, "Those areas that are inundated or saturated by surface water or groundwater 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 (USACE, 1987).

The USACE requires three environmental criteria be present in a location for it to qualify as a wetland (USACE, 1987):

- ***Soil.*** Soils are present and have been classified as hydric (i.e., soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the

growth and regeneration of hydrophytic vegetation), or they possess characteristics that are associated with reducing soil conditions. Prolonged anaerobic soil conditions lead to a reducing environment. This results in chemical reduction of some soil components (e.g., iron and manganese oxides), which leads to development of soil colors and other physical characteristics that usually are indicative of hydric soils.

- ***Vegetation.*** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions of a wetland. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptations, have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions.
- ***Hydrology.*** The area is inundated either permanently or periodically at mean water depths less than 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and nontidal situations. Indicators of wetland hydrology may include, but are not necessarily limited to: drainage patterns, drift lines, sediment deposition, watermarks, stream gage data and flood predictions, historic records, visual observation of saturated soils, and visual observation of inundation.

Wetlands are afforded regulatory protection because they serve many beneficial functions, including the storage and slow release of surface water, rain, snowmelt, and seasonal floodwaters to surface waters. Additionally, wetlands provide wildlife habitat, sediment stabilization/retention functions, and perform an important role in the nitrogen cycle. They also help to maintain stream flow during dry periods, and provide groundwater recharge functions. Wetlands are among the most productive ecosystems in the world, comparable to rain forests and coral reefs. Many species of wildlife, including a large percentage of T&E species, depend on wetlands for their survival.

Wetlands in the TLEP study area have been mapped according to the USFWS Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et. al., 1979) using remote mapping methods (USFWS, 2004h; USFWS, 2009). The objective of National Wetland Inventory (NWI) maps is to produce graphic representations of the type, size, and location of surface waters. NWI maps are meant to be used on a reconnaissance level only and are useful for planning purposes. Delineation of wetlands and coordination with the USACE Regulatory Office is normally required prior to ground disturbance activities per the Erosion and Sediment Pollution Control Plan. Any impacts to wetlands greater than or equal to one acre require coordination with USACE through the wetland permitting process.

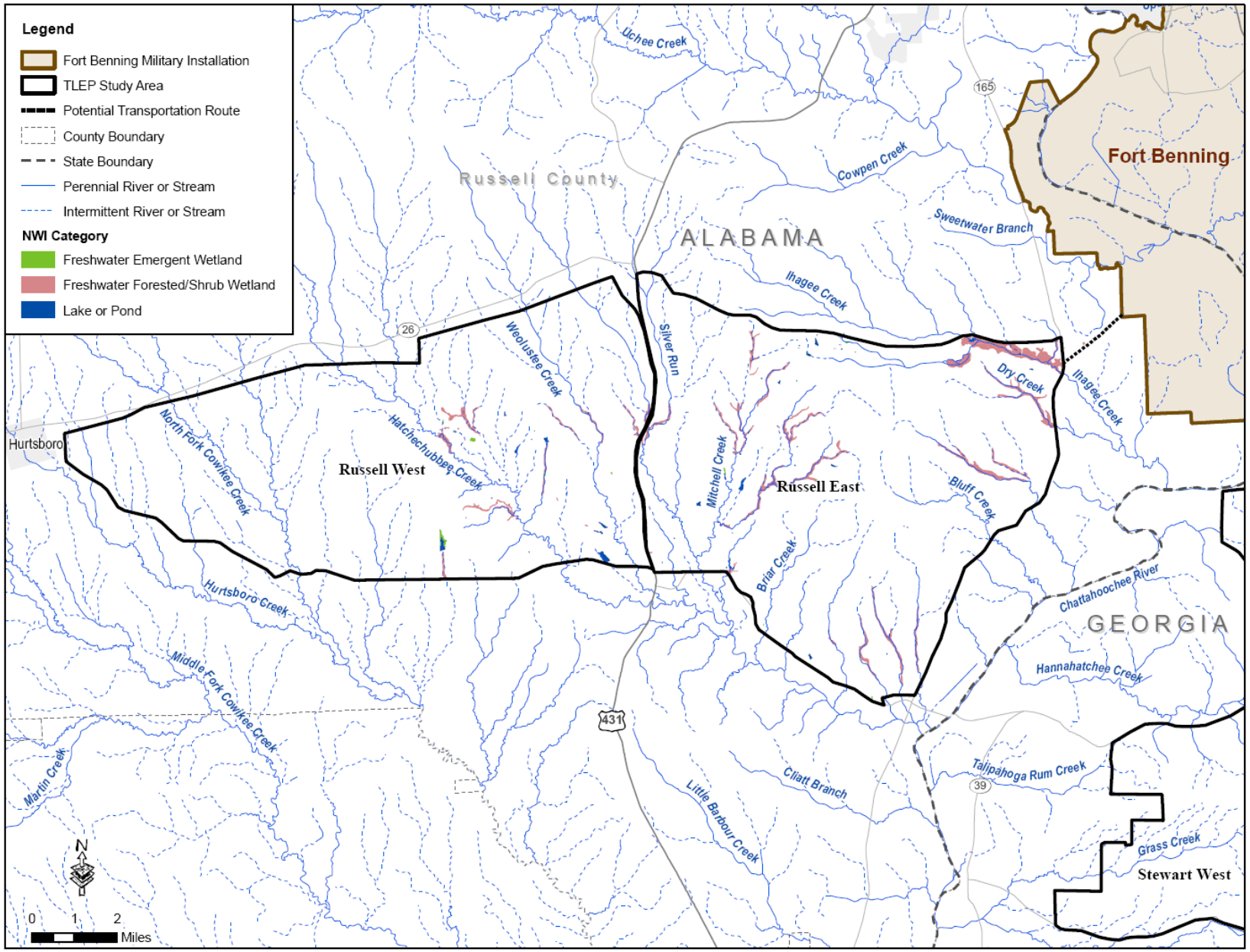
3.7.1.5.1 CHARACTERISTICS OF WETLANDS IN THE TLEP STUDY AREA

Figures 3.7-3 through 3.7-5 show the location of the different types of wetlands within the TLEP study area based on NWI mapping. Table 3.7-5 summarizes the wetland types existing within the TLEP study area as a proportion of the total land area. As with existing Fort Benning land, the vast majority of wetland areas across the TLEP study area are characterized as palustrine forested wetland. Palustrine systems within the TLEP study area consist of all non-tidal wetlands that are dominated by trees, shrubs, or emergent vegetation, as well as small, shallow, open water bodies (less than 20 acres and 6.6 feet deep). Palustrine forested wetlands are characterized by woody vegetation that is 20 feet tall or taller. The second most abundant wetland type is generally palustrine scrub-shrub wetland. Scrub-shrub wetlands include areas dominated by woody vegetation less than 20 feet tall. Plant species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. The third most abundant wetland type is palustrine emergent wetland. Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes (i.e., plant species adapted to live in a high moisture environment), excluding mosses and lichens.

Table 3.7-5. Wetlands Distribution within the TLEP Study Area

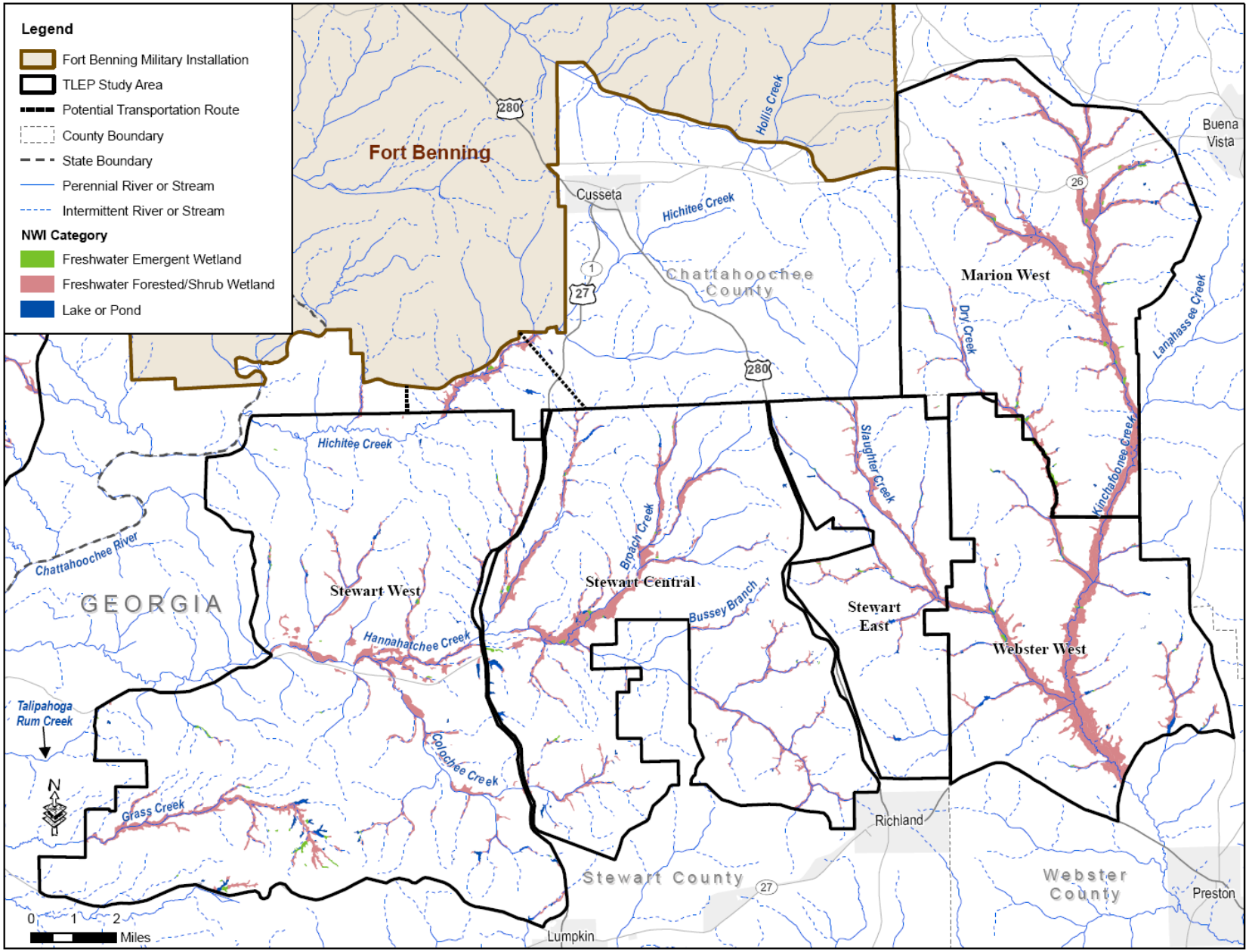
TLEP Study Area Location	Wetland Type		
	Palustrine Forested Acreage/(percent of alternative study area)	**Palustrine Scrub-shrub Acreage/(percent of alternative study area)**	**Palustrine Emergent Acreage/(percent of alternative study area)**
Russell West	281/(1)	5/(<1)	26/(<0.1)
Russell East	1,205/(3)	75(<1)	9/(<0.1)
Stewart West	1,898/(3)	262/(1)	91/(<1)
Stewart Central	1,863/(5)	425/(1)	54/(<1)
Stewart East	465/(3)	288/(2)	17/(<1)
Webster West	2,636/(10)	107(<1)	59/(<1)
Marion West	2,634/(8)	307/(1)	99/(<1)
Harris East and Talbot West	663/(3)	50/(<1)	36/(<1)

Source: USFWS, 2009; USFWS, 2004h



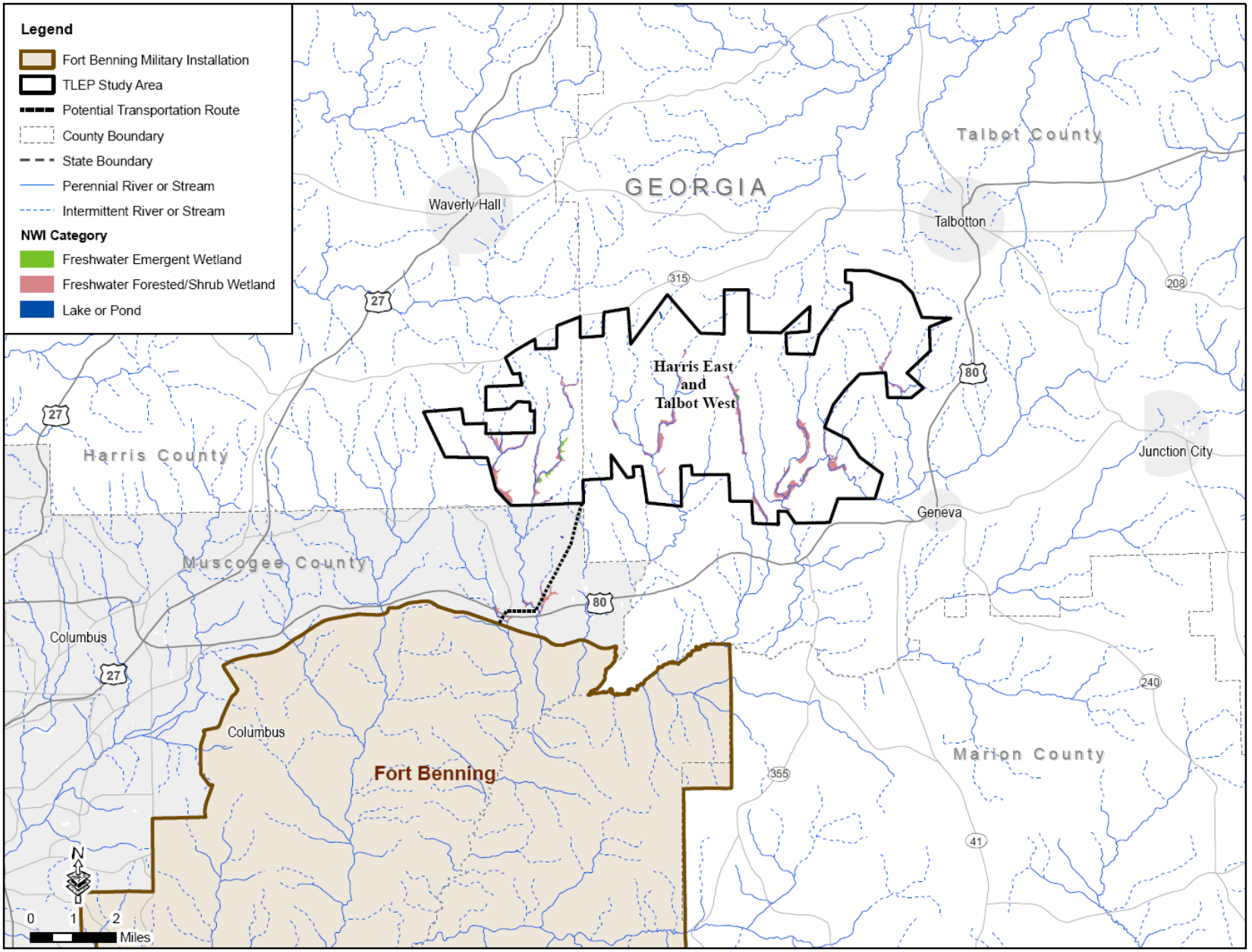
Source: USFWS, 2009; USFWS, 2004h

Figure 3.7-3. Wetlands within Russell East and Russell West



Source: USFWS, 2009; USFWS, 2004h

Figure 3.7-4. Wetlands within Stewart West, Central, East, Webster West, and Marion West



Source: USFWS, 2009; USFWS, 2004h

Figure 3.7-5. Wetlands within Harris East and Talbot West

Aerial photography review estimates and land cover mapping indicate that 70-80 percent of the TLEP study area appears to be subject to timber production (see Section 3.2). Although wetlands are Federally-regulated, established normal timber harvesting operations within wetlands are allowed under certain conditions and are exempt from CWA Section 404 permit requirements (EPA, 2010f). Specific resource management practices within the TLEP study area are not currently known, but it can generally be assumed that a portion of the wetlands within the TLEP study area are subject to timber harvesting activities. Therefore, in these locations, forested wetlands are periodically converted to emergent and, ultimately, scrub-shrub wetlands following harvesting. In addition, these wetland areas and others in the vicinity of timber harvesting activities are likely degraded to some extent through soil disturbances and sedimentation, which may alter the topography and associated wetland hydrology. Timber harvesting in both wetland and upland areas disturbs the forest floor and exposes soils to accelerated erosion. In particular, the activities involved in moving the trunks from the stump to the mill typically disturbs soils and can cause sediment pollution of wetlands and other waterways. Most soil erosion problems associated with timber harvesting originate with the improper layout or construction of skid trails, logging roads, and landing areas (Rummer, 2004).

3.7.1.5.2 RUSSELL WEST

The distribution of USFWS NWI-mapped wetlands within Russell West is shown in Table 3.7-5 and Figure 3.7-3. All the wetlands are within the Middle Chattahoochee-Walter F. George Reservoir watershed (see Figure 3.7-1). Wetlands in Russell West lie within the Hatchechubbee Creek and Cowikee Creek subwatershed. Wetlands along the eastern boundary are located within the Chattahoochee River subwatershed; wetlands in the southwestern area are located within the Grass Creek subwatershed, while the most extensive wetland system in the center and southeastern portion are within the Hannahatchee Creek subwatershed. The forested wetlands are primarily deciduous, although smaller areas of mixed deciduous/needle-leaved evergreen wetlands have also been mapped. Most of the forested wetlands are seasonally flooded. Most of the Russell West scrub-shrub wetlands are seasonally flooded, caused by impoundments. The emergent wetlands are semi-permanently or seasonally flooded, also caused primarily by impoundments.

3.7.1.5.3 RUSSELL EAST

The distribution of USFWS NWI-mapped wetlands within Russell East is shown in Table 3.7-5 and Figure 3.7-3. All the wetlands are within the Middle Chattahoochee-Walter F. George Reservoir watershed (see Figure 3.7-1). The majority of the wetlands lie within the Mitchell Creek subwatershed; however, a small area of wetlands in the northeastern corner of the study section lie within the Ihagee Creek subwatershed, and a few wetlands along the eastern boundary are associated with smaller tributaries draining directly into Chattahoochee River. The forested wetlands have all been mapped as temporarily or seasonally deciduous. The scrub-shrub wetlands are temporarily flooded, and most have been caused by impoundments. The emergent wetlands are mostly seasonally flooded, and have been caused by impoundments. There are no mapped wetlands within the proposed transportation route connecting Russell East to Fort Benning.

3.7.1.5.4 STEWART WEST

The distribution of USFWS NWI-mapped wetlands within Stewart West is shown in Table 3.7-5 and Figure 3.7-4. All the wetlands are within the Middle Chattahoochee-Walter F. George Reservoir watershed (see Figure 3.7-1). Wetlands along the northern boundary are located within the Chattahoochee River subwatershed; wetlands in the southwestern area are located within the Grass Creek subwatershed, while the most extensive wetland system in the center and southeastern portion are within the Hannahatchee Creek subwatershed. The forested wetlands are primarily deciduous, although some

needle-leaved evergreen wetlands have also been mapped. About half of the forested wetlands are seasonally flooded while the remainder are temporarily flooded. The scrub-shrub wetlands are either temporarily, seasonally, or semi-permanently flooded. Some flooding is caused by beaver activity. The emergent wetlands are seasonally or semi-permanently flooded, and over half are associated with dams or other impoundments. There are no mapped wetlands within the proposed transportation route connecting Stewart West to Fort Benning.

3.7.1.5.5 STEWART CENTRAL

The distribution of USFWS NWI-mapped wetlands within Stewart Central is shown in Table 3.7-5 and Figure 3.7-4. All the wetlands are within the Middle Chattahoochee-Walter F. George Reservoir watershed (see Figure 3.7-1). The majority of the wetlands are in the northern portion of Stewart Central and are associated with Black Creek and Broach Creek. There are also wetlands associated with Colochee Creek in the southwestern portion and with Busseys Branch, Chamblers Branch and Hannahatchee Creek in the southeastern part of Stewart Central. Deciduous forested wetlands (6.1 acres) are found within the proposed transportation route connecting Stewart Central to Fort Benning. The forested wetlands are primarily deciduous, with some needle-leaved evergreen wetlands. The forested wetlands are typically either seasonally flooded or temporarily flooded. The scrub-shrub wetlands are either temporarily, seasonally, or semi-permanently flooded. The emergent wetlands are temporarily or semi-permanently flooded.

3.7.1.5.6 STEWART EAST

Stewart East USFWS NWI-mapped wetlands are located in its northern and central portions and are shown in Table 3.7-5 and Figure 3.7-4. All the wetlands are within the Kinchafoonee-Muckalee watershed (see Figure 3.7-1). The wetlands are associated with Slaughter Creek, Little Slaughter Creek, and Sand Branch. The forested wetlands are primarily deciduous, with some needle-leaved evergreen wetlands. The forested wetlands are typically either seasonally flooded or temporarily flooded. The scrub-shrub wetlands are either temporarily, seasonally, or semi-permanently flooded. The largest wetland is located on an upper tributary to Black Creek is caused by beaver activity. The emergent wetlands are temporarily or semi-permanently flooded.

3.7.1.5.7 WEBSTER WEST

Webster West USFWS NWI-mapped wetlands are shown in Table 3.7-5 and Figure 3.7-4. Webster West has the highest percentage of wetlands compared to the remainder of the TLEP study area. A very large forested wetland system is fed by the Kinchafoonee Creek and its tributaries, Dry Creek and Slaughter Creek. The area lays within the Kinchafoonee-Muckalee watershed (see Figure 3.7-1). The majority of the forested wetlands are broad-leaved deciduous and temporarily or seasonally flooded; however, there are also some broad-leaved as well as needle-leaved evergreen forested wetlands mapped. The scrub-shrub wetlands are either temporarily, seasonally, or semi-permanently flooded, and the majority of the scrub-shrub wetlands are associated with impounded water. The emergent wetlands are either temporarily, seasonally, or semi-permanently flooded.

3.7.1.5.8 MARION WEST

Marion West USFWS NWI-mapped wetlands are shown in Table 3.7-5 and Figure 3.7-4. Marion West has the second highest percentage of wetlands, and is a continuation of the large forested wetland system along Kinchafoonee Creek described in Section 3.7.1.3.8. The wetlands are composed predominantly by an almost even mix of evergreen and deciduous, seasonally flooded, forested wetlands. The scrub-shrub,

as well as the emergent wetlands, are mostly seasonally or semi-permanently flooded, and are found interspersed throughout the forested wetland system.

3.7.1.5.9 HARRIS EAST AND TALBOT WEST

The Harris East and Talbot West USFWS-NWI mapped wetlands are shown in Table 3.7-5 and Figure 3.7-5, and primarily lie within the Middle Chattahoochee-Walter F. George Reservoir watershed (see Figure 3.7-1). The wetlands in Harris East and Talbot West are associated with tributaries to the Upatoi Creek subwatershed. The majority of the wetlands are deciduous, temporarily flooded, forested wetlands. The scrub-shrub, as well as the emergent wetlands, are deciduous and temporarily or seasonally flooded.

3.7.1.5.10 FORT BENNING WETLAND MANAGEMENT

Section 404 under the CWA states that a permit is required if part of a jurisdictional wetland is dredged or fill materials are discharged into wetlands. In addition, the EPA and USACE have determined that major drainage in jurisdictional wetlands also needs a Section 404 permit, and that logging site preparation in certain unique or high quality wetlands[1] requires a permit as well (EPA, 1995b). In order for impacts to wetlands to be permitted under the jurisdiction of the USACE, mitigation is required. The term mitigation is used in this sense to mean the avoidance, minimization, rectification, reduction, or compensation for resource losses. The mitigation procedure is explained in EPA, CWA Section 404(b)(1) Guidelines and required by the USACE when imposing permit conditions. The procedure consists of three tiers: avoidance of impacts whenever possible, minimization when impacts cannot be avoided, and compensation for impacts that cannot be minimized. Alternatives are required if a project can be located in a different area or designed differently to produce less wetland impacts.

Compensatory mitigation is the act of compensating for the loss of wetland functions at one location by replacing them at another; it is performed when impact avoidance and minimization is impracticable. There are a variety of compensatory mitigation types, including: replacing the impacted wetland type by repairing another area of the same type; replacing the impacted wetland type with another wetland type; replacing the impacted wetland onsite; restoring a former wetland to its previous condition; creating a new wetland area; preserving an existing wetland from future disturbance; and mitigation banking, which involves establishing a large mitigation project to replace smaller anticipated impacts and crediting acreage at existing mitigation banks to replace impacted acreages.

On April 10th, 2008, the EPA and USACE issued regulations governing compensatory mitigation (referred to as the Compensatory Mitigation Rule) for activities authorized by permits issued by the USACE. These regulations are designed to improve the effectiveness of compensatory mitigation to replace lost aquatic resource functions and area, expand public participation in compensatory mitigation decision making, and increase the efficiency and predictability of the mitigation project review process. The Rule lists the following preference hierarchy for mitigation: 1) mitigation bank credits; 2) in-lieu of fee program credits; 3) permittee-responsible mitigation under a watershed approach; 4) on-site and/or in-kind permittee-responsible mitigation; and 5) off-site and/or out-of-kind permittee-responsible mitigation. In addition, the Rule requires a minimum of one-to-one acreage replacement of wetlands to achieve no net loss of values. This ratio, however, may be greater if the functional values of the impacted wetland are higher than the compensatory area.

[1]Unique or high quality wetlands include Cypress-Gum Swamps, Muck and Peat Swamps, Cypress Strands/Domes, Low Pocossin wetlands, Wet Marl Forest, and other wetlands with unique characteristics of Southeast wetlands.

3.7.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to water resources that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to water resources would result in the exceedance of TMDLs causing a change in surface water impairment status, or result in unpermitted direct impacts to jurisdictional waters. Tables 3.7-6 and 3.7-7 provide a summary comparison of water resources and wetlands for each alternative. Impacts to water resources and wetlands by alternative are detailed in Sections 3.7.2.1 through 3.7.2.6.

Table 3.7-6. Surface Water Features by Proposed Action Alternative

Surface Water Type	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Perennial Stream/Creek (miles)	77	115	96	113	87
Intermittent Stream/Creek (miles)	92	139	188	124	151
Total (miles)	169	254	284	237	238
Pond/Lake (acres)	121	102	163	140	115
100-Year Floodplains[1] (acres)	4,492	7,824	6,811	5,565	3,950

Source: USGS, EPA, ESRI, 2006; FEMA, 2010a; FEMA, 2010b
[1]Digital FEMA data not available for Harris East and Talbot West.

Table 3.7-7. Wetland Types by Proposed Action Alternative

Wetland Type	Alternative 1 (acres)	Alternative 2 (acres)	Alternative 3 (acres)	Alternative 4 (acres)	Alternative 5 (acres)
Palustrine forested	5,735	1,486	3,762	3,068	1,901
Palustrine scrub shrub	702	80	698	511	262
Palustrine emergent	174	35	145	63	91
Total	**6,611**	**1,601**	**4,605**	**3,642**	**2,254**

Source: USFWS, 2009; USFWS, 2004h

3.7.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, impacts to water resources and wetlands from current ongoing training activities would persist within the current Installation boundary as described in Chapter 2. No training activities or land development upgrades would occur within the TLEP study area, and therefore, surface water quality would remain unchanged. There would be no new adverse impacts to the watershed, surface waters, and associated floodplains or groundwater within the TLEP study area. Much of the land under consideration for acquisition would continue to be managed under current timber harvesting and management practices and could have potential impacts to surface water resources through increased sedimentation, erosion, and degraded wetland areas, causing moderate adverse impacts. Tree harvesting and related site preparation in wetlands is exempt from Section 404 of the CWA, and although the timber harvesters are supposed to follow appropriate environmental protection measures, short- and long-term impacts to wetlands under the No Action Alternative are expected to be moderate. Direct impacts include site clearing, soil disturbance, and changes in hydrology from skid trails and heavy machinery

maneuvering in the wetlands. Indirect impacts include sedimentation of wetlands from harvesting timber and transporting activities upslope from the wetlands.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to water resources would be the subject of future NEPA analysis.

3.7.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

The potential types of impacts to water resources that could be expected from military training, and the degree of impact or the ability to avoid impacts, would depend upon the following factors: the sites selected for construction and training activities, the type of activities authorized (including their intensity and duration), and the conditions or restrictions imposed under which proposed future actions within newly acquired land may operate. Alternative 1 is located within the Coastal Plain aquifer system. Under Alternative 1, there would be no additional personnel from what currently exists and is projected from the 2005 BRAC and MCoE. Additional wells may be required in new areas; however, overall water usage would remain the same, as would withdrawal rates from the Coastal Plain aquifer system. Impacts related to the four stages of the Proposed Action under Alternative 1 are further discussed in this section. Table 3.7-6 displays surface waters present in Alternative 1 and Table 3.7-7 lists wetlands present in Alternative 1.

3.7.2.2.1 FEDERAL ACQUISITION OF LAND

Alternative 1 contains numerous surface waters and wetlands which occur in currently or historically timber-harvested areas. Large-scale commercial timber harvests would cease within Alternative 1 lands, along with the potential for timber harvest related impacts as discussed in Section 3.7.2.1. Impacts on water resources from Federal acquisition of land under Alternative 1 are expected to be negligible.

3.7.2.2.2 ARMY MANAGEMENT

The short- and long-term effects of Army management on the natural resources within Alternative 1 lands would, in general, be a net beneficial impact to water resources. Alternative 1 is currently dominated by timber production. The variety of existing water resources would benefit greatly by being converted to managed forest land. The following is a list of resource management programs that would be implemented on newly acquired land as part of the Proposed Action along with potential impacts to water resources within Alternative 1 resulting from Army management.

- ***INRMP.*** Under the INRMP program, water resources are protected and conserved through monitoring, evaluating training impacts to land, and ensuring compliance with environmental laws and regulations. Fort Benning water resources management is discussed in the INRMP. Water resource management includes development, implementation, and monitoring of water resources under the following plans: Watershed Protection Plans; SWPPPs; the SPCC Plan; Installation Spill Contingency Plan; WHPP/Source Water Protection Plan; and Stormwater Management Plan. Water quality monitoring data is used to make decisions regarding land use, restoration activities, and aquatic habitat management. These plans would be revised and developed to include newly acquired land within Alternative 1 to guide Fort Benning in land use planning, prioritizing restoration areas, and aquatic habitat management. Implementation of

water resource protection, conservation, and management measures discussed in the INRMP would also be analyzed in the NEPA document required to support INRMP updates.

The INRMP also contains Fort Benning's policy to protect water resources from excessive sedimentation. Although training activities could cause a degree of sedimentation (as discussed above), the implementation of the INRMP policies regarding water resources management would be expected to cause a net beneficial impact on both surface water and wetland resources within newly acquired land.

- ***ITAM***. The ITAM program provides the bridge between training requirements on Army lands and natural resource management activities that promote conservation and sustainability. Under the ITAM program, land management and sustainable use of training land is addressed, subject to funding availability. The program inventories and monitors land conditions for the purposes of minimizing adverse impacts and providing land rehabilitation and maintenance. The ITAM program would be used to identify and repair areas of degraded training land, thereby protecting surface waters and wetlands from sedimentation.
- ***Development and Implementation of Watershed Management Plans.*** Under this program, current WMU protection plans would be updated and revised as appropriate for the newly acquired land within Alternative 1. The watershed management plans provide the overall technical structure for the development of individual WMUs that estimate pollutant loads, identify the management practices needed to maintain or reduce loads, and implement site-specific monitoring to measure progress toward attaining load maintenance or reduction. Existing Fort Benning watershed management plans sharing the same watersheds with newly acquired land would be revised or new WMU protection plans would be developed to address watersheds within the newly acquired land. This program would aid in the overall improvement of watershed conditions within Alternative 1 affected by timber production and would serve as a tool to minimize watershed impacts from Army training on newly acquired land.

3.7.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Pursuant to EOs 11988, *Floodplain Management*, and 11990, *Protection of Wetlands*, the Army would prepare a Finding of No Practicable Alternative to demonstrate land preparation and associated construction activities have taken all practicable measures to minimize harm to the floodplain and wetlands. Specific types of land preparation activities, potential unavoidable impacts to water resources, and measures to reduce impacts are discussed further within this section.

Surface Water, Floodplains, and Groundwater

The preparation of acquired land to Army training land would consist of upgrading existing road and trail networks, establishing water crossings, site hardening at specific locations where required to support training, and prescribed burning and tree thinning where necessary to support military maneuvers. The amount of infrastructure upgrades cannot be determined until the existing road and trail networks can be evaluated. A detailed site-specific evaluation that would include identifying jurisdictional waters, cannot take place until the parcels of land are acquired; therefore, the impacts resulting from infrastructure upgrades are discussed at a programmatic level. To the extent possible, the Army would utilize existing roads and trails in Alternative 1. Some existing trails would be surfaced with gravel or blacktop resulting in an increase in impervious area, which in turn could cause additional runoff into streams during rain events; however, trail hardening also minimizes overall soil disturbances and, ultimately, soil erosion. Increased roadway runoff may contain petroleum, oils, and lubricants (POLs) and present an increased potential to cause minor and long-term adverse impacts to surface water resources. In addition, minor short-term adverse impacts could occur to surface waters due to fuel spills that could occur during road construction. The use of BMPs and procedures to prevent spills and rapid response to spills, including those outlined in Fort Benning's SPCC Plan would avoid or reduce impacts to surface water resources.

Additional trail networks would be established as necessary. This would be accomplished through the thinning and clearing of trees and vegetation along with soil grading, which includes earthwork and maintenance activities. Should this occur in areas containing surface waters or directly adjacent to surface waters for crossings, soil erosion resulting in sedimentation would have adverse minor impacts on water quality. In addition, trail development adjacent to surface waters could directly disturb stream beds and banks causing destabilization of these features; however, following standard erosion control BMPs and minimizing the siting of such features near surface waters would substantially reduce the potential for this impact to occur. These impacts also would be minimized by adhering to construction SWPPPs specific to construction activities.

The Army would construct hardened low-water crossings across surface waters, where needed, to facilitate the maneuvers of its units within the newly acquired land. Hardening and protecting the streambanks and approaches would stabilize water crossing areas, reducing the potential for erosion. The water crossings could also be designed to allow floodwaters to flow unconstrained across the stream's floodplain. In addition, to increase effectiveness and achieve a more natural stream channel, low-water crossings could be constructed and depressed with their base buried below the natural streambed. These types of depressed crossings allow water to flow and sediments to deposit as they would naturally and encourage fish passage (USDA, 1997). Construction of the proposed water crossings would result in localized short-term direct minor adverse effects in the form of increased stream turbidity during construction. The use of BMPs, as discussed below, during construction would aid in reducing possible impacts to water resources during water crossing construction.

The construction of buildings may be required to support training activities in newly acquired lands. The Army would develop alternatives for the site placement of new infrastructure, examining locations with the intent of lessening impacts to water resources. Therefore, the primary impact from the construction of future facilities would be attributed to stormwater runoff from impervious surfaces. These impacts would be minimized by adhering to SWPPPs and incorporating appropriate stormwater management design within the new facilities. See Section 3.7.1.3 for a discussion of Fort Benning's requirements under the Energy Independence and Security Act of 2007 for minimizing impacts to water resources from construction.

None of the activities associated with Alternative 1 would be expected to result in the construction of structures that would divert flood flows in any existing 100-year floodplains. Therefore, overall, negligible impacts on the floodplains' abilities to absorb flood flows would be expected, assuming all surface water crossings are constructed according to applicable regulations utilizing applicable BMPs, such as the use of low-water crossings, described above. Should the Army require the construction of any culverted or bridged systems over surface waters, follow-on NEPA review and Section 404 permitting may be needed.

There is one public water system groundwater well located within Stewart East (Stapel, J. 2011). The land acquired would be subject to public utilities, including the public water system well which occurs in Stewart East. If the Army required use of the subject property, the well would be closed and the Army would put a well in a new location. Private wells within Alternative 1 would be located and verified during the site-specific evaluation, which cannot take place until an alternative is selected and the lands are acquired. The possibility exists, however, for there to be undocumented wells. Therefore, should any undocumented wells become known during infrastructure upgrades, the proper procedures in accordance with the State of Georgia Water Well Standards Act of 1985, (OCGA 12-5-120--12-5-137) would be used to prevent the possibility of groundwater contamination (Georgia Department of Human Resources, 2010). This includes closing or buffering the wells to prevent groundwater contamination from construction and training activities in accordance with the Georgia Drinking Water Rule 391-3-5.

The following is a list of general NPDES BMPs that could be implemented during the siting process and construction stages, where applicable. If these BMPs are adhered to in conjunction with Fort Benning's

resource management plans, they would further serve to minimize any potential water resource impacts during construction (Alabama Soil and Water Conservation Committee, 2009; Georgia Soil and Water Conservation Commission, 2001).

- Design new roads to avoid water crossings to minimize erosion and adverse effects.
- Re-seed areas of bare soil with vegetation, layer mulch, gravel, or wood chips to minimize bare soil available for sediment transport during storm events.
- Maintain a minimum 25-foot riparian buffer zone around streams as vegetative cover to maintain natural temperature of surface waters and to act as a filter against sedimentation.
- Place a protective layer (e.g., rubber mats) on top of temporary access roads utilized during construction to prevent or reduce erosion in areas of highly erodible soils or sensitive areas such as wetlands.
- Construct structures that require water crossings only when necessary and design them using the most direct route. Plan the construction of water crossings during periods of low flow conditions. Utilize crossing sites that have low, stable banks, a firm stream bottom, and minimal surface runoff when possible.
- Maximize use of existing roads and trails in planning site access.
- Locate equipment, maintenance, and fueling areas away from surface waters or wells.

The Fort Benning NEPA Program would also serve in identification of environmentally preferred siting and design options, including those to reduce or prevent disruption to water resources.

Wetlands

Land preparation activities to support Army training could cause minor to moderate, adverse impacts to wetland resources. Should construction activities occur near down-slope wetland areas, the earth-disturbing activities could result in sedimentation into those wetlands and hydrology alterations, which would cause minor indirect impacts if soil erosion control techniques were not employed (see Section 3.6). In addition, filling of wetland areas may be required for construction of the transportation network or supporting training facilities, which would constitute a loss of the resource and a moderate adverse, but mitigable, impact. As a requirement of CWA Section 404 permitting, the Army would be required to show that the only practicable alternative would be to fill these areas to meet its needs; therefore, the total wetland area impacted would be minimized to the maximum extent possible. In addition, all construction planning and siting that could possibly impact jurisdictional wetlands would be coordinated with the USACE, which would minimize and potentially eliminate wetland impacts.

It is anticipated that several low-water stream crossings would be established, which may be located in areas where fringe wetlands occur along streambanks. Fringe wetlands commonly occur along the edges of bodies of water and water levels in fringe wetlands are influenced by fluctuations in the adjacent body of water, which can be either freshwater or saltwater. The establishment of these features would also require CWA Section 404 permitting, which would provide a regulatory mechanism by which wetland and surface water impacts would be minimized. If hardened roads are constructed as approaches to the low-water stream crossings, wetland areas may need to be filled for construction. This would result in moderate adverse impacts that would be mitigable under CWA Section 404 permitting. Silviculture techniques including burning and forest thinning are anticipated; however, Fort Benning would adhere to Georgia's BMPs for forestry management, thereby minimizing impacts to wetlands.

Designated areas for TAAs, unit tactical operations centers, and nodes of command and control operations would be established. TAAs would consist of 100-meter by 100-meter (328 feet by 328 feet) locations that require vegetation clearing. It is likely that the TAAs and the other control centers can be sited outside of wetland areas; therefore, no adverse wetland impacts would be expected. Should they be sited in wetland areas, the vegetation clearing would change the overall character of the wetland, causing

minor adverse impacts assuming no fill material is deposited, no site hardening occurs, and the existing local hydrology is maintained. The application of Fort Benning's natural resource management plans (Section 3.7.2.2.2), along with detailed on-site surveys of the quantity and quality of wetlands within Alternative 1, would assure that emphasis is put on avoiding wetland impacts to the degree possible. Based on site surveys, unavoidable impacts could be focused on low-quality wetlands, while impacts could be reduced by preserving unique and high-quality wetlands. A wetland's significance (e.g., high, moderate, or low) is based on the wetland's functions and values.

3.7.2.2.4 ARMY TRAINING

Surface Water, Floodplains, and Groundwater

The degree of impact to surface water resources would depend on the location, frequency, and extent of training and off-road vehicle use. As previously discussed, aerial photography review estimates indicate approximately 70-80 percent of the TLEP study area appears to be subject to timber production. As the Army works to apply restorative management activities for riparian areas (see Section 3.7.2.2.2), Soldiers would likely be training in existing areas disturbed from past timber harvesting activities. These disturbed areas would likely contain disturbed/removed riparian areas, and unimproved stream crossings left over from logging operations that contribute a high level of perturbation to surface water systems (where not removed). The following discussion focuses on the level of impact that could occur in areas not currently disturbed from timber harvesting activities, to determine an upper bound level of impact analysis to water resources.

Vehicles and troop maneuvers within or along the banks or streambeds of surface water features not containing designated water crossings would have the potential to cause changes (possibly destabilization) in streambed and bank morphologies, as well as associated decreases of surface water quality from sedimentation due to streambank erosion. These moderate adverse impacts, do not take into consideration that the field operations could be sited to avoid sensitive areas (e.g., areas susceptible to severe water erosion) and utilize water crossings. Impacts could be avoided or minimized if the appropriate BMPs (discussed later within this section) are followed. Ground operations such as off-road vehicle use, large dismounted operations (e.g., foot Soldier maneuvers), and field operations (e.g., large-scale bivouacking and installation of tent cities) would cause the potential for moderate impacts to surface water resources through increasing the potential for soil disturbance and sedimentation. In addition, tracks created by vehicles that would maneuver cross country (e.g., off-road and on unimproved trails) increases the probability of accelerated and channeled water runoff, in turn increasing particularly rill and gully erosion on and off the trails. This is particularly true in the case of off-road maneuver associated with BCT Ranger Regiment combat vehicles. Overall, the aforementioned training impacts may be reduced through the use of NPDES BMPs and mitigation measures. Potential moderate impacts would be mitigated through improvements of capital investments (e.g., road upgrades and development of water crossings) and the continued implementation of ITAM, as funding is available.

The potential for munitions contamination to impact surface waters would exist from training exercises conducted within the newly acquired lands. Munitions contamination would be managed through the Army Operational Range Assessment Program (ORAP). The ORAP is designed to support the Army's Sustainable Range Program and fulfill the requirements of DoD Directive 4715.11 and DoD Instruction 4715.11.14 (U.S. Army, 2008b). The ORAP was created to determine whether a release or substantial threat of release of munitions constituents has occurred from an operational range to an off-range area, specifically into groundwater, surface water, or soils, to the extent that an unacceptable risk to human health or the environment is present. The program is conducted in two phases: Phase I consists of a qualitative assessment or identification of existing data on contamination; Phase II consists of a quantitative assessment in which sampling of groundwater, surface water, and soils is conducted. The ORAP ensures that the Army continues to:

- Conduct appropriate, cost-effective, scientifically defensible efforts to identify, evaluate, and determine if a release or substantial threat of release of munitions constituents from an operational rage complex to an off-range area poses an unacceptable risk to human health or the environment.
- Plan, program, budget, and execute operational range assessments in accordance with DoD and Army directives and guidance.
- Promote and support public stakeholder participation within the guidelines of DoD and U.S. Army directives and guidance.
- Support the development and use of cost effective approaches and technologies to improve program efficiency.
- Provide a smooth transition from the ORAP to the appropriate clean-up program for sites that have munitions constituents migration off-range at levels that threaten human health or the environment. (U.S. Army, 2010b)

Indirect long-term moderate adverse effects could occur to surface waters adjacent to established live-fire areas from the transport of sediments contaminated by munitions compounds. These impacts may be reduced through the implementation of the ORAP. If an unacceptable level of munitions-related contaminants is indicated during the ORAP phases, then appropriate actions would be taken to minimize any risk of water resource contamination, such as clean-up of munitions and any contaminated soils. Sampling and monitoring results on Fort Benning to date have not shown any incidents of water resource contamination by munitions directly or through migration, even though areas of the Installation have been used for munitions training for over 50 years.

Aircraft and UAS are used during training activities. Should aircraft and UAS operations encounter complications (e.g., emergency landings) the potential release of aircraft fuel or ground impact could potentially degrade surface water quality or groundwater quality through contamination of soil as well as affect existing potable wells depending on the location. Spill kits would be used to address cleanup of accidental spills.

Alternative 1 does not include additional troops or training rotations; therefore, there would be no effects to groundwater and aquifers beyond what currently exists. There would be minor impacts associated with maneuver training to include some limited leaking of substances (i.e., fuels, oils, and other lubricants), during refueling of vehicles, into the soil potentially making its way into surface water or groundwater. The Army would continue to implement measures contained within Fort Benning's SPCC Plan including the regular inspection of vehicles, conducting routine maintenance checks, and the use of drip pans when vehicles are at rest to limit adverse impacts. See Section 3.13 for more information regarding Fort Benning's SPCC Plan.

The following is a list of mitigation measures that could be implemented during Army training, where applicable, to reduce the level of adverse impacts to minor or negligible (Fort Benning, 2001; Fort Benning, 2008b). If these mitigation measures are adhered to in conjunction with Fort Benning's resource management plans, they would further serve to minimize potential water resource impacts resulting from training activities:

- Restrict crossings of streams, rivers, creeks, lakes, ponds, floodplains, and use hardened low-water crossings to the extent practicable.
- Where practical, restrict intensive and frequent off-road maneuvering by wheeled vehicles and other ground disturbing activities in severe erosive soils and water erosion areas.
- Demarcate off-limits areas (e.g., potable well sites) using methods that are clearly visible to field participants.
- Provide environmental briefings on water resources to all field personnel prior to deployment.

- Where practical, consider weather and ground conditions when scheduling activities to minimize potential impacts to surface waters, such as erosion and the spread of contaminants that may be exacerbated by sheet flow during storm events.
- Locate equipment, maintenance, and fueling areas away from surface waters or wells.

Wetlands

Maneuver training is required to synchronize the execution of tasks on the battlefield, and the activities with the greatest potential to impact wetland resources would be the movement of wheeled and tracked vehicles. Off-road vehicle movements could occur through or near wetland areas causing minor adverse impacts from soil compaction and sedimentation, which can alter wetland hydrology. Vehicle movements on unimproved trails would also occur; should these unimproved trails be located in wetland areas, much of the wetland impact would occur during land preparation as described in Section 3.7.2.2.3. During maneuvers on unimproved trails, minor and indirect impacts to wetlands in the vicinity of the trails (primarily down-slope) could occur as a result of sedimentation, which would alter topography and the associated wetland hydrology. Similarly, but to a lesser degree, on-road vehicle movements could cause erosion to down-slope wetlands causing minor indirect impacts on wetland hydrology. Maneuver training would also involve vehicle movement along the aforementioned hardened low-water stream crossings. Impacts to wetlands adjacent to the designated stream crossings would be negligible as training operations would utilize the hardened crossings, avoiding any sensitive areas adjacent to the crossings. Some training activities would include the digging of defensive positions using hand tools as well as heavy equipment (e.g., excavators, bulldozers, etc.). Should these defensive positions be located near down-slope wetland areas, erosion could occur, causing minor, indirect wetland impacts from sedimentation.

Training activities would include the establishment of temporary support sites such as bivouacking areas, field hospitals, and Communication and Surveillance Operations areas. These locations would likely include tents and equipment temporarily staged to support troops while they rest and simulate battlefield scenarios. It is anticipated, however, that these sites would be located outside of wetland areas as wetlands would be surveyed and mapped before training is initiated; therefore, no direct impacts would occur to wetland resources. If these sites are located near down-slope wetland areas, it is possible that the surface disturbances caused by vehicle and equipment movement could result in sedimentation to the wetlands, causing minor indirect adverse impacts.

Live-fire training, itself, would not cause any wetland impacts. Live-fire activities could occur during maneuver training, which would result in the impacts described above.

3.7.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3). Tables 3.7-6 and 3.7-7 display surface water resources and wetland types existing within Alternative 2.

Overall potential impacts to water resources would be similar to those described under Alternative 1 (Section 3.7.2.2). With regard to water resources, the implementation of Alternative 2 would result in negligible impacts as a result of acquisition of land; minor to moderate adverse impacts as a result of Army construction and Army training; and beneficial impacts as a result of Army management.

Surface Water, Floodplains, and Groundwater

Alternative 2 is located within the Coastal Plain aquifer system, which is the same as Alternative 1. Under Alternative 2, there would be no additional personnel; therefore, groundwater usage and withdrawal impacts would remain similar to those previously described for Alternative 1. Preparation of

newly acquired land associated with Alternative 2 would result in the potential for minor adverse impacts to groundwater resources and surface waters, similar to those discussed under Alternative 1 (see Section 3.7.2.2.3). In addition, Alternative 2 contains approximately 85 more miles of streams/creeks but 20 acres less of ponds and lakes as compared to Alternative 1 (see Table 3.7-6). Alternative 2 also contains a substantial amount of 100-year floodplains (9.6 percent) compared to the 5.9 percent of floodplains associated with Alternative 1. Any water crossings or upgrades to road networks, which would be established as needed, would have the same impacts as discussed under Alternative 1 (see Section 3.7.2.2.3).

As there are more surface waters and floodplains per acre located within Alternative 2, the chances of impacting surface water quality through sedimentation resulting from troop and vehicle maneuvers during training increases. As discussed under Alternative 1, however, these impacts would be mitigated through improvements of capital investments (i.e., road upgrades and development of water crossings) and the continued implementation of ITAM (as funding is available), resulting in moderate adverse impacts to surface water resources. Impacts related to live-fire training, aircraft and UASs, and leaking substances would be the same as Alternative 1, although more surface waters exist within Alternative 2.

As shown in Table 3.7-4, a total of two public water groundwater wells have been reported by the ADEM to occur within Russell East and Russell West. The land acquired would be subject to public utilities, including the two public water system wells which occur in Alternative 2. If the Army required use of the subject properties, the wells would be closed and the Army would put wells in a new location. As discussed under Alternative 1 (Section 3.7.2.2.3), the potential for undocumented wells, including private wells, within Alternative 2 exists. These wells would be located and verified during the site-specific evaluation, which would take place after land acquisition. Should any undocumented wells become known during infrastructure upgrades, the proper procedures in accordance with the ADEM Division 7 Water Supply Program Administrative Code R. 335-7-5-.16 (ADEM, 2010b) would be employed to prevent the possibility of groundwater contamination for both the existing wells and wells identified during the real estate reporting process.

Similar to Alternative 1, the short- and long-term effects of Army management on the natural resources within Alternative 2 lands would in general be a net beneficial impact to water resources. The variety of existing surface waters would benefit greatly if Alternative 2 lands are converted from timber harvesting to Army-managed forest land. See Section 3.7.2.2.2 for a list of resource management programs that would be transferred onto newly acquired land as part of the Proposed Action.

Wetlands

The types of impacts to wetlands under Alternative 2 would be similar to those described under Alternative 1. The quantity of wetlands under Alternative 2 is much less than under Alternative 1 (see Table 3.7-7), making it easier for Fort Benning to implement their policy of avoidance and minimization. In addition, the location of the wetlands under Alternative 2 makes accessibility to most of its study area easier without crossing wetland complexes (Figure 3.7-3). The overall potential impacts from the land acquisition would be negligible, however, Army management of newly acquired land would be beneficial to wetland resources as most of Alternative 2 lands are in timber production and similar to those described under Alternative 1. Impacts from construction and upgrades as well as training would be minor to moderate and similar to those described under Alternative 1. There are no wetlands mapped within the Russell East transportation route, so no additional impacts are anticipated from the route.

3.7.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3). Tables 3.7-6 and 3.7-7 display surface water resources and wetland types existing within Alternative 3.

Overall potential impacts to water resources would be similar to those described under Alternative 1 (Section 3.7.2.2). With regard to water resources, the implementation of Alternative 3 would result in negligible impacts as a result of Federal acquisition of land; minor to moderate adverse impacts as a result of Army construction and Army training; and beneficial impacts as a result of Army management.

Surface Water, Floodplains, and Groundwater

Alternative 3 is located within the Coastal Plain aquifer system, which is the same as Alternatives 1 and 2. Under Alternative 3, there would be no additional personnel; therefore, groundwater usage and withdrawal impacts would remain similar to those previously described for Alternative 1. Preparation of newly acquired land associated with Alternative 3 would result in the potential for minor adverse impacts to groundwater resources and surface waters, similar to those discussed under Alternative 1 (see Section 3.7.2.2.3). Alternative 3 contains the most surface waters of all five alternatives (see Table 3.7-6). Alternative 3 contains approximately 30 more miles of streams/creeks than Alternative 2, and approximately 61 more acres of lakes and ponds as Alternative 2. Alternative 3 also contains a greater amount of 100-year floodplains (7.0 percent) compared to the 5.9 percent of floodplains associated with Alternative 1. Any water crossings or upgrades to road networks, which would be established as needed, would have the same impacts as discussed under Alternative 1 (see Section 3.7.2.2.3).

As there are more surface waters and floodplains associated with Alternative 3 per acre, the chances of impacting surface water quality through sedimentation resulting from troop and vehicle maneuvers during training increases. As discussed under Alternative 1, however, these impacts would be mitigated through improvements of capital investments (i.e., road upgrades and development of water crossings) and the continued implementation of ITAM (as funding is available), resulting in moderate adverse impacts to surface waters. As displayed in Table 3.7-3, the Integrated Report identified Talipahoga Rum Creek, which is located within Stewart West, as impaired from nonpoint sources. Should Alternative 3 be chosen to implement the Proposed Action, the Army would monitor the creek and its established TMDL as well as continue to utilize management practices, as outlined in the GDNR guidance for TMDLs. Army management of the land may improve or reduce the amount of nonpoint source pollution resulting in a beneficial impact as the land would be converted from timber harvesting to managed forest land. Impacts related to live-fire training, aircraft and UASs, and leaking substances would be the same as Alternative 1; however, more surface waters exist within Alternative 3.

As discussed under Alternative 1 (Section 3.7.2.2.3), groundwater wells within Alternative 3 would be located and verified during the site-specific evaluation, which would take place after the purchase of the land. Unlike Alternatives 1, 2 and 4 no public water supply wells were identified within Alternative 3. Similar to all alternatives, the possibility exists for undocumented wells. Should any undocumented wells become known during infrastructure upgrades, the proper procedures in accordance with the State of Georgia Water Well Standards Act of 1985 (OCGA 12-5-120--12-5-137) (Georgia Department of Human Resources, 2010) would be employed to prevent the possibility of groundwater contamination for both the existing wells and wells identified during the real estate reporting process. This includes closing or buffering the wells to prevent groundwater contamination from construction and training activities in accordance with the Georgia Drinking Water Rule 391-3-5.

As for Alternative 1 the short- and long-term effects of Army management on the natural resources within Alternative 3 lands would, in general, be a net beneficial impact to water resources. The variety of existing surface waters would benefit greatly by Alternative 3 lands being converted from timber harvesting to managed forest land. See Section 3.7.2.2.2 for a list of resource management programs that would be transferred onto newly acquired land as part of the Proposed Action.

Wetlands

The types of impacts to wetlands under Alternative 3 would be similar to those described under Alternative 1. The quantity of wetlands under Alternative 3 is less than under Alternative 1 (see Table

3.7-7), making it easier for Fort Benning to implement their policy of avoidance and minimization. The overall potential impacts from the land acquisition would be negligible, however, Army management of newly acquired land would be beneficial to wetland resources as most of Alternative 3 lands are in timber production and similar to those described under Alternative 1. Impacts from construction and upgrades as well as training would be minor to moderate and similar to those described under Alternative 1. There are no wetlands mapped within the Stewart West transportation route; therefore, no additional impacts would be anticipated from this route. The Stewart Central transportation route, however, contains 6.1 acres of mapped wetlands; therefore, additional impacts to wetlands would be likely from establishment of the Stewart Central transportation route.

3.7.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3). Tables 3.7-6 and 3.7-7 display surface water resources and wetland types existing within Alternative 4.

Overall potential impacts to water resources would be similar to those described under Alternative 1 (Section 3.7.2.2). With regard to water resources, the implementation of Alternative 4 would result in negligible impacts as a result of Federal acquisition of land; minor to moderate adverse impacts as a result of Army construction and Army training; and beneficial impacts as a result of Army management.

Surface Water, Floodplains, and Groundwater

Alternative 4 is located within the Coastal Plain aquifer system, which is the same as Alternatives 1 through 3. Under Alternative 4, there would be no additional personnel, therefore, groundwater usage and withdrawal impacts would remain similar to those previously described for Alternative 1. Preparation of newly acquired land associated with Alternative 4 would result in the potential for minor adverse impacts to groundwater resources and surface waters, similar to those discussed under Alternative 1 (see Section 3.7.2.2.3). In addition, Alternative 4 contains approximately 68 more miles of streams/creeks and approximately 19 more acres of ponds and lakes as opposed to Alternative 1 (see Table 3.7-6). Alternative 4 also contains a greater amount of 100-year floodplains (6.9 percent) compared to the 5.9 percent of floodplains associated with Alternative 1. Any water crossings or upgrades to road networks, which would be established as needed, would have the same impacts as discussed under Alternative 1 (see Section 3.7.2.2.3).

As there are more surface waters and floodplains associated with Alternative 4 per acre, the chances of impacting surface water quality through sedimentation resulting from troop and vehicle maneuvers during training increases when compared to Alternative 1. Alternative 4, however, has a smaller chance of impacting surface waters when compared to Alternative 3, which contains the most surface waters of all the alternatives. The chance of impacting surface waters under Alternative 4 is similar to that of Alternative 2. Alternative 2 contains more streams/creeks, but Alternative 4 contains more ponds and lakes, therefore, collectively they have similar ground coverage. As discussed under Alternative 1, however, these impacts would be mitigated through improvements of capital investments (i.e., road upgrades and development of water crossings) and the continued implementation of ITAM (as funding is available), resulting in moderate adverse impacts to surface water resources. Impacts related to live-fire training, aircraft and UASs, and leaking substances would be the same as Alternative 1; however, as more surface waters exist within Alternative 4, the chance for impact increases.

As discussed under Alternative 1 (Section 3.7.2.2.3), groundwater wells within Alternative 4 would be located and verified during the site-specific evaluation, which would take place after the purchase of the land. Alternative 4 contains one public water supply well within Russell East. The land acquired would be subject to public utilities, including the public water system well which occurs in Stewart East. If the Army required use of the subject property, the well would be closed and the Army would put a well in a

new location. Similar to all alternatives, the possibility exists for undocumented wells. Should any undocumented wells become known during infrastructure upgrades, the proper procedures, in accordance with the ADEM Division 7 Water Supply Program Administrative Code R. 335-7-5-.16 (ADEM, 2010b) and the State of Georgia Water Well Standards Act of 1985, (OCGA 12-5-120--12-5-137) (Georgia Department of Human Resources, 2010), would be employed to prevent the possibility of groundwater contamination for both the existing wells and wells identified during the real estate reporting process. This includes closing or buffering the wells to prevent groundwater contamination from construction and training activities in accordance with the Georgia Drinking Water Rule 391-3-5.

As with Alternative 1, the short- and long-term effects of Army management on the natural resources within Alternative 4 lands would in general be a net beneficial impact to water resources. The variety of existing surface waters would benefit greatly by being converted from timber harvesting to managed forest land. See Section 3.7.2.2.2 for a list of resource management programs that would be transferred onto newly acquired land as part of the Proposed Action.

Wetlands

The types of impacts to wetlands under Alternative 4 would be similar to those described under Alternative 1. The quantity of wetlands under Alternative 4 is less than under Alternative 1 (see Table 3.7-7), making it easier for Fort Benning to implement their policy of avoidance and minimization. In addition, the location of the wetlands under Alternative 4 makes accessibility to most of its study area possible without crossing wetland complexes. The overall potential impacts from the land acquisition would be negligible, however, Army management of newly acquired land would be beneficial to wetland resources as most of Alternative 4 lands are in timber production and similar to those described under Alternative 1. Impacts from construction and upgrade as well as training would be minor to moderate and similar to those described under Alternative 1. In addition, there are 6.1 acres of wetlands mapped within the Stewart Central transportation route; therefore, additional impacts are anticipated from the route.

3.7.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3). Tables 3.7-6 and 3.7-7 display surface water resources and wetland types existing within Alternative 5.

Overall potential impacts to water resources would be similar to those described under Alternative 1 (Section 3.7.2.2). With regard to water resources, the implementation of Alternative 5 would result in negligible impacts as a result of Federal acquisition of land; minor to moderate adverse impacts as a result of Army construction and Army training; and beneficial impacts as a result of Army management.

Surface Water, Floodplains, and Groundwater

Stewart West is located within the Coastal Plain aquifer system; however, Harris East and Talbot West are located within the Piedmont and Blue Ridge crystalline rock aquifers. Under Alternative 5, there would be no additional personnel, therefore, groundwater usage and withdrawal impacts would remain similar to those previously described for Alternative 1. Preparation of newly acquired land associated with Alternative 5 would result in the potential for minor adverse impacts to groundwater resources and surface waters, similar to those discussed under Alternative 1 (see Section 3.7.2.2.3). In addition, Alternative 5 contains approximately 69 more miles of streams/creeks and approximately 6 less acres of ponds and lakes, as opposed to Alternative 1 (see Table 3.7-6). Alternative 5 also contains fewer documented acres of 100-year floodplains compared to Alternative 1 (the acreage of floodplains within Harris East and Talbot West is unknown). Any water crossings or upgrades to road networks, which would be established as needed, would have the same impacts as discussed under Alternative 1 (see Section 3.7.2.2.3).

As there are more streams and creeks associated with Alternative 5, the chances of impacting surface water quality through sedimentation resulting from troop and vehicle maneuvers during training increases when compared to Alternative 1. Alternative 5, however, has a smaller chance of impacting surface waters when compared to Alternative 3, which contains the most miles of surface waters of all the alternatives. The chance of impacting surface waters under Alternative 5 is similar to that of Alternatives 2 and 4. Alternative 2 contains more streams/creeks, but Alternative 5 contains more ponds and lakes (similar to Alternative 4); therefore, collectively they have similar ground coverage. As discussed under Alternative 1, however, these impacts would be mitigated through improvements of capital investments (i.e., road upgrades and development of water crossings) and the continued implementation of ITAM (as funding is available), resulting in moderate adverse impacts to surface water resources. As displayed in Table 3.7-3, and discussed under Alternative 3, the Integrated Report identified Talipahoga Rum Creek as impaired with the impairment resulting from nonpoint source runoff. Once identified by the Integrated Report a TMDL is established for the pollutants of concern. Should Alternative 5 be chosen to implement the Proposed Action, the Army would monitor the Creek and its established TMDL, as well as continue to utilize management practices, as outlined in the GDNR guidance for TMDLs. Army management of the land may improve or reduce the amount of nonpoint source pollution, resulting in a beneficial impact as the land would be converted from timber harvesting to managed forest land. Impacts related to live-fire training, aircraft and UASs, and leaking substances would be the same as Alternative 1, however, as more surface waters exist within Alternative 5, the chance for impact increases.

As discussed under Alternative 1 (Section 3.7.2.2.3), wells within Alternative 5 would be located and verified during the site-specific evaluation, which would take place after the purchase of the land. Unlike Alternatives 1, 2, and 4, no public water supply wells were identified within Alternative 5. Similar to all alternatives, the possibility exists for undocumented wells. Should any undocumented wells become known during infrastructure upgrades, the proper procedures, in accordance with the State of Georgia Water Well Standards Act of 1985 (OCGA 12-5-120--12-5-137) (Georgia Department of Human Resources, 2010), would be employed to prevent the possibility of groundwater contamination for both the existing wells and wells identified during the real estate reporting process. This includes closing or buffering the wells to prevent groundwater contamination from construction and training activities in accordance with the Georgia Drinking Water Rule 391-3-5.

As under Alternative 1, the short- and long-term effects of Army management on the natural resources within Alternative 5 lands would in general be a net beneficial impact to water resources. The variety of existing surface waters would benefit greatly by being converted from timber harvesting to managed forest land. See Section 3.7.2.2.2 for a list of resource management programs that would be transferred onto newly acquired land as part of the Proposed Action.

Wetlands

The types of impacts to wetlands under Alternative 5 would be similar to those described under Alternative 1. The quantity of wetlands under Alternative 5 is much less than under Alternative 1 (see Table 3.7-7), making it easier for Fort Benning to implement their policy of avoidance and minimization. The overall potential impacts from the land acquisition would be negligible, however, Army management of newly acquired land would be beneficial to wetland resources as most of Alternative 5 lands are in timber production and similar to those described under Alternative 1. Impacts from construction and upgrade as well as training would be minor to moderate and similar to those described under Alternative 1. There are no wetlands mapped within the Stewart West transportation route; therefore, no additional impacts would be anticipated along the corridor. The Harris East and Talbot West transportation route, however, contains approximately three acres of forested wetlands. These wetlands would likely be permanently impacted if avoidance is not feasible.

3.7.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts within the ROI for water resources that would be expected to occur with the implementation of the Proposed Action (Alternatives 1, 2, 3, 4, or 5). Fort Benning's contribution would not change per alternative as ultimately the same acreage of land (approximately 82,800 acres) would be acquired under each alternative. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.2.

Cumulative minor long-term adverse effects on water quality are expected. Long-term minor adverse effects on water quality would result from training activities and timber harvesting within the four watersheds. All of these activities would contribute to soil erosion and increased sedimentation and siltation to nearby surface water resources. It can be assumed that the timber harvesting will continue to remove timber from the land, resulting in adverse short-term impacts until timber harvesting is completed and the areas are replanted. Although Army management of land previously used for timber production would have a beneficial impact, timber harvesting in other regional areas along with future training would result in minor long-term cumulative effects.

Short-term minor adverse cumulative effects to water quality would be expected as a result of the road improvements and other local planned construction throughout the counties within the ROI. Exposed soils during construction would be more susceptible to flow with stormwater runoff, which could result in increased sedimentation and turbidity to receiving waterbodies. The main activity identified within the TLEP study area which could impact water resources is the construction period of road improvement projects. Road improvements and other local planned construction may have to cross surface waters which contain 100-year floodplains. Roadway projects have been identified in Russell and Chattahoochee counties (see Section 3.1.3.2). None of the proposed construction would be expected to result in the construction of structures that would divert flood flows in any existing 100-year floodplains; therefore, negligible impacts on the floodplains' abilities to absorb flood flows would be expected, assuming all surface water crossings are constructed according to applicable regulations.

As limited development and growth is foreseen within the region, the potential to impact groundwater resources would be low. The counties within the TLEP study area are not projected to see substantial population increases, and therefore, cumulative groundwater impacts within the region would not be anticipated regardless of the alternative chosen.

Continuing Fort Benning training operations and regional commercial forestry operations could cause the degradation of wetland resources, primarily through sedimentation; however, Army land ecosystem management activities would likely have a long-term beneficial impact of conserving and enhancing existing wetland habitats. Overall, cumulative adverse effects to wetlands would be negligible.

3.7.4 PROPOSED MITIGATION

No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.

3.8 BIOLOGICAL RESOURCES

Biological resources consist of native or naturalized plants and animals and their habitats. This section focuses on vegetation types, plant and animal species, and habitat, which typify or are important to the function of the ecosystem, or are protected under Federal or state law. For purposes of this evaluation, sensitive biological resources are defined as those plants and animal species listed by the USFWS or by the states of Georgia or Alabama.

3.8.1 AFFECTED ENVIRONMENT

The following sections describe the ecological conditions and biological communities that are or may be present within the TLEP study area (Sections 3.8.1.1 through 3.8.1.4), as well as a brief synopsis of Army management regarding biological resources that would be implemented on any new land acquired by the Army (Section 3.8.1.5). Sections 3.8.1.3 and 3.8.1.4 discuss Federal and state-protected species. The ROI for biological resources encompasses all areas within the TLEP study area. Detailed descriptions of ecological conditions, biological communities, and management strategies for Fort Benning are provided in the 2001 INRMP, which is incorporated by reference (Fort Benning, 2001).

3.8.1.1 VEGETATION

The TLEP study area contains two ecoregions: Piedmont and Southeastern Plains. The Piedmont Ecoregion is within the northern portion of the TLEP study area containing the majority of Harris East and Talbot West. The remainder of the study area is within the Southeastern Plains Ecoregion.

The portion of the Piedmont Ecoregion within the TLEP study area is within the subdivision Southern Outer Piedmont. Within the Southern Outer Piedmont, loblolly-shortleaf pine is the major forest type, with oak-hickory forest and oak-pine forest also present. Gneiss, schist, and granite are the dominant rock types, covered with deep saprolite and mostly red, clayey subsoils. The southern boundary of the Southern Outer Piedmont, near the southern boundary of Harris East and Talbot West and the existing northern Fort Benning boundary, occurs at the "Fall Line," a band of transitional habitat extending from western Georgia to the Carolinas where unconsolidated coastal plain sediments overlay the metamorphic and igneous rocks of the Piedmont (GDNR, 2005). This ecoregion encompasses 100 percent of Harris East and approximately 95 percent of Talbot West.

The portion of the Southeastern Plains Ecoregion within the TLEP study area contains the following six subdivisions:

- ***Sand Hills*** is composed primarily of Cretaceous and Eocene marine sands and clays deposited over the crystalline and metamorphic rocks of the Piedmont. Soils are mostly excessively well-drained and low in nutrients, although soils in some areas contain more loamy and clayey horizons. The driest sites have typical sandhill vegetation, characterized by longleaf pine (*Pinus palustris*) and turkey oak (*Quercus laevis*). Other areas have shortleaf-loblolly pine forests or mixed oak-pine forests. Atlantic white-cedar (*Chamaecyparis thyoides*) swamps can be found in a few areas in the western portion of the Sand Hills region (GDNR, 2005). This ecoregion encompasses approximately 5 percent of Talbot West, 40 percent of Marion West, 80 percent of Webster West, and 20 percent of Stewart East.
- ***Southern Hilly Gulf Coastal Plain*** is characterized by irregular plains and gently rolling hills developed over bands of sand, clay, and marl formations. This heterogeneous region has a variety of clayey, loamy, and sandy soils. The natural vegetation is mostly oak-hickory-pine forest, transitioning to southern mixed forest at its southern border (GDNR, 2005). This ecoregion encompasses approximately 60 percent of Marion West, 20 percent of Webster West,

75 percent of Stewart East, 67 percent of Russell East, 99 percent of Stewart Central, and 99 percent of Stewart West.

- ***Coastal Plain Red Uplands*** is formed on reddish Eocene sand and clay formations. Soils are mostly well-drained with a brown or reddish brown loamy or sandy surface layer and red subsoils. The majority of the area is cropland or pasture, with some woodland on steeper slopes (GDNR, 2005). This ecoregion encompasses approximately five percent of Stewart East and one percent of Stewart Central.
- ***Southeastern Floodplains and Low Terraces*** comprise a region of large sluggish rivers and backwaters with ponds, swamps, and oxbow lakes. Swamp forests of bald cypress (*Taxodium distichum*), water tupelo (*Nyssa aquatic*), and oak-dominated bottomland hardwood forests provide important wildlife corridors and habitat (GDNR, 2005). This ecoregion encompasses approximately one percent of Stewart West and one percent of Russell East.
- ***Blackland Prairie*** has distinctive Cretaceous-age chalk, marl, and calcareous clay. Historically, the natural vegetation had dominant trees of sweetgum (*Liquidambar styraciflua*), post oak (*Quercus stellata*), and red cedar (*Juniperus virginiana*), along with patches of bluestem prairie. Currently, the area is mostly cropland and pasture, with small patches of mixed hardwoods (Griffith and Omernik, 2008). This ecoregion encompasses approximately five percent of Russell West.
- ***Flatwoods/Blackland Prairie Margins*** combine two slightly different areas. The Flatwoods are comprised of a mostly forested lowland area of little relief, formed primarily on dark, massive marine clay. Soils are deep, clayey, somewhat-poorly to poorly drained, and acidic. The Blackland Prairie Margins are undulating, irregular plains, with slightly more relief than the Flatwoods, but also tend to have heavy clay soils that are sticky when wet, hard and cracked when dry, with generally poor drainage (Griffith and Omernik, 2008). This ecoregion encompasses approximately 95 percent of Russell West and 33 percent of Russell East.

3.8.1.1.1 LAND COVER IN THE TLEP STUDY AREA

As described in Section 3.8.1.1, the TLEP study area contains seven ecoregion subdivision classifications, which provide a basic understanding of common regional ecosystem characteristics and uses based on their position in the landscape and general soil properties. Land cover information, however, provides a more detailed breakdown of cover types that can be used to further classify vegetative community types and level of human activities occurring within these ecoregions. The TLEP study area contains a variety of land cover types including deciduous forest, evergreen forest, mixed forest, shrub/scrub vegetation, grassland/herbaceous vegetation, open water, wetlands, pasture/hay, cultivated land, bare land, and developed land. Predominant habitat types within the TLEP study area are, in descending order, evergreen forest, deciduous forest, grassland/herbaceous, shrub/scrub, mixed forest (i.e., a mix of deciduous and evergreen vegetation), and woody wetland. Table 3.8-1 summarized the land cover types within the TLEP study area (see Figure 3.2-3, Section 3.2, for a graphic depiction).

Forested areas, shrub/scrub vegetation, grassland, and wetland provide the most valuable habitat for wildlife. Developed areas, bare land, pasture/hay, and cultivated crops are unlikely to contain valuable habitat due to disturbance, lack of land cover, and little vegetative diversity. Historically, a majority of the TLEP study area has been managed for timber production and has been logged. Evergreen forest comprises relatively large amounts of TLEP study area, which has the potential to be in timber production. Shrub/scrub habitat is also present, which likely represent areas that are regenerating following past timber harvest. Based on aerial photography, it is estimated that relatively large amounts of the TLEP study area (70 to 80 percent) are in timber production.

Table 3.8-1. Approximate Percentage of Land Cover Types in the TLEP Study Area

TLEP Study Area Location	Percent Vegetation Type													
	Deciduous Forest	Evergreen Forest	Mixed Forest	Shrub/Scrub	Grassland/Herbaceous	Open Water	Woody Wetlands	Herbaceous Wetlands	Pasture/Hay	Cultivated	Bare Land	Developed Open Space	Low Intensity Developed	Medium Intensity Developed
Russell West	19	23	8	20	<1	<1	10	<1	9	6	<1	4	<1	0
Russell East	34	25	9	14	<1	<1	4	<1	4	5	<1	4	<1	<1
Stewart West	33	36	7	3	11	<1	4	<1	2	3	<1	1	<1	<1
Stewart Central	46	23	8	3	9	<1	5	<1	1	3	<1	1	<1	<1
Stewart East	25	43	7	4	5	<1	4	<1	3	7	<1	<1	<1	0
Webster West	18	39	7	3	7	<1	11	<1	5	8	0	2	<1	<1
Marion West	28	36	6	4	10	<1	9	<1	2	3	<1	1	<1	<1
Harris East and Talbot West	24	45	<1	3	15	<1	2	0	6	<1	3	2	<1	0

Source: NRCS, 2001

TLEP = Training Land Expansion Program

As previously stated, 70-80 percent of the TLEP study area displays characteristics of timber-managed land. Common practices on timber-managed land include clear-cutting and row-planting of monoculture stands of loblolly pine (*Pinus taeda*) and slash pine (*P. elliottii*). The lack of vegetation species diversity and forest structure caused by the selective row planting of monoculture pine stands indirectly reduces the diversity of wildlife species. These row-planted monoculture stands are common within the TLEP study area. Stand management typically excludes the natural fire and burning cycles typical of the region, which also reduces the available habitat for those species dependent on natural fire regimes. Some prescribed burning, however, occurs in the TLEP study area, including burns for managing game species such as quail and slash burn events after timber harvests. These types of burns, however, would provide little benefit for biodiversity of species.

Once timber stands are harvested, habitat loss and fragmentation occurs. Aquatic species are also impacted during harvest through increasing the potential for sedimentation in streams from heavy equipment and removal of vegetation (Clemson University, 1997). The impacts of forest harvesting on sedimentation are also related to skid trail layout, road building, and maintenance activities. Road design and maintenance that does not include sediment control BMPs (e.g., using grassed roadbeds and sediment barriers along road margins) can result in substantial sedimentation impacts to nearby waterways. Many of the historical methods of forest road construction have not included such BMPs (Furniss et. al., 2007). Once the forest stands are removed, the potential exists for stream thermal loading, increasing the temperature of streams. The lack of species diversity, stand structure, and increases in stream temperature can be compatible with some wildlife species, but also may adversely affect area-sensitive or edge-avoiding species (Clemson University, 1997).

The Georgia-designated Hannahatchee WMA is located immediately adjacent to Stewart Central. This WMA provides several recreational opportunities for the public, including hunting, camping, firearms shooting range, hiking, bird watching, and horseback riding. Species hunted include white-tailed deer (*Odocoileus virginiana*), eastern wild turkeys (*Meleagris gallopavo*), mourning doves (*Zenaida macroura*), quail, waterfowl, and feral swine (*Sus scrofa*).

3.8.1.1.2 NOXIOUS PLANTS

EO 13112, *Invasive Species,* defines invasive species (also referred to as noxious plants) as a species that is: 1) non-native (exotic) to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Not all exotic species are invasive; the more prone an exotic species is to spreading and proliferation over native species, the more invasive an exotic species is considered. EO 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 known to occur in Georgia and Alabama include tree species such as Chinese tallowtree (*Triadica sebifera*) and mimosa (*Albizia julibrissin*). Common invasive shrubs include species such as Chinese privet (*Ligustrum sinense*) and multiflora rose (*Rosa multiflora*). Common invasive vine species include kudzu (*Pueraria montana var. lobata*) and English ivy (*Hedera helix*). Common invasive forbs and grasses include cogongrass (*Imperata cylindrical*) and Japanese knotweed (*Fallopia japonica*). In the region, Chinese tallowtree may pose the greatest threat because of its ability to invade high quality, undisturbed forests and displace native vegetation. Cogongrass is a serious threat because it is an extremely aggressive invader with the capability of invading a range of sites. It forms dense infestations that exclude all other vegetation (Miller et. al., 2009). Kudzu is a particularly important invasive species both on Fort Benning and in the region because it produces dense shade and an extensive root system that prevents the growth of trees, pines in particular (Fort Benning, 2001).

Fort Benning utilizes 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. Rather than a preventive approach in which pesticides may be used when not needed, integrated pest management relies on regular monitoring to determine if and when control treatments are needed (Fort Benning, 2001).

3.8.1.2 WILDLIFE AND AQUATIC LIFE

The TLEP study area contains a mosaic of habitats, including longleaf pine forests, hardwood forests, shrub/scrub habitats, grasslands, and streams. While information on specific wildlife species inhabiting the TLEP study area was not readily available, for the purposes of this discussion it is reasonable to assume that the TLEP study area contains similar species to those found within the existing boundary of Fort Benning as there is overlap between the ecoregions of Fort Benning and the TLEP study area. As mentioned earlier, the TLEP study area consists of considerable amounts of timber managed land; therefore, biodiversity of the TLEP study area is likely restricted as compared to Fort Benning.

3.8.1.2.1 MAMMALS

The TLEP study area provides suitable habitat for mammals, such as American beaver (*Castor canadensis*), white-tailed deer, eastern gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon lotor*), rabbits (*Sylvilagus spp.*), and other small terrestrial mammals. Bat species include Seminole bat (*Lasiurus seminolu*), southeastern myotis (*Myotis austroriparius*), and Brazilian free-tailed bat (*Tadarida brasiliensis*). Game mammals are present in the area and include white-tailed deer, eastern cottontail rabbit (*Sylvilagus floridanus*), swamp rabbit (*Sylvilagus aquaticus*), eastern gray squirrel, eastern fox squirrel (*Sciurus niger*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), red fox (*Vulpes vulpes*), Virginia opossum (*Didelphis virginiana*), and raccoon. Hunting for non-game species such as coyote (*Canis latrans*) and feral swine also occurs (USACE, 2009).

Clear-cutting typically causes the abundance of some species to decline (e.g., red-backed vole [*Clethrionomys gapperi*]) while others may increase (e.g., eastern chipmunk [*Tamias striatus*]) (Clemson University, 1997); thus, biodiversity is likely hindered to a degree in the TLEP study area as compared to Fort Benning due to clear-cutting practices.

3.8.1.2.2 BIRDS

The MBTA (16 USC 703-712, as amended) established a Federal prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention… for the protection of migratory birds… or any part, nest, or egg of any such bird." 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. In accordance with 50 CFR 21.15 (Authorization of take incidental to military readiness activities), the regulation does not allow an installation to take migratory birds indiscriminately during readiness activities but requires that installations consider the protection of migratory birds when planning and executing military readiness activities. Readiness activities include activities that are related specifically to the training of Soldiers.

All birds on Fort Benning except pigeons (*Columba livia*), starlings (*Sturnus spp.*), and English sparrows (*Passer domesticus*) are protected under the MBTA (approximately 150 species), and it is assumed that the bird species at Fort Benning would be typical of the TLEP study area; however, the actual distribution

would vary based on land use (i.e., natural forest, timber stand, agricultural field, etc.). Species likely present within the TLEP study area include a wide variety of wading birds (e.g., great egret [*Ardea alba*]), water fowl (e.g., Canada goose [*Branta canadensis*]), and songbirds (e.g., brown thrasher [*Toxostoma rufum*]).

The MBTA grants the Secretary of the Interior the authority to establish hunting seasons for species the 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. There are two species of resident game birds at Fort Benning that would also likely occur within the TLEP study area: northern bobwhite quail (*Colinus virginianus*) and eastern wild turkey. Nineteen species of migratory game birds (at least 16 of which are waterfowl) are likely present, including: mourning dove, 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*), blue-winged teal (*Anas discors*), canvasback (*Aythya valisineria*), redhead (*Aythya americana*), bufflehead (*Bucephala albeola*), hooded merganser (*Lophodytes cucullatus*), northern shoveler (*Anas clypeata*), and lesser scaup (*Aythya affinins*). In addition, Fort Benning allows hunting of crow (*Corvus spp.*), another species likely to occur within the TLEP study area (USACE, 2009).

Clear-cutting can have varying degrees of effects on forest bird species where species that prefer early-successional habitats may increase in abundance and diversity in clear-cut areas. Nest predation of ground-nesting birds does not necessarily increase in clear-cut areas; however, predation does increase in mature forests adjacent to clear-cut areas. As a timber management strategy, forest thinning, as compared to clear-cutting, leads to a greater diversity of bird species because thinned areas tend to result in lush ground cover (Clemson University, 1997); therefore, the thinning management practice employed by Fort Benning (see Section 3.8.1.5.1) likely leads to greater biodiversity than in the TLEP study area where clear-cutting appears to be the predominant resource management strategy.

3.8.1.2.3 REPTILES AND AMPHIBIANS

Many species of herpetofauna can be found in the TLEP study area, including reptile species, such as American alligator (*Alligator mississippiensis*) eastern coachwhip (*Masticophis flagellum flagellum*), eastern diamondback rattlesnake (*Crotalus adamanteus*), Florida pinesnake (*Pituophis melanoleucus mugitus*), and southern hognose snake (*Heterodon simus*). Amphibian species include eastern tiger salamander (*Ambystoma tigrinum*), three-lined salamander (*Eurycea longicauda guttolineata*), and dusky gopher frog (*Rana capito sevosa*), among others (USACE, 2009). Herpetofauna abundance in clear-cut areas tends to be considerably lower as compared to mature forests. Timber harvesting practices that minimize soil compaction, ground litter disruption, and forest type conversions can shorten the length of time required for species to recover following harvesting (Clemson University, 1997); therefore, Fort Benning harvesting practices (see Section 3.8.1.5.1) likely results in greater abundance and stability of herpetofauna populations as compared to the clear-cutting practices employed in the TLEP study area.

3.8.1.2.4 AQUATIC SPECIES

The TLEP study area supports a high diversity of native freshwater fish, including game and non-game species. Native non-game fish include many species of shiners, darters, shad, and minnows, as well as the southern brook lamprey (*Ichthyomyzon gagei*). Game fish species 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*) (USACE, 2009).

Insect communities, crustaceans, and other invertebrates are not well documented at Fort Benning, but the region is typically rich in invertebrate biodiversity. Common insects in stream systems include larval and adult stages of stoneflies, mayflies, midges, and caddisflies. A wide variety of crayfish, mussels, isopods, snails, and amphipods occur in Georgia and Alabama habitat. Fort Benning lies within the native range of approximately 18 species of native mussels, such as the eastern elliptio (*Elliptio complanata*) and little spectaclecase (*Villosa lienosa*) (USACE, 2009).

3.8.1.2.5 NOXIOUS ANIMALS

Feral swine are considered noxious animals in Alabama and Georgia and by Fort Benning. Their rooting style of feeding behavior can cause damage to vegetation and soil surfaces. Consequences of feral swine feeding activity include soil disturbance, direct mortality of pine and hardwood trees, competition with native wildlife species, habitat disturbance, and direct mortality of protected species. Feral swine can also uproot and damage cables, wiring, targetry, bivouac sites, and other military assets. Both Alabama and Georgia allow hunting of this species as a method of population control, often having no bag limits and no closed season on private lands. Fort Benning's management of this species focuses on controlling the population by establishing liberal hunting regulations such as no bag limits and expanded season lengths. In addition, trapping is conducted at specific locations to minimize damage to military assets and listed plants (USACE, 2009). Feral swine would be likely to occur throughout the TLEP study area.

3.8.1.3 FEDERAL ENDANGERED, THREATENED, AND CANDIDATE SPECIES

The Federal ESA of 1973 provides a program for the conservation of T&E species and the habitats in which they are found. The ESA prohibits the "take" (i.e., to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct) of any listed species, as well as destruction or modification of any designated "critical habitat" (i.e., habitat that is essential to the survival of the species).

Informal consultation was performed with the USFWS (Alabama and West Georgia Field Offices) regarding the potential for protected species to occur within the TLEP study area. Responses received from these agencies have been incorporated into this analysis and are included in Appendix B.

Table 3.8-2 at the end of Section 3.8.1.4 describes the Federal proposed, threatened, and candidate species listed by the USFWS as potentially occurring in the counties of the TLEP study area as well as those species known to occur on Fort Benning that are not included in the USFWS lists. The following discussion describes Fort Benning's management of listed species at the Installation.

AR 200-1, *Environmental Protection and Enhancement,* implements Army requirements with respect to the ESA. The regulation requires ESMCs[1], previously Endangered Species Management Plans (ESMPs), for listed and proposed species and critical habitat, a 100 percent inventory of suitable habitat for listed and proposed species that may occur on the Installation, and an initial thorough inventory of plants, fish, wildlife, and habitats on installation lands. Fort Benning has prepared ESMPs for RCW (*Picoides borealis*), relict trillium (*Trillium reliquum*), wood stork (*Mycteria americana*), American alligator (*Alligator mississippiensis*), and bald eagle (*Haliaeetus leucocephalus*) (USACE, 2009). In addition, Fort Benning actively works to protect the Georgia-threatened gopher tortoise (*Gopherus polyphemus*).

Fort Benning currently has one of the largest RCW populations in the southeastern U.S. There are 212 known active and 96 inactive RCW clusters at this time (Fort Benning, 2010d). An active cluster is an aggregation of trees with fresh cavities that are currently used by RCW. An inactive cluster consists of abandoned cavity trees. Inactive clusters may be managed or restored to provide habitat for

[1] ESMCs were previously referred to as ESMPs; however, now they are included as a component of installation's INRMPs. Alternatives involving Federally-protected species not covered under existing ESMPs at Fort Benning discuss the development of ESMCs. Where existing ESMPs are in place for species at Fort Benning, the text refers to ESMP/Cs for revision or development.

recolonization (USACE, 2009). The primary limiting factor for RCW is the availability of suitable cavity trees, such as mature (greater than 80 years old) living pine trees. Fort Benning's management strategy for the RCW, outlined in the ESMP of the INRMP, includes the protection and enhancement of the existing RCW population and expansion into unoccupied suitable and potentially suitable habitat (Fort Benning, 2001). According to the Installation RCW management plan, Fort Benning's goal is set at 361 active breeding clusters (Fort Benning, 2010d).

According to USFWS records (see Table 3.8-2), this species has the potential to occur in Stewart, Webster, Marion, Talbot, Muscogee, Chattahoochee, and Russell counties. As previously stated, the extensive practice of commercial timbering within the TLEP study area reduces the diversity of wildlife species and stand management typically excludes the natural fire and burning cycles typical of the region, reducing the available habitat for species dependent on natural fire regimes. The existing dominant timber-managed habitat, therefore, within the study area would unlikely contain RCW clusters.

Relict trillium grows in moist hardwood forests with little to no recent disturbance. According to USFWS records (see Table 3.8-2), this species has the potential to occur in Harris, Talbot, and Muscogee counties. Fort Benning has previously relocated this species to Blanton Creek WMA and the Preserve at Callaway Gardens, both in Harris County. Management strategies on Fort Benning for this species are defined in the ESMP of the INRMP and consist of the following practices (USACE, 2009):

- Placing signs around relict trillium populations;
- Prohibiting digging and driving within and adjacent to known populations;
- Monitoring and control of kudzu and Japanese honeysuckle;
- Prohibiting timber harvest within 200 feet of known populations;
- Prohibiting prescribed burning within the boundaries of populations;
- Fencing to protect populations from feral swine; and
- Conducting additional surveys for unknown populations.

Wood storks are seasonal migrants usually occurring in the TLEP study area in late summer. They use shallow water ponds or river backwaters depending on available food supplies and appropriate water levels. The management strategy for the wood stork on Fort Benning, detailed in the ESMP of the INRMP, consists of maintaining the current transient population and protecting the habitat in which they temporarily live and feed. Current management activities consist of surveys, monitoring efforts, and protection of sensitive areas (USACE, 2009). According to Fort Benning (see Table 3.8-2), this species occurs on-Post; however, USFWS records do not indicate this species occurs within the TLEP study area (see Appendix B).

The American alligator was first Federally-listed on March 11th, 1967. In 1987, the USFWS pronounced the American alligator fully recovered and it was removed from the endangered species list; however, the alligator is still listed as threatened due to "Similarity in Appearance," because some related species (several species of crocodiles and caimans) still need protection. Habitat available to the alligator is limited and consists of fishponds, beaver ponds, backwaters, sloughs, and creeks. Fort Benning's management for this species, as defined in the ESMP of the INRMP, consists of maintaining a stable population and maintaining the habitat in which it lives and feeds. Current management activities consist of surveys, monitoring efforts, and protection and maintenance of alligator habitat (USACE, 2009). According to Fort Benning (see Table 3.8-2) this species occurs on-Post; however, USFWS records do not indicate this species occurs within the TLEP study area (see Appendix B).

Bald eagles are no longer protected under the ESA; however, they are still protected under the Bald and Golden Eagle Protection Act (16 USC 668-668d). The management strategy on Fort Benning for the bald eagle is detailed in the ESMP of the INRMP, and consists of maintaining the integrity of their habitat and feeding sources in order to eventually increase the number of nesting pairs. Current management activities consist of surveys, monitoring efforts, and protection by limiting potentially disturbing activities

within primary (1,500 feet) and secondary (1 mile) buffer zones around nest sites (USACE, 2009). According to USFWS records, this species has the potential to occur in Stewart, Webster, Harris, Talbot, and Chattahoochee counties.

Gopher tortoises are considered Georgia-threatened and are state-protected by Alabama, but are not protected under the Federal ESA; however, Fort Benning actively protects and manages this species under an ESMP. A *Candidate Conservation Agreement for the Gopher Tortoise (Gopherus Polyphemus) Eastern Population* was signed by the Army in 2008 as part of an effort to collectively implement proactive gopher tortoise conservation measures across its eastern range. As part of this agreement, specific management objectives and activities for gopher tortoise have been developed and implemented by Fort Benning. Currently, between 2,500 and 3,000 individuals occur on the Installation. Fort Benning protects gopher tortoises by instructing trainees working in their potential habitat to leave individuals and their burrows alone, prohibiting vehicles within 50 feet of known burrows, and, if found in areas where construction is occurring or planned to occur, relocating those individuals to fenced areas until they establish new burrows (Rodewig, 2010). According to USFWS records (see Table 3.8-2), this species has the potential to occur in Russell, Stewart, Webster, Marion, Talbot, Muscogee, and Chattahoochee counties.

The only designated critical habitat for protected species within the TLEP study area occurs in Webster County. Webster West contains critical habitat for the Federally- and Georgia-threatened mussel, the purple bankclimber (*Elliptoideus sloatianus*), within a portion of Kinchafoonee Creek. The designated critical habitat does not extend into portions of Kinchafoonee Creek in Marion County and the Marion West (USFWS, 2010a).

3.8.1.4 STATE PROTECTED SPECIES

The State of Georgia protects T&E species within the Endangered Wildlife Act of 1973 (OCGA 27-3-5). This article protects species that are rare, unusual, or in danger of extinction by "the regulation of the capture, killing, or selling of protected species and the protection of the habitat of the species on public lands." The State of Alabama protects a number of species through the "Nongame Species Regulation" (Alabama Administrative Code 220-2-.92), which makes it "unlawful to take, capture, kill, or attempt to take, capture or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value" for certain designated species. Informal consultation was performed with the ADCNR and the Georgia Wildlife Resources Division regarding the potential for state-protected species to occur within the TLEP study area. Responses received from these agencies have been incorporated into this analysis and are included in Appendix B.

Table 3.8-2 includes the state-protected species which potentially occur in the counties of the TLEP study area.

Table 3.8-2. Protected Species Potentially Located in the TLEP Study Area

Class	Common Name	Scientific Name	Federal Status	State Status	Counties Potentially Located Within	Alternative Potential	Habitat Preferences
Plants							
Plant	Relict trillium	*Trillium reliquum*	E	E (GA)	Harris, Talbot, Muscogee	5	Shaded, undisturbed sites in moist hardwood forests
Plant	Fringed campion	*Silene polypetala*	E	E (GA)	Talbot	5	Mature hardwood or hardwood-pine forests on river bluffs, small stream terraces, moist slopes and well-shaded ridge crests
Plant	Michaux's sumac	*Rhus michauxii*	E	E (GA)	Muscogee	5	Sandy or rocky open woods, usually on ridges with a disturbance history (periodic fire, prior agricultural use, maintained rights-of-way); the known population of this species in Muscogee County has been extirpated
Plant	Georgia rockcress	*Arabis georgiana*	C	T (GA & S	Stewart, Harris, Muscogee, Chattahoochee, Russell	1, 2, 3, 4, 5	Rocky bluffs, slopes and streambanks on sandy soils
Plant	Pool Sprite, Snorkelwort	*Amphianthus pusillus*	T	T (GA)	Harris	5	Shallow pools on granite outcrops, where water collects after a rain
Plant	Croomia	*Croomia pauciflora*	N/A	T (GA)	Harris, Talbot, Muscogee, Chattahoochee	3, 4, 5	Moist deciduous woodlands, river channels, riparian areas
Plant	Lax water-milfoil	*Myriophyllum laxum*	N/A	T (GA)	Marion, Chattahoochee	1, 3, 4, 5	Shallow, clear-water ponds, bogs, sinkholes and streams
Plant	Indian olive	*Nestronia umbellula*	N/A	T (GA)	Marion, Muscogee	1, 5	Open areas in dry-mesic hardwood and pine forests
Plant	Sweet pitcher plant	*Sarracenia rubra*	N/A	E (GA)	Marion, Talbot, Muscogee	1, 5	Open sites in moist woodlands, seeps, and wetland margins
Plant	Pickering's morning-glory	*Stylisma pickeringii pickeringii*	N/A	T (GA)	Marion, Talbot, Muscogee, Chattahoochee	1, 3, 4, 5	Open scrub-woodland habitat on sandy soils

Table 3.8-2. Protected Species Potentially Located in the TLEP Study Area

Class	Common Name	Scientific Name	Federal Status	State Status	Counties Potentially Located Within	Alternative Potential	Habitat Preferences
Plant	Nevius stonecrop	*Sedum nevii*	N/A	T (GA)	Harris, Muscogee	5	Thin frantic, limestone, or shale soils
Plant	Granite rock stonecrop	*Sedum pusillum*	N/A	T (GA)	Muscogee	5	Granitic outcrops among mosses
Plant	Bay star-vine	*Schisandra glabra*	N/A	T (GA)	Chattahoochee	3, 4, 5	Twining over understory trees and shrubs or trailing over the ground in forested bottomlands and adjacent lower slopes
Plant	Plumleaf azalea	*Rhododendron prunifolium*	N/A	T (GA)	Stewart, Harris, Chattahoochee	1, 3, 4, 5	Moist soils of rich hardwood ravines
Plant	Shoals spider-lily	*Hymenocallis coronaria*	N/A	E (GA)	Harris, Talbot, Muscogee	5	Rocky shoals and cracks in bedrock along river and stream courses
Plant	Flyr's nemesis	*Brickellia cordifolia*	N/A	T (GA)	Muscogee (Fort Benning)	2, 3, 4, 5	Mesic hardwood forests
Plant	Clearwater butterwort	*Pinguicula primuliflora*	N/A	T (GA)	Marion	1	Shallow running water of sandy, clear streams and spring-fed rivulets (spring runs); also along moist streambanks in mats of peat moss
Plant	Sandhill golden-aster	*Pityopsis pinifolia*	N/A	T (GA)	Marion, Talbot	1, 5	Fall Line sandhills with open scrub oak-longleaf pine; sometimes in cleared and cut over areas, old fields, maintained rights-of- way, and pine plantations
Animals							
Mammal	Southeastern pocket gopher	*Geomys pinetis*	N/A	S	Russell	2, 4	Deep sandy soils of open areas; open areas of longleaf pine woods, dry loose soils
Bird	Red-cockaded Woodpecker	*Picoides borealis*	E	E (GA), S	Stewart, Webster, Marion, Talbot, Muscogee, Chattahoochee, Russell	1, 2, 3, 4, 5	Open mature pine woodlands, pine savannahs; nests in mature pine with low understory vegetation

Table 3.8-2. Protected Species Potentially Located in the TLEP Study Area

Class	Common Name	Scientific Name	Federal Status	State Status	Counties Potentially Located Within	Alternative Potential	Habitat Preferences
Bird	Bald eagle	*Haliaeetus leucocephalus*	DL	T (GA), S	Stewart, Webster, Harris, Talbot, Chattahoochee, Russell	1, 3, 4, 5	Forested edges of lakes, estuaries, and large rivers
Bird	Wood stork	*Mycteria americana*	E	E (GA), S	Muscogee (Fort Benning), Russell	2, 3, 4, 5	Marshes, river swamps, shrub wetlands; nests in cypress or dead hardwoods
Bird	Common ground-dove	*Columbina passerina*	N/A	S	Russell	2, 4	Open areas with plants that produce small seeds such as abandoned agricultural fields and young pine plantations and other early successional habitats
Bird	Cooper's hawk	*Accipiter cooperi*	N/A	S	Russell	2, 4	Deep mature forest (broadleaf and coniferous); forest openings may also be used when foraging
Bird	Osprey	*Pandion haliaetus*	N/A	S	Russell	2, 4	Along rivers, lakes, reservoirs, and seacoasts; typically nest on living or dead trees and also use numerous man-made structures (e.g., utility poles)
Mussel	Gulf moccasin-shell	*Medionidus pencillatus*	E	E (GA)	Webster, Muscogee, Harris, Russell	1, 2, 4, 5	Medium streams to large rivers with slight to moderate current over sand and gravel Substrates; may be associated with muddy sand substrates around tree roots
Mussel	Oval pigtoe	*Pleurobema pyriforme*	E	E (GA), S	Webster, Muscogee, Russell	1, 2, 4, 5	River tributaries and main channels in slow to moderate currents over silty sand, muddy sand, sand, and gravel substrates
Mussel	Shiny-rayed pocketbook	*Hamiota subangulata*	E	E (GA), S	Webster, Muscogee, Russell	1, 2, 4, 5	Medium creeks to the mainstems of rivers with slow to moderate currents over sandy substrates and associated with rock or clay

Table 3.8-2. Protected Species Potentially Located in the TLEP Study Area

Class	Common Name	Scientific Name	Federal Status	State Status	Counties Potentially Located Within	Alternative Potential	Habitat Preferences
Mussel	Purple bankclimber	*Elliptoideus sloatianus*	T	T (GA)	Harris, Talbot, Muscogee, Webster	1, 5	Main channels of basin rivers in moderate currents over sand, sand mixed with mud, or gravel substrates
Reptile	American alligator	*Alligator mississipp-iensis*	T	N/A	Muscogee (Fort Benning)	2, 3, 4, 5	Fresh and brackish marshes, ponds, lakes, and rivers
Reptile	Gopher tortoise	*Gopherus polyphemus*	N/A	T (GA), S	Stewart, Webster, Marion, Talbot, Muscogee, Chattahoochee, Russell	1, 3, 4, 5	Sandy soils in pine forest and grassy understory
Reptile	Barbour's map turtle	*Graptemys barbouri*	N/A	T (GA)	Stewart, Talbot, Chattahoochee	1, 3, 4, 5	Low-gradient rivers and swamps in the Apalachicola River system
Reptile	Alligator snapping turtle	*Macrochelys temminckii*	N/A	T (GA), S	Stewart, Webster, Marion, Muscogee, Chattahoochee, Russell	1, 2, 3, 4, 5	Rivers, lakes, and ponds near vegetated wetlands
Reptile	Southern hognose snake	*Heterodon simus*	N/A	T (GA)	Muscogee (Fort Benning)	2, 3, 4, 5	Fallow fields and scrub pine woodlands, well drained riparian and xeric flatwoods
Reptile	Eastern coachwhip	*Coluber flagellum*	N/A	S	Russell	2, 4	Wide range of habitats (desert, prairie, scrubland, juniper-grassland, woodland, thornforest, farmland, creek valleys, and sometimes swamps) usually in relatively dry open terrain
Reptile	Florida pine snake	*Pituophis melanoleucus mugitus*	N/A	S	Russell	2, 4	High sandy pinelands; longleaf pine-turkey oak where pocket gophers are present (eggs are laid in pocket gopher burrows or similar sites); also sand pine scrub, pine flatwoods on well-drained soils, xeric hammocks, and old fields on former sandhill sites

Table 3.8-2. Protected Species Potentially Located in the TLEP Study Area

Class	Common Name	Scientific Name	Federal Status	State Status	Counties Potentially Located Within	Alternative Potential	Habitat Preferences
Fish	Bluestripe shiner	*Cyprinella callitaenia*	N/A	T (GA)	Stewart, Harris, Talbot, Muscogee, Chattahoochee	1, 3, 4, 5	Medium to large rivers; undisturbed but unvegetated areas
Fish	Highscale shiner	*Notropis hypsilepis*	N/A	T (GA)	Stewart, Talbot	1, 3, 4, 5	Blackwater and brownwater streams
Fish	Halloween darter	*Percina crypta*	N/A	S	Russell	2, 4	Freshwater streams; relatively swiftly flowing areas over bedrock or a mixture of coarse (boulder to gravel) bed sediments

Source: NatureServe, 2010; USACE, 2009; USFWS, 2010a; USFWS, 2010b; USFWS, 2004a; USFWS, 2004b; USFWS, 2004c; USFWS, 2004d; USFWS, 2004e; USFWS, 2004f; USFWS, 2004g

AL = Alabama; C=candidate; DL=de-listed; E=endangered; GA = Georgia; N/A=not applicable; S=State Protected (Alabama); T=threatened; TLEP = Training Land Expansion Program

3.8.1.5 ECOSYSTEM MANAGEMENT

Fort Benning utilizes an ecosystem management approach for natural resource management. Natural resource managers restore and maintain ecological integrity by sustaining native plant and animal species and their habitats, controlling invasive species, restoring native species diversity, and restoring and maintaining natural communities. Concurrent with these efforts, and in cooperation with natural resource managers, training land managers rehabilitate and sustain healthy ecosystems via the ITAM program to sustain current and projected training loads and to provide realistic training scenarios. Fort Benning manages natural resources with a number of goals, including (Fort Benning, 2001):

- Maintain a realistic training environment, in accordance with an ecosystem approach, by managing for the sustainability of the Installation's natural resources;
- Restore and maintain a variety of ecosystems, with an emphasis on the longleaf pine ecosystem, to conserve native biological diversity and the ecological processes that sustain it;
- Manage hardwoods using an ecosystem approach: conserve hardwoods where they are ecologically appropriate and contribute to biological diversity; conversely, control hardwoods where they are detrimental to management goals and objectives, including restoration of the longleaf pine ecosystem;
- Manage aquatic and wetland ecosystems to restore and maintain their ecological integrity;
- Develop a strategy for management of designated unique ecological areas;
- Use forest management as part of an adaptive management approach that focuses on the ecological integrity of the landscape as its primary end state;
- Provide multiple-use opportunities that include a sustained yield of quality forest products;
- Develop a comprehensive strategy for land conservation, maintenance, and rehabilitation;
- Manage species of conservation concern using an ecosystem approach to maintain the ecological integrity of the landscape while still contributing to species recovery or maintenance;
- Manage game species, including sport fish, and nongame species using an ecosystem approach;
- Manage problematic species to eliminate or minimize adverse impacts to natural resources;
- Develop and implement a comprehensive, ecosystem-based monitoring strategy that tracks indicators of ecological change, enables the determination and use of ecological thresholds, facilitates adaptive management, and leads to a sustainable training environment by providing a basis for effective land management decisions; and
- Coordinate the actions of applicable Installation directorates to facilitate the recognition and incorporation of natural and cultural resource considerations into land use planning, environmental review, and watershed restoration projects.

3.8.1.5.1 PRESCRIBED BURNING AND TIMBER MANAGEMENT

Prescribed burning is a critical component of managing the forest ecosystems of Fort Benning, particularly with respect to the longleaf pine ecosystem including the grasses and other native plants that are characteristic of this ecosystem's understory. The objective is to restore a fire-dependent community that has been fire-suppressed and/or subjected to human induced disturbances. Fire is an important part of the natural processes that maintain the longleaf pine ecosystem and is required for RCW management; therefore, prescribed burning is required. Fires also provide training benefits of managing underbrush and pests. Fort Benning utilizes a frequent burn return-interval with an average burn rotation of three years to maintain low fuel loads (e.g., leaf litter). Of the approximate 182,000 acres of Fort Benning, approximately 90,000 acres are subject to fires on the 3 year-rotation. Approximately 70-80 percent of prescribed burns are accomplished prior to May 1 (i.e., prior to the start of the ozone forecast season). Species that are not compatible with growing season burns or RCW management are treated at different

times of the year. For example, relict trillium is not compatible with RCW treatments as it is sensitive to fire disturbances during the growing season. Therefore, prescribed burns in their vicinity are performed during the plants' dormant season, prior to their emergence. The prescribed burn season is adjusted within particular areas to achieve maximum floral diversity as not all plants respond to the same season of burn. Hardwood forest communities are managed differently than pine communities. Bottomland hardwood areas are not burned deliberately, while others are burned passively with low-intensity fires. Fires are suppressed in all emergency situations when the following are threatened: life and property, protected species, smoke sensitive areas (i.e., hospitals, cantonment areas, highways, and airfields), or a training exercise is threatened (Fort Benning, 2001).

Fort Benning currently harvests shortleaf, loblolly, and slash pine for forest and ecosystem management; hardwoods generally are not harvested. Longleaf pine plantations are replacing some areas formerly planted with loblolly and slash pine. To best mimic natural processes while considering surrounding land uses and Army training, timber harvesting is performed utilizing an uneven-aged management system or a small patch even-aged management system. Longleaf pine is capable of reaching ages in excess of 300 years, which is the desired goal. Carrying the vegetation out to old age results in less successional change in the forest, which is desirable from both ecosystem and military training standpoints. The uneven-aged management approach consists of selecting individual trees for harvesting based on health, contribution to desired stand characteristics, effect on present and future wildlife habitat requirements, and volume growth of the stand (Fort Benning, 2001).

3.8.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to biological resources that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the approach for analyzing potential impacts and defines each impact rating. A significant impact to biological resources would occur in situations where formal consultation with the USFWS would be required. Table 3.8-3 provides a summary comparison of vegetation types by Proposed Action alternative. Impacts to biological resources by alternative are detailed in Sections 3.8.2.1 through 3.8.2.6. Impacts to water resources (including open water, stream, and wetland systems) are discussed in Section 3.7.

Table 3.8-3. Percentage Vegetation Type by Proposed Action Alternative

Vegetation Type	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Deciduous Forest	18	27	38	40	30
Evergreen Forest	39	24	31	24	39
Mixed Forest	7	9	7	9	5
Shrub/Scrub	3	17	3	9	3
Grassland/Herbaceous	8	<1	10	5	12
Open Water	<1	<1	<1	<1	<1
Woody Wetlands	9	7	4	4	3
Herbaceous Wetlands	<1	<1	<1	<1	<1
Pasture/Hay	5	6	2	2	3
Cultivated	6	5	3	4	2
Bare Land	<1	<1	<1	<1	1
Developed Open Space	1	4	1	2	1

Table 3.8-3. Percentage Vegetation Type by Proposed Action Alternative

Vegetation Type	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Low Intensity Developed	<1	<1	<1	<1	<1
Medium Intensity Developed	<1	<1	<1	<1	<1

Source: NRCS, 2001

3.8.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. In addition, no acquisition of land to Federal ownership and management would occur within the TLEP study area. Land in the TLEP study area would continue to experience adverse impacts from commercial timber harvesting practices. Adverse impacts to vegetation caused by current timber harvesting activities would continue without the benefit of Army management. Degraded ecosystems within the TLEP study area would not be restored. Current timber harvesting practices halt natural forest succession and prevent the ability of RCW habitat to mature. Impacts to biological resources, therefore, under the No Action Alternative would remain moderate with timber harvesting practices dominating the landscape.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to biological resources would be the subject of future NEPA analysis and possibly additional consultation under the ESA.

3.8.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Implementation of Alternative 1 would be expected to cause short-term, localized and minor adverse impacts from construction, localized moderate adverse impacts from Army training, and long-term beneficial impacts from Army management. Adverse impacts from construction and training activities would be offset to a degree by Army management plans and programs implemented on newly acquired land, which would improve land and habitat management and rehabilitation efforts.

3.8.2.2.1 FEDERAL ACQUISITION OF LAND

The overall potential impacts to biological resources in Alternative 1 lands from Federal acquisition would be negligible. Alternative 1 lands are predominantly forested and characterized by current or historic timber harvesting activities. Large-scale commercial timber harvests would cease within Alternative 1 lands, along with the potential for timber harvest related impacts as discussed in Section 3.8.2.1. In the long term, biological resources within Alternative 1 lands would benefit from Army acquisition; biological resources would be managed and protected under Fort Benning's resource management programs (see Section 3.8.2.2.2 for a discussion of beneficial impacts under Army management).

3.8.2.2.2 ARMY MANAGEMENT

The short- and long-term effects of Army management on the natural resources within Alternative 1 lands would in general be a net beneficial impact to biological resources. Alternative 1 lands are predominantly deciduous and evergreen forest, but also contains other vegetation communities and habitats (see Table 3.8-3). Land formerly managed for commercial timber production would be managed for training and new native growth where construction activities are not planned. Fort Benning ecosystem-based forest management practices would be a benefit to biological resources compared to the traditional clear-cut timber production that currently exists.

The following is a list of resource management programs relevant to biological resources that would be updated and coordinated with appropriate Federal and state agencies to include all acquired lands. These plans would be transferred by the Army onto newly acquired land as part of the Proposed Action.

- ***INRMP.*** Under the INRMP, natural resources (e.g., vegetation, wildlife, water resources, etc.) are protected, conserved, and managed through monitoring, evaluating training impacts, and ensuring compliance with environmental laws and regulations. Fort Benning employs an ecosystem management approach, which focuses on sustaining native plant and animal species and their habitats, restoring native species diversity, and restoring and maintaining natural communities; thus, Army management of newly acquired land would be considered a beneficial impact. Fort Benning employs an uneven-aged management approach to timber production where single trees are selected for harvesting based on individual tree health (selectively thinning unhealthy and slow growing individuals), contribution to desired stand characteristics, effect on present and future wildlife habitat requirements, and volume growth of the stand. This method of timber harvesting promotes the establishment of longleaf pine (important RCW habitat) and mimics natural disturbances and forest succession and regeneration. The INRMP would be revised and developed to include newly acquired land within Alternative 1 to guide Fort Benning in land use planning, prioritizing restoration areas, and habitat management. Implementation of biological resource protection, conservation, and management measures discussed in the INRMP would also be analyzed in the NEPA document required to support INRMP updates.
- ***IPMP.*** Fort Benning utilizes integrated pest management, which is a sustainable approach to pest management. The IPMP would be used to identify and manage invasive species on newly acquired land, benefiting vegetation resources, integrity, and diversity.
- ***ESMP/C.*** As described in Section 3.8.1.3, ESMP/Cs are used by Army land managers to protect and enhance Federally-protected species occurring within the boundaries of their jurisdiction. Fort Benning has prepared ESMPs for RCW, relict trillium, wood stork, American alligator, and bald eagle and would devise and implement ESMCs for any other Federally-protected species, as applicable, on any newly acquired lands. Implementation of ESMP/Cs on newly acquired lands would be expected to have moderate beneficial impacts on Federally-protected species populations (if present) and would have indirect benefits for biological resources as well.
- ***Forest Management Plan.*** This plan, which is a component of the INRMP, provides for the management of forested land at Fort Benning, including insect and disease prevention and control, timber production, prescribed burning, wildfire suppression, and enhancement for training. This management plan is used to develop management activities that both improve the quality of the forest and support the mission of Fort Benning.
- ***ITAM.*** Under the ITAM program, land management and sustainable use of training land is addressed. The program inventories and monitors land conditions including water resources for the purposes of minimizing adverse impacts and providing land rehabilitation and maintenance, when funding is available. The ITAM program would be used to identify and repair areas of degraded water quality and promote vegetation restoration and erosion control.
- ***Development and Implementation of Watershed Management Plans.*** Under this program, watershed management plans would be developed for the newly acquired land where ground-

disturbing military activity would occur. These plans would be used to promote land rehabilitation in erosion problem areas, including areas currently degraded due to logging practices.

- ***Gopher Tortoise Conservation.*** As described in Section 3.8.1.3, Fort Benning actively works to protect gopher tortoise and their habitat as part of the *Candidate Conservation Agreement* and has developed specific management objectives and activities for gopher tortoise management. Protection of gopher tortoises and their habitat on newly acquired lands would have a moderate beneficial impact on gopher tortoise populations.

3.8.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Vegetation

Overall, construction and upgrades of training infrastructure would result in minor adverse impacts to vegetation, primarily in the forms of vegetation loss and community conversion. Construction of new roads, trails, and buildings would result in the permanent loss of vegetation. While most disturbances would result in the permanent loss of vegetation, road and trail shoulders would be graded and stabilized with vegetation, allowing some of the disturbed areas to be converted to grassy vegetation. Tree thinning and clearing would also occur for the establishment of TAAs and for tactical and command and control operations centers, which would result in a permanent loss of vegetation where site hardening would occur.

The disturbances to vegetation communities during construction activities and the transport of dirt and fill material could present opportunities for the introduction and spread of invasive plant species. The establishment and proliferation of invasive species would be inhibited to the extent practicable by planting native species in disturbed areas and implementing invasive species control measures (e.g., manual removal, mowing, and approved herbicide treatments).

Impacts to biological resources during construction would be minimized under the Fort Benning NEPA Program. During the planning stages, environmentally preferred siting would be identified and design options would be chosen for proposed projects within newly acquired land, including those to reduce vegetation and habitat loss and disturbance. Fort Benning will identify specific environmental compliance requirements and measures to reduce adverse effects to environmentally sensitive resources (including biological) are included in contract specifications for military construction projects.

Aquatic Life and Wildlife

Minor adverse impacts to wildlife and aquatic life would be expected from preparation of newly acquired land, primarily in the form of habitat loss, degradation, and fragmentation, as well as noise associated with construction projects.

Vegetation clearing to accommodate construction of new roads and trails, upgrades to existing roads and trails, construction of buildings, site hardening, and tree thinning and clearing to provide space for TAAs and command and control operations centers would result in the permanent loss and conversion of terrestrial habitat. These adverse impacts would be minor, as land within Alternative 1 would continue to provide large amounts of comparable habitat in adjacent areas for wildlife utilization. Furthermore, as described in Section 3.8.1.1.1, the majority of the land in Alternative 1 is currently in timber production, which is generally considered low quality wildlife habitat. The majority of disturbances would likely be associated with linear features (i.e., roads and trails) rather than the clearing of vast expanses; thus, impacts of habitat fragmentation may be more prevalent than impacts of habitat loss. Construction of training areas to support heavy mechanized maneuver training, however, would require large expanses of clearing and habitat loss. As a majority of land has already been cleared or affected by timber activities, fragmentation of habitat loss would not be anticipated to result in significant adverse impacts. During

construction, it is possible that accidental mortality of wildlife could occur due to collisions with vehicles and equipment.

Construction and disturbances associated with land improvements could cause long-term minor, direct impacts to migratory bird species primarily through habitat loss and fragmentation. Forest-interior dwelling migratory birds would experience a loss of available habitat for nesting and foraging; however, the amount of habitat loss would be minor as compared to the amount of comparable habitat near Alternative 1, thus adverse impacts would be minor. In addition, the establishment of linear features (i.e., roads and trails) would provide open spaces that nest predators (e.g., raccoons) could exploit to access forest-interior locations and prey on forest-interior bird eggs. These impacts would be minor as the amount of forest edge created compared to the amount of interior forest that would continue to exist would be minimal and it is not expected that noticeable declines in bird populations would occur. It is important to note that a degree of habitat fragmentation currently exists within Alternative 1 lands due to past and ongoing logging activities, and the acquisition of this land by the Army may actually reduce the rate of fragmentation into the future.

In accordance with the MBTA, Fort Benning would be required to consider the protection of migratory birds when planning and executing non-military readiness activities on newly acquired lands; no direct take of individuals would be expected (aside from possible accidental collisions with vehicles). Fort Benning would, to the extent practicable, perform construction and land preparation activities outside of the migratory bird nesting season (generally April through August) to protect nests.

Short-term adverse impacts to aquatic species could occur as a result of increased soil disturbance from in-stream construction activities for hardened water crossings. Construction of water crossings would cause temporary disruption of aquatic habitat at the construction site and could cause temporary increased sedimentation, which could cause temporary impacts to aquatic species. Ultimately, increased sedimentation can fill in empty spaces in streambeds, which provide habitat for aquatic macroinvertebrates; declines in macroinvertebrate numbers also reduce food resources for insectivorous fish species. Stream crossings may also act as potential barriers to the movement of small-stream fish. These impacts, however, would likely be minor and temporary with the use of hardened low-water crossings. Hardened water crossings do not have long-term adverse effects on benthic conditions or water chemistry. Materials used for the crossings (e.g., limestone) may cause short-term increases in the concentrations of certain chemical constituents (e.g., calcium); however, the dissolution of the materials ceases after a period of time (Bryan et. al., 2007). Future construction of any culverted or bridged systems over surface waters could cause construction-related sedimentation, loss of streambed habitat, and impediments to fish passage; however, these impacts would be expected to be minor as they would likely affect relatively small areas of surface waters. In addition, construction of such structures in jurisdictional waters would require CWA Section 404 permitting, which would provide a regulatory mechanism to minimize adverse impacts.

Creation of impervious surfaces would potentially increase stormwater runoff and have the potential to cause flash flows during heavy rainfall events, potentially leading to aquatic habitat degradation and constituting an adverse impact. The use of sediment basins adjacent to surface water resources for projects with greater potential for stormwater runoff would reduce impacts to a negligible level.

Noise from construction activities may disturb animals or displace them to less favorable habitat; however, wildlife responses to noise may be species-specific, and could result in either avoidance or habituation. Avoidance could cause species to under-use high-quality habitat near disturbance areas, potentially resulting in wildlife utilizing areas with more limited or lower quality food resources and/or lower quality breeding habitat. It is likely that construction equipment would produce similar noise levels to the existing logging operations, which occur throughout Alternative 1. Resident wildlife may be habituated to such noise levels, and therefore, construction-related noise impacts would be expected to be short-term and minor.

Federal and State Endangered, Threatened, and Candidate Species

Federally- and state-protected species that could potentially occur within Alternative 1 are listed in Table 3.8-2. Federally-protected species that could be associated with Alternative 1 include: Georgia rockcress, RCW, bald eagle, gulf moccasinshell, oval pigtoe, shiny-rayed pocketbook, and purple bankclimber. State-protected species that could be associated with Alternative 1, aside from those that are also Federally-protected noted above, include: lax water-milfoil, Indian olive, sweet pitcher plant, Pickering's morning-glory, plumleaf azalea, clearwater butterwort, sandhill golden-aster, gopher tortoise, Barbour's map turtle, alligator snapping turtle, bluestripe shiner, and highscale shiner.

As described in Section 3.8.1.1.1, the majority of the land in Alternative 1 is currently in timber production, which is generally considered low quality wildlife habitat; therefore, it is likely that existing land management practices have substantially reduced the potential to encounter protected species, such as the RCW.

For Federally-protected species, the Army would initiate consultation with the USFWS prior to construction in newly acquired land to determine the presence of Federally-protected species and whether the preparation of a BA would be required. Federal agencies are required to determine whether their actions may affect Federally-listed or proposed species and designated and proposed critical habitat. If an agency determines that their activity may affect Federally-protected species, a BA is prepared, which assesses potential impacts to the protected species, and further consultation with the USFWS occurs. Fort Benning would conduct surveys for the Federally-protected species potentially present within new construction footprints. As per the requirements of AR 200-1, Fort Benning would devise and implement ESMCs for Federally-protected species to include the species and habitat management as appropriate for any newly acquired land. Procedures would be outlined within the ESMCs to manage Federally-protected species and establish target recovery goals, which would ultimately benefit resident populations.

There is designated critical habitat for the purple bankclimber within a portion of Kinchafoonee Creek in Webster County. Impacts to purple bankclimber habitat would be the same as those described above for aquatic species under "Aquatic Life and Wildlife;" however, as per AR 200-1, Fort Benning would be required to devise and implement an ESMC for this section of the waterway. Implementation of an ESMC would be expected to drastically minimize adverse impacts and, ultimately, would be expected to result in an enhancement of habitat quality.

If present, specific impacts to Federally-protected species occurring within Alternative 1 lands could occur as follows:

- ***Georgia rockcress:*** The species could be disturbed by construction activities, primarily in sandy soil areas adjacent to streambanks; however, as a Federally-protected species, surveys for this species prior to construction would be expected to substantially minimize the potential for impacts to occur. If this species were determined present, further protections would be afforded by the development and implementation of an ESMC for this species this could include expanding the GEPD-required 25-foot buffer of water resources.
- ***RCW:*** A low probability exists for suitable RCW habitat within Alternative 1 due to past and current logging activities. If this species were determined present, implementation of an ESMP/C on newly acquired land would reduce the potential for impacts to occur.
- ***Bald eagle:*** It is unlikely that impacts to bald eagles would occur. Construction could cause the removal of nesting habitat near surface waters; however, this is considered highly unlikely as Fort Benning would employ its ESMP/C to protect bald eagles and their habitat.
- ***Mussel species:*** Mussel species could incur minor impacts resulting from decreased water quality, primarily in the form of increased sediment loads; however, the majority of impacts would be short-term and associated with construction activities. The development and implementation of ESMCs for these species and purple bankclimber critical habitat in Kinchafoonee Creek would drastically reduce the potential for adverse impacts.

As presented in Table 3.8-2, state-protected species may also exist within Alternative 1 where suitable habitat exists. As previously stated, the extensive practice of commercial timbering within the TLEP study area reduces the quality of habitat and diversity of species. The presence of these species is therefore unlikely. Although not Federally-protected under the ESA, Fort Benning would coordinate with the GDNR to identify the potential for state-protected species prior to construction. If present, Fort Benning would work with GDNR in minimizing impacts to these species.

3.8.2.2.4 ARMY TRAINING

Vegetation

Impacts to vegetation from training activities would be directly related to their type, location, duration, intensity, and soil and weather conditions. Vehicle operations on established paved and unpaved roads within newly acquired land would have negligible impacts to vegetation. Ground operations such as off-road vehicle use, large dismounted operations (e.g., foot Soldier maneuvers), and field operations (e.g., large-scale bivouacking and establishment of combat support areas and/or field hospitals) would cause moderate land disturbance over a potentially large area of land. The exact locations of activities would be determined by specific activity, and locations would vary on an annual basis. Off-road vehicle use would be expected to cause moderate, long-term, adverse impacts to vegetation, resulting from cross-country maneuver, trampling of vegetation and root damage from vehicle passage, and soil compaction in areas with frequent off-road traffic. Soil compaction could slow natural revegetation and gradually reduce the density of forest understory to plants tolerant of heavy traffic. This is particularly true in the case of off-road maneuver associated with tracked vehicles (e.g., tanks). For these types of off-road maneuvers, impacts may be greater than those from wheeled vehicles; however, they would be mitigated through continued implementation of the ITAM program. Herbaceous, shallow-rooted plants more tolerant of disturbance could become more prevalent in frequently used areas. Excavation for development of defensive positions (excavation of individual fighting positions) and for emplacement of obstacles (e.g., simulated mines) would cause soil disturbance and associated vegetation loss; however, these impacts would likely be minor with Army management. Excavation/construction of deliberate defenses (involving the excavation/construction of vehicle positions, ditches, berms, and bunkers) would disturb larger land areas than hasty or limited defensive positions during training exercises.

Vegetation disturbance from training could increase opportunities for the introduction or spread of invasive plant species, which are often the first to colonize disturbed areas. As considerable amounts of lands within Alternative 1 have been disturbed due to timber harvesting, a benefit in the reduction of invasive species would be anticipated from management activities and reintroduction of prescribed fire as discussed within the INRMP.

Aquatic Life and Wildlife

Off-road vehicle use, large dismounted operations (e.g., foot Soldier maneuvers), and field operations (e.g., large-scale bivouacking and establishment of combat support areas and/or field hospitals) could cause heavier land disturbance and could result in decreased species diversity in frequently used areas. Adverse impacts to wildlife would be moderate and include the avoidance and displacement of wildlife from the presence of people, systems, and facilities, as well as the generation of associated noise. Generated noise could also result in interruptions of nesting and breeding locations (including migratory bird species), interruptions to migration/wildlife corridors, and startling behaviors; however, elevated noise sources and human activity are common within Alternative 1 due to timber harvesting activities.

Vehicle maneuvers during training would result in minor impacts from increased potential of direct mortality of individuals from collisions, particularly with less mobile species. Off-road vehicle maneuvers would also cause habitat loss and degradation. Fort Benning's forest management measures, as indicated in the INRMP, however, would reduce potential adverse impacts to habitat from Army training to moderate levels.

As previously stated in Section 3.8.2.2.3, Army use of the low-water crossings do not cause detectable differences in water quality or benthic conditions (Bryan et. al., 2007). Impacts to aquatic habitat from Army use of established low-water crossings, therefore, would be negligible to minor.

Federal and State Endangered, Threatened, and Candidate Species

As previously stated, Federally- and state-protected species could potentially occur within Alternative 1 locations. As described in Section 3.8.1.1.1, however, the majority of the land in Alternative 1 is currently in timber production, which is generally considered low quality wildlife habitat; therefore, it is not likely that protected species would be present.

As described in Section 3.8.2.2.3, for Federally-protected species, the Army would informally consult with the USFWS prior to the start of training activities in newly acquired land to determine the presence of protected species and whether the preparation of a BA would be required. As per the requirements of AR 200-1, Fort Benning would prepare and implement ESMP/Cs for Federally-protected species occurring within any newly acquired land. The implementation of additional ESMP/Cs would minimize potential impacts to Federally-protected species and, ultimately, it is the desired goal that beneficial impacts would result to resident populations..

As presented in Table 3.8-2, state-protected species may also exist within Alternative 1 where suitable habitat exists. As previously stated, the extensive practice of commercial timbering within the TLEP study area reduces the quality of habitat and diversity of species. The presence of these species is therefore unlikely. Although not Federally-protected under the ESA, Fort Benning would coordinate with the GDNR to identify the potential for state-protected species. If present, Fort Benning would work with GDNR in minimizing impacts to these species from training activities.

3.8.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3). The land area included in Alternative 2 contains a similar composition of vegetation and habitat as those in Alternative 1 (i.e., primarily deciduous and evergreen forest with smaller amounts of mixed forest and shrub/scrub vegetation) (Table 3.8-3). Similar to Alternative 1, timber harvesting land management is prevalent throughout the area.

Overall, negligible impacts from Federal acquisition of land, minor localized impacts from construction, and moderate localized adverse impacts from training would occur and would be similar to those described under Alternative 1 (Section 3.8.2.2). Also similar to Alternative 1, Army management of the land would provide moderate beneficial impacts to biological resources.

Federally- and state-protected species that could potentially occur within Alternative 2 are described in Table 3.8-2. There would be a slightly different composition of protected species potentially present within Alternative 2 as compared to Alternative 1. There is no designated critical habitat for Federally-protected species in Alternative 2. Federally-protected species that could be associated with Alternative 2 include: Georgia rockcress, RCW, wood stork, bald eagle, shiny-rayed pocketbook, gulf moccasinshell, oval pigtoe, and American alligator. State-protected species that could be associated with Alternative 2, aside from those that are Federally-protected noted above, include: southeastern pocket gopher, common ground-dove, Cooper's hawk, osprey, gopher tortoise, alligator snapping turtle, eastern coachwhip, Florida pine snake, and Halloween darter.

As described in Section 3.8.2.2.3, for Federally-protected species, the Army would informally consult with the USFWS prior to the start of training activities in newly acquired land to determine the presence of protected species and whether the preparation of a BA would be required. As per the requirements of AR 200-1, Fort Benning would prepare and implement ESMP/Cs for Federally-protected species occurring within any newly acquired land. The implementation of additional ESMP/Cs would minimize

potential impacts to Federally-protected species and, ultimately, it is the desired goal that beneficial impacts would result to resident populations.

3.8.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3). The land area included in Alternative 3 contains a similar composition of vegetation and habitat as those in Alternative 1 (i.e., primarily deciduous and evergreen forest with smaller amounts of mixed forest and shrub/scrub vegetation) (Table 3.8-3). Similar to Alternative 1, timber harvesting land management is prevalent throughout the area.

Overall, negligible impacts from Federal acquisition of land, minor localized impacts from construction, and moderate localized adverse impacts from training would occur and would be similar to those described under Alternative 1 (Section 3.8.2.2). Also similar to Alternative 1, Army management of the land would provide moderate beneficial impacts to biological resources.

Federally- and state-protected species that could potentially occur within Alternative 3 locations are described in Table 3.8-2. There would be a slightly different composition of protected species potentially present within Alternative 3 as compared to Alternative 1. There is no designated critical habitat for Federally-protected species in Alternative 3. Federally-protected species that could be associated with Alternative 3 include: Georgia rockcress, RCW, bald eagle, wood stork, and American alligator. State-protected species that could be associated with Alternative 3, aside from those that are Federally-protected noted above, include: croomia, lax water-milfoil, Pickering's morning-glory, bay star-vine, plumleaf azalea, Flyr's nemesis, gopher tortoise, Barbour's map turtle, alligator snapping turtle, southern hognose snake, bluestripe shiner, and highscale shiner.

As described in Section 3.8.2.2.3, for Federally-protected species, the Army would informally consult with the USFWS prior to the start of training activities in newly acquired land to determine the presence of protected species and whether the preparation of a BA would be required. As per the requirements of AR 200-1, Fort Benning would prepare and implement ESMP/Cs for Federally-protected species occurring within any newly acquired land. The implementation of additional ESMP/Cs would minimize potential impacts to Federally-protected species and, ultimately, it is the desired goal that beneficial impacts would result to resident populations.

3.8.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3). The land area included in Alternative 4 contains a similar composition of vegetation and habitat as those in Alternative 1 (i.e., primarily deciduous and evergreen forest with smaller amounts of mixed forest and shrub/scrub vegetation) (Table 3.8-3). As is the case with Alternative 1, timber harvesting land management is prevalent throughout the area.

Overall, negligible impacts from Federal acquisition of land, minor localized impacts from construction, and moderate localized adverse impacts from training would occur and would be similar to those described under Alternative 1 (Section 3.8.2.2). Also similar to Alternative 1, Army management of the land would provide moderate beneficial impacts to biological resources.

Federally- and state-protected species that could potentially occur within Alternative 4 are described in Table 3.8-2. There would be a slightly different composition of protected species potentially present within Alternative 4 as compared to Alternative 1. In addition, there is no designated critical habitat for Federally-protected species in Alternative 4. Federally-protected species that could be associated with Alternative 4 include: Georgia rockcress, RCW, bald eagle, wood stork, gulf moccasinshell, oval pigtoe,

shiny-rayed pocketbook, and American alligator. State-protected species that could be associated with Alternative 4, aside from those that are also Federally-protected noted above, include: croomia, lax water-milfoil, Indian olive, Pickering's morning-glory, bay star-vine, plumleaf azalea, Flyr's nemesis, southeastern pocket gopher, common ground-dove, Cooper's hawk, osprey, gopher tortoise, Barbour's map turtle, alligator snapping turtle, southern hognose snake, eastern coachwhip, Florida pine snake, Halloween darter, bluestripe shiner, and highscale shiner.

As described in Section 3.8.2.2.3, for Federally-protected species, the Army would informally consult with the USFWS prior to the start of training activities in newly acquired land to determine the presence of protected species and whether the preparation of a BA would be required. As per the requirements of AR 200-1, Fort Benning would prepare and implement ESMP/Cs for Federally-protected species occurring within any newly acquired land. The implementation of additional ESMP/Cs would minimize potential impacts to Federally-protected species and, ultimately, it is the desired goal that beneficial impacts would result to resident populations.

3.8.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3). The land areas included in Alternative 5 contain a similar composition of vegetation and habitat as those in Alternative 1 (i.e., primarily deciduous and evergreen forest with smaller amounts of mixed forest and shrub/scrub vegetation) (Table 3.8-3). Similar to Alternative 1, timber harvesting land management is prevalent throughout the area.

Overall, negligible impacts from Federal acquisition of land, minor localized impacts from construction, and moderate localized adverse impacts from training would occur and would be similar to those described under Alternative 1 (Section 3.8.2.2). Also similar to Alternative 1, Army management of the land would provide moderate beneficial impacts to biological resources.

Federally- and state-protected species that could potentially occur within Alternative 5 locations are described in Table 3.8-2. There would be a slightly different composition of protected species potentially present within Alternative 5 as compared to Alternative 1. There is no designated critical habitat for Federally-protected species in Alternative 5. Federally-protected species that could be associated with Alternative 5 include: relict trillium, fringed campion, Michaux's sumac, Georgia rockcress, pool sprite (snorkelwort), RCW, bald eagle, wood stork, gulf moccasinshell, oval pigtoe, shiny-rayed pocketbook, purple bankclimber, and American alligator. State-protected species that could be associated with Alternative 5, aside from those that are also Federally-protected noted above, include: croomia, lax water-milfoil, Indian olive, sweet pitcher plant, Pickering's morning-glory, Nevius' stonecrop, granite rock stonecrop, bay star-vine, plumleaf azalea, shoals spider-lily, Flyr's nemesis, sandhill golden-aster, gopher tortoise, Barbour's map turtle, alligator snapping turtle, southern hognose snake, bluestripe shiner, and highscale shiner.

As described in Section 3.8.2.2.3, for Federally-protected species, the Army would informally consult with the USFWS prior to the start of training activities in newly acquired land to determine the presence of protected species and whether the preparation of a BA would be required. As per the requirements of AR 200-1, Fort Benning would prepare and implement ESMP/Cs for Federally-protected species occurring within any newly acquired land. The implementation of additional ESMP/Cs would minimize potential impacts to Federally-protected species and, ultimately, it is the desired goal that beneficial impacts would result to resident populations.

3.8.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts for biological resources that would be expected to occur with the implementation of the alternatives. A complete description of the cumulative impacts methodology

and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.2.

In general, past activities that have caused adverse impacts to biological resources in the TLEP study area are primarily associated with timber management activities and land development. Past timber management has altered vegetation communities and wildlife habitat over a wide portion of the TLEP study area. Land development has removed vegetation and habitat in many locations and likely caused some degree of habitat degradation in adjacent locations. Fort Benning construction and training activities have caused vegetation loss, habitat loss, and habitat degradation on-Post; however, with Army management of training land, Fort Benning currently maintains diverse ecological communities.

Essentially, future land development projects can cause a loss/degradation of terrestrial vegetation and degradation of surface waters, which ultimately leads to adverse impacts on vegetation (i.e., the loss of native vegetation), aquatic life and wildlife (i.e., loss or degradation of available, usable terrestrial [vegetative] and aquatic habitat), and Federal and state endangered, threatened, and candidate species (i.e., loss or degradation of available, usable terrestrial [vegetative] and aquatic habitat). Cumulative impacts to biological resources, therefore, consist mainly of vegetation losses and associated habitat losses as well as habitat degradation, which is the primary means by which aquatic species could be adversely affected. As shown in Section 3.1.3.2, limited reasonably foreseeable future regional activities that could lead to a loss of vegetation and decline/degradation in habitat for aquatic life and wildlife and Federal and state endangered, threatened, and candidate species exists. The primary action identified is the construction of a new 100-acre industrial park in Talbot County. This impact, however, would minimally contribute to impacts if Alternative 5 is chosen. The main other type of action identified which could contribute to impacts to biological resources are roadway improvements projected for Russell and Chattahoochee counties. As these projects involve improvement to existing roadways (i.e., surface repair and widening), these projects would minimally contribute to impacts regardless of alternative chosen.

3.8.4 PROPOSED MITIGATION

Mitigation measures will be determined through consultation with the USFWS regarding potential impacts from construction and training to any Federally-listed species in an alternative study area. This may include the development and implementation of ESMP/Cs, as necessary.

3.9 CULTURAL RESOURCES

3.9.1 AFFECTED ENVIRONMENT

This section provides a summary of Fort Benning's existing CRM Program and the phased approach for identification of cultural resources at this stage of the Proposed Action, including results to date. Fort Benning follows the AAP for implementing Section 106 compliance in lieu of 36 CFR 800 (36 CFR 800.14). Other sections of this EIS identify the geographic area of analysis for various resources as the ROI. For purposes of this section of the EIS, and consistent with the rules of the ACHP implementing the National Historic Preservation Act (NHPA) Section 106 (36 CFR 800), the geographic area or study area of analysis for cultural resources is referred to as the "Area of Potential Effect" (APE). The APE encompasses the land within the boundaries of the alternatives under study in this EIS. Appendix D contains a detailed overview of the regional cultural context, including prehistoric, Native American, and county histories.

AR 200-1, *Environmental Protection and Enhancement*, defines the term "cultural resources" as historic properties as defined by the NHPA, cultural items as defined by NAGPRA, archeological resources as defined by ARPA, sacred sites as defined in EO 13007 (*Indian Sacred* Sites) to which access is afforded under the American Indian Religious Freedom Act, significant paleontological items as described by 16 USC 431–433 (*Antiquities Act of 1906*), and collections and associated records as defined in 36 CFR 79 (*Curation of Federally-Owned and Administered Archeological Collections*). Legal significance attaches to certain categories of cultural resources as described below. These legal distinctions, as used in this EIS, are not intended to diminish the value or community significance of the particular resource.

- ***Historic Properties.*** Historic properties are above-ground and/or subsurface properties or sites that are generally at least 50 years of age and that are either listed on the NRHP or are eligible for listing on the NRHP because they meet certain criteria established in the rules of the U.S. Department of Interior, National Park Service, at 36 CFR 60. The listing and eligibility determinations involve professional evaluations of whether the property is historically significant within its context under Criterion A (events), B (people), C (architecture or engineering), or D (data) and the level of significance (local, state, or national).
- ***NHPA Section 106 Review*** applies only to historic properties that are NRHP-listed or NRHP-eligible. Such properties are further subdivided as follows:
    - Building – an aboveground structure created to shelter any form of human activity (36 CFR 60.3(a)).
    - Site – the location of a significant event, prehistoric or historic activity, or a building or structure (whether standing, ruined, or vanished), where the location itself maintains historic or archaeological value regardless of the value of any existing structure (36 CFR 60.3(l)).
    - Structure – a human-engineered work (36 CFR 60.3(p)).
    - Object – a material thing of functional, aesthetic, cultural, historic, or scientific value that may be moveable yet related to a specific setting (36 CFR 60.3(j)).
    - District – a geographically definable area possessing a significant concentration, linkage, or continuity of buildings, sites, structures, or objects united by past events or aesthetically by plan or physical development (36 CFR 60.3(d)).
- ***Properties of Traditional Religious and Cultural Importance/Traditional Cultural Properties.*** A Property of Traditional Religious and Cultural Importance or Traditional Cultural Property (TCP) is a place associated with the cultural practices or beliefs of a living community that (a) are

rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community. Examples include a location associated with the traditional beliefs of a Tribe about its origins, its cultural history, or the nature of the world; or a rural community whose organization, buildings and structures, or patterns of land use reflect the cultural traditions valued by its long-term residents (*National Register Bulletin 38, Guidelines for Evaluating and Documenting Traditional Cultural Properties*). Each Federal agency is required to identify all Tribes having aboriginal or historic ties to its jurisdictional land and to seek to determine through the relevant Tribal official(s) the location and nature of TCPs (per 32 CFR 229.7(b)(1), rules implementing the ARPA of 1979). This duty extends to both Federally-recognized Native American Tribes and Native American groups (32 CFR 229.7(b)(1)).

- ***Cemeteries.*** As explained in National Register Bulletin 41 of the National Park Service, cemeteries and burial places (including military cemeteries) older than 50 years are not typically considered NRHP-eligible. Cemeteries, however, may be NRHP-eligible in the following circumstances:
    - They are an integral part of a larger property eligible under Criterion A (for association with events, such as a battle), B (for association with a person if there is no other remaining structure that reflects that person's life, or for collective association with several people who made important contributions to a town, region, state, or nation), or C (for artistic design and style). An example would be a cemetery physically present in association with a still-existing church; or
    - They are considered an archaeological site that has yielded or has the potential to yield important information (Criterion D) about a historic event or period; or
    - They meet one or more special "Criteria Considerations" established in Bulletin 41. Special Criterion Consideration D (association with historic events and activities, Bulletin 41 pp. 16-17) has the most potential to apply to one or more of the cemeteries for their association with early settlement in the region.
- ***Native American Sacred Sites.*** A "sacred site" is a specific, discrete, narrowly delineated location identified by a Tribe or authorized Tribal representative to a Federal agency as sacred by virtue of its established religious significance to, or ceremonial use by, a Native American religion (Presidential EO 13007, *Indian Sacred Sites*, issued May 24th, 1996). This Presidential directive mandates that Federal agencies accommodate Tribal access and use of Native American sacred sites to the extent practicable and avoid adverse impacts to such sites.
- ***Archaeological Resources Protection Act of 1979 (16 USC 470aa-470mm; Public Law 96-95 and amendments).*** The ARPA was enacted to protect archaeological resources on Federal land. Archaeological resources include sites, isolated finds, features, and artifacts from prehistoric peoples as well as from historic occupations greater than 50 years of age. The ARPA establishes a permitting process for archaeological excavations on Federal lands and Native American reservations to ensure that archaeological studies are conducted following a research design with proper curation of the collected materials. The ARPA also requires that Federal agencies restrict access to information about archaeological site locations. The ARPA also significantly increased penalties and prosecution for violators of the act.
- ***Native American Graves Protection and Repatriation Act (Public Law 101-601).*** The NAGPRA provides a process for the repatriation of burial artifacts collected by Federal agencies and museums. The NAGPRA also requires that Federal agencies consult with Tribes when Native American burials are encountered or may be affected by construction and other actions.

TCPs and Native American Sacred Sites are not necessarily NRHP-eligible. Even if not NRHP-eligible, however, such sites or areas are evaluated under NEPA (see 40 CFR 1508.8). Further, the locations of such sites, as well as archaeological sites that may be NRHP-listed or -eligible, may be maintained in

confidentiality under various state and Federal laws to protect them from intentional damage or destruction, per the ARPA and NAGPRA.

3.9.1.1 FORT BENNING CULTURAL RESOURCES MANAGEMENT PROGRAM

The approach that Fort Benning would take with respect to the identification, evaluation, consideration, and protection of cultural resources within the APE for the Proposed Action is based upon its existing framework for cultural resources management.

3.9.1.1.1 GENERAL RESPONSIBILITY AND DUTY

Section 110(a)(1) of the NHPA provides that all Federal agencies are responsible for the preservation of historic properties they own or control. Section 110(a)(2)(B) of the NHPA imposes a general duty requirement on Federal agencies for management and maintenance of their historic properties.

Section 110(a)(2) of the NHPA requires Federal agencies to implement a preservation program that includes surveying their land and real property assets for identification, inventorying, and evaluating properties that may be eligible for the NRHP (see also the ARPA, 16 USC 470aa-mm, Section 14(a)&(b), 32 CFR 229.21(a)&(b), Presidential EO 11593 Section 2(a) [*Protection and Enhancement of the Cultural Environment*, issued May 13th, 1971] and Presidential EO 13287 [*Preserve America*, issued March 3rd, 2003]).

3.9.1.1.2 PROGRAM MANAGEMENT

AR 200-1, *Environmental Protection and Enhancement,* requires that each installation:

- Develop an ICRMP for use as a planning tool (6-4.a.(1)).
- Incorporate the INRMP into the ICRMP (4-3.d.(1)(*l*)).
- Develop compliance documents as needed (6-4.a.(2)).
- Appoint a government employee as the Cultural Resources Manager (6-4.a.(3)).
- Establish a Government-to-Government relationship with Tribes (6-4.a.(4)).
- Establish a process for early coordination between the Cultural Resource Manager and all internal and external stakeholders for cultural resource requirements relating to projects and actions (6-4.a.(5)).

3.9.1.1.3 INTEGRATED CULTURAL RESOURCES MANAGEMENT PLAN

The current ICRMP for Fort Benning was finalized in FY 2008. The ICRMP is a five-year plan effective through 2012 that integrates the cultural resource program with on-going mission activities. The ICRMP structures and guides the implementation of the Army's CRM Program at Fort Benning and contains an internal Army management plan and a HPC for actions requiring review. The ICRMP is a modular plan containing sections that include: 1) Introduction, which addresses the location, setting, and significance of Fort Benning; 2) Planning Summary, which includes mission statements and CRM goals with major accomplishments over the past five years; 3) Management, which outlines CRM responsibilities and management framework; and 4) Integration, which address the review process for undertakings and the integration of CRM with Fort Benning's operations. The HPC provides a discussion of the survey level data, settings, and contexts for different historic property types and presents SOPs for use in assessing proposed actions and their potential effects. The HPC was certified by the ACHP in 2006.

CRM at Fort Benning is based in EMD. The DPW reports to the Garrison Commander who coordinates cultural resource programs with the Functional Unit Manager. The cultural resource program is directed by the Cultural Resource Manager who oversees a team that includes archaeologists, architectural historians, and GIS technicians and that coordinates with the Environmental Attorney, Engineers, the

Infantry Branch Historian, the National Infantry Museum Director, the Curator, and the Public Affairs Office on an as-needed basis. The Cultural Resource Manager oversees all cultural resources on Fort Benning as well as the implementation of SOPs. The responsibilities of the Cultural Resource Manager include the following duty categories: program planning, program management, integration with stakeholders, public education and outreach, compliance evaluation, technical expertise and research, and training (Fort Benning, 2008c). The Cultural Resource Manager oversees reports and reviews of cultural resource actions; compliance with the ARPA, NAGPRA, NHPA, and other laws and regulations; coordination with stakeholders through early involvement in project planning; Tribal outreach and consultation; the enlistment and retention of personnel and public support for outreach efforts; monitoring and enforcement of cultural resource compliance with the assistance of attorneys and investigators; research studies aimed at addressing data deficiencies; and provides training on cultural resources to Senior Environmental Compliance Officers (Fort Benning, 2008c).

The ICRMP contains SOPs for the compliance with all Federal laws and regulations such as Section 106 and 110 of the NHPA, ARPA, NAGPRA, American Indian Religious Freedom Act, and the curation of archaeological collection. The purpose of the AAP is to expedite and facilitate the review of undertakings in accordance with Section 106 that may affect historic properties using the NEPA process for coordination and consultation. A Fort Benning Form 144R (through the NEPA process) is issued by project proponents and reviewed by the Cultural Resources Manager. If the Cultural Resources Manager determines the project will have no effect on historic properties, their concurrence on the 144R terminates cultural resource review, and SHPO and Tribal consultation is not required. Records of all actions are kept for SHPO and Tribal bi-annual review. Should projects have an adverse effect on historic properties that requires mitigation, then SHPO and Tribal consultation is conducted and Fort Benning consults via NEPA documentation when determining how to mitigate adverse effects; however, under the AAP and HPC, Memoranda of Agreement are not needed for project mitigations, and the NEPA and HPC processes are used to determine and implement mitigation actions in a more timely fashion.

Fort Benning has completed its Section 110 responsibilities to inventory cultural properties on the Installation, except in areas that pose a safety risk. An archaeological survey of more than 170,000 acres (all of the Installation except areas with safety risks, such as impact/dud zones) was completed by 2003 and a total of 3,982 archaeological sites were identified. Of these, 3,062 have been determined ineligible for the NRHP, 156 have been determined eligible, and the evaluation of the remaining 764 sites is in progress. Architectural history surveys have identified 1,782 buildings, structures, and objects on the Installation, 638 of which contribute to 4 NRHP districts; 1) the Main Post Historic District, 2) the KLSF Historic District; 3) the Parachute Jump Tower District, and 4) the Ammunition Storage Historic District.

There are a total of 80 historic cemeteries identified on Fort Benning. None of these are considered to be historic properties, and all are managed by Fort Benning. No TCPs or Native American Sacred Sites have been identified on the Installation.

3.9.1.1.4 SUPPORTING PARTNERS, FACILITIES, AND CAPABILITIES

Georgia and Alabama State Historic Preservation Offices. The primary interface between Fort Benning and the SHPO is consultation on the Installation's ongoing program of survey and identification and special projects or activities, such as the Proposed Action.

Advisory Council on Historic Preservation. The ACHP provides comment on undertakings, when requested.

Native American Interests. There are 13 Tribes that claim traditional ties to land in the Fort Benning region, 11 of which indicated that they want Fort Benning to consult with them: the Alabama-Coushatta Tribe of Texas, the Alabama/Quassarte Tribe of Oklahoma, the Chickasaw Nation, the Kialegee Tribal Town, the Mississippi Band of Choctaw Native Americans, the Muscogee (Creek) Nation of Oklahoma, the Poarch Band of Creek Native Americans, the Seminole Nation of Oklahoma, the Seminole Tribe of

Florida, the Thlopthlocco Tribal Town, and the United Keetoowah Band of Cherokee Native Americans. Representatives from many of these Tribes have participated in Native American bi-annual consultation meetings with Fort Benning.

Fort Benning has established a Native American Reinternment Site for the reburial of human remains and funerary objects that cannot be left in place at their original location on-Post or in the region.

Curation Facility. Fort Benning's Curation Facility is located in Building 364, a renovated historic structure with environmental controls that meet the standards of 36 CFR 79, *Curation of Federally-Owned and Administered Archaeological Collections.*

3.9.1.2 PROCESS FOR IDENTIFICATION OF RESOURCES

Complete survey information on the identification of cultural resources within the alternative study areas is not currently available or necessary at this stage of the Proposed Action, which is the review of alternatives for the selection of potential acquisition of individual tracts for future military training.

The approach that Fort Benning takes to identify cultural resources at this stage of the Proposed Action is a phased approach as provided in 36 CFR 800.4 (b)(2):

> "…Where alternatives under consideration consist of corridors or large land areas…the agency…may use a phased process to conduct identification and evaluation efforts. The agency official may also defer final identification and evaluation of historic properties if it is specifically provided for in…the documents used to comply with [NEPA] pursuant to 800.8. The process should establish the likely presence of historic properties within the [APE] for each alternative or inaccessible area through background research, consultation and an appropriate level of field investigation, taking into account the number of alternatives under consideration, the magnitude of the undertaking and its likely effects, and the views of the SHPO/Tribal Historic Preservation Officer (THPO) and any other consulting parties. As specific aspects or locations of an alternative are refined or access is gained, the agency official shall proceed with identification and evaluation of historic properties…."

Section 3.9.1.4 provides a preliminary identification of cultural resources (above-ground standing structures and archaeological sites) in the areas under consideration in Harris, Talbot, Marion, Webster, Stewart, Chattahoochee and Muscogee counties, Georgia, and Russell County, Alabama, based on: 1) public sources (e.g., surveys, databases); 2) past and on-going consultations with Tribes; and 3) the initial public scoping process.

After an alternative is selected, follow-on NEPA and cultural resource analysis/identification is planned, and Fort Benning proposes to use a cultural predictive model as an intensive survey within the APE. The predictive model has been used in prior Fort Benning activities to determine the potential for cultural resources and is based on landform, elevation, slope, distance to water, soil type, and other factors. The model would divide acquisition areas into zones considered to have a high, medium, or low potential to contain archaeological sites. The predictive model would also include a review of historic/archival surveys, a catalog of historic maps and resources, identification of known prehistoric and historic archaeological sites, identification of known standing structures, the identification of known cemeteries, information about TCPs (if applicable), and the development of GIS database layer(s) illustrating features such as current and past roads and rails within the APE, and would characterize alternative study areas as having high, moderate, or low potential to contain archaeological sites. Phase I inventory reports would be circulated to the SHPO for review, as well as to the SHPO and Tribes for review, as well as any other consulting parties. Information from the inventory would also be made available to the public, unless confidentiality provisions prohibit certain aspects of locational information.

3.9.1.3 IDENTIFIED RESOURCES WITHIN THE TLEP STUDY AREA

Cultural resources within the TLEP study area have been broken out by each county and alternative study area (Russell West, Russell East, Stewart West, Stewart Central, Stewart East, Webster West, Marion West, Harris East, and Talbot West). Resources within the proposed transportation routes through Chattahoochee and Muscogee counties are also discussed.

3.9.1.4 ARCHAEOLOGICAL SITES

Archaeological sites recorded in the project APEs are the products of a number of intensive surveys, including work for corridor projects and area surveys. The surveys that have been completed are listed in Table 3.9-1, and are further discussed below. This discussion is followed by a summarization of archaeological sites that are currently known, by alternative study area (APE).

Table 3.9-1. Previous Archaeological Investigations in Areas of Potential Effect

APE	Approximate Area Surveyed[1]	Report Reference
Harris-Talbot	16 acres	Fredericksen & Hamby, 2000
Russell East	310 acres	Floyd & Brooms, 1977
Russell East	7 miles	Goodwin et. al., 1994
Russell East	0.5 acre	Cottier, 2001
Russell East & West	2 acres	Parker, 1982
Russell East & West	5 miles	Elliott and Holland, 1992
Russell East & West	5 miles	Watkins, 1996
Russell West	3 acres	Cottier, 2002
Russell West	1 acre	Cottier, 2003
Stewart Central	5 miles	Ledbetter and O'Steen, 1985
Stewart Central & West	13.5 miles	Gardner et. al., 1993
Stewart West	1 acre	Entorf & Fleming, 1997

[1]Only area falling within APE calculated, area outside of APE excluded.

APE = Area of Potential Effect

Previous Archaeological Investigations

An archaeological survey of a 190-acre tract in Talbot County was conducted by New South Associates (Fredericksen and Hamby, 2000). Approximately 16 of the 190 acres lie within the bounds of the Harris East and Talbot West APE. As a result of the survey, two previously unidentified archaeological sites and one isolated find were documented; all of these fall outside of the APE, and all were recommended ineligible for the NRHP.

Reconnaissance for the proposed relocation of a portion of Russell CR-4 and the addition of a bridge over the Chattahoochee River extended into the southeastern corner of the Russell East APE (Floyd and Brooms, 1977). Surveyed by the Alabama Historical Commission for the Alabama Department of Transportation (ALDOT) in 1977, no archaeological sites were recorded within the approximately 310 acres that extended into the Russell East APE.

In the eastern portion of the Russell East APE, Goodwin and Associates, Inc. conducted a survey of the proposed Southern Natural Gas pipeline corridor (Goodwin et. al., 1994). As a result of this survey, three previously-unrecorded sites (1RU249, 1RU250, 1RU251) were identified within the approximately seven

miles of corridor that fell within the Russell East APE. All three sites were recommended not eligible for the NRHP.

John W. Cottier has conducted several small surveys for road projects within the areas of Russell East and Russell West APEs. In 2001, he conducted an archaeological survey of a proposed bridge replacement along Russell CR-58 over Silver Run Creek. No cultural resources were identified as a result of the investigation of the approximately 0.5-acre project area. In 2002, Cottier conducted an archaeological survey for a proposed bridge replacement along Russell CR-11 over Little Cowikee Creek. As a result of this survey of approximately three acres, artifacts and a structure dating to the first quarter of the 20th century were identified. For an unknown reason, however, these remains were not considered to represent an archaeological or cultural resource, despite their historic age. In 2003, Cottier conducted a survey of another proposed bridge replacement area along Torbert Road over an unnamed stream. The survey of this approximately 1-acre project area did not locate any archeological resources.

An archaeological survey was conducted by the ALDOT (Parker, 1982) in advance of a bridge replacement over Watermelon Creek on US-431. As a result of this survey of approximately two acres, no archaeological sites were identified.

In an investigation that included areas within both Russell East and Russell West, the ALDOT-sponsored archaeological investigations in advance of the expansion of US-431; the survey area included approximately 5 linear miles within the APEs. The initial archaeological survey was conducted by Garrow and Associates (Elliott and Holland, 1992); this survey resulted in the identification of four previously unrecorded sites within the APEs, one of which was recommended potentially eligible for the NRHP and the remaining three of which were recommended not eligible. A few years later, the Office of Archaeological Research of the University of Alabama (Watkins, 1996) conducted a survey for the corridor from south of Glenville to North of Pittsview; Phase II testing of selected sites was also conducted during this project.

In 1985, Southeastern Archeological Services, Inc. conducted a cultural resources survey of the proposed Lumpkin to Louvale transmission line (Ledbetter and O'Steen, 1985). Approximately 5 miles of this 23 meter-wide corridor falls within the Stewart Central APE. As a result of this survey, 15 previously-unidentified archaeological sites (9SW109-123) were discovered within the Stewart Central APE along this corridor, including prehistoric, Historic Native American, and historic non-Native American sites. Three of the sites were recommended eligible and 11 of the sites were determined to be ineligible for listing in the NRHP; the eligibility of the remaining site is unknown.

Brockington and Associates (Gardner et. al., 1993) conducted a survey for the proposed widening and reconstruction of SR-1/US-27 between Cusseta and Lumpkin. This highway forms the boundary between the Stewart Central and Stewart West APEs. In total, approximately 13.5 miles of this highway borders these APEs. As a result of the survey, one previously recorded site was encountered, while eight new sites and three isolated finds were discovered. Eight of the sites and all of the isolated finds were recommended ineligible for the NRHP, while a portion of one of the sites was recommended potentially eligible for the NRHP.

Within the bounds of the Stewart West APE, the Georgia Department of Transportation (GDOT) conducted an archaeological survey in advance of a proposed bridge rehabilitation project for the bridge on Stewart CR-43 at Hichitee Creek (Entorf and Fleming, 1997). No archaeological sites were discovered during this survey.

An assessment of the archaeological potential of a large tract situated partially within proximity to the proposed transportation route through Chattahoochee County to Stewart West was conducted by Southeastern Archaeological Services (Benson and Rogers, 1992). As a result of this cultural resource review and potential study, Benson and Rogers (1992) characterized the area as having an archaeological potential comparable to the area within the existing boundaries of Fort Benning.

Russell West, Alabama. Within the Russell West APE, a total of seven archaeological sites have been identified (see Table D-1 in Appendix D). The NRHP status of all of these sites is unknown.

Russell East, Alabama. Within the Russell East APE, a total of 11 archaeological sites have been identified (see Table D-2 in Appendix D). The NRHP status of all of these sites is unknown.

Stewart West, Georgia. Within the Stewart West APE, a total of 56 archaeological sites have been identified (see Table D-3 in Appendix D). Of these sites, 2 have been recommended eligible for listing on the NRHP, and 18 have been recommended not eligible for listing. The remaining 36 sites have an unknown NRHP status.

Stewart Central, Georgia. Within the Stewart Central APE, a total of 33 archaeological sites have been identified (see Table D-4 in Appendix D). Of these sites, 3 have been recommended eligible for listing on the NRHP, and 23 have been recommended not eligible for listing. The remaining seven sites have an unknown NRHP status.

Stewart East, Georgia. Within the Stewart East APE, no archaeological sites have been recorded.

Chattahoochee Transportation Routes, Georgia. Within proximity to the proposed transportation routes through Chattahoochee County, a total of 22 archaeological sites have been identified (see Table D-5 in Appendix D). Of these sites, 5 have been recommended ineligible for listing on the NRHP, 1 has been determined eligible for listing, and the NRHP status of the remaining 16 sites is unknown.

Webster West, Georgia. Within the Webster West APE, two archaeological sites have been identified (see Table D-6 in Appendix D). Of these sites, one has been recommended eligible for listing on the NRHP, and the other is listed on the NRHP.

Marion West, Georgia. Within the Marion West APE, a total of four archaeological sites have been identified (see Table D-7 in Appendix D). Of these sites, one has been recommended eligible for listing on the NRHP, and the remaining three sites have an unknown NRHP status.

Harris East and Talbot West, Georgia. Within the Harris East and Talbot West APE, a total of 55 archaeological sites have been identified (see Table D-8 in Appendix D). Of these sites, 1 has been recommended ineligible for listing on the NRHP, and the remaining 54 sites have an unknown NRHP status.

Muscogee County Transportation Route, Georgia. There are two archaeological sites recorded within the proposed Harris East and Talbot West transportation route through Muscogee County (see Table D-9 in Appendix D). Site 9ME17 was recorded as a small prehistoric camp site on Cox Creek. It was recorded in 1957 and no recommendation of eligibility was made. The form indicated Upatoi Complex [?] for cultural affiliation, indicating this may be a Muscogee Creek site. Site 9ME240 is a historic cemetery containing six or seven burials with death dates ranging from 184(3) to 1896. It was identified during a survey of alternative routes for the Fall Line Freeway and further work was recommended.

3.9.1.5 ARCHITECTURAL RESOURCES

Russell County, Alabama. There are 45 historic structures recorded in the Russell County APE (see Figure 3.9-1; Table D-10 in Appendix D). The county's resources were surveyed in the winter of 1989-1990, by Linda J. Nelson of the FuturePast, a consultant hired by the Historic Chattahoochee Commission. Given the date of this survey, it is likely that there are additional structures, particularly those of the mid-20th century, that have since turned 50 years of age. Of these 45 structures, 1 is listed as not eligible, 7 are listed as eligibility unknown, and the remaining 37 are recorded as potentially eligible.

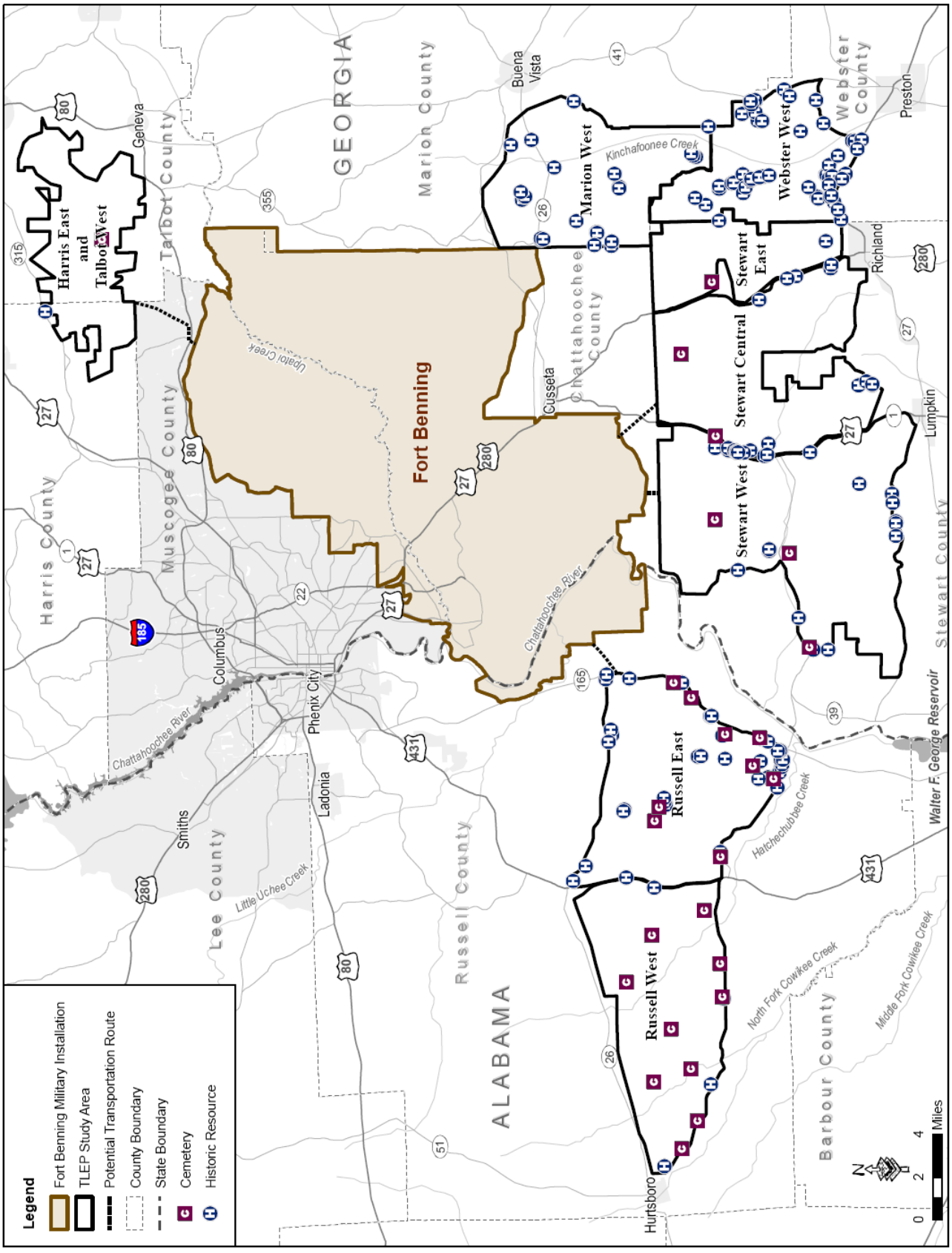


Figure 3.9-1. Historic Resources and Cemeteries Identified within the Areas of Potential Effect

Stewart County, Georgia. Stewart County has been intensively surveyed for architectural resources. A partial survey was conducted in 1976, followed by a more thorough survey in 1989. The second survey was conducted by Erick Montgomery of Montgomery Preservation Services of Augusta, Georgia. At that time, many of the properties noted in the 1976 survey were already lost to the elements or had been demolished. The results of the 1989 survey closely parallel those recorded in the Georgia Natural, Archaeological, and Historic Resources Geographical Information System (NAHRGIS), although the numbering systems used to identify the resources are different. Since the survey was completed in 1989, there could still be unrecorded resources in the APEs that are now 50 years of age, particularly mid-century resources.

There are 41 architectural resources recorded in the Stewart County APEs (see Figure 3.9-1; Table D-11 in Appendix D). By APE, these include 3 resources recorded in Stewart East, 16 resources recorded in Stewart Central, and 21 resources recorded in Stewart West. Stewart East contains one NRHP-listed property, the Nathaniel Prothro Plantation, and two that are considered potentially eligible. Stewart Central contains 13 properties considered potentially eligible for the NRHP and 4 whose eligibility is unknown. Stewart West contains 1 NRHP-listed property, the Louvale Church Row Historic District, and 20 potentially eligible structures.

Chattahoochee County, Georgia. No architectural resources are recorded in proximity to the proposed transportation routes through Chattahoochee County. Only one property form appears to exist of an old 1976 survey, and this was for the McCook House on GA-137, east of Cusseta. In 2004, a "Cusseta-Chattahoochee County Historic Resources Survey" was conducted by Quatrefoil Consulting of Savannah, Georgia, but most of the properties identified were located in the town of Cusseta and the adjacent area. The un-incorporated portion of the county had a relatively short list of properties, but the locations were not provided on any comprehensive map. Even so, none of these properties appears to be located in proximity to the proposed transportation routes through Chattahoochee County.

Webster County, Georgia. The first architectural survey of Webster County was conducted by Joseph Kitchens, Americus, Georgia, in 1981. This resulted in the identification of 60 properties within the Webster West APE (see Figure 3.9-1; Table D-12 in Appendix D). For the most part, all that remains of this survey are the quad maps and the photography log. Properties were identified by type, but were rarely assigned a date. Years later, the University of Georgia's (UGA) FindIt Program, a graduate program run through the Historic Preservation Program at UGA, resulted in the identification of 38 architectural resources in the Webster West APE. For the most part, the 2 surveys did not overlap and thus, there are currently 71 recorded historic structures in the Webster West APE, which includes 1 that is recommended eligible for the NRHP, 12 that are recommended potentially eligible, and 58 whose eligibility is unknown.

The earlier survey did not identify cemeteries, or even many churches, while the FindIt program did not record all resources greater than 50 years of age. Given the early date of the intensive survey, there may be resources that are no longer standing, and there are also likely additional resources that have since turned 50 years of age. These resources would likely date from the early to mid-20th century and may include residential, ranch, and minimal traditional house types, as well as commercial buildings and bridges. In the table below, the FindIt resources are listed first, followed by the results of the 1981 survey.

Marion County, Georgia. The earliest comprehensive survey of Marion County was done by Joseph Kitchens in 1981. Only the first six architectural survey forms have survived in the survey files of the Georgia SHPO, but the complete survey is still represented by the original quad maps and the photography log, which note property type.

In addition to this survey, there are three architectural resources recorded in the Marion County APE by the UGA's FindIt Program. The FindIt program does not record all resources greater than 50 years of age and thus there may be additional architectural resources present in the area that have not been surveyed.

These resources would likely date from the early to mid-20th century and may include residential, ranch, and minimal traditional house types, as well as commercial buildings and bridges.

Within the APE located in Marion County, a total of 27 architectural resources have been identified (see Figure 3.9-1; Table D-13 in Appendix D). There is only limited information available for a number of these resources. Three of these, MR-31, 32, and 45, were recorded by the FindIt program. Of the recorded sites, 2 are recommended eligible for the NRHP and the eligibility of the remaining 25 is unknown.

Harris County, Georgia. There are no architectural resources recorded in the Harris East APE. This county was first surveyed architecturally in 1976, by Eugene B. Culpepper. A "Black Resources Survey" was conducted in 1986, by Joseph B. Mahan of the Lower Chattahoochee Area Planning and Development Commission (APDC), Columbus, Georgia. This was followed by a second survey of historic resources for Harris County by Burke Walker of Historic Preservation Photography, Athens, Georgia. None of these surveys recorded historic structures within the Harris County APE. The 1970s and 1980s survey dates suggest that there may be resources in the Harris County APE that are now 50 years of age and that have not been surveyed and recorded.

Talbot County, Georgia. There are no architectural resources recorded in the Talbot West APE. Survey notes on file with the Georgia SHPO indicate that an architectural survey was first conducted within the county around 1975, with properties plotted on a county road map. This was followed in 1986 with a survey by Joseph B. Mahan of the Lower Chattahoochee APDC, Columbus, Georgia. Around the same time, there was a survey of historic African American resources. There are no properties recorded in the Talbot West APE. The 1970s and 1980s survey dates suggest that there may be resources in the Talbot County APE that are now 50 years of age and that have not been surveyed and recorded.

Muscogee County, Georgia. There are no architectural resources recorded in the proposed Harris East and Talbot West transportation route through Muscogee County.

3.9.1.6 CEMETERIES

Historic cemeteries may be determined eligible for listing on the NRHP. The treatment of cemeteries is also governed by state laws and regulations: Georgia's Abandoned Cemetery Act (OCGA 36-72-1-16) and Alabama's Abandonment of Cemeteries and Removal and Reinternment of Human Remains provisions (Code of Alabama, Division 2, Section 11-47).

Cemetery records for Georgia and Alabama vary greatly. Russell County, Alabama, is well documented by the publication of the *Historical Atlas of Alabama, Volume 2 – Cemetery Locations by County* (Remington, 2008). This statewide reference was completed by the University of Alabama's Department of Geography through map research and documentation compiled by the Genealogical Society of Alabama, which published a journal, *Tap Roots,* from the 1960s to the 1990s that contained cemetery information.

In Georgia, cemetery records are infrequent. Marion County is the only Georgia county with a cemetery survey, and the locations recorded in this self-published survey are based on hand-drawn sketch maps (Jernigan, n.d.). No surveys have been completed for the other Georgia counties. The presence of cemeteries was determined through a place-name search of the USGS topographic maps of the project APEs. Neither the published surveys nor the map research are likely to include small family cemeteries, and hence, unmarked and unrecorded cemeteries should be anticipated in all project APEs.

Russell County, Alabama. The *Historical Atlas of Alabama, Volume 2 - Cemetery Locations by County* (Remington, 2008), records 19 cemeteries in the Russell County APE. Cemeteries in the Russell West APE include Antioch Baptist Church, Bethel Church 1 and Bethel Church 2, Friendship Church 1 and 2, Lester Cemetery, Mount Moriah Baptist Church Cemetery, Olivet Cemetery, Nero Cemetery, and Zion Hill Baptist. Cemeteries in the Russell East APE include Cool Springs Baptist, Mount Canaan Baptist

Church Cemetery, Mount Lebanon Baptist Church Cemetery, New Hope Baptist Church Cemetery, Shady Grove Cemetery, St. James Baptist Church Cemetery, Saint Joseph's Church Cemetery, Thomas Cemetery, and Unknown Cemetery (see Figure 3.9-1). None of these cemeteries have been evaluated for the NRHP and their status is currently unknown.

Stewart County, Georgia. Six cemeteries were identified in Stewart County based on map research. These included one cemetery (Slaughter Creek) in Stewart East, one cemetery (Saint Phillip's) in Stewart Central, and four cemeteries (Fitzgerald, Mathis, Armur, and Irena) in Stewart West (see Figure 3.9-1). These cemeteries have not been surveyed and their NRHP eligibility is unknown.

Chattahoochee County, Georgia. No cemeteries were identified in proximity to the proposed transportation routes through Chattahoochee County.

Webster County, Georgia. There are seven known cemeteries in the Webster West APE (see Figure 3.9-1). Four cemeteries were identified by map research, including: Lowrey Cemetery, Shiloh Cemetery, Smyrna Cemetery, and Pickett-Brooks-Shippey Cemetery. The Pickett-Brooks-Shippey Cemetery is also recorded as architectural resource WB-202. Three other cemeteries were recorded in the Webster West APE by architectural survey, including the Enterprise Baptist Church and Cemetery (WB-14), the Greater Goodhope Baptist Church and Cemetery (WB-12), and an unnamed cemetery (WB-15). Of these, the Enterprise Baptist Church and Cemetery (WB-14) has been recommended eligible for the NRHP and the Greater Goodhope Baptist Church and Cemetery (WB-12), the Pickett-Brooks-Shippey Cemetery (WB-202), and the unnamed cemetery (WB-15) have been recommended potentially eligible for the NRHP. The eligibility of the remaining three cemeteries is unknown.

Marion County, Georgia. There are 14 historic cemeteries in Marion County (see Figure 3.9-1). Within the Marion West APE, no cemeteries were identified based on map research. Two cemeteries were identified by architectural survey, the Smyrna Presbyterian Church Cemetery and the Primitive Baptist Church Cemetery. A self-published survey of Marion County cemeteries (Jernigan, n.d.) lists 10 additional cemeteries present in the APE: Anderson, Glaze, Glen Alta, Liberty, Mathis, McCall, Pineville, Old Philadelphia Methodist Church, White Graveyard, and Sims Graveyard. Finally, archaeological survey has identified two cemeteries, Church Hill (9MR15) and Shiloh Marion Baptist (9MR17), the first of which is recommended eligible for the NRHP and the second of which is listed. Of the 14 historic cemeteries, the Primitive Baptist Church and Cemetery (MR-32) and Church Hill Cemeteries (9MR15) have been recommended eligible for the NRHP, the Shiloh Marion Baptist Church (9MR17) has been recommended potentially eligible, while the eligibility of the remaining cemeteries is unknown.

Harris and Talbot Counties, Georgia. Within the Harris East and Talbot West APEs, two cemeteries were identified based on map research: the Hollis Cemetery and the Ridgeway Cemetery (see Figure 3.9-1). Neither of these resources has been evaluated for the NRHP.

Muscogee County, Georgia. There is one recorded cemetery in the proposed Harris East and Talbot West transportation route through Muscogee County. This is the Patterson Cemetery, which is also recorded as archaeological site 9ME240. This cemetery dates to the 1840s and contains six or seven burials (see Figure 3.9-1).

3.9.1.7 NATIVE AMERICAN SACRED SITES AND PROPERTIES OF TRADITIONAL AND RELIGIOUS CULTURAL IMPORTANCE

There are no known Native American Sacred Sites or TCPs in any of the APEs. Consultation with Tribes that are historically associated with the region has been initiated by Fort Benning and will be ongoing during the TLEP planning process.

3.9.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to cultural resources that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to cultural resources would result from irretrievable or irreversible damage to a historic property (exclusive of data recovery) that is listed or is eligible/potentially eligible for listing on the NRHP. Archaeological sites with Native American burials would also require consultation and coordination in accordance with the NAGPRA.

Archaeological site data for the APEs reflect the location of intensive surveys, as discussed in Section 3.9.1.4, and are highly variable. None of the APEs have been intensively surveyed for archaeological sites, so the frequency of sites per APE is not an accurate indication of their archaeological site potential. Eligibility assessments for previously identified archaeological sites considered ineligible are subject to change following DEIS consultation with the SHPOs and Tribes. Historic structure data are also variable, with some counties unsurveyed while others have been inventoried at various times in the past and hence may not reflect the locations of all structures that are currently 50 years of age. Finally, historic cemetery data are uneven and incomplete in coverage.

Unrecorded archaeological sites, historic structures, and historic cemeteries should be anticipated for all of the APEs under consideration. No attributes were identified in this review that distinguished any of the APEs as having a greater potential for cultural resources than the others. Fort Benning's application of predictive modeling in GIS, using natural attributes and geo-referenced historic maps, would help to identify resource potential in the selected APEs and would be followed by intensive survey to locate and evaluate archaeological sites, historic structures, and historic cemeteries once an alternative has been selected. Subsequent NEPA analysis would be conducted, where necessary, to determine the potential impact of future proposed support facilities and training activities within the newly acquired lands. Fort Benning has not been advised of the location of any Native American sacred sites or TCPs within any of the APEs.

3.9.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the Proposed Action described in Section 2.2 would not be implemented, and current land uses would continue. The No Action Alternative would have the potential for moderate adverse impacts, as cultural resources within the APE are currently not being managed. Historic cemeteries are the only resources governed under state laws (Alabama's Abandonment of Cemeteries and Removal and Reinternment of Human Remains provisions [Code of Alabama, Division 2, Section 11-47] and Georgia's Abandoned Cemetery Act [OCGA 36-72-1-16]), however, neither the Georgia or Alabama statutes contain provisions for the survey and identification of unmarked cemeteries and hence cemeteries without mortuary architecture would most likely not be recognized or treated in accordance with these laws. Archaeological sites and historic resources are not governed by state or local laws in either state, except in locations where Federally permitted or funded undertakings occur. Therefore, most private and non-Federal government undertakings would not require inventory, consultation, or mitigation. Finally, NRHP listing of historic properties provides no restriction on land use and treatment, and thus NRHP-listed properties are subject to adverse effects, including demolition, without mitigation under the No Action Alternative. The lack of mandated stewardship of resources, the effects of timber harvesting and agriculture, and development may lead to the degradation of the integrity of these cultural resources.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to cultural resources would be the subject of future NEPA analysis and possibly additional consultation under the NHPA.

3.9.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Overall, cultural resources would experience negligible impacts from Army acquisition, moderate beneficial impacts from Army management, and significant adverse impacts from Army construction and training activities. Archaeologically, the Webster West APE contains one NRHP-listed and one recommended eligible site, both of which are historic cemeteries. The Marion West APE includes one recommended eligible site and three sites whose eligibility is unknown. There are no archaeological sites currently known in the Stewart East APE.

Within Webster West, there is 1 NRHP-eligible historic structure, 11 potentially eligible structures, and 58 historic structures whose NRHP eligibility is unknown. Within Marion West, there are 2 recommended eligible historic structures and 25 structures whose NRHP eligibility is currently unknown. Within Stewart East, there is one NRHP-listed property, the Nathaniel Prothro Plantation, and two potentially eligible resources, one of which is associated with the Prothro Plantation. Webster West contains 7 known cemeteries, Marion West contains 14 (including the 2 archaeological sites listed above), and Stewart East has 1 currently identified historic cemetery. The Shiloh Marion Baptist Church Cemetery in Marion West is listed on the NRHP, the Church Hill Cemetery in Marion West is recommended NRHP-eligible, and the eligibility of the remaining 12 cemeteries is unknown. No Native American sacred sites or TCPs have been identified in this alternative.

Archaeological survey is currently lacking for much of the land in Alternative 1, and the historic resources survey requires updating. Cemetery survey is also lacking, with the exception of Marion West. All of the resources that are either listed on the NRHP, recommended eligible or potentially eligible for listing, or whose eligibility is unknown would be treated as eligible until formal Determinations of Eligibility could be made. Historic cemeteries would also be treated as eligible resources.

Fort Benning would conduct surveys and evaluations in subsequent planning and development of individual areas within the acquired land for training. These actions would serve to avoid or reduce adverse impacts to cultural resources and would be implemented with NEPA and NHPA compliance processes (such as implemented in the Fort Benning ICRMP). Archaeological resources and cemeteries are maintained through securing the area, monitoring, and maintenance. Above-ground structures that may be NRHP-eligible would have to be assessed on a property-specific basis to determine if they can be maintained in a specific training area; if they cannot be maintained in their location, then SOPs in the HPC would be implemented to mitigate adverse effects through removal or demolition of the structure.

Depending on the location of specific training areas in subsequent phases of this Proposed Action, there could be the potential for indirect impacts off-site of Installation land. The primary indirect impact is likely to be noise impacts to potential off-site cultural resources (e.g., occupied farms or plantations that may be NRHP-eligible). Subsequent NEPA and NHPA documentation would include APEs for evaluation of resources and impacts.

Fort Benning has initiated consultation with the SHPO, ACHP, Tribes, and other parties with a potential interest in the Proposed Action (see Appendix B). Fort Benning will use the NEPA process and documentation required for adherence with NHPA and other applicable cultural resource requirements. The Army would continue to utilize an established, phased approach to identify and document cultural resources within the newly acquired land. The methodology utilized with this approach has been approved for previous compliant projects undertaken by Fort Benning. Fort Benning would apply a GIS-based predictive model of all newly acquired parcels to identify locations with site potential.

3.9.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a negligible impact on cultural resources.

3.9.2.2.2 ARMY MANAGEMENT

The short- and long-term effects of Army management of the cultural resources within the newly acquired land associated with Alternative 1 would in general be a net beneficial impact to cultural resources. Military stewardship of and compliance with existing cultural resources laws, regulations, and Army requirements are discussed in Sections 3.9.1.1.1 through 3.9.1.1.3. Adherence to these requirements and the Installation's CRM Program for resources located within Alternative 1 APE is anticipated to create beneficial impacts to cultural resources that may not otherwise be maintained under existing ownership and land use practices that include agriculture and commercial forestry. Fort Benning would update the ICRMP to include the protection and management of resources located within the newly acquired land.

Phase I cultural resource surveys would be completed after acquisition of land within Alternative 1, as well as implementation of other legislated CRM tools and procedures detailed in the Fort Benning ICRMP (Fort Benning, 2008c). Surveys would be conducted following predictive modeling of the Alternative 1 APE, which would help to identify the potential locations of archaeological resources and historic structures. Cultural resource surveys for archaeological sites, and historic cemeteries would be completed and consultation and treatments determined as outlined in the HPC. Artifacts identified during archaeological survey, testing, and recovery would be housed in the Fort Benning curation facility, in accordance with 36 CFR 79 (Fort Benning, 2008c).

3.9.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Under Alternative 1, preparation of newly acquired land would likely result in the potential for localized adverse impacts to cultural resources. Qualified personnel would conduct archaeological and architectural surveys and evaluations to identify areas of potential impact associated with land-clearing activities. Historic cemeteries would also be identified by both archaeological survey (for smaller, unmarked cemeteries) and architectural survey (where cemeteries are associated with historic churches). After land acquisition, subsequent stages of this Federal action may include more refined and quantitative site and resource evaluation for the construction and operation of specific training areas and transportation routes within newly acquired land. Appropriate follow-on NEPA analyses would be conducted in accordance with Army NEPA Regulation 32 CFR 651 and other applicable Federal regulations. Prior to construction, Fort Benning would evaluate siting of projects and alternatives to avoid or minimize impacts to cultural resources during construction. Artifacts and associated records would be curated for the permanent collection at the Installation’s Curation Facility. Existing CRM plans and agreements would be utilized during survey, evaluation, and construction.

If NRHP-eligible archaeological sites cannot be avoided or protected, moderate to significant adverse impacts could occur. Data recovery excavations, however, could be conducted to mitigate adverse impacts to the resources. As identified above, any unavoidable direct adverse impacts to NRHP-eligible historic resources would be mitigated through processes outlined in the HPC. Should cemeteries require relocation, this would be accomplished pursuant to applicable Federal and state regulations.

No Native American Sacred Sites or TCPs (Native American or other) have been identified within Alternative 1. Consultation with Tribes is in its early stages in this EIS process; however, based on past experience, training and infrastructure construction is expected to have negligible impacts on any such sites.

3.9.2.2.4 ARMY TRAINING

Under Alternative 1, Army training would likely result in localized moderate to significant adverse impacts to cultural resources. Fort Benning would attempt to avoid new construction in the locations of NRHP-eligible archaeological sites; however, avoidance may not be possible in all situations. Army training activities that involve ground-disturbing activities also have the potential to impact archaeological sites adversely. Impacts to archaeological sites are anticipated to be moderate to significant and would be managed through CRM procedures outlined in the HPC. Army training activities are anticipated to create moderate to significant adverse impacts to architectural resources. Preservation and adaptive re-use would be evaluated for each, but infrastructure and training activities may require demolition or relocation, which would constitute a significant impact. Impacts on historic cemeteries are anticipated to vary from negligible to significant adverse impacts depending on whether cemeteries may be preserved in place or would require relocation. As previously stated, no Native American TCPs or Sacred Sites have been identified to date within this alternative; however, Native American consultation is still in progress. Army training is expected to have negligible impacts on Native American resources based on previous experience. Specific mitigation for adverse impacts would be determined through consultation and in accordance with the ICRMP.

3.9.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Overall, cultural resources would experience negligible impacts from Army acquisition, moderate beneficial impacts from Army management, and significant adverse impacts from Army construction and training activities. Archaeologically, the Russell East APE contains 11 resources whose NRHP eligibility is unknown, while Russell West contains 7 resources of unknown eligibility. Within Russell East, there are 33 potentially eligible historic structures and 7 historic structures whose NRHP eligibility is unknown. Within Russell West, there are 4 potentially eligible historic structures. Russell East contains 9 known cemeteries, while Russell West contains 10. The NRHP eligibility of the cemeteries is unknown. No Native American sacred sites or TCPs have been identified in this alternative.

Archaeological survey is currently lacking for much of the land in Alternative 2, and the historic resources survey requires updating. Historic cemeteries have been surveyed although there remains potential for unmarked and unrecorded cemeteries in the APEs. All of the resources that are either listed on the NRHP, recommended eligible or potentially eligible for listing, or whose eligibility is unknown would be treated as eligible until formal Determinations of Eligibility could be made. Historic cemeteries would also be treated as eligible resources. In addition, similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1 regarding cultural resources.

3.9.2.3.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a negligible impact on cultural resources.

3.9.2.3.2 ARMY MANAGEMENT

Impacts to cultural resources from Army management under Alternative 2 would be similar to Alternative 1. Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1.

3.9.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts to cultural resources from preparation of newly acquired land under Alternative 2 would be similar to Alternative 1. Similar surveys, evaluations, consultation, and mitigation processes would be followed and conducted as described under Alternative 1.

3.9.2.3.4 ARMY TRAINING

Impacts to cultural resources from Army training under Alternative 2 would be similar to Alternative 1. Similar avoidance, CRM procedures, and consultation would be followed and conducted as described under Alternative 1.

3.9.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Overall, cultural resources would experience negligible impacts from Army acquisition, moderate beneficial impacts from Army management, and significant adverse impacts from Army construction and training activities. Archaeologically, the Stewart Central APE contains 3 NRHP-eligible archaeological sites and 7 resources whose NRHP eligibility is unknown, while Stewart West contains 2 eligible resources and 36 archaeological sites of unknown eligibility. There are 16 potentially eligible structures in Stewart Central and 4 structures whose eligibility is unknown. Within Stewart West, there is 1 NRHP-listed historic structures and 20 potentially eligible historic structures. There is one known historic cemetery in Stewart Central and four in Stewart West, although the county has not been surveyed for cemeteries. The NRHP eligibility of the cemeteries is unknown. No Native American sacred sites or TCPs have been identified in this alternative. Under this alternative, a transportation route would be required through the Chattahoochee County. There is 1 NRHP-eligible and 16 archaeological sites whose eligibility is unknown in proximity to the proposed transportation routes through Chattahoochee County, and no recorded structures or cemeteries.

Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1 regarding cultural resources.

3.9.2.4.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a negligible impact on cultural resources.

3.9.2.4.2 ARMY MANAGEMENT

Impacts to cultural resources from Army management under Alternative 3 would be similar to Alternative 1. Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1.

3.9.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts to cultural resources from preparation of newly acquired land under Alternative 3 would be similar to Alternative 1. Similar surveys, evaluations, consultation, and mitigation processes would be followed and conducted as described under Alternative 1.

3.9.2.4.4 ARMY TRAINING

Impacts to cultural resources from Army training under Alternative 3 would be similar to Alternative 1. Similar avoidance, CRM procedures, and consultation would be followed and conducted as described under Alternative 1.

3.9.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Overall, cultural resources would experience negligible impacts from Army acquisition, moderate beneficial impacts from Army management, and significant adverse impacts from Army construction and training activities. Archaeologically, the Stewart Central APE contains 3 NRHP-eligible archaeological sites and 7 resources whose NRHP eligibility is unknown, while the Russell East APE contains 11 archaeological sites whose NRHP eligibility is unknown. There is 1 historic structure in the Stewart Central APE that is considered eligible for the NRHP as well as 19 potentially eligible structures and 3 structures whose eligibility are unknown. Within Russell East, there are 33 potentially eligible historic structures and 7 historic structures whose NRHP eligibility is unknown. There is one known historic cemetery in Stewart Central and nine in Russell East. The NRHP eligibility of the cemeteries is unknown. No Native American sacred sites or TCPs have been identified in this alternative. Under this alternative, one or more right-of-way (ROW) easements may be required through Chattahoochee County. There is 1 eligible and 16 archaeological sites whose eligibility is unknown in proximity to the proposed transportation routes through Chattahoochee County, and no recorded structures or cemeteries.

Archaeological survey is currently lacking for much of the land in Alternative 4, historic resources survey requires updating, and cemetery survey has not been completed for Stewart or Chattahoochee counties. All of the resources that are either listed on the NRHP, recommended eligible or potentially eligible for listing, or whose eligibility is unknown would be treated as eligible until formal Determinations of Eligibility could be made. Historic cemeteries would also be treated as eligible resources.

Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1 regarding cultural resources.

3.9.2.5.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a negligible impact on cultural resources.

3.9.2.5.2 ARMY MANAGEMENT

Impacts to cultural resources from Army management under Alternative 4 would be similar to Alternative 1. Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1.

3.9.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts to cultural resources from preparation of newly acquired land under Alternative 4 would be similar to Alternative 1. Similar surveys, evaluations, consultation, and mitigation processes would be followed and conducted as described under Alternative 1.

3.9.2.5.4 ARMY TRAINING

Impacts to cultural resources from Army training under Alternative 4 would be similar to Alternative 1. Similar avoidance, CRM procedures, and consultation would be followed and conducted as described under Alternative 1.

3.9.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Overall, cultural resources would experience negligible impacts from Army acquisition, moderate beneficial impacts from Army management, and significant adverse impacts from Army construction and training activities. Archaeologically, the Harris East and Talbot West APE contain 54 resources of unknown NRHP eligibility, while the Stewart West APE contains 2 eligible resources and 36 archaeological sites of unknown eligibility. There are currently no recorded historic structures in the Harris East and Talbot West APEs. There are four known historic cemeteries in Stewart West and two in Harris East and Talbot West, although the counties have not been surveyed for cemeteries. The NRHP eligibility of the cemeteries is unknown. No Native American sacred resources or TCPs have been identified in this alternative. Under this alternative, one or more ROW easements may be required through Chattahoochee County. There is 1 eligible and 16 archaeological sites whose eligibility is unknown in proximity to the proposed transportation routes through Chattahoochee County, and no recorded structures or cemeteries. The proposed Muscogee transportation route includes one cemetery (also recorded as an archaeological site) and one archaeological site whose eligibility is unknown.

Archaeological survey is currently lacking for much of the land in Alternative 5, historic resources survey requires updating, and cemetery survey has not been completed. All of the resources that are either listed on the NRHP, recommended eligible or potentially eligible for listing, or whose eligibility is unknown would be treated as eligible until formal Determinations of Eligibility could be made. Historic cemeteries would also be treated as eligible resources.

Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1 regarding cultural resources.

3.9.2.6.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have a negligible impact on cultural resources.

3.9.2.6.2 ARMY MANAGEMENT

Impacts to cultural resources from Army management under Alternative 5 would be similar to Alternative 1. Similar surveys and evaluations would be conducted and the NEPA process would be followed as described under Alternative 1.

3.9.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts to cultural resources from preparation of newly acquired land under Alternative 5 would be similar to Alternative 1. Similar surveys, evaluations, consultation, and mitigation processes would be followed and conducted as described under Alternative 1.

3.9.2.6.4 ARMY TRAINING

Impacts to cultural resources from Army training under Alternative 5 would be similar to Alternative 1. Similar avoidance, CRM procedures, and consultation would be followed and conducted as described under Alternative 1.

3.9.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts by the Proposed Action (Alternatives 1, 2, 3, 4, and 5) within the APE for cultural resources. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects are included in Section 3.1.3.2. As shown in Section 3.1.3.2, on-going actions at Fort Benning have the potential to have adverse effects on cultural resources; however, these are being conducted with environmental review by Fort Benning's Cultural Resource Manager to minimize adverse effects. Transportation infrastructure improvements in both Alabama and Georgia also have potential adverse effects; however, these actions would follow environmental and cultural resource review by the ALDOT and the GDOT, respectively. Growth and development in the region is limited, which would reduce the potential for adverse effects on cultural resources. Overall cumulative impacts to cultural resources under all Proposed Action alternatives are anticipated to be beneficial, as military stewardship of resources within these areas would likely maintain the integrity of these cultural resources.

3.9.4 PROPOSED MITIGATION

No mitigation measures for cultural resources would be required under the Proposed Action. The follow-on NEPA and NHPA Section 106 processes for the specific alternative study area would include consultation to develop mitigation for the potential or actual loss of any identified cultural resource. Fort Benning’s general strategy for protection of archaeological sites and cemeteries is avoidance, securing sensitive areas (fencing of cemeteries), monitoring, and maintenance. The most likely potential for significant adverse effects requiring mitigation is for any standing structures that may be eligible for listing on the NRHP.

3.10 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.10.1 AFFECTED ENVIRONMENT

The following sections describe the socioeconomic conditions within the study area with respect to population and housing (Section 3.10.1.1), environmental justice and protection of children (Section 3.10.1.2), economic development and employment (Section 3.10.1.3), taxes and revenue (Section 3.10.1.4), and public services (Section 3.10.1.5). The ROI for socioeconomics and environmental justice includes Muscogee and Chattahoochee counties, Georgia, which encompass most of Fort Benning, as well as Harris, Marion, Stewart, Talbot, and Webster counties, Georgia, and Russell County, Alabama, which include study areas for potential acquisition. This ROI constitutes the area in which the predominant socioeconomic effects of the Proposed Action and alternatives would occur. Figure 3.10-1 shows the locations of Fort Benning, the TLEP study area, and the counties in the ROI.

3.10.1.1 POPULATION AND HOUSING

3.10.1.1.1 POPULATION

With the exception of Muscogee County, which is consolidated with the City of Columbus, populations in the eight counties comprising the socioeconomic ROI are of relatively low density (Table 3.10-1). The counties are primarily rural in character. Also, except for Harris County, population growth in the ROI since 2000 has been low or negative. Harris County, which is directly north of Muscogee County, has experienced the highest rate of growth from the outward expansion of the Columbus MSA. The recent population growth rates in the combined ROI and in Alabama were below the national average. In comparison, the rate of population growth in Georgia since 2000 exceeded the national growth rate. Over the next decade, the populations of Harris, Russell, and Muscogee counties are expected to grow at the highest rates in the ROI.

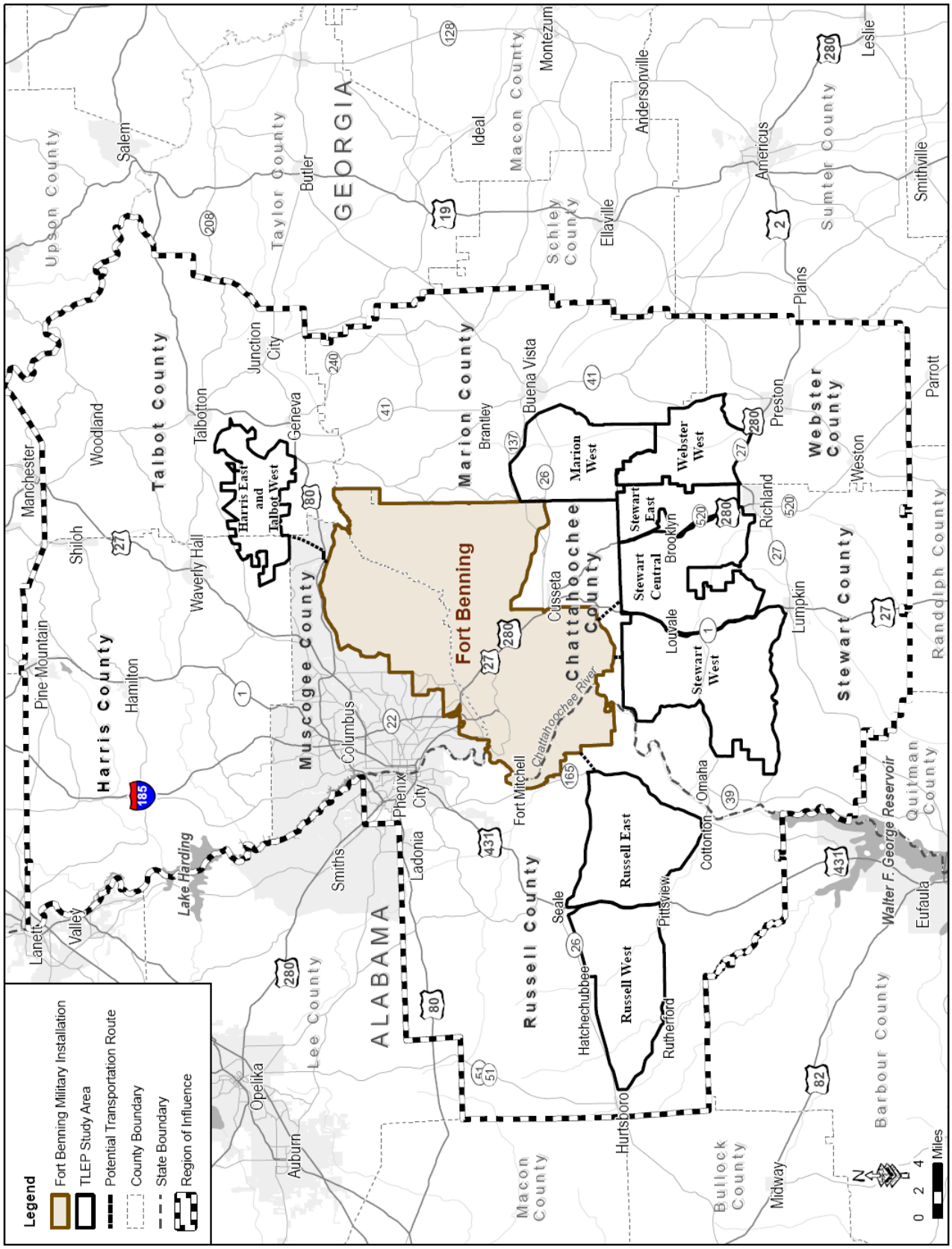


Figure 3.10-1. Counties within the TLEP Study Area

Table 3.10-1. Population and Trends in the ROI

Jurisdiction	1990	2000	2009	Change 1990 to 2000 (percent)	Change 2000 to 2009 (percent)	Predicted Change 2008 to 2018 (percent)
Chattahoochee County	16,934	14,882	14,402	-12.1	-3.2	0.4[1]
Muscogee County	179,278	186,291	190,414	3.9	2.2	10.2[1]
Harris County	17,788	23,695	30,138	33.2	27.2	26.9[1]
Talbot County	6,524	6,498	6,355	-0.4	-2.2	5.2[1]
Marion County	5,590	7,144	6,995	27.8	-2.1	5.2[1]
Webster County	2,263	2,390	2,192	5.6	-8.3	3.3[2]
Stewart County	5,654	5,252	4,558	-7.1	-13.2	0.4[1]
Russell County	46,860	49,756	50,846	6.2	2.2	14.4[1]
Total ROI	280,891	295,908	305,900	5.3	3.4	11.7[1]
Georgia	6,478,216	8,186,453	9,829,211	26.4	20.1	13.1[3]
Alabama	4,040,587	4,447,100	4,708,708	10.1	5.9	2.9[3]
United States	248,709,873	281,421,906	307,006,550	13.2	9.1	8.7[3]

Source: U.S. Census Bureau, 2010, except:
[1]The Valley Partnership Joint Development Authority, 2009a – 2009g;
[2]Webster County Commission & Town of Preston, 2004;
[3]U.S. Census Bureau, 2005 (effective 2010-2020).
ROI = Region of Influence

Table 3.10-2 summarizes demographic information for the ROI from the 2000 Census. The table shows the information for Chattahoochee County separately for the Fort Benning portion (Census Tract 202) and the non-Army portion (Census Tract 201). The data indicate that the less populous counties in the ROI generally have higher percentages of senior citizens, lower percentages of adults in the labor force, and lower median incomes than the more populous counties, the respective states, and the nation as a whole. Harris County is the notable exception. In addition to being the fastest growing county, Harris County appears to be the most affluent in the ROI. With the exception of the Fort Benning portion of Chattahoochee County, Harris County also had the largest percentage of adults in the labor force in 2000. More recent comparable statistics are not available for all jurisdictions.

3.10.1.1.2 HOUSING

Table 3.10-2 summarizes housing statistics from the 2000 Census. As expected, the proportions of housing units in the respective counties reflect their population sizes. Webster County had the lowest occupancy rate for housing units (81.7 percent) in the ROI; Muscogee County had the highest occupancy rate (91.6 percent). Other data in the table describe the size of the rental housing market and rental vacancy rates among the counties in comparison to Georgia, Alabama, and the nation. Figure 3.10.2 illustrates the housing units in the TLEP study area by block group.

Table 3.10-2. Regional Demographics and Housing (2000)

Characteristic	Chattahoochee County – Tr 202 (Ft. Benning)	Chattahoochee County – Tr 201 (off-Ft. Benning)	Muscogee County	Harris County	Talbot County	Marion County	Webster County	Stewart County	Russell County	State of Georgia	State of Alabama	United States
Population	12,050	2,832	186,291	23,695	6,498	7,144	2,390	5,252	49,756	8,186,453	4,447,100	281,421,906
Median Age (years)	22.5	33.8	32.6	38.5	39.5	35.2	37.5	38.8	35.4	33.4	35.8	35.3
Under 18 Years (percent)	28.2	29.3	26.8	25.6	24.2	28.3	25.2	24.9	26.5	26.5	25.3	25.7
65 and over (percent)	0.1	8.9	11.7	11.9	14.4	10.5	14.8	18.5	13.1	9.6	13.0	12.4
Average Household Size	3.83	2.67	2.54	2.66	2.55	2.65	2.62	2.48	2.49	2.65	2.49	2.59
Average Family Size	3.87	3.08	3.08	3.02	3.06	3.12	3.07	3.07	3.05	3.14	3.01	3.14
Population In Labor Force (percent)	87.8	62.1	63.7	67.4	54.6	58.8	57.7	51.6	57.1	66.1	59.7	63.9
Mean Travel Time to Work (minutes)	12.3	26.2	19.9	29.9	32.8	34.4	24.7	28.6	24.6	27.7	24.8	25.5
Median Household Income	$41,928	$30,112	$34,798	$47,763	$26,611	$29,145	$27,992	$24,789	$27,492	$42,433	$34,135	$41,994
Per Capita Income	$13,973	$14,372	$18,262	$21,680	$14,539	$14,044	$14,772	$16,071	$14,015	$21,154	$18,189	$21,587
Housing Units	2,053	1,263	76,182	10,288	2,871	3,130	1,115	2,354	22,831	3,281,737	1,963,711	115,904,641
Occupancy Rate (percent)	91.2	83.9	91.6	85.8	88.4	85.2	81.7	85.3	86.5	91.6	88.5	91.0
Vacant Housing Units	181	203	6,363	1,466	333	462	204	347	3,090	275,368	226,631	10,424,540
Renter-Occupied Housing Units	1,830	309	30,469	1,222	441	584	167	543	7,400	977,215	478,375	35,664,348
Rental Vacancy Rate (percent)	0.1	21.6	10.5	7.5	10.7	5.5	4.0	8.4	16.6	8.2	11.8	6.8

Source: U.S. Census Bureau, 2010

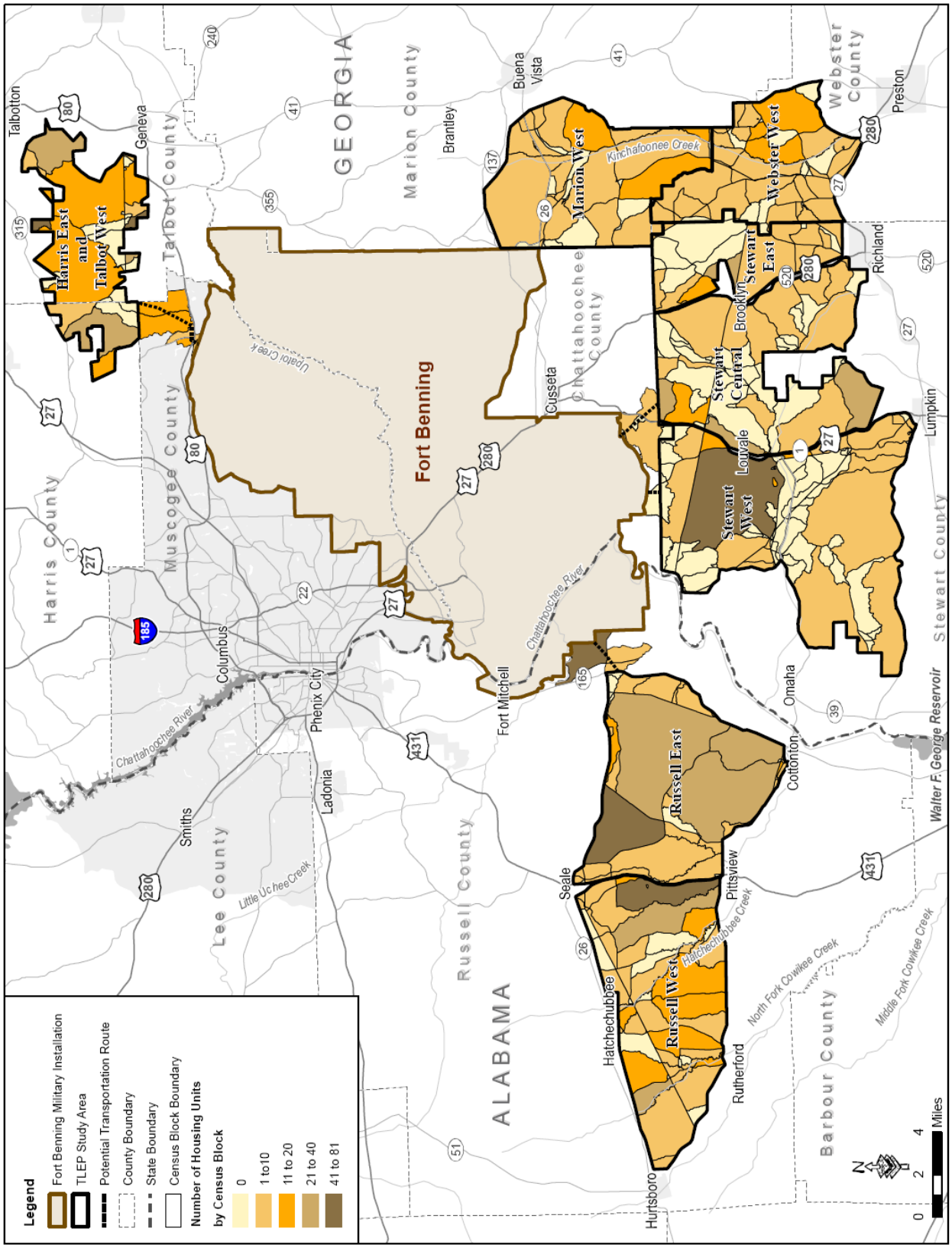


Figure 3.10-2. Housing Units by Block Group within the TLEP Study Area

3.10.1.2 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

3.10.1.2.1 ENVIRONMENTAL JUSTICE

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs Federal agencies to identify and address as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations. The process followed by Fort Benning to identify potential disproportionate impacts associated with the Proposed Action and to ensure compliance with this directive was initiated early in the NEPA scoping and will continue throughout the process. The early scoping process was as follows:

- Identification of the potentially affected population in the study area;
- Characterization of the study area with respect to minorities and low-income populations;
- Determination of potentially significant adverse impacts of the Proposed Action Alternatives; and
- Evaluation of the potential for disproportionately high and adverse impacts on minority populations and low-income populations in proximity of the alternate sites.

Table 3.10-3 summarizes the proportions of minority and low-income populations within the eight-county ROI in comparison to the proportions of these populations within Georgia, Alabama, and the U.S. Minority populations include individuals characterized as Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Hispanic or Latino. Low-income populations are defined as individuals with incomes below the poverty level (as reported by the U.S. Census Bureau based on Office of Management and Budget Directive 14). With the exception of Harris County, all of the counties in the ROI have percentages of minority populations comparable to or higher than the State of Georgia and higher than the State of Alabama or the U.S. Also, with the exception of Harris County and the Fort Benning portion of Chattahoochee County, all of the counties in the ROI have percentages of low-income populations higher than the percentages in Georgia and the U.S. Russell County has a greater percentage of low-income population than the State of Alabama.

These statistics characterize the minority and low-income status within the general population of the eight-county ROI, as well as larger regions of the respective states and the nation. They indicate that the background conditions with respect to minority and low-income populations in the ROI are higher than in the larger jurisdictions encompassing the ROI. These background conditions, therefore, indicate a potential for environmental justice issues depending upon the impacts of the Proposed Action.

Table 3.10-3. Minority and Low-Income Populations in the ROI

Jurisdiction	Minority Population[1] (percent)	Low-Income Population[2] (percent)
Chattahoochee County Tract 202 (Fort Benning)	36.7	6.3
Chattahoochee County Tract 201 (off-Fort Benning)	43.2	21.3
Muscogee County	54.4	15.7
Harris County	23.5	8.2
Talbot County	59.0	24.2
Marion County	42.8	22.4
Webster County	49.9	19.3
Stewart County	60.0	22.2
Russell County	46.8	19.9
Total ROI	49.4	16.1
Georgia	42.5	13.0
Alabama	32.0	16.1
United States	34.9	12.4

Source: U.S. Census Bureau, 2000 and 2010
[1]Minority Population estimates for 2009 including Black or African American, American Indian, Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Hispanic or Latino.
[2]Low-Income Population from 2000 Census including individuals with incomes below poverty level.
ROI = Region of Influence

3.10.1.2.2 PROTECTION OF CHILDREN

On April 21th, 1997, the President issued EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. This EO directs each Federal agency to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. EO 13045 recognizes that a growing body of scientific knowledge demonstrates that children might suffer disproportionately from environmental health risks and safety risks. These risks arise because children's neurological, immunological, digestive, and other bodily systems are still developing; children eat more food, drink more fluids, and breathe more air in proportion to their body weight than adults; children's size and weight may diminish their protection from standard safety features; and children's behavior patterns may make them more susceptible to accidents because they are less able to protect themselves; therefore, to the extent permitted by law and appropriate, as well as consistent with the agency's mission, the President has directed each Federal agency to:

- Make it a high priority to identify and assess environmental health risks and safety risks that might disproportionately affect children; and
- Ensure that the agency's policies, programs, and standards address disproportionate health risks to children that result from environmental health risks or safety risks.

Examples of risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants that children might come into contact with or ingest.

As summarized in Table 3.10-2, Chattahoochee, Marion, and Muscogee counties have the highest percentages of individuals under 18 years of age. The percentages for these counties are higher than the percentages in Georgia, Alabama, or the U.S.

3.10.1.3 ECONOMIC DEVELOPMENT AND EMPLOYMENT

Table 3.10-2 provides demographic information regarding the labor force for the counties in the ROI, including the percentage of the respective county populations within the labor force and the mean travel time to work based on the 2000 Census. The average percentage of population in the labor force for the ROI overall was approximately 64 percent, with the highest percentage (83 percent) in Chattahoochee County, and the lowest (less than 52 percent) in Stewart County. Workers in Chattahoochee County experienced the shortest commuting times on average (14.3 minutes), while workers in Marion County experienced the longest (34.4 minutes), compared to averages for Georgia and Alabama of 27.7 and 24.8 minutes, respectively. Table 3.10-2 also compares income levels among the counties in the ROI with income levels in the respective states and the nation. Among the eight counties, only Harris and Muscogee had per capita incomes that were on a par with Georgia, Alabama, and the U.S. in 2000. Per capita incomes in the other counties were lower than the averages in the respective states and the national average in 2000.

Table 3.10-4 summarizes comparative employment characteristics by county in the ROI, including unemployment rates, the employed labor force, and the distribution of employed civilian population by industry. The civilian labor force in the eight counties of the ROI totaled 135,490 in 2009, with 123,107 employed. The average unemployment rate in 2009 for the ROI was 9.1 percent, compared to 9.6 percent for the State of Georgia, 10.1 percent for the State of Alabama, and 9.3 percent for the U.S. Chattahoochee County had the highest unemployment rate (15 percent) in the ROI, while Harris County had the lowest (7 percent). Overall, the largest employment sectors in the ROI include education, health and social services, manufacturing, and retail trade. Although significant acreage in the ROI is devoted to forestry and agriculture, a very small percentage of the civilian population is employed in that sector. Major, private business openings in the ROI within the past decade have included KIA, Ben Carter Properties, Mobis, and Ala Trade Foods, each of which employ 500 workers or more (The Valley Partnership Joint Development Authority, 2009a-g).

Fort Benning has a work force of 40,885 personnel, of which 31,019 (76 percent) are uniformed Soldiers, 3,603 (9 percent) are civilian direct employees, and 6,263 (15 percent) are civilian contractors. Thus, civilian employment by Fort Benning accounts for approximately 7 percent of the civilian labor force in the ROI. In addition, more than 28,400 Family members and 10,900 military retirees and their dependents reside within the ROI. The total work force is projected to increase to 48,564 personnel by FY 2014, including 4,493 civilian direct employees and 6,344 civilian contractors, reflecting the relocation of the U.S. Armor Center and School. This would represent an 18.8 percent increase in the Installation work force (Fort Benning, 2010e).

Installation expenditures totaled $2,266,490,543 regionally during 2005, and payroll expenditures amounted to $1,054,214,521 (USACE, 2009). Thus, Fort Benning serves as an economic engine for the region by contributing more than $2 billion annually to the local economy. The Installation contributes more than $100 million locally each month, and an additional $25 million to $35 million are brought into the local economy each month as BRAC and other Army actions are implemented. BRAC/Transformation activities are expected to stimulate more than $3.5 billion in spending for construction on Fort Benning through 2016. Local planning authorities estimate that by 2012, direct payroll to military personnel will reach $1.3 billion annually, while the civilian and contractor payroll will reach $500 million per year. Additionally, Fort Benning's population growth is expected to increase the region's commercial sales volume by $1 billion annually, which doesn't include the sales attributable to a likely increase in retired military choosing to remain in the ROI.

Table 3.10-4. Employment in ROI

Characteristic	Chattahoochee County	Muscogee County	Harris County	Talbot County	Marion County	Webster County	Stewart County	Russell County	All Counties
Average Unemployment Rate in 2009 (percent)	15.0	8.8	7.0	9.1	9.6	9.4	10.3	11.2	9.1
Employed Labor Force in 2009	2,163	77,954	15,077	2,846	3,016	1,104	2,096	18,851	123,107
Employed Civilian Population in 2000 (aged 16 years and over)	2,280	75,677	11,821	2,533	3,015	985	1,904	19,902	118,117
Agriculture, Forestry, Fishing and Hunting, and Mining (percent)	1.6	0.4	0.8	4.1	6.8	9.0	5.3	1.4	1.0
Construction (percent)	6.5	6.0	6.7	7.2	9.1	5.3	8.4	8.9	6.7
Manufacturing (percent)	11.0	14.9	17.1	28.1	27.0	26.5	21.2	21.7	17.0
Wholesale Trade (percent)	2.6	2.0	3.7	2.6	3.3	3.5	2.6	2.1	2.3
Retail Trade (percent)	14.4	11.6	9.9	9.3	12.0	8.2	8.3	11.5	11.3
Transportation and Warehousing, and Utilities (percent)	3.6	3.6	3.9	5.8	6.0	8.2	4.8	4.4	4.0
Information (percent)	2.8	2.8	4.2	1.7	1.0	0.7	1.8	2.4	2.7
Finance, Insurance, Real estate and Rental and Leasing (percent)	7.3	10.8	9.9	5.6	3.5	2.8	3.8	8.6	9.8
Professional, Scientific, Management, Administrative, and Waste Management Services (percent)	4.4	6.0	6.1	5.3	3.9	2.7	3.4	5.8	5.8
Educational, Health and Social Services (percent)	23.6	21.4	18.5	20.1	15.2	16.0	22.1	16.0	20.1
Arts, Entertainment, Recreation, Accommodation and Food Services (percent)	6.8	9.0	8.3	2.1	3.6	2.5	5.6	6.5	8.1
Other Services Except Public Administration (percent)	6.4	5.4	4.2	3.9	4.4	6.4	7.0	5.2	5.2
Public Administration (percent)	9.1	6.0	6.5	4.3	4.0	8.0	5.8	5.4	5.9

Source: U.S. Census Bureau, 2000; BLS, 2010
Note: Data from 2000 Census, except where indicated (from BLS). Data for Chattahoochee County reflects civilian population only.
ROI = Region of Influence

3.10.1.4 TAXES AND REVENUE

The majority of tax revenue in the State of Georgia is derived from individual income taxes and sales and use taxes. These sources constituted 50 percent and 34 percent, respectively, of total state tax revenues ($15.6 billion) in FY 2009 (GDR, 2010a). The majority of tax revenue in the State of Alabama is derived from individual income taxes and sales and use taxes, which constituted 35 percent and 27 percent, respectively, of net state tax revenues ($7.6 billion) in FY 2009 (ADR, 2010). The sales tax rate in Georgia as applicable in the counties within the ROI includes a 4 percent statewide general sales tax, 1 percent local option tax, 1 percent local education option tax, and a 1 percent special purpose local tax option. The general sales tax rate in Russell County, Alabama, is 4 percent with additional local sales taxes ranging from 1 to 2.5 percent applicable in some jurisdictions.

In Georgia, the ad valorem tax, initially imposed by law in the 1800s, serves as the primary source of revenue for county governments, municipalities, and public schools in the state (GDR, 2010a). Real property (land and buildings) in Georgia is generally assessed at 40 percent of its fair market value. The governing authority of the county or other taxing jurisdiction annually sets the tax rate (millage) in each county. One mill represents a tax liability of $1 per $1,000 of assessed value. In addition to the county millage rates, the respective states apply millage rates applicable to all real property in the states. The Georgia State millage rate in each county is 0.25 mill applied to real and personal property. The Alabama State millage rate is 6.5 mill and real property is assessed at 10 percent of fair market value, including residential, agricultural, and forest property. Table 3.10-5 summarizes the millage rates by county in the ROI, as well as the net assessed value of general property by county. The table also compares the average property tax revenue per total acreage by county and the property tax revenue per capita by county.

Both Georgia and Alabama provide homestead exemptions on property taxes. Georgia provides for a $2,000 exemption on the assessed value of a home that is occupied and used as a primary residence by the owner. Higher exemptions are permitted for residents aged 62 years or older, as well as for disabled veterans and surviving spouses of military service members, peace officers, or firefighters killed in the line of combat or duty (GDR, 2010b). Alabama provides for a $4,000 state exemption on homesteads up to 160 acres for owners under the age of 65. Higher exemptions are permitted for homesteads whose owners are age 65 or older and meet income or disability requirements. County exemptions in Alabama vary from $2,000 to $4,000 of assessed value for a regular homestead (ADR, 2010).

Georgia provides special assessment programs that offer property tax relief to property owners who agree to maintain their property in these programs for a period of 10 years (GDR, 2010b). The special programs include Preferential Agricultural Property, Conservation Use Property, and Brownfield Property. Preferential Agricultural Property is generally taxed at 30 percent of fair market value. The Conservation Use Property program enables qualifying properties to be assessed at their current use value rather than fair market value. Qualifying properties may include bona fide agricultural property, environmentally sensitive property when maintained in its natural condition, residential transitional property when located in an area that is changing from residential to other uses, and property that has been certified by the Department of Natural Resources and approved by the local government for use as constructed storm water wetlands. The Brownfield Property program provides for the preferential assessment of contaminated property as an incentive for developers to clean it up. In addition, the Georgia Forest Land Protection Act of 2008 provides for an ad valorem tax exemption on property used primarily for subsistence or commercial production of wood products including an exclusion of the value of any residence located on the property. Also, standing timber in Georgia is not taxed until harvested or sold, at which time it is taxed at 100 percent of its fair market value.

Table 3.10-5. Property Values, Tax Rates, and Estimated Revenues in ROI

County	Net Assessed Value ($K)[1]	Millage Rate[2]	Estimated Revenue ($)[3]	Avg. Revenue Per Acre ($)	Per Capita Revenue ($)[4]
Chattahoochee County	56,833	25.290	1,437,000	9	100
Muscogee County	4,603,552	41.530	191,185,000	1,352	1,004
Harris County	1,211,135	22.950	27,796,000	92	922
Talbot County	197,081	30.079	5,928,000	23	933
Marion County	214,323	23.396	5,014,000	21	717
Webster County	82,830	28.147	2,331,000	17	1,063
Stewart County	130,905	25.447	3,331,000	11	730
Russell County	423,504	29.500	18,851,000	45	371

Source: GDR, 2010a; ADR, 2010

[1]For Georgia counties, includes net assessed value on general property ($ thousands) after the state homestead exemption (2008). For Russell County, Alabama, includes real, business personal, and motor vehicle property tax assessments in 2007.

[2]For Georgia counties, county millage rates per $1,000 of assessed value (2008). For Russell County, Alabama, combined millage rates for County and School District 1 (2010).

[3]For Georgia counties, estimated property tax revenue ($) calculated from net assessed values and millage rates (2008). For Russell County, Alabama, net collections of County, School, and Municipal taxes, including real, business personal, and motor vehicle property taxes (2008).

[4]Estimated per capita revenue ($) based on 2009 population.

$K = thousands of dollars; ROI = Region of Influence

Table 3.10-5 indicates that the comparative annual property tax revenues in relation to total county acreages vary substantially among counties within the ROI, with Muscogee County representing the highest ($1,352 per acre) and Chattahoochee County representing the lowest ($9 per acre). The comparative annual property tax revenues per capita vary within a narrower range, with Webster County representing the highest ($1,063 per capita) and Chattahoochee County again representing the lowest ($100 per capita). Most Georgia counties in the ROI show property tax revenues averaging from $717 to $1,004 per capita. The data for Russell County may not be directly comparable to the Georgia counties, because the property tax and revenue structure is not the same in Alabama. These data evidence the effect on property tax revenues in Chattahoochee County related to the large ownership of land by Fort Benning, which is not subject to state and county taxes. Although Fort Benning owns land in Muscogee and Russell counties as well, the effects on property tax revenues in these counties are not as substantial as in Chattahoochee County.

Standing timber in Georgia is taxed only once following its harvest or sale at 100 percent of fair market value based on the state and county ad valorem millage rates described above (GDR, 2010b). The timber is subject to taxation even if the land beneath it is exempt, unless prohibited by Federal law or treaty. In Alabama, forest products are subject to severance taxes that vary by the type of product. The taxes in Alabama are collected by the state and distributed 25 percent to the general fund, 25 percent to counties, and 50 percent to cities (ADR, 2010). Tax revenues on timber reported for 2007 by the Georgia counties in the ROI included $8,590 in Chattahoochee, $2,950 in Muscogee, $68,643 in Harris, $75,108 in Talbot, $70,174 in Marion, $107,842 in Webster, and $138,236 in Stewart, in addition to the state share of timber sales in these counties collectively of $4,794 (GDR, 2010b). Information on Alabama forest product severance taxes distributed specifically to Russell County is not available.

Fort Benning does not manage a commercial forest to produce income. Rather, income generated from timber sales is a by-product of sound forest ecosystem management and is used to help sustain the forest ecosystem management practices on Fort Benning. Each year Fort Benning conducts silvicultural timber

harvest to support military training activities and endangered species management. The money from the timber sales is deposited into the DoD forestry account and is distributed to participating Installations to reimburse costs incurred in forestry and natural resources management. This money is used to pay for employee salaries, tree planting services, trees, site preparation, prescribed burning, firebreak maintenance, wildfire suppression, equipment, etc. In accordance with 10 USC 2665, after all of the Installation's cost are incurred and if there are funds remaining from the Installation's timber sales for a given year, then 40 percent of the remainder of the funds generated by Fort Benning are paid to the states in which that Installation is located. Since 1990, the entitlement payments to respective states were $1,036,751 for Chattahoochee County and $431,060 for Muscogee County, Georgia, and $104,512 for Russell County, Alabama, totaling $1,572,323. State legislatures can expend these funds to the counties in which Fort Benning is located for projects such as public roads and public schools. It is up to each state's legislature to expend the funds to the counties.

Due to the requirements for management of the RCW on Fort Benning in accordance with the ESA, no remaining funds have been available for payment to the states since 2006, and it is anticipated that there will not be a large amount of funding generated in timber sales on Fort Benning in the next 5 to 10 years. The estimated annual average revenues are expected to range from $300,000 to $500,000. The primary timber sales conducted on Fort Benning are and will be chipping contracts that produce fuel wood for sale on the open market. Sawtimber and pulpwood volumes are expected to be very limited. Chipping contracts will be used to improve RCW habitat and military training areas by removing dense underbrush and invasive species for planting longleaf pine. With increased costs for natural resource management activities and the current state of the economy affecting timber prices, there may not be any money available for distribution to the states in coming years (Personal Communication, Parker, 2010).

During the scoping process for the TLEP Proposed Action, concerns were raised by community members and local government representatives regarding acquisition of land currently taxable by state and local authorities to Federal ownership, which would render that land non-taxable and reduce the tax revenue of the affected counties. The Payment in Lieu of Taxes (PILT) program was established by Public Law 94-565 in 1976 to provide partial compensation to local governments for loss of taxes on certain Federally-owned land. The PILT program is administered by the Department of Interior. Congress appropriates PILT payments each year according to a formula involving county entitlement land acres and populations, with adjustments for inflation, certain Federal program payments, as well as Congressional appropriation short-falls for the program (DOI, 2010).

The PILT Act defines lands that qualify for offset payments as "entitlement lands", which does not include active Army installations such as Fort Benning (Payments in Lieu of Taxes Act, 31 USC 6901 et. seq.). Therefore, neither Muscogee County nor Chattahoochee County in Georgia nor Russell County in Alabama receives PILT payments for lands currently comprising Fort Benning. The definition of "entitlement lands" does not include training lands acquired under the Fort Benning TLEP proposal; however, it does include one previous Army training land expansion action. The PILT Act was amended in 1981 to add training lands acquired for Fort Carson in Colorado (Public Law 97-99). This action indicates a potential mitigation could be provided for the loss of local tax revenue (i.e., an amendment to the PILT Act to add training lands acquired as part of this TLEP Proposed Action). Any such amendment must be pursued by local and state officials rather than the Army. In accordance with NEPA guidance, this EIS will discuss generally a PILT Amendment as potential mitigation with the understanding that mitigation is not within the Army's control (CEQs Forty Most Asked Questions, 19b). Legislative amendment can be an arduous process and the outcome is uncertain, so no specific assessment of a PILT Amendment can be determined at this time. For more information regarding the PILT program, see Appendix G.

3.10.1.5 PUBLIC SERVICES

Law Enforcement

The Provost Marshall provides on-Post law enforcement services. Off-Post law enforcement totals are provided in Table 3.10-6. While certain jurisdictions are below the U.S. national average of 2.3 officers per 1,000 residents, all departments with the exception of the Columbus Police Department report adequate staffing levels and low crime rates (Project America, 2008; Best Places, 2009; The Valley Partnership Joint Development Authority, 2009a-g; Unified Government of Webster County Board of Commissioners, 2009). The Columbus Police Department is in the process of increasing capacity and hired 100 new officers in the fall of 2009 in an effort to reduce workload. This has resulted in faster response times and positive public feedback on the quality of law enforcement services in the county (Columbus Police Department, 2009).

Table 3.10-6. Law Enforcement within the ROI

County	Police Department	Number Officers	Number Officers per 1,000 Residents
Chattahoochee	Sherriff Office	6	2.12[1]
Harris	Hamilton	>5[2]	1.76[3]
	Shiloh	1	
	Waverly Hall	5	
	Sherriff Office	43	
Marion	Buena Vista	6	1.72
	Sherriff Office	6	
Muscogee	Columbus	462	4.16
	Marshal	20	
	Sherriff Office	311	
Webster	Sherriff Office	5	2.28
Stewart	Lumpkin	4	3.73
	Richland	8	
	Sherriff Office	5	
Talbot	Talbotton	3	1.42
	Woodland	2	
	Sherriff Office	3	
Russell	Phenix City	80	2.20
	Sherriff Office	32	

Source: U.S. Department of Justice, 2009; Personal Communication, Chattahoochee County Sherriff's Office, 2010; Personal Communication, Talbotton City Hall, 2011; Personal Communication, Talbot County Police Department, 2011; Personal Communication, Muscogee County Marshal's Office, 2011; Personal Communication, Millirons, R., 2011.

1. Number is based off of 2000 Census estimate for Census Track 202.

2. Sherriff Department refused to disclose exact number of sworn officers.

ROI = Region of Influence

Fire Protection/Emergency Response

Fort Benning's Fire Department provides on-Post fire protection. In addition, it has Memoranda of Understanding (MOU) to provide fire assistance in times of increased need with fire departments in

Phenix City, the City of Columbus, and Chattahoochee County. No MOU exist between Fort Benning and the fire departments in Stewart, Webster, Marion, Harris, or Talbot counties (Personal Communication, Stewart D., 2010).

Muscogee County and Phenix City Fire departments retain 342 and 58 paid fire-fighters, respectively. Muscogee County, in an agreement with bordering counties to the north outside of the ROI, provides fire services to areas lying immediately adjacent to the county. The county provides adequate fire protection given its current population; however, if population growth occurs, the county may not be able to provide a sufficient level of service (LOS) to neighboring counties (The Valley Partnership Joint Development Authority, 2009d-e).

Russell County is serviced by volunteer fire departments (VFDs); however, these VFDs experience resource and staffing deficiencies in less populated areas. One VFD is located along the border of Russell East near the intersection of Oswichee Road and CR-39 and a second VFD near the intersection of Route 165 and Firetower Road. Chattahoochee, Harris, Marion, Stewart, Talbot, and Webster counties are serviced solely by VFDs. Staffing levels are adequate in Chattahoochee and Webster counties, while Harris, Marion, Stewart, and Talbot counties have insufficient funding mechanisms that preclude adequate functioning and consistent staffing of their departments. Additionally, despite being connected to government-provided water services, there is insufficient flow capacity of the water system in Marion, Stewart, Talbot, and Webster counties for fire suppression. Table 3.10-7 details the level of fire protection within the ROI (The Valley Partnership Joint Development Authority, 2009a–g; Unified Government of Webster County Board of Commissioners, 2009).

Table 3.10-7. Fire Protection within the ROI

County	Number of Fire Departments
Chattahoochee	2
Harris	13
Marion	6
Muscogee	14
Webster	2
Stewart	2
Talbot	6
Russell (not including Phenix City)	11
Phenix City	3

Source: The Valley Partnership Joint Development Authority, 2009a-g; Unified Government of Webster County Board of Commissioners, 2009

ROI = Region of Influence

The Fort Benning Fire Department maintains its own Emergency Medical Services (EMSs). Because Fort Benning is located within Health District 7 under the Georgia Division of Public Health, by default it has an MOU to provide EMSs in times of increased need to other counties within the district, which includes Chattahoochee, Marion, Muscogee, Harris, Stewart, Talbot and Webster counties. However, mutual aid occurs primarily in areas closest to Fort Benning, specifically the City of Columbus, Chattahoochee County, and Stewart County. Fort Benning also maintains an MOU with Phenix City, but does not typically provide assistance to the more rural areas of Russell County (Personal Communication, Dunford D., 2010).

EMSs in Muscogee County are provided publicly by the Columbus Fire and Emergency Services Department and privately by the Mid-Georgia Ambulance Company. This department has adequate resources for current conditions and future growth. EMSs in Chattahoochee County are provided jointly by the Columbus Fire and Emergency Services Department and the Cusseta-Chattahoochee VFD. The low incidence of emergencies in Chattahoochee County has led to minimal stress on the Columbus Fire and Emergency Services Department; however, EMSs in Muscogee County are vulnerable to increased stress not only from growth within its own county, but from Chattahoochee County as well. Harris County operates publicly provided EMS out of four stations in the county. While service can be characterized as adequate, coverage is concentrated in the eastern portion of the county. Marion, Stewart, Talbot, and Webster counties all operate their own EMSs. Service can be characterized as adequate given the low frequency of incidents; however, these departments are only capable of responding to one event at a time and would require inter-county assistance to respond to additional emergencies. Agreements exist between Stewart, Marion, and Webster counties to provide back-up EMS in events of increased demand; however this does not frequently occur. EMSs in Russell County are operated by two private providers and one non-profit provider, with three stations located in Phenix City and one in Seale. EMSs in Russell County can be categorized as sufficient (The Valley Partnership Joint Development Authority, 2009a-g; Unified Government of Webster County Board of Commissioners, 2009).

Response times for both fire services and EMSs are generally adequate in more densely populated, incorporated areas. In the unincorporated, typically rural portions of the ROI, response times are generally higher due to the prevalence of unpaved roads, imprecise mapping, and overall distance from the dispatch point (The Valley Partnership Joint Development Authority, 2009a, c, f; Unified Government of Webster County Board of Commissioners, 2009).

Schools

For educational services off-Post, the U.S. Department of Education provides Federal impact aid to school districts that have Federal lands within their jurisdiction. This aid is authorized under Public Law 103-282 as a type of payment in lieu of taxes that would have been paid if the land were not held by the Federal government. School districts receive Federal impact aid for each student whose parent or parents live or work on Federal property. The amount of aid a school receives is based on the number of Federal students the district supports in relation to the total district student population. Schools receive more aid for those students whose parents both live and work on Federal property. Total Federal impact aid varies each year depending on congressional appropriations, but in general has ranged from $250 to $2,000 per student (USACE, 2007).

Fort Benning has seven DoD schools on the Installation (six elementary and one middle). High school students residing on the Installation (grades 9-12) attend local county high schools (The Valley Partnership Joint Development Authority, 2009a). Off-Post, there are a total of 52 elementary schools, 21 middle schools, 15 high schools and 1 central elementary/high school within the ROI. Table 3.10-8 presents the school districts, type, enrollment, capacity, and student-teacher ratio (Georgia Department of Education, 2010a; Alabama Department of Education, 2010).

Colleges within the ROI are located primarily in the Columbus-Phenix City MSA and include Columbus State University, Georgia Military College (Columbus Campus), and Columbus Technical College in Columbus, with a satellite campus for Troy State University and Chattahoochee Valley Community College in Phenix City.

Table 3.10-8. School Districts and Enrollment within the ROI

School District or County	School Type (number of schools)	Enrollment	Total District Enrollment	District Capacity	Student-Teacher Ratio
Chattahoochee	Elementary (1)	335	945	1,360	1:14
	Middle (1)	148			
	High (1)	462			
Marion	Elementary (1)	639	1,353	1,900	1:15
	Middle/High (1)	714			
Muscogee	Elementary (34)	15,743	32,288	36,690	1:13
	Middle (12)	7,000			
	High (9)	9,545			
Webster	Elementary/Middle (1)	367	468	550	1:13
	High (1)	101			
Stewart	Elementary (1)	270	548	994	1:11
	Middle (1)	135			
	High (1)	143			
Russell (includes Phenix City)	Elementary (11)	5,194	9,845	10,073	1:16
	Middle (4)	1,905			
	High (3)	2,746			
Harris	Elementary (4)	1,979	5,011	5,072	1:14
	Middle (2)	1,550			
	High (1)	1,522			
Talbot	Central Elementary/High (1)	599	599	988	1:12
Total			51,057		

Source: Georgia Department of Education, 2010a, b; Alabama Department of Education, 2010; The Valley Partnership Joint Development Authority, 2009 a – g; Personal Communication, Green, J. 2011.

ROI = Region of Influence

Schools require a level of excess capacity in order to maintain efficiency, as full capacity would require extensive and time-consuming scheduling. Currently, only Mount Olive Elementary in Russell County and elementary schools in Phenix City are near or at enrollment capacity; however, if plans to build additional elementary schools proceed, sufficient capacity for growth is expected. All remaining schools in the ROI have some capacity for growth, to varying degrees. Certain school districts may approach capacity within the next three years based on current growth estimates irrespective of the Proposed Action. Both Muscogee and Chattahoochee County School districts are projected to exceed capacity by 2013 if no new schools are constructed. Harris and Marion County School districts are projected to have sufficient space for additional students as a result of new facilities opening in 2011. Stewart and Talbot County School districts are projected to have sufficient capacity due to lack of increased growth. Russell County middle and high schools also have sufficient capacity for additional students (The Valley Partnership Joint Development Authority, 2009a-g). Webster County High School has excess capacity for growth, while the elementary/middle school is categorized as just below capacity (Personal Communication, Webster County Schools, 2010).

Healthcare

The U.S. Army Medical Department Activity provides medical care to an eligible patient population in excess of 72,000 beneficiaries out of the 250-bed MACH (U.S. Army Medical Department, 2010). A new hospital is currently under construction at the Greenfield site west of the MACH facility and is scheduled for completion in FY 2013. Additional medical facilities are located in Soldiers' Plaza, including the Community Mental Health Service, the Social Work Service, and the Preventive Medicine Service. Hospitals serving the ROI are included below in Table 3.10-9.

Table 3.10-9. Hospital Service within the ROI

County	Facility	Hospital Type	Number of Beds
Chattahoochee	Martin Army Community Hospital	General	250
Muscogee	Columbus Doctors Hospital	General	171
	The Medical Center	General	497
	Saint Francis Hospital	General	269
	Columbus Specialty Hospital	Acute, Long-term care	30
	West Central Georgia Regional Hospital	Psychiatric	145
	Hughston Hospital	Orthopedic	100
Stewart	Stewart Webster Hospital	General	25
Russell	Jack Hughston Memorial Hospital	Surgical	60
	Regional Rehabilitation Hospital	Rehabilitation	38
Total Beds			**1,585**
Total Beds per 1,000 Residents			**5.88**

Source: U.S. News and World Report, 2010
ROI = Region of Influence

Relative to the Hill-Burton Act standard of 4.5 hospital beds per 1,000 residents and the 2007 U.S. average of 2.7 hospital beds per 1,000 residents, healthcare services within the ROI can be categorized as above average (Pearson, 2009). However, it is important to note that medical services are highly concentrated within the Columbus-Phenix City MSA and are notably deficient in rural areas. In particular,

there is a shortage of physicians and nurse practitioners in these communities. This shortage is most acute in Marion County, which lacks a physician, and Webster County, where a single physician is located (The Valley Partnership Joint Development Authority, 2009c; Unified Government of Webster County Board of Commissioners, 2009).

3.10.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to socioeconomic resources that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to environmental justice would result from a disproportionate impact on minority or low-income populations. A significant impact would also result from displacement of schools, churches, and emergency services or from an adverse effect on socioeconomic indicators (i.e., population, personal income, employment, or business activity exceeds the difference between the maximum and average historical levels). Additionally, a significant impact would also result from a 10 percent or greater loss of tax revenues to counties.

Table 3.10-10 summarizes comparative demographic and socioeconomic conditions within the TLEP study area identified for potential acquisition under the five alternatives considered in this EIS. These conditions provide the basis for the analysis of potential demographic and socioeconomic impacts in comparison to the conditions described in the affected environment of the ROI. Data from Table 3.10-10 also supported an analysis of the inflow of money to the local community using the Economic Impact Forecasting System (EIFS) as described in Appendix E.

3.10.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning would not occur. No acquisition of land would occur within the TLEP study area to Federal ownership and management, and existing conditions would remain as described in Section 3.10.1. No change in population or demographics would occur, and existing trends in population, housing, public services, employment, economic development, revenues and taxes would continue unaffected. In turn, no impacts would occur to minority and low-income populations or children in the TLEP study area from the alternative.

The Installation, however, would not be able to support the doctrinal maneuver requirements for operational units since additional land is required to do so. The requirement to train two battalions simultaneously with the MCoE training cannot be met on Fort Benning's existing land base. Without land acquisition, the MCoE JBO requirement to move the ARC field training would cause the Army to pursue other options, such as conducting ARC training at another military installation or the use of mobile training teams. Changes in training and associated impacts to socioeconomic conditions would be the subject of future NEPA analysis.

Table 3.10-10. Characteristics of the TLEP Study Area

Characteristic	Marion West	Webster West	Stewart East	Stewart Central	Stewart West	Russell East	Russell West	Talbot West	Harris East
Estimated Maximum Land Area (acres)	33,300	25,700	16,800	40,100	57,100	40,800	40,500	17,400	7,000
Estimated Maximum Number of Land Owners (number)[1]	162	260	69	197	172	450	355	31	16
Estimated Number of Structures (number)[1]	97	149	46	93	93	185	117	6	5
Estimated Demolition Costs ($K)[1]	$2,425	$3,725	$1,150	$2,325	$2,325	$4,625	$2,925	NA	NA
Total Estimated Value of Improved Property ($M)[2]	$78	$61	$25	$42	$74	$157	$84	$41	$17
Estimated Assessed Property Value ($M)[3]	$31	$25	$10	$17	$29	$16	$8	$16	$7
Estimated Annual Property Tax Revenue ($K)[4]	$586	$518	$235	$396	$693	$464	$249	$377	$141
Percentage of Estimated County Tax Revenue Contributed by Area[5]	12	22	7	12	21	2	1	6	<1
Housing Units in Associated Census Blocks (number)[6]	98	128	50	142	154	281	279	52	24
Population in Associated Census Blocks (number)[6]	233	290	102	282	292	562	661	114	68
Estimated Minority Population Percentage of Total[6]	59	40	33	64	65	34	83	66	2
Estimated Percentage of Individuals Below Poverty Level[6]	28	21	22	23	26	16	22	23	2
Estimated Percentage of Individuals Under 18 Years of Age[6]	28	24	27	25	23	25	29	26	24

Source: USACE, 2010; GDR, 2010a; ADR, 2010; U.S. Census, 2010.
[1]Estimates provided by the USACE Real Estate Office in Excel spreadsheet (USACE, 2011).
[2]Estimates provided by the USACE Real Estate Office in Excel spreadsheet (USACE, 2010).
[3]For Georgia counties, calculated as 40% of total estimated value of improved property (GDR, 2010a). For Russell County, Alabama, calculated as 10% of total estimated value of improved property (ADR, 2010).
[4]Calculated based on estimated assessed property tax values adjusted to net assessed values using net to gross value ratios for counties and multiplied by millage rates for counties (GDR, 2010a and ADR, 2010).
[5]Calculated from the estimated annual property tax revenue contributed by the area divided by the estimated property tax revenue for the respective county as listed in Table 3.10-5.
[6]Calculated from U.S. Census data.

$K = thousands of dollars; $M = millions of dollars; TLEP = Training Land Expansion Program; NA = not available

3.10.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

3.10.2.2.1 FEDERAL ACQUISITION OF LAND

Population and Housing

The USACE estimated that the acquisition of land within Alternative 1 would affect a maximum of 491 owners and require the demolition of an estimated 292 structures. Based on data from the 2000 Census for the blocks associated with the three areas, the proposed acquisition has the potential to displace or otherwise directly affect an estimated 276 housing units and an estimated population of 625 individuals residing within or immediately adjacent to the affected land areas. Implementation of Alternative 1 would thus displace or directly affect approximately 4.5 percent of the combined population and 4.2 percent of the housing units in the three counties involved. As summarized in Table 3.10-1, all three counties lost population over the past decade; therefore, the displaced population may relocate to other counties in the TLEP study area or may leave the ROI entirely. The eight counties in the ROI collectively had approximately 122,000 housing units in the 2000 Census, with approximately 12,600 vacant housing units (see Table 3.10-2). Therefore, adequate housing choices would be available for individuals choosing to relocate within the ROI. Choices for relocation within the same counties, however, may be less abundant given the lesser amount of housing stock in all three counties (see Table 3.10-2).

Individuals and businesses affected by the Federal acquisition of land would be eligible for rights and benefits under the Uniform Relocation Assistance and Real Property Acquisition Policies Act (URA) of 1970 as amended (42 USC 4601, et seq.). The rights and benefits available to affected land owners are explained in more detail in Appendix F. The implementation of requirements under the URA would reduce impacts on individuals and businesses displaced by Alternative 1. For real property acquisition, the URA requires Federal agencies to:

- Appraise property before conducting negotiations with an owner;
- Invite the property owner to accompany the appraiser during property inspection;
- Provide the owner with a written offer of just compensation and a summary of what is being acquired;
- Pay for property before possession; and
- Reimburse expenses resulting from the transfer of title such as recording fees, prepaid real estate taxes, or other expenses.

In cases of residential displacements, the URA requires Federal agencies to:

- Provide relocation advisory services to displaced tenants and owner occupants;
- Provide a minimum 90 days written notice to vacate prior to requiring possession;
- Reimburse for moving expenses; and
- Provide payments for the added cost of renting or purchasing comparable replacement housing.

In cases of non-residential displacements (businesses, farms, and nonprofit organizations), the URA requires Federal agencies to:

- Provide relocation advisory services;
- Provide a minimum 90 days written notice to vacate prior to requiring possession; and
- Reimburse for moving expenses and reestablishment expenses.

Environmental Justice and Protection of Children

As summarized in Table 3.10-10, the Census blocks in Webster West and Stewart East contain minority populations of approximately 40 percent and 33 percent, respectively, which are lower than the minority populations of the respective entire counties (approximately 50 percent and 60 percent as summarized in Table 3.10-3). Therefore, the acquisition of land in these counties for Alternative 1 would not have a disproportionate adverse effect on minority populations in the study area. The aggregated Census blocks in Marion West, however, contain a minority population comprising 59 percent compared to a 43-percent minority population in the entire county. Therefore, the acquisition of land for Alternative 1 has the potential for significant adverse environmental justice impacts by disproportionate displacement of minorities within the population of Marion County.

Marion West, Webster West, and Stewart East have low-income populations comprising 28 percent, 21 percent, and 22 percent, respectively, of the total populations in the area (see Table 3.10-10). The percentages for Webster West and Stewart East are generally comparable to the percentages in the respective counties as a whole (19 percent and 22 percent, respectively, as shown in Table 3.10-3). Marion West, however, contains a low-income population comprising 28 percent, which is nearly 6 percent higher than the county-wide average. Therefore, the acquisition of land for Alternative 1 also has the potential for significant adverse environmental justice impacts by disproportionate displacement of a low-income population within Marion County.

Among the three land areas considered for acquisition in Alternative 1, Marion West and Webster West have proportions of children in the population that are comparable to the proportions within the respective counties. Only Stewart East has a higher proportion of children under the age of 18 years (27 percent) than the county as a whole (25 percent) as outlined in Tables 3.10-10 and 3.10-2. These small differences do not indicate that Alternative 1 would have a disproportionately adverse impact by potential displacement of a higher percentage of children in Stewart County.

Economic Development and Employment

In the event that approximately 625 individuals could be displaced from the Marion West, Webster West and Stewart East areas for Alternative 1, the potential impact on the economies and employment within the respective counties would depend upon whether these individuals would remain at their current places of employment or seek new employment outside the ROI for the TLEP study area. If all the individuals were to leave the ROI, the reduction in the employed labor force of the eight counties would be less than 1 percent, which would have a negligible effect on regional employment. Employment in the respective counties could decline more noticeably in the event of relocation outside the ROI.

The acquisition of lands in Marion, Webster, and Stewart counties to Federal ownership would eliminate farming and lumbering jobs on private lands. As indicated in Table 3.10-4, relatively small percentages of the civilian work force in these counties are employed in agriculture, forestry, and related industries. Therefore, the loss of employment in these industries on private lands in the potential acquisition areas is not expected to be substantial.

The EIFS analysis in Appendix E indicates that the expenditures for procurement of lands and demolition of structures for Alternative 1 would have a moderate positive regional economic impact on the ROI. The introduction of these land procurement and demolition funds into the local multi-county economy is a direct impact, similar to the construction of a new building or an increase in procurements as part of a new action. The EIFS model captures the "multiplier" effects associated with such expenditures, addressing the total effects (direct and indirect) of the new expenditures in the ROI. The model addresses likely total impacts on business volume, employment, and income in the ROI and establishes the likely significance of these estimates, based on historical ROI trends.

Taxes and Revenue

The acquisition of the entire Marion West, Webster West, and Stewart East areas for Alternative 1 would result in estimated reductions of annual property tax revenues for the counties by 12 percent, 22 percent,

and 7 percent, respectively (see Table 3.10-10). Losses of tax revenues at these amounts for counties with relatively small populations and low or negative growth has the potential for significant adverse impacts on the maintenance of county services and infrastructure. Fort Benning's acquisition of the Webster West area would have a particularly significant adverse impact on the county's revenue base.

The acquisition of lands in Marion, Webster, and Stewart counties to Federal ownership would eliminate tax revenues from the sale of farm and forest products. The tax revenues lost by the respective counties may be compensated to an extent by the distribution of 40 percent of the proceeds from forest products sold by Fort Benning in each FY as discussed in Section 3.10.1.4.

Public Services

Law Enforcement. Given the assumptions of population redistribution described under Population and Housing, it is likely that the majority of displaced individuals would relocate throughout the ROI, with some residents remaining in their counties. While the pattern of dispersion throughout the ROI is unknown, it is expected that localized increases in population would be marginal. Given that all police departments within the ROI have reported adequate staffing levels, it is expected that small, localized increases in population would not have measureable effects on the capacity to provide law enforcement. As such, impacts to law enforcement under Alternative 1 would be negligible.

The worst case scenario for law enforcement impacts as a result of the Proposed Action would be if all displaced individuals relocated to Harris County, which has the lowest ratio of police officers at 0.33 per 1,000 residents. Population growth would result in increased service calls, which could potentially impact response times given such a low ratio. It is unlikely, however, that all residents would relocate to this county.

Fire Protection/Emergency Response. In the event of relocations resulting from the acquisition of lands for Alternative 1, it is expected that localized increases in population would be marginal. Although certain fire departments are currently under-resourced and could experience an increase in service calls, this increase is anticipated to be marginal and would not significantly impede fire protection.

The acquisition of land within Alternative 1 could impact Marion, Stewart, and Webster counties' ability to provide inter- and intra-county fire assistance and inter-county EMS in times of increased need. Ambulance and fire truck response times could potentially be impacted by the restriction of certain roads, which would increase the amount of time it would take to reach certain areas of the county. The need for inter- and intra-county assistance is relatively low; therefore, fire protection and EMS should experience only minor impacts.

The worst case scenario of impacts to fire protection would occur if all displaced residents resettled in rural areas at a far distance from a fire or EMS station. These areas include portions of southern Stewart County, northeastern Marion County, southeastern Webster County, south central and western Russell County, and southwestern Chattahoochee County. Relocation in these areas would lead to increased response times and could result in minor impacts. It is unlikely, however, that all residents would relocate in these areas.

Schools. In the event of residents dispersing throughout the ROI, increases in student population would be marginal. Some schools may require the hiring of additional teachers to maintain student-teacher ratios; however, most schools within the ROI have the capacity for increased student population. Therefore, impacts to the school districts are expected to be negligible.

Under the worst case scenario, impacts could be experienced in the event of all families relocating to the same county. Stewart County has the lowest student-teacher ratio and as a result would have to hire the most teachers to maintain staffing ratios in the event of total relocation to Stewart County. Under Alternative 1, Stewart County schools would have to hire a maximum of 12 teachers to maintain current staffing ratios if all residents from Webster West and Marion West relocated to the county. Considering

that Stewart County has the least favorable housing stock for relocation, it is unlikely that a high percentage of displaced residents would relocate there.

Healthcare. Under current relocation assumptions, localized increases in population would be marginal. Because the Proposed Action would not result in a population increase, the number of beds per 1,000 residents in the ROI would not decrease and impacts would be negligible.

Stewart Webster Hospital is the only hospital within the ROI outside of the Columbus-Phenix City MSA and is the hospital with the lowest capacity to absorb any localized increase in population. The worst case scenario for healthcare would seem to be a clustering in the service area of this hospital. Because Marion, Stewart, and Webster counties are already primarily serviced by Stewart Webster Hospital, there is no potential for localized increases in population under Alternative 1.

3.10.2.2.2 ARMY MANAGEMENT

Army management of the acquired land would have a negligible impact on population, housing, environmental justice, children, public employment, taxes and revenue, and public services in the surrounding communities.

3.10.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

The preparation of newly acquired land by Fort Benning for Alternative 1 would have a negligible additional effect on population, housing, environmental justice, protection of children, and public services, because no additional displacements would be anticipated. Other impacts on the surrounding population would be as described in other sections of this chapter.

Demolition and construction activities associated with the upgrade of training infrastructure for Alternative 1 would have a beneficial impact on the ROI by providing temporary employment opportunities. Construction and upgrading of training infrastructure would also have a short-term beneficial impact from increased spending for materials locally, as well as multiplier effects from indirect and induced spending.

3.10.2.2.4 ARMY TRAINING

Training activities would be restricted to the land acquired and would have a negligible impact on population, housing, environmental justice, children, employment, taxes and revenue, and public services in the surrounding communities. The potential for adverse land use conflicts, noise, and safety impacts to populations surrounding newly acquired lands are discussed in Sections 3.2, 3.5, and 3.14, respectively. The addition of newly acquired lands could provide an economic opportunity for growth within the county in support of training.

3.10.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3). The proposed transportation route to link Fort Benning with these areas could require the acquisition of approximately 62 additional acres of land in Russell County.

3.10.2.3.1 FEDERAL ACQUISITION OF LAND

Population and Housing

The USACE estimated that the acquisition of land within Alternative 2 would affect a maximum of 805 owners and require the demolition of an estimated 302 structures. Based on data from the 2000 Census for the blocks associated with the two areas, the proposed acquisition has the potential to displace or

otherwise directly affect an estimated 560 housing units and an estimated population of 1,223 individuals residing within or immediately adjacent to the affected land areas. Implementation of Alternative 2 would thus displace or directly affect approximately 2.4 percent of the population and housing units in Russell County. The displaced population may relocate to other counties in the TLEP study area or may leave the region entirely. As summarized in Table 3.10-1, Russell County gained a modest 2.2 percent in population over the past decade. Given a total of 122,000 housing units in the ROI, and approximately 12,600 vacant housing units (see Table 3.10-2), adequate housing choices would be available for individuals choosing to relocate within the ROI. Choices for relocation specifically within Russell County would be less abundant; however, the relative housing stock within Russell County was nearly 23,000 housing units in the 2000 Census, of which more than 3,000 were unoccupied (see Table 3.10-2).

Individuals and businesses affected by the Federal acquisition of land would be eligible for rights and benefits under the URA as described for Alternative 1 (Section 3.10.2.2.1) and supplemented by information in Appendix F. The implementation of requirements under the URA would reduce impacts on individuals and businesses displaced by Alternative 2.

Environmental Justice and Protection of Children

As summarized in Table 3.10-10, the Census blocks in Russell East and West contain minority populations of approximately 34 percent and 83 percent, respectively, while the minority population percentage in Russell County as a whole is approximately 47 percent (see Table 3.10-3). Therefore, the acquisition of land in Russell East for Alternative 2 would not have a disproportionate adverse effect on minority populations in the study area. However, because of the extremely high percentage of minorities in the Census blocks of Russell West, the acquisition of this land for Alternative 2 would have the potential for significant adverse environmental justice impacts by disproportionate displacement of minorities within the ROI.

Russell East and West have low-income populations comprising 16 percent and 22 percent of their respective total populations (see Table 3.10-10). In comparison, Russell County as a whole has a low-income population of approximately 20 percent, as shown in Table 3.10-3. Although Russell West has a slightly higher percentage of individuals with incomes below poverty level than the county, the comparison does not indicate that the acquisition of land in either area would have a disproportionate adverse effect on low-income populations in the ROI.

In comparison to the county-wide distribution of approximately 26 percent of children under the age of 18 in the population (see Table 3.10-2), Russell East has a comparable distribution of 25 percent, while Russell West is slightly higher at 29 percent. These small differences do not indicate that Alternative 2 would have a disproportionately adverse impact by potential displacement of a higher percentage of children in Russell County.

Economic Development and Employment

In the event that approximately 1,223 individuals could be displaced from the Russell East and West areas for Alternative 2, the potential impact on the economies and employment within the ROI would depend upon whether these individuals would remain at their current places of employment or seek new employment outside the ROI for the TLEP study area. If all the individuals were to leave the ROI, the reduction in the employed labor force of the eight counties would be less than 1 percent, which would have a negligible effect on regional employment. Employment in Russell County could decline more noticeably in the event of relocation outside the ROI.

The acquisition of lands in Russell County to Federal ownership would eliminate farming and lumbering jobs. As indicated in Table 3.10-4, a relatively small percentage of the civilian work force in Russell County is employed in agriculture, forestry, and related industries. Therefore, the loss of employment in these industries on lands in the potential acquisition areas is not expected to be substantial.

The EIFS analysis in Appendix E indicates that the expenditures for procurement of lands and demolition of structures for Alternative 2 would have a moderate positive regional economic impact on the ROI, comparable to the effects described for Alternative 1 (see Section 3.10.2.2.1).

Taxes and Revenue

The acquisition of the entire Russell East and West areas for Alternative 2 would result in an estimated reduction of annual property tax revenue for Russell County by approximately 3 percent (see Table 3.10-10). A loss of revenue at this level would be a moderate adverse impact, and could potentially be compensated by the reduction in demands for county services and maintenance of infrastructure within the newly acquired land.

The acquisition of lands in Russell County to Federal ownership would eliminate tax revenues from the sale of farm and forest products. The tax revenues lost by the county may be compensated to an extent by the distribution of 40 percent of the proceeds from forest products sold by Fort Benning in each FY as discussed in Section 3.10.1.4.

Public Services

Law Enforcement. Impacts to law enforcement under Alternative 2 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Fire Protection/Emergency Response. Under Alternative 2, two volunteer fire stations within Russell East could be displaced as a result of land acquisition. It is expected that the Army would provide financial assistance for the relocation of these stations. Therefore, a moderate temporary adverse impact would be anticipated.

Schools. Under Alternative 2, impacts would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). In the worst case scenario of all residents relocating to Stewart County, an additional 41 teachers would have to be hired to maintain current staffing ratios.

Healthcare. Impacts to healthcare under Alternative 2 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). Under the worst case scenario, localized impacts could be experienced if all residents relocated to the service area of Stewart Webster Hospital.

3.10.2.3.2 ARMY MANAGEMENT

Impacts of Army management under Alternative 2 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.2).

3.10.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts from preparation of newly acquired land under Alternative 2 would be similar to Alternative 1 and are expected to be negligible on population, housing, environmental justice, protection of children, and public services. Also similar to Alternative 1, beneficial impacts would occur from temporary employment opportunities and from increased spending for materials locally, as well as multiplier effects from indirect and induced spending during construction (Section 3.10.2.2.3).

3.10.2.3.4 ARMY TRAINING

Impacts of training under Alternative 2 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.4).

3.10.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3). In addition, the proposed transportation routes to link Fort Benning with these areas could require the acquisition of approximately 108 acres of land in Chattahoochee County.

3.10.2.4.1 FEDERAL ACQUISITION OF LAND

Population and Housing

The USACE estimated that the acquisition of land associated with Alternative 3 would affect a maximum of 369 owners and require the demolition of an estimated 186 structures. Based on data from the 2000 Census for the blocks associated with the two areas, the proposed acquisition has the potential to displace or otherwise directly affect an estimated 296 housing units and an estimated population of 574 individuals residing within or immediately adjacent to the affected land areas. Implementation of Alternative 3 would thus displace or directly affect approximately 12.6 percent of the population and housing units in Stewart County which would constitute a moderate adverse impact. The displaced population may relocate to other counties in the TLEP study area or may leave the region entirely. As summarized in Table 3.10-1, Stewart County lost 13 percent of its population over the past decade. Given a total of 122,000 housing units in the ROI, and approximately 12,600 vacant housing units (see Table 3.10-2), adequate housing choices would be available for individuals choosing to relocate within the ROI. Displaced residents wanting to relocate within Stewart County, however, could encounter a lesser amount of housing stock in the county (see Table 3.10-2).

Individuals and businesses affected by the Federal acquisition of land would be eligible for rights and benefits under the URA as described for Alternative 1 (Section 3.10.2.2.1) and supplemented by information in Appendix F. The implementation of requirements under the URA would reduce impacts on individuals and businesses displaced by Alternative 3.

Environmental Justice and Protection of Children

As summarized in Table 3.10-10, the Census blocks in Stewart Central and West contain minority populations of approximately 64 percent and 65 percent, respectively, while the minority population percentage in Stewart County as a whole is approximately 60 percent (see Table 3.10-3). These differences are relatively small, but they emphasize the fact that Stewart County has the highest percentage of minorities among all the counties in the ROI. Therefore, although the acquisition of land in the two areas would not have a disproportionate adverse effect on the distribution of minorities in Stewart County, the acquisition of land and displacement of population in Stewart County would have the potential for significant adverse environmental justice impacts by disproportionate displacement of minorities within the ROI as a whole.

Low-income populations in Stewart Central and West comprise 23 percent and 26 percent of the total populations in the areas (see Table 3.10-10). In comparison, Stewart County as a whole has a low-income population of approximately 22 percent, as shown in Table 3.10-3. The higher percentage of individuals with incomes below the poverty level in Stewart West indicates that Alternative 3 could potentially have a significant adverse environmental justice impact by disproportionately displacing low-income individuals. Stewart County is already among the counties with the highest percentages of low-income population within the ROI.

The distribution of children under the age of 18 in both Stewart Central (25 percent) and Stewart West (23 percent) are comparable to the 25 percent distribution in Stewart County as a whole (see Table 3.10-2). Therefore, it does not appear that Alternative 3 would have a disproportionately adverse impact by potential displacement of a higher percentage of children in Stewart County or the ROI.

Economic Development and Employment

In the event that 574 individuals could be displaced from the Stewart Central and West areas for Alternative 3, the potential impact on the economies and employment within the ROI would depend upon whether these individuals would remain at their current places of employment or seek new employment outside the ROI for the TLEP study area. If all the individuals were to leave the ROI, the reduction in the employed labor force of the eight counties would be less than 1 percent, which would have a negligible effect on regional employment. Employment in Stewart County could potentially decline more noticeably in the event of relocation outside the ROI.

The acquisition of lands in Stewart County to Federal ownership would eliminate farming and lumbering jobs. As indicated in Table 3.10-4, a relatively small percentage of the civilian work force in Stewart County is employed in agriculture, forestry, and related industries. Therefore, the loss of employment in these industries on lands in the potential acquisition areas is not expected to be substantial.

The EIFS analysis in Appendix E indicates that the expenditures for procurement of lands and demolition of structures for Alternative 3 would have a moderate positive regional economic impact on the ROI, comparable to the effects described for Alternative 1 (see Section 3.10.2.2.1).

Taxes and Revenue

The acquisition of the entire Stewart Central and West areas for Alternative 3 would result in an estimated reduction of annual property tax revenue for Stewart County by approximately 33 percent (see Table 3.10-10). A loss of tax revenue of this magnitude for a county with relatively small population and negative growth could potentially have significant adverse impacts on the maintenance of county services and infrastructure. Fort Benning's acquisition of the Stewart Central and West areas would have a particularly significant adverse impact on the county's revenue base.

The associated acquisition of approximately 108 acres of land in Chattahoochee County to provide the proposed transportation routes between Fort Benning and the lands in Stewart Central and West could result in a loss of annual tax revenue of less than $1,000 for the county. This loss in revenue, amounting to less than 0.1 percent of the county total, would not have a significant impact on the Chattahoochee County revenue base.

The acquisition of lands in Stewart County to Federal ownership would eliminate tax revenues from the sale of farm and forest products. The tax revenues lost by the county may be compensated to an extent by the distribution of 40 percent of the proceeds from forest products sold by Fort Benning in each FY as discussed in Section 3.10.1.4.

Public Services

Law Enforcement. Impacts to law enforcement under Alternative 3 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Fire Protection/Emergency Response. Impacts to fire protection and EMS from population redistribution under Alternative 3 would be similar to Alternative 1 (Section 3.10.2.2). Acquisition of Stewart West and Stewart Central could require fire and EMS providers to take slightly longer, less direct routes when providing inter- and intra-county assistance in the ROI, which could result in increased response times. Because the need for inter- and intra-county assistance is relatively low, impacts are expected to be minor.

Healthcare. Impacts to healthcare under Alternative 3 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Schools. Under Alternative 3, impacts would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

3.10.2.4.2 ARMY MANAGEMENT

Impacts of Army management under Alternative 3 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.2).

3.10.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts from preparation of newly acquired land under Alternative 3 would be similar to Alternative 1 and are expected to be negligible on population, housing, environmental justice, protection of children, and public services. Also similar to Alternative 1, beneficial impacts would occur from temporary employment opportunities and from increased spending for materials locally, as well as multiplier effects from indirect and induced spending during construction (Section 3.10.2.2.3).

3.10.2.4.4 ARMY TRAINING

Impacts of training under Alternative 3 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.4).

3.10.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3). In addition, the proposed transportation routes to link Fort Benning with these areas could require the acquisition of approximately 84 acres of land in Chattahoochee County and an additional 62 acres of land in Russell County.

3.10.2.5.1 FEDERAL ACQUISITION OF LAND

Population and Housing

The USACE estimated that the acquisition of land within Alternative 4 would affect a maximum of 647 owners and require the demolition of an estimated 278 structures. Based on data from the 2000 Census for the blocks associated with the areas, the proposed acquisition has the potential to displace or otherwise directly affect an estimated 423 housing units and an estimated population of 844 individuals residing within or immediately adjacent to the affected land areas. Implementation of Alternative 4 would thus displace or directly affect approximately 1.5 percent of the combined population and 1.7 percent of the housing units in the two counties. The displaced population may relocate to other counties in the TLEP study area or may leave the region entirely. Given a total of 122,000 housing units in the ROI, and approximately 12,600 vacant housing units (see Table 3.10-2), adequate housing choices would be available for individuals choosing to relocate within the ROI. Choices for relocation within the same counties, particularly the less-populous Stewart County, may not be as favorable given the lesser amount of housing stock (see Table 3.10-2).

Individuals and businesses affected by the Federal acquisition of land would be eligible for rights and benefits under the URA as described for Alternative 1 (Section 3.10.2.2.1) and supplemented by information in Appendix F. The implementation of requirements under the URA would reduce impacts on individuals and businesses displaced by Alternative 4.

Environmental Justice and Protection of Children

As summarized in Table 3.10-10, the Census blocks in Stewart Central and Russell East contain minority populations of approximately 64 percent and 34 percent, respectively. The percentage of minorities in Russell East is lower than the percentage of minorities in Russell County as a whole (approximately 47 percent), which indicates that acquisition of this area would not disproportionately affect minority populations. As stated for Alternative 3, the acquisition of Stewart Central would have the potential for significant adverse environmental justice impacts by disproportionate displacement of minorities in the

ROI as a whole. This is because Stewart County (see Table 3.10-3) has the highest percentage of minorities among all the counties in the ROI, and Stewart Central has a higher percentage of minorities than the county as a whole.

Stewart Central and Russell East have low-income populations comprising 23 percent and 16 percent, respectively, of the total populations in the areas (see Table 3.10-10). The percentage of low-income population in Russell East is lower than the percentage for Russell County (20 percent), and the percentage in Stewart Central is comparable to the percentage for Stewart County (22 percent). Therefore, the acquisition of land for Alternative 4 would not likely have an adverse environmental justice impact by disproportionately displacing low-income populations within the counties.

Both Stewart Central and Russell East have percentages of children below age 18 that are comparable to the percentages in the respective counties (see Tables 3.10-10 and 3.10-2). Therefore, Alternative 4 would not likely have a disproportionately adverse impact by potential displacement of higher percentages of children in the ROI.

Economic Development and Employment

In the event that approximately 844 individuals could be displaced from the Stewart Central and Russell East areas for Alternative 4, the potential impact on the economies and employment within the respective counties would depend upon whether these individuals would remain at their current places of employment or seek new employment outside the ROI for the TLEP study area. If all the individuals were to leave the ROI, the reduction in the employed labor force of the eight counties would be less than 1 percent, which would have a negligible effect on regional employment. Employment in the respective counties, particularly the less-populous Stewart County, could potentially decline more noticeably in the event of relocation outside the ROI.

The acquisition of lands in Stewart and Russell counties to Federal ownership would eliminate farming and lumbering jobs. As indicated in Table 3.10-4, relatively small percentages of the civilian work force in these counties are employed in agriculture, forestry, and related industries. Therefore, the loss of employment in these industries on lands in the potential acquisition areas is not expected to be substantial.

The EIFS analysis in Appendix E indicates that the expenditures for procurement of lands and demolition of structures for Alternative 4 would have a moderate positive regional economic impact on the ROI, comparable to the effects described for Alternative 1 (see Section 3.10.2.2.1).

Taxes and Revenue

The acquisition of Stewart Central and Russell East for Alternative 4 would result in estimated reductions of annual property tax revenues for the counties by 12 percent and 2 percent, respectively (see Table 3.10-10). A 2-percent loss of revenue for Russell County would be a moderate adverse impact to Russell County, which could potentially be compensated by the reduction in demands for county services and maintenance of infrastructure within Russell County on the newly acquired land. In contrast, a 12 percent loss of revenue for Stewart County, which has relatively low population and recent negative growth, could potentially have significant adverse impacts on the maintenance of county services and infrastructure.

The associated acquisition of approximately 84 acres of land in Chattahoochee County to provide the proposed transportation routes between Fort Benning and Stewart Central could result in a loss of annual tax revenue of less than $1,000 for the county. This loss in revenue, amounting to less than 0.1 percent of the county total, would not have a significant impact on the Chattahoochee County revenue base.

The acquisition of lands in Stewart and Russell counties to Federal ownership would eliminate tax revenues from the sale of farm and forest products. The tax revenues lost by the respective counties may be compensated to an extent by the distribution of 40 percent of the proceeds from forest products sold by Fort Benning in each FY as discussed in Section 3.10.1.4.

Public Services

Law Enforcement. Impacts to law enforcement under Alternative 4 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Fire Protection/Emergency Response. Under Alternative 4, two volunteer fire stations within Russell East could be displaced as a result of land acquisition. It is expected the Army would provide financial assistance for the relocation of these stations; therefore, only a moderate temporary impact would be anticipated. Acquisition of Stewart Central could require fire and EMS providers to take slightly longer, less direct routes when providing inter- and intra-county assistance in the ROI, which could result in increased response times. Because the need for inter- and intra-county assistance is relatively low, impacts are expected to be minor.

Schools. Under Alternative 4, impacts would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). In the worst case scenario of all residents relocating to Stewart County, an additional 19 teachers would need to be hired to maintain current staffing ratios.

Healthcare. Impacts to healthcare under Alternative 4 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). Under the worst case scenario, localized impacts could be experienced if all residents relocated to the service area of Stewart Webster Hospital.

3.10.2.5.2 ARMY MANAGEMENT

Impacts of Army management under Alternative 4 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.2).

3.10.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts from preparation of newly acquired land under Alternative 4 would be similar to Alternative 1 and are expected to be negligible on population, housing, environmental justice, protection of children, and public services. Also similar to Alternative 1, beneficial impacts would occur from temporary employment opportunities and from increased spending for materials locally, as well as multiplier effects from indirect and induced spending during construction (Section 3.10.2.2.3).

3.10.2.5.4 ARMY TRAINING

Impacts of training under Alternative 4 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.4).

3.10.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3). In addition, the proposed transportation routes to link Fort Benning with these areas could require the acquisition of approximately 24 acres of land in Chattahoochee County and 130 acres of land in Muscogee County.

3.10.2.6.1 FEDERAL ACQUISITION OF LAND

Population and Housing

The USACE estimated that the acquisition of land associated with Alternative 5 would affect a maximum of 219 owners and require the demolition of an estimated 104 structures. Based on data from the 2000 Census for the blocks associated with the two areas, the proposed acquisition has the potential to displace or otherwise directly affect an estimated 230 housing units and an estimated population of 474 individuals

residing within or immediately adjacent to the affected land areas. Implementation of Alternative 5 would thus displace or directly affect approximately 1.2 percent of the population and 1.5 percent of the housing units in the three counties. The displaced population may relocate to other counties in the TLEP study area or may leave the region entirely. As summarized in Table 3.10-1, Harris County had the highest rate of population growth over the past decade, while Stewart County had the highest rate of population decline, and Talbot County remained relatively static. Given a total of 122,000 housing units in the ROI, and approximately 12,600 vacant housing units (see Table 3.10-2), adequate housing choices would be available for individuals choosing to relocate within the ROI. Displaced individuals seeking to remain in Talbot or Stewart counties would have fewer choices due to the lesser amount of housing stock in these counties (see Table 3.10-2).

Individuals and businesses affected by the Federal acquisition of land would be eligible for rights and benefits under the URA as described for Alternative 1 (Section 3.10.2.2.1) and supplemented by information in Appendix F. The implementation of requirements under the URA would reduce impacts on individuals and businesses displaced by Alternative 5.

Environmental Justice and Protection of Children

As summarized in Table 3.10-10, the Census blocks in Harris East have a very low proportion of minorities in the population (2 percent). Stewart County (60 percent) and Talbot County (59 percent) have the highest percentages of minority populations within the ROI (see Table 3.10-3), and Talbot West and Stewart West have minority populations (66 percent and 65 percent, respectively), which are higher than the minority population percentages in the respective counties. Therefore, the acquisition of land in Talbot West and Stewart West for Alternative 5 would have the potential for significant adverse environmental justice impacts by disproportionate displacement of minorities within the ROI.

At 2 percent, Harris East has a very low percentage of low-income population (see Table 3.10-10). However, Stewart West has a percentage of low-income population (26 percent) that is higher than Stewart County as a whole (22 percent). The low-income population in Talbot West (23 percent) is slightly lower than the percentage in Talbot County (24 percent); but both Talbot and Stewart counties have proportions of low-income populations that are among the highest in the ROI. Therefore, the acquisition of land in Stewart and Talbot counties for Alternative 5 would also have the potential for significant adverse environmental justice impacts by disproportionate displacement of low-income populations within the ROI.

Harris East, Talbot West, and Stewart West all have percentages of children below age 18 that are comparable to the percentages in the respective counties (see Tables 3.10-10 and 3.10-2). Therefore, Alternative 5 would not likely have a disproportionately adverse impact by potential displacement of higher percentages of children in the ROI.

Economic Development and Employment

In the event that approximately 474 individuals could be displaced from the Harris East, Talbot West, and Stewart West areas for Alternative 5, the potential impact on the economies and employment within the ROI would depend upon whether these individuals would remain at their current places of employment or seek new employment outside the ROI for the TLEP study area. If all the individuals were to leave the ROI, the reduction in the employed labor force of the eight counties would be less than 1 percent, which would have a negligible effect on regional employment. Employment in Talbot and Stewart counties could potentially decline more noticeably in the event of relocation outside the ROI, based on the relatively low population in these counties.

The acquisition of lands in Harris, Talbot, and Stewart counties to Federal ownership would eliminate farming and lumbering jobs. As indicated in Table 3.10-4, relatively small percentages of the civilian work force in these counties are employed in agriculture, forestry, and related industries. Therefore, the loss of employment in these industries on lands in the potential acquisition areas is not expected to be substantial.

The EIFS analysis in Appendix E indicates that the expenditures for procurement of lands and demolition of structures for Alternative 5 would have a moderate positive regional economic impact on the ROI, comparable to the effects described for Alternative 1 (see Section 3.10.2.2.1).

Taxes and Revenue

The acquisition of Harris East, Talbot West, and Stewart West for Alternative 5 would result in estimated reductions of annual property tax revenues for the respective counties by less than 1 percent, 6 percent, and 21 percent (see Table 3.10-10). A loss in revenue of that magnitude to Harris County would be minor because the county is among the most affluent and fastest growing in the ROI. A 6-percent loss of revenue for Talbot County would be moderate, given the relatively low population of the county and negative growth rate; however, it could potentially be compensated by a reduction in demands for county services and maintenance of infrastructure within Talbot County newly acquired land. A 21-percent loss of revenue for Stewart County, which has relatively low population and negative growth rate, could potentially have significant adverse impacts on the maintenance of county services and infrastructure.

The associated acquisition of approximately 24 acres of land in Chattahoochee County to provide the proposed transportation route between Fort Benning and Stewart West could result in a loss of annual tax revenue of less than $1,000 for the county, which would not have a significant impact on the Chattahoochee County revenue base. The potential acquisition of 130 acres in Muscogee County to provide the proposed transportation route between Fort Benning and the Harris and Talbot areas could result in a loss of approximately $1,200 in annual tax revenue, which would have a negligible impact on the county tax base, which is the largest in the ROI.

The acquisition of lands in Harris, Talbot, and Stewart counties to Federal ownership would eliminate tax revenues from the sale of farm and forest products. The tax revenues lost by the respective counties may be compensated to a considerable extent by the distribution of 40 percent of the proceeds from forest products sold by Fort Benning in each FY as discussed in Section 3.10.1.4.

Public Services

Law Enforcement. Impacts to law enforcement under Alternative 5 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Fire Protection/Emergency Response. Under Alternative 5, impacts would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1).

Schools. Under Alternative 5, impacts would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). In the worst case scenario of all residents relocating to Stewart County, an additional four teachers would have to be hired to maintain current staffing ratios.

Healthcare. Impacts to healthcare under Alternative 5 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.1). Under the worst case scenario, localized impacts could be experienced if all residents relocated to the service area of Stewart Webster Hospital.

3.10.2.6.2 ARMY MANAGEMENT

Impacts of Army management under Alternative 5 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.2).

3.10.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

Impacts from preparation of newly acquired land under Alternative 2 would be similar to Alternative 1 and are expected to be negligible on population, housing, environmental justice, protection of children, and public services. Also similar to Alternative 1, beneficial impacts would occur from temporary

employment opportunities and from increased spending for materials locally, as well as multiplier effects from indirect and induced spending during construction (Section 3.10.2.2.3).

3.10.2.6.4 ARMY TRAINING

Impacts of training under Alternative 5 would be similar to Alternative 1 and are expected to be negligible (Section 3.10.2.2.4).

3.10.3 CUMULATIVE IMPACTS

This section discusses cumulative socioeconomic impacts within the ROI that would be expected to occur with the implementation of the Proposed Action alternatives. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.

Most reasonably foreseeable actions associated with Fort Benning, Muscogee County, and Chattahoochee County would have positive socioeconomic impacts that would also benefit the surrounding counties. Other reasonably foreseeable actions listed in Section 3.1.3.2 generally would have beneficial impacts on socioeconomic conditions and could help offset the revenues lost by Army land acquisition in the respective counties. Counties affected by the TLEP alternatives are described below.

3.10.3.1 ALTERNATIVE 1

No specific reasonably foreseeable actions have been identified in Stewart, Marion or Webster counties. Therefore, the incremental impacts of Alternative 1 to socioeconomics would be negligible.

3.10.3.2 ALTERNATIVE 2

Reasonably foreseeable actions in Russell County outlined in Section 3.1.3.2 would affect areas in the vicinity of Phenix City and would be located outside the boundaries of Russell East and West. Any associated infrastructure improvements planned in the respective potential acquisition areas, however, would require further consideration by the county to avoid conflicts as discussed in Section 3.2. Therefore, the incremental impacts of Alternative 2 to socioeconomics would be negligible.

3.10.3.3 ALTERNATIVE 3

No specific reasonably foreseeable actions have been identified in Stewart County. Therefore, the incremental impacts of Alternative 3 to socioeconomics would be negligible.

3.10.3.4 ALTERNATIVE 4

Reasonably foreseeable actions in Russell County outlined in Section 3.1.3.2 would affect areas in the vicinity of Phenix City (Russell County) and would be located outside the boundaries of Russell East. Any associated infrastructure improvements planned in the respective potential acquisition areas, however, would require further consideration by the counties to avoid conflicts as discussed in Section 3.2. Therefore, the incremental impacts of Alternative 4 to socioeconomics would be negligible.

3.10.3.5 ALTERNATIVE 5

Reasonably foreseeable actions in Harris and Talbot counties outlined in Section 3.1.3.2 would affect areas in the vicinity of Hamilton (Harris County) and Routes 41 and 80 (Talbot County). These projects would be located outside the boundaries of Harris East and Talbot West. Any associated infrastructure improvements and development planned in the respective potential acquisition areas, however, would require further consideration by the counties to avoid conflicts as discussed in Section 3.2. Therefore, the incremental impacts of Alternative 5 to socioeconomics would be negligible.

3.10.4 PROPOSED MITIGATION

Potential impacts from demolition of housing and displacement of population in respective counties can be minimized by carefully refining the boundaries of prospective acquisition areas to avoid encompassing some residences at the periphery of the areas. Such measures would be particularly effective where clusters of residences are situated in proximity to potential boundaries of the lands to be acquired. Specific consideration should be given to minimize acquisition of properties in Census blocks having the highest percentages of minority and low-income populations to reduce potential environmental justice impacts. Stewart and Talbot counties, in particular, have the highest percentages of minority populations, while Talbot, Marion, and Stewart counties have the highest percentages of low-income populations in the ROI. Hence, these counties are most susceptible to environmental justice impacts from disproportionate displacement of minority and low-income populations.

The loss of property tax revenue to counties as a result of Army acquisition of land would be most adverse in Stewart, Webster, and Marion counties. In particular, Alternative 3 could potentially cause a 33-percent reduction in property tax revenue for Stewart County, Alternative 5 could potentially cause a 21-percent reduction in property tax revenue for Stewart County, and Alternative 1 could potentially cause reductions in property tax revenues of 22 percent for Webster County and 12 percent for Marion County. All three counties are characterized by small populations and negative growth rates. Therefore, the loss of revenues at these magnitudes could potentially have significant adverse impacts on the abilities of these counties to maintain county services and infrastructure. Fort Benning would explore potential mechanisms to reduce the impacts on county revenues that could result from TLEP land acquisition.

The loss of county tax revenue due to Federal acquisition could be partially off-set by a PILT Amendment that would include Fort Benning's additional training lands acquired under the Proposed Action. Historically, Congress has not fully-funded the PILT program. For example, from 1995 through 2008, payments to local governments were funded at 41 to 77 percent of the full entitlement levels. Congress mandated that PILT payments would be fully funded from 2008 through 2012 through the Emergency Economic Stabilization Act of 2008 (DOI, 2008). If a PILT amendment to include Fort Benning's TLEP land is successful, the amount of PILT payments would likely vary between counties and over time, but PILT payments would mitigate the loss of tax revenue on newly acquired training land in the affected counties. As previously stated, a PILT Amendment must be pursued by local and state officials rather than the Army and this type of mitigation is a potential form of mitigation which is not within the Army's control.

3.11 TRAFFIC AND TRANSPORTATION

3.11.1 AFFECTED ENVIRONMENT

The following sections describe the roadway system and traffic conditions for the roadway network serving Fort Benning, the surrounding counties, and within the alternative study areas. The ROI for traffic and transportation encompasses the public roadways within and adjacent to the TLEP study area.

3.11.1.1 ROADWAY SYSTEM

3.11.1.1.1 ROADWAYS SURROUNDING FORT BENNING

Most roadway access to the Installation is from the north due to Fort Benning's relative location to the Columbus and Phenix City MSA. The main roads that provide access to Fort Benning are Benning Boulevard, Lindsay Creek Parkway (I-185), AL-165, and Victory Drive, as described below.

- Benning Boulevard is a four-lane, divided, limited access primary arterial that runs north-south and serves both regional and local commuter traffic in the Main Post cantonment and Columbus/Phenix City area. The main access control point (ACP) into Fort Benning is on this road.
- Lindsay Creek Parkway (I-185) is a four-lane, divided, limited access highway that runs in a north-south direction and is part of the regional road network that connects the Kelley Hill cantonment area with Columbus and points beyond. In addition to serving Kelley Hill, I-185 also provides access to the Main Post and Harmony Church cantonment areas by First Division Road.
- AL-165 is a two-lane state highway that runs in a north-south direction along the western most Installation boundary. The ACP providing access to AL-165 is on Dixie Road just south of KLSF. Dixie Road connects to Sightseeing Road, providing direct access to Main Post.
- Victory Drive (US-27/280) is a four-lane, divided, limited access highway that travels through Fort Benning on a generally diagonal path from northwest to southeast and serves as a regional thoroughfare under different names providing access to Sand Hill and Harmony Church.

The greatest traffic volumes in the area occur near the northwest corner of Fort Benning on I-185, Lindsey Creek Parkway, and on Macon Road (Table 3.11-1).

Table 3.11-1. Roadways within the TLEP Study Area with the Most Traffic

Roadway	Location	AADT (vpd)
Interstate 185	Harris County near Lindsey Creek Parkway	21,580
Macon Road (US-80)	Talbot County near Lindsey Creek Parkway	89,280
Lindsey Creek Parkway (Route 411)	Phenix City/Columbus near J.R. Allen Parkway	11,230

Source: GDOT, 2008
AADT = Annual Average Daily Traffic; TLEP = Training Land Expansion Program; US = United States Highway; vpd = vehicles per day

3.11.1.1.2 ON-POST ROADWAYS

Fort Benning has four cantonment areas in the western portion of the Installation that include Main Post, Kelley Hill, Sand Hill, and Harmony Church. The on-Post road network is comprised of primary, secondary, and tertiary roadways, which are discussed by cantonment area below. There are seven ACPs to control access to the cantonment areas and the Installation (Figure 3.11-1).

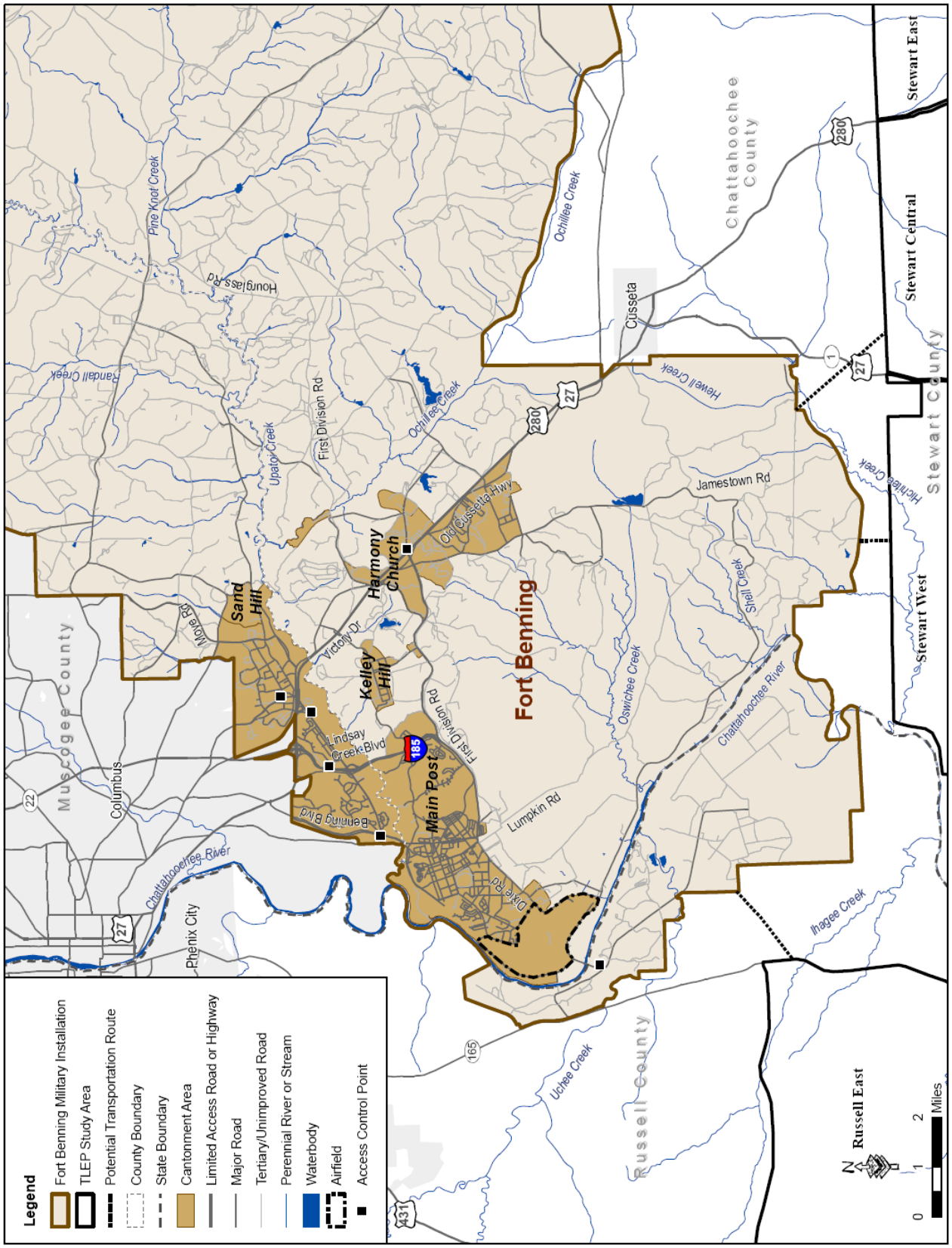


Figure 3.11-1. Fort Benning Access Control Points and On-Post Road Network

Main Post. The largest cantonment area, Main Post, includes KLSF and the hospital and mall complex. Access to Main Post is provided by two major traffic corridors, Benning Boulevard (north-south) and First Division Road (east-west). North-south traffic is also served by Lumpkin and Sigerfoos roads, and Edwards and Anderson streets. East-west traffic is also served by Tenth Division and Dixie roads, and Vibbert and Wold avenues. Eight intersections within Main Post are congested during the peak traffic periods. Congested intersections are primarily along Lumpkin Road, Ingersoll Road, and Dixie Road (USACE, 2009).

Kelley Hill. Access to Kelley Hill is provided by Marne and Ivy roads. Travel outside of Kelley Hill is concentrated on access to Columbus, the hospital and mall complex, Harmony Church, and the Malone and Kilo training ranges. East-west traffic is served by Marne Road and Watkins Street, and north-south by Ivy Road and Bell Richards Street. Tank trails from Kelley Hill provide limited tracked-vehicle access to Harmony Church and the Malone and Kilo training ranges. All but two intersections within Kelley Hill operate free of traffic congestion during the A.M. and P.M. peak traffic periods. Congested intersections include First Division Road at Dixie Road, and First Division Road at Lindsay Creek (USACE, 2009).

Sand Hill. Sand Hill is a consolidated recruit reception and infantry basic training cantonment area consisting of unit administration, unaccompanied personnel housing, training, and some community support. Travel outside of Sand Hill is concentrated on access to Columbus, the hospital and mall complex, and the Malone training ranges. North-south traffic is served by Moye and Custer roads, and east-west traffic by the 11th Airborne Division, 2nd Armored Division, and 2nd Infantry Division roads. All intersections in Sand Hill operate free of traffic congestion during the A.M. and P.M. peak traffic periods (USACE, 2009).

Harmony Church. Travel outside of Harmony Church is concentrated on access to Columbus, Main Post, and the Malone, Alpha, and Kilo training ranges. Access to Harmony Church is provided by Victory Drive (US-27/280) and Eighth Division Road. North-south traffic is served by Hourglass, Axton, and Eighth Division roads, and east-west by Old Cusseta Highway and Jamestown Road. Two intersections along 1st Street are congested during the A.M. and P.M. peak traffic periods (USACE, 2009).

The Installation has designated maneuver, training, and range areas and associated buffer lands located in the north and south portions of the Installation. Martha Berry Highway (US-27/280) bisects the Installation and acts as the dividing line between these areas (see Figure 3.11-1). Combat vehicles move between the cantonments, maintenance, and training areas and are provided with a separate system of tank trails. These trails have different design characteristics: wider lanes, stronger structure, and harder materials to accommodate wider and heavier vehicles and different traction systems (USACE, 2009).

3.11.1.1.3 TRAFFIC WITHIN THE TLEP STUDY AREA

Traffic volume is typically reported as Annual Average Daily Traffic (AADT), which is the total number of vehicles for an entire year divided by the number of days in the year. Figure 3.11-2 shows the transportation network throughout the TLEP study area. AADT volumes (2008) for primary public roadways in the vicinity of the TLEP study area were obtained from the GDOT and are shown in Table 3.11-2. The TLEP study area is characterized by low population density areas, which do not see substantial traffic volumes on a daily basis. In recent decades, there has been increasing urbanization of the Phenix City/Columbus area located to the northwest of Fort Benning; however, in 1955, a geographic separation occurred between the urban landscape and the Post, and urbanization expanded along the northwestern borders of the Post by the mid-1990s. Increasing urbanization adjacent to the north of the Post and southwestern portion of the Post is projected.

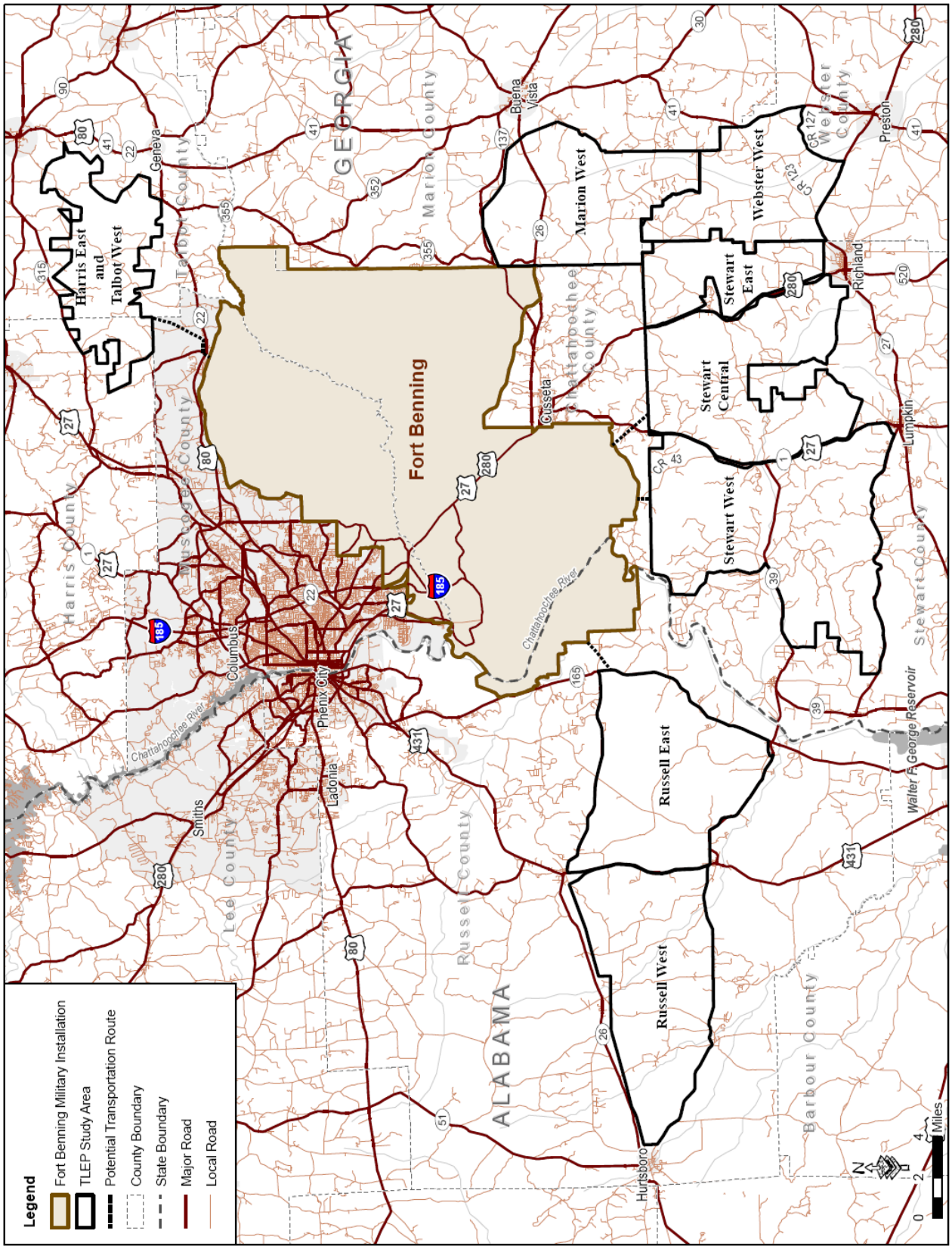


Figure 3.11-2. Transportation Network throughout the TLEP Study Area

Table 3.11-2. Average Daily Traffic Counts for TLEP Study Area Roadways

County	Roadway	AADT (vpd)
Russell	AL-26	1,940-2,400
	AL-165	1,780
Muscogee	Macon Road (SR-22) (just west of corridor)	16,470
Harris	GA-1	7,110
Marion	Clark Duncan Highway (CR-26)	2,510
	GA-355	540
	GA-137	250
Stewart	Martha Berry Highway (US-27/GA-1)	1,780-2,510
	US-280/ GA-27	1,510
	Chatt Valley Tri Scenic Highway (GA-39)	890
	Crisp Military Highway (I-280/GA-520)	4,900 – 6,120
	Hitchitee Creek Road (CR-43)	250
Talbot	GA-22	7,060
	GA-90	4,420
	GA-20/80	2,300
Webster	GA-520	4,180
	GA-41	1,450
	Enterprise Church Road/Bethlehem Church Road (CR-123)	380
	CR-127	110
	CR-126	160
	CR-8	770

Source: GDOT, 2008; ALDOT, 2009

AADT = Annual Average Daily Traffic; AL = Alabama State Highway; CR = County Road; GA = Georgia State Highway; I = Interstate; SR = State Route; TLEP = Training Land Expansion Program; US = United States Highway; vpd= vehicles per day

Due to the rural nature, traffic volumes are relatively low on roadways in the area. In general, the capacity of a single through lane is 1,700 vehicles per hour. Although some roadways have experienced natural increases in traffic over time, traffic volumes indicate that the roadways in the TLEP study area operate at a consistent level, generally good operating conditions, and with little to no traffic congestion (Table 3.11-2).

3.11.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential environmental impacts to transportation resources that would result from the Proposed Action. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to traffic and transportation would result from the reduction in state or Federal highway function by more than two LOSs or would result in the closure of one or more primary or secondary roadways. Impacts were primarily assessed by reviewing existing traffic conditions of public roadways and the types/frequency of military activities that may require use of these roadways.

Notably, within acquired lands, all existing road and trail networks would be utilized to support all training needs. Street/trails not used would not be demolished purposely unless conflicting with proposed projects. Major thoroughfares, however, would be maintained and remain open for continued public

traffic. Nevertheless, secondary and tertiary roads would be closed to public traffic and would cause and adverse effect to surrounding communities in this regard.

3.11.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support the Fort Benning training requirements would not occur. No impacts to transportation resources would occur as there would be no change in traffic on the roadways, no road closures or reconfigurations, and no transportation routes established.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to traffic and transportation would be the subject of future NEPA analysis.

3.11.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Alternative 1 would have short- and long-term significant adverse effects on transportation resources. These effects would primarily be due to road closures within the newly acquired lands. Minor adverse effects would also be due to temporary construction activities, ongoing traffic from support personnel, and wear and tear on roadways within the newly acquired lands.

3.11.2.2.1 FEDERAL ACQUISITION OF LAND

Short- and long-term significant adverse effects would be expected. Acquisition of all roadways within Marion West, Webster West, and Stewart East would be part of Alternative 1. All roadways that transect or terminate within these newly acquired lands would be permanently closed. All roadways adjacent to and along the perimeter of the individual areas would not be acquired, and would remain open and accessible to the public. A partial list of roadways that transect or are adjacent to newly acquired lands under Alternative 1 are outlined in Table 3.11-3. It is important to note that this is not a comprehensive list. In the final planning stages, road closures would be implemented on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis.

Table 3.11-3. Roadways Transecting or Adjacent to Alternative 1

Roadways Transecting Alternative 1	TLEP Study Area Location	Length of Roadway Closed (miles)
Clark Duncan Highway (CR-26)	Marion West	6.6
Mud Ridge Road	Marion West	4.8
Pinesville Road (CR-163)	Marion West	7.0
Enterprise Church Road/ Bethlehem Church Road (CR-123)	Webster West	6.5
CR-102	Stewart East	3.4
Walter Gill Road (CR-66)	Stewart East	1.4
Roadways Adjacent to Alternative 1	**TLEP Study Area Location**	
GA-137	Marion West	
GA-355	Marion West	
GA-41	Webster West	
Bankston Road	Webster West	
Nicholson Street (GA-27/US-280)	Webster West	
I-520/GA-27	Stewart East	

Source: GDOT, 2008
CR = County Road; GA = Georgia State Highway; I = Interstate; US = United States Highway

Alternative 1 has been specifically selected and configured to minimize effects from road closures and to allow primary roadways to remain open.

3.11.2.2.2 ARMY MANAGEMENT

Long-term minor beneficial effects would be expected. These effects would be due primarily to Army upgrades and maintenance of existing road networks. Maintenance and rehabilitation of existing road networks would prevent pavement failure and minimize impacts from off-road activity on all primary, secondary, and tertiary roads within the newly acquired lands, and design adjustments to proposed trails and water-crossings would reduce road and stream-crossing maintenance. In the final planning stages, Fort Benning's DPW would evaluate road maintenance needs to facilitate a servicing schedule. Smoke from prescribed burning may lead to a decrease in visibility on surrounding roads resulting in a public safety hazard. These effects would be minimized by maintaining well-trained personnel, using smoke management SOPs, and smoke warning indicators.

Implementing the IONMP, Pest Management Plan, and Fort Benning's ITAM program would result in negligible effects on transportation resources.

3.11.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Short-term minor adverse effects would be expected. Traffic would increase due to additional construction vehicles and traffic delays near construction sites. Traffic would increase due to worker commutes and delivery of equipment and materials to individual construction sites. In addition, temporary road closures or detours to accommodate utility work would be expected, creating short-term traffic delays. These effects would be temporary in nature and would end with the construction phase.

When appropriate, the Army would use existing roads and trails to facilitate construction activities. Access points may be established in the southwestern portion of the Installation or along US-280 that runs north-south along the western border of Stewart East. Alternative 1 would not require a transportation route because its western boundary shares a 1.7-mile boundary with the existing Installation.

All construction vehicles would be equipped with backing alarms, two-way radios, and Slow Moving Vehicle signs when appropriate. Although the effects would be minor, contractors would route and schedule construction vehicles to avoid conflicts with other traffic, and strategically locate staging areas to minimize traffic impacts.

3.11.2.2.4 ARMY TRAINING

Long-term minor adverse effects would be expected. These effects would be due to traffic from support personnel, and wear and tear from training activities on existing roadways within the newly acquired lands.

There would be no increases in personnel associated with the Proposed Action; therefore, the overall level of Installation-wide traffic would be similar to current levels. In addition, training vehicles outlined under Alternative 1 would not travel from Fort Benning in support of exercises at other installations, and there would be no vehicle convoys using public roads. Some support personnel would be relocated from the existing Installation to the newly acquired properties. Traffic would increase on public roadways from these individuals commuting to and from work at the newly acquired lands, and traveling to and from the existing Installation. These effects would be offset by a corresponding decrease in traffic at their current work location. Heavy vehicle use and the transport of personnel and equipment to and from the new training areas would introduce a corresponding decrease in roadways use within the existing Installation. These effects would be minor.

Increases in use of military ground vehicles would result in additional wear and tear on roads within the newly acquired lands. Heavily used roads would experience accelerated pavement deterioration, and a corresponding increase in maintenance and rehabilitation activities. The rate of deterioration would depend on the types of vehicles and frequency of use. To minimize the risk of damage to underground utilities, off-road vehicle use would be limited to established (i.e., pre-approved) routes. Additionally, underground pipelines, such as water and gas lines, would be located and reinforced to prevent damage at the intersection of dedicated transportation and training routes. These effects would be minor.

Marion West is contiguous with the existing Installation and the shared boundary is approximately 16.4 miles east of the cantonment area. There are no appreciable water bodies to be crossed when approaching the shared boundary from either the existing training areas or the cantonment area. No major road, rail, or waterway crossings are anticipated with the development of this alternative. There would be no direct use of existing off-Post roadways or other transportation infrastructure by military non-road vehicles.

No roadways transecting or separating Marion West, Webster West, and Stewart East would remain open, and no transportation routes would be necessary. Therefore, no roadway crossings would be required to facilitate day-to-day training activities. Access to the newly acquired lands would take place completely by way of the 1.7-mile shared border between Fort Benning and the northwestern border of Marion West. All training would take place completely within the newly acquired lands. Although not anticipated at this time, potential public roadway crossings would be dependent on the final property configuration. In order to minimize traffic conflicts and safety hazards, public highways may require transportation improvements (e.g., bridges, tunnels, or overpasses), which would be determined on a case-by-case basis, and preceded by the appropriate level of follow-on NEPA analysis.

3.11.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Alternative 2 would have short- and long-term significant adverse effects on transportation resources. Significant effects under Alternative 2 would be similar to those discussed under Alternative 1 (Section 3.11.2.2), and would primarily be due to road closures within the newly acquired lands. Minor to moderate adverse effects would also be due to temporary construction activities, ongoing traffic from support personnel, wear and tear on roadways, establishing a transportation route to the newly acquired lands, and upgrades along Old Seale Highway (US-431/AL-1).

3.11.2.3.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, and for similar reasons, Federal acquisition of land under Alternative 2 would have short- and long-term significant adverse effects. Acquisition of all roadways within Russell East and Russell West would be part of Alternative 2. All roadways that transect or terminate within these newly acquired lands would be permanently closed. All roadways adjacent to and along the perimeter of the study areas, including Old Seale Highway (US-431/AL-1), would not be acquired, and would remain open and accessible to the public. A partial list of roadways that transect or are adjacent to newly acquired lands under Alternative 2 are outlined in Table 3.11-4. It is important to note that this is not a comprehensive list. In the final planning stages, road closures would be implemented on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis.

Table 3.11-4. Roadways Transecting or Adjacent to Alternative 2

Roadways Transecting Alternative 2	TLEP Study Area Location	Length of Roadway Closed (miles)
Prudence Road (CR-4)	Russell West	5.6
Antioch Road	Russell West	4.8
Howard Road/Firetower Road (CR-43)	Russell East	11.1
Greenburt Road (CR-39)	Russell East	6.4
Oswichee Road (CR-18)	Russell East	6.1
Roadways Adjacent to Alternative 2	**TLEP Study Area Location**	
Old Seale Highway (US-431/AL-1)	Russell West	
AL-26	Russell West	
AL-165	Russell East	

Source: ALDOT, 2009

AL = Alabama State Highway; CR = County Road; US = United States Highway

As with Alternative 1, Alternative 2 has been specifically selected and configured to minimize effects from road closures and to allow primary roadways to remain open.

3.11.2.3.2 ARMY MANAGEMENT

As with Alternative 1, and for similar reasons, Army management would have long-term minor beneficial effects. These effects would be due primarily to Army upgrades and maintenance of existing road

networks. These effects would be identical to those outlined under Alternative 1, but would take place in Russell East and Russell West.

3.11.2.3.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, and for similar reasons, preparation of newly acquired land would have short-term minor adverse effects. Traffic would increase due to worker commutes and delivery of equipment and materials to construction sites. In addition, temporary road closures or detours to accommodate utility work would be expected. Measures to minimize adverse impacts would be identical to those outlined under Alternative 1.

3.11.2.3.4 ARMY TRAINING

Unlike Alternative 1, Army training would have moderate adverse effects on transportation resources. In addition to traffic from support personnel, and wear and tear on existing roadways outlined under Alternative 1, Alternative 2 would have additional adverse effects due to the establishment of the transportation route and transportation upgrades along Old Seale Highway (US-431/AL-1). The nature and overall level of effects associated with personnel commutes, the use of military ground vehicles, and roadway maintenance within the newly acquired lands would be identical to those outlined under Alternative 1; however, under Alternative 2, these effects would occur on areas in and around Russell East, Russell West, and associated transportation route.

Unlike Alternative 1, the newly acquired lands would not be contiguous with the existing Installation. Under Alternative 2, military vehicles accessing the acquired lands would be limited to a transportation route, as outlined in Chapter 2, running diagonally from the southwest tip of the existing Installation to the northeast corner of Russell East. The transportation route would be approximately 1.8 miles in length, and located approximately 4.6 miles south of the cantonment area (Figure 3.11-2).

The Heavy Equipment Transport (HET) with M2/M3 is the largest vehicle (i.e., weight, height, and width) being considered for training in the new study areas. The HET loaded with an M2/M3 weighs approximately 150,000 pounds, and is 12.2 feet wide and 15 feet tall. Existing infrastructure between the existing Installation and Russell East would not allow for access to the site by these vehicles, and additional infrastructure upgrades would be required. To access the proposed transportation route from the training or cantonment areas on the existing Installation, the Chattahoochee River would need to be crossed. The only in-place on-Post infrastructure for crossing the Chattahoochee River is a bridge at the northern end of Dixie Road adjacent to KLSF. If this route were used, Uchee Creek would also need to be crossed. The only in-place on-Post infrastructure for crossing the Uchee Creek is a bridge on 101st Airborne Division Road. It is likely that these bridges would need to be upgraded to facilitate the weight of the HET with M2/M3. Development of the proposed transportation route (between Fort Benning and Russell East) itself would require a bridge, tunnel, or overpass at both CR-18 and a single rail spur. Old Seale Highway (US-431/AL-1) separating Russell East from Russell West would remain open, and some form of roadway crossings would be required to facilitate day-to-day training activities. Roadway crossings would be dependent on the final property configuration, and security upgrades and force protection measures would be carefully planned at these locations. To minimize traffic conflicts and safety hazards, transportation improvements (e.g., bridges, tunnels, or overpasses) would be determined on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis.

3.11.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Alternative 3 would have short- and long-term significant adverse effects on transportation resources. Significant effects under Alternative 3 would be similar to those discussed under Alternative 1 (Section 3.11.2.2), and would primarily be due to road closures within the newly acquired lands. Minor to moderate adverse effects would also be due to temporary construction activities, ongoing traffic from support personnel, wear and tear on roadways, establishing transportation routes to the newly acquired lands, and upgrades along Chatt Valley Tri Scenic Highway (GA-39) and Martha Berry Highway (US-27/GA-1).

3.11.2.4.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, and for similar reasons, Federal acquisition of land under Alternative 3 would have short- and long-term significant adverse effects. Acquisition of all roadways within Stewart West and Stewart Central would be part of Alternative 3. All roadways that transect or terminate within these newly acquired lands, except Chatt Valley Tri Scenic Highway (GA-39), would be permanently closed. All roadways adjacent to and along the perimeter of the individual areas including Martha Berry Highway (US-27/GA-1) would not be acquired, and would remain open and accessible to the public. A partial list of roadways that transect or are adjacent to newly acquired lands under Alternative 3 are outlined in Table 3.11-5. Notably, this is not a comprehensive list, and in the final planning stages road closures would be implemented on a case-by-case basis, and preceded by the appropriate level of follow-on NEPA analysis.

Table 3.11-5. Roadways Transecting or Adjacent to Alternative 3

Roadways Transecting Alternative 3	TLEP Study Area Location	Length of Roadway Closed (miles)
Big M Road/Moores Store Road (CR-150)	Stewart Central	5.6
Mathis Store Road (CR-50)	Stewart Central	8.8
Hitchitee Creek Road (CR-43)	Stewart West	4.0
Chatt Valley Tri Scenic Highway (GA-39)	Stewart West	5.9
Roadways Adjacent to Alternative 3	**TLEP Study Area Location**	
US-280/ GA-27	Stewart Central	
Crisp Military Highway (I-280/GA-520)	Stewart Central	
Martha Berry Highway (US-27/GA-1)	Stewart West	
GA-39	Stewart West	

Source: GDOT, 2008
CR = County Road; GA = Georgia State Highway; I = Interstate; US = United States Highway

As with Alternative 1, Alternative 3 has been specifically selected and configured to minimize effects from road closures and to allow primary roadways to remain open.

3.11.2.4.2 ARMY MANAGEMENT

As with Alternative 1, and for similar reasons, Army management would have long-term minor beneficial effects. These effects would be due primarily to Army upgrades and maintenance of existing road networks. These effects would be identical to those outlined under Alternative 1, but would take place in Stewart West and Stewart Central.

3.11.2.4.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, and for similar reasons, preparation of newly acquired land would have short-term minor adverse effects. Traffic would increase due to worker commutes and delivery of equipment and materials to construction sites. In addition, temporary road closures or detours to accommodate utility work would be expected. Measures to minimize adverse impacts would be identical to those outlined under Alternative 1.

3.11.2.4.4 ARMY TRAINING

Unlike Alternative 1, Army training would have moderate adverse effects on transportation resources. In addition to traffic from support personnel, and wear and tear on existing roadways outlined under Alternative 1, Alternative 3 would have additional adverse effects due to the establishment of two transportation routes, and transportation upgrades along Martha Berry Highway (US-27/GA-1) and Chatt Valley Tri Scenic Highway (GA-39). The nature and overall level of effects associated with personnel commutes, the use of military ground vehicles, and roadway maintenance within the newly acquired lands would be identical to those outlined under Alternative 1; however, under Alternative 3, these effects would occur on areas in and around Stewart West and Stewart Central, and associated transportation routes.

Unlike Alternative 1, the newly acquired lands would not be contiguous with the existing Installation. Under Alternative 3, military vehicles accessing the acquired lands would be limited to one of two newly established transportation routes as outlined in Chapter 2. The Stewart West transportation route through Chattahoochee County would be an approximate 0.6-mile corridor through Chattahoochee County, approximately 10.6 miles southeast of the cantonment area. The Stewart Central transportation route would be an approximate 2.4-mile corridor through Chattahoochee County, approximately 9.3 miles southeast of the cantonment area (Figure 3.11-2).

Similar to Alternative 2, existing infrastructure would not allow for access to Alternative 3 by the HET loaded with an M2/M3, and additional infrastructure upgrades would be required. Development of the proposed Stewart Central corridor would require a single bridge, tunnel, or overpass at US-1/27, an off-Post, four-lane, divided roadway. Development of the Stewart West corridor would require a single bridge, tunnel, or overpass at Riverbend Road, an off-Post, two-lane, rural road. Martha Berry Highway (US-27/GA-1) separating Stewart East from Stewart Central and Chatt Valley Tri Scenic Highway (GA-39) transecting Stewart East would remain open, and some form of roadway crossings would be required to facilitate day-to-day training activities. Roadway crossings would be dependent on the final property configuration, and security upgrades and force protection measures would be carefully planned at these locations. To minimize traffic conflicts and safety hazards, transportation improvements (e.g., bridges, tunnels, or overpasses) would be determined on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis. There are no appreciable water bodies to be crossed when approaching either of the transportation routes for Alternative 3 from the training or cantonment areas on the existing Installation.

3.11.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Alternative 4 would have short- and long-term significant adverse effects on transportation resources. Significant effects under Alternative 4 would be similar to those discussed under Alternative 1 (Section 3.11.2.2), and would primarily be due to road closures within the newly acquired lands. Minor to moderate adverse effects would also be due to temporary construction activities, ongoing traffic from

support personnel, wear and tear on roadways, and establishing transportation routes to the newly acquired lands.

3.11.2.5.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, and for similar reasons, Federal acquisition of land under Alternative 4 would have short- and long-term significant adverse effects. Acquisition of all roadways within Stewart Central and Russell East would be part of Alternative 4. All roadways that transect or terminate within these newly acquired lands would be permanently closed. All roadways adjacent to and along the perimeter of the individual areas would not be acquired, and would remain open and accessible to the public. A partial list of roadways that transect or are adjacent to newly acquired lands under Alternative 4 are outlined in Table 3.11-6. Notably, this is not a comprehensive list, and in the final planning stages road closures would be implemented on a case-by-case basis, and preceded by the appropriate level of follow-on NEPA analysis.

Table 3.11-6. Roadways Transecting or Adjacent to Alternative 4

Roadways Transecting Alternative 4	TLEP Study Area Location	Length of Roadway Closed (miles)
Howard Road/Firetower Road (CR-43)	Russell East	11.1
Greenburt Road (CR-39)	Russell East	6.4
Oswichee Road (CR-18)	Russell East	6.1
Big M Road/Moores Store Road (CR-150)	Stewart Central	5.6
Mathis Store Road (CR-50)	Stewart Central	8.8
Roadways Adjacent to Alternative 4	**TLEP Study Area Location**	
AL-165	Russell East	
US-280/GA-27	Stewart Central	
Crisp Military Highway (I-280/GA-520)	Stewart Central	

Source: GDOT, 2008; ALDOT, 2009

AL = Alabama State Highway; CR = County Road; GA = Georgia State Highway; I = Interstate; US = United States Highway

As with Alternative 1, Alternative 4 has been specifically selected and configured to minimize effects from road closures and to allow primary roadways to remain open.

3.11.2.5.2 ARMY MANAGEMENT

As with Alternative 1, and for similar reasons, Army management would have long-term minor beneficial effects. These effects would be due primarily to Army upgrades and maintenance of existing road networks. These effects would be identical to those outlined under Alternative 1, but would take place in Stewart Central and Russell East.

3.11.2.5.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, and for similar reasons, preparation of newly acquired land would have short-term minor adverse effects. Traffic would increase due to worker commutes and delivery of equipment and materials to construction sites. In addition, temporary road closures or detours to accommodate utility work would be expected. Measures to minimize adverse impacts would be identical to those outlined under Alternative 1.

3.11.2.5.4 ARMY TRAINING

Unlike Alternative 1, Army training would have moderate adverse effects on transportation resources. In addition to traffic from support personnel, and wear and tear on existing roadways outlined under Alternative 1, Alternative 4 would have additional adverse effects due to the establishment of two transportation routes. The nature and overall level of effects associated with personnel commutes, the use of military ground vehicles, and roadway maintenance within the newly acquired lands would be identical to those outlined under Alternative 1; however, under Alternative 4, these effects would occur in and around Stewart Central and Russell East, and associated transportation routes.

Unlike Alternative 1, the newly acquired lands would not be contiguous with the existing Installation. Under Alternative 4, military vehicles accessing the acquired lands would be limited to one of two newly established transportation routes as outlined in Chapter 2. The configuration and infrastructure upgrade needs of Stewart Central and Russell East, including the transportation routes, would be identical to the descriptions under Alternatives 2 and 3, respectively. Roadway crossings would be dependent on the final property configuration, and security upgrades and force protection measures would be carefully planned at these locations. To minimize traffic conflicts and safety hazards, transportation improvements (e.g., bridges, tunnels, or overpasses) would be determined on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis.

3.11.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Alternative 5 would have short- and long-term significant adverse effects on transportation resources. Significant effects under Alternative 5 would be similar to those discussed under Alternative 1 (Section 3.11.2.2), and would primarily be due to road closures within the newly acquired lands. Minor to moderate adverse effects would also be due to temporary construction activities, ongoing traffic from support personnel, wear and tear on roadways, establishing a transportation route to the newly acquired lands, and upgrades along Chatt Valley Tri Scenic Highway (GA-39).

3.11.2.6.1 FEDERAL ACQUISITION OF LAND

As with Alternative 1, and for similar reasons, Federal acquisition of land under Alternative 5 would have short- and long-term significant adverse effects. Acquisition of all roadways within Stewart West, Harris East, and Talbot West would be part of Alternative 5. All roadways that transect or terminate within these newly acquired lands except Chatt Valley Tri Scenic Highway (GA-39) would be permanently closed. All roadways adjacent to and along the perimeter of the individual areas would not be acquired, and would remain open and accessible to the public. A partial list of roadways that transect or are adjacent to newly acquired lands under Alternative 5 are outlined in Table 3.11-7. Notably, this is not a comprehensive list, and in the final planning stages road closures would be implemented on a case-by-case basis, and preceded by the appropriate level of follow-on NEPA analysis.

As with Alternative 1, Alternative 5 has been specifically selected and configured to minimize effects from road closures and to allow primary roadways to remain open.

Table 3.11-7. Roadways Transecting or Adjacent to Alternative 5

Roadways Transecting Alternative 5	TLEP Study Area Location	Length of Roadway Closed (miles)
Dennis Creek Road (CR-79)	Talbot West	2.1
Teal Road (CR-96)	Talbot West	2.5
Waverly Hall Road and Patterson Road (CR-82)	Talbot West	4.2
Cal Jones Road (CR-80)	Talbot West	4.2
Dennis Creek Road (CR-79)	Talbot West	2.1
Waverly Hall Road (CR-82)	Talbot West	0.8
Patterson Road (CR-82)	Talbot West	1.9
Ridgeway Road (CR-200)	Harris East	1.4
Chatt Valley Tri Scenic Highway (GA-39)	Stewart West	5.9
Roadways Adjacent to Alternative 5	**TLEP Study Area Location**	
Martha Berry Highway (US-27/GA-1)	Stewart West	
GA-39CO	Stewart West	
GA-208	Harris East/Talbot West	
Macon Road (US-80/GA-22)	Harris East/Talbot West	
Ellerslie Talbotton Road (GA-315)	Harris East/Talbot West	

Source: GDOT, 2008
CR = County Road; GA = Georgia State Highway; US = United States Highway

3.11.2.6.2 ARMY MANAGEMENT

As with Alternative 1, and for similar reasons, Army management would have long-term minor beneficial effects. These effects would be due primarily to Army upgrades and maintenance of existing road networks. These effects would be identical to those outlined under Alternative 1, but would take place in Stewart West, Harris East, and Talbot West.

3.11.2.6.3 PREPARATION OF NEWLY ACQUIRED LAND

As with Alternative 1, and for similar reasons, preparation of newly acquired land would have short-term minor adverse effects. Traffic would increase due to worker commutes and delivery of equipment and materials to construction sites. In addition, temporary road closures or detours to accommodate utility work would be expected. Measures to minimize adverse impacts would be identical to those outlined under Alternative 1.

3.11.2.6.4 ARMY TRAINING

Unlike Alternative 1, Army training would have moderate adverse effects on transportation resources. In addition to traffic from support personnel, and wear and tear on existing roadways outlined under Alternative 1, Alternative 5 would have additional adverse effects due to the establishment of two transportation routes, and transportation upgrades along Chatt Valley Tri Scenic Highway (GA-39). The nature and overall level of effects associated with personnel commutes, the use of military ground vehicles, and roadway maintenance within the newly acquired lands would be identical to those outlined under Alternative 1; however, under Alternative 5, these effects would occur to areas in and around Stewart West, Harris East, Talbot West, and associated transportation routes.

Unlike Alternative 1, the newly acquired lands would not be contiguous with the existing Installation. Under Alternative 5, military vehicles would be limited to one of two newly established transportation routes as outlined in Chapter 2. The configuration and infrastructure upgrade needs of Stewart West, including the transportation routes and the Chatt Valley Tri Scenic Highway (GA-39), would be identical to its description under Alternative 3.

Similar to Alternative 2, existing infrastructure would not allow for access to Harris East and Talbot West by the HET loaded with an M2/M3, and additional infrastructure upgrades would be required. The transportation route from Fort Benning to Harris East and Talbot West would involve transecting land (three to four miles) through Muscogee County. Development of a transportation route would require a single bridge, tunnel, or overpass at Macon Road (CR-80), an off-Post, four-lane, divided roadway (Figure 3.11-2). Notably, no roadways bisecting or transecting Alternative 5 lands would remain open, and no infrastructure upgrades would be required across public roadways to allow for unrestricted maneuvers or training within Harris East and Talbot West. Roadway crossings would be dependent on the final property configuration, and security upgrades and force protection measures would be carefully planned at these locations. To minimize traffic conflicts and safety hazards, transportation improvements (e.g., bridges, tunnels, or overpasses) would be determined on a case-by-case basis and preceded by the appropriate level of follow-on NEPA analysis.

3.11.3 CUMULATIVE IMPACTS

Road closures and the limited access to different parts of the TLEP study area to primary roadways on the perimeter of the newly acquired lands would have potential significant adverse effects on transportation resources. This section discusses cumulative impacts for traffic and transportation and would be expected to occur with the implementation of the Proposed Action (Alternatives 1 through 5). A complete description of the cumulative impacts methodology is included in Section 3.1.3, and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.2.

Regardless of the alternative selected, the Proposed Action would have potential significant adverse effects on transportation resources. These effects would primarily be due to road closures and the limiting access to different parts of the TLEP study area to primary roadways on the perimeter of the newly acquired lands. These effects would be exacerbated by naturally occurring population growth in the region, and specifically projects that relocate people and activities to the region like the BRAC, MCoE, and Army Transformation actions. Section 3.1.3.2 outlines several planned transportation upgrade projects in the area near Fort Benning in efforts to keep pace with the predicted population changes in the region. No large-scale projects or proposals have been identified in Section 3.1.3.2 that, when combined with the Proposed Action, would reduce or offset the impacts of road closures under the Proposed Action to less-than-significant levels.

3.11.4 PROPOSED MITIGATION

No mitigation measures would be required for construction and infrastructure upgrades, Army training, or Army management. No mitigation measures would be required for temporary construction activities, ongoing traffic from support personnel, wear and tear on roadways, and establishing transportation routes to the newly acquired lands.

Road closures have been discussed in programmatic terms for the purpose of this EIS. In the final planning stages road closures would be implemented on a case-by-case basis, and preceded by the appropriate level of follow-on NEPA analysis. The Army would take reasonable measures to ensure roadway access to communities outside the newly acquired lands would remain unrestricted. These measures may include building new roads and allowing controlled access across the newly acquired lands.

3.12 UTILITIES

3.12.1 AFFECTED ENVIRONMENT

The following sections describe the existing utilities (including water, wastewater, electricity, gas, and communications) within the TLEP study area (Section 3.12.1.1). The ROI for utilities encompasses the utilities within the TLEP study area.

3.12.1.1 EXISTING UTILITIES WITHIN FORT BENNING AND THE TLEP STUDY AREA

Fort Benning currently has privatized potable water, wastewater, electrical and natural gas systems. The water system is owned and managed by the CWW, which provides potable water to the cantonment areas. The CWW has a permitted withdrawal level of 90 million gallons per day (mgd) from the Chattahoochee River. The more remote areas of the Installation are supplied water through seven public water supply wells. Water is transported to support facilities throughout the Installation in 600-gallon tanks on transport trailers. There are two sanitary wastewater treatment plants that serve the Installation with a combined capacity of 8.4 mgd. The wastewater system is also owned and managed by the CWW. On the Installation's outlying ranges, no connection to water and wastewater systems are currently available; therefore, the use of latrines and septic systems is a common practice.

Georgia Power supplies electrical power via two 115-kilovolt feeders into its substation on Marne Road. Voltage is transformed, metered, and fed to the adjacent Flint EMC-owned substation. Transmission lines leave this substation to supply power to the cantonment areas, family housing, and other developed areas of the Installation. There is no power generation for the entire Installation; however, emergency power generators are in place at critical locations such as the KLSF control tower, hospital, and water treatment plant. Atmos Energy provides natural gas to Fort Benning and the missions and loads at the Installation determine the volume of natural gas used. Natural gas supplies the majority of non-mobile fuel requirements at the Installation and propane is the main energy source for the ranges. The Installation also uses propane as a backup and supplement to natural gas.

Bell South provides the residential phone services to Family and bachelor housing and other non-military users. Trunks to facilitate toll-free calling between the two separate systems interconnect the Army owned and Bell South systems.

Table 3.12-1 displays the existing oil and gas pipelines as well as existing transmission lines located within the alternative study areas. Residential propane tanks are often used as a substitute for natural gas in rural areas. Information on communication lines, potable water and sanitary sewer lines is based on the best available information. In rural areas the majority of sanitary waste is processed through on-site septic systems and private wells are utilized for drinking water; therefore, it is assumed no major water or wastewater lines exist in the TLEP study area. Figure 3.12-1 illustrates the existing utility lines that traverse the TLEP study area (Note: Figure 3.12-1 is based on the best available data from various sources. Due to the scale of the figure and the potential exclusion of smaller utilities and co-ops that may serve the area, smaller utility lines if present in the TLEP study area may not be represented).

Table 3.12-1. List of Existing Utilities

TLEP Study Area Location	Utility Line Type	Miles
Russell West	Not Available	
Russell East	Transmission Line[1]	5.35
Stewart West	Transmission Line[1]	6.85
	Gas Pipeline[2]	7.60
	Oil Pipeline[2]	13.06
Stewart Central	Transmission Line[1]	11.96
	Gas Pipeline[2]	0.34
Stewart East	Transmission Line[1]	6.72
Webster West	Transmission Line[1]	11.25
Marion West	None Exist	0
Harris East and Talbot West	Transmission Line[1]	7.31
Muscogee corridor	None Exist	0

Source: GDOT, 1997
[1]Aboveground line.
[2]Underground line.

The presence of public supply, irrigation, observation, and monitoring wells is not uncommon throughout the TLEP study area. Through coordination with the ADEM, Drinking Water Branch, and the GDNR the number of public water systems as defined by the EPA located within the alternative study areas was available for review. The ADEM and GDNR do not regulate or maintain information on private drinking water wells. Table 3.12-2 displays the number and name of wells located within each alternative study area.

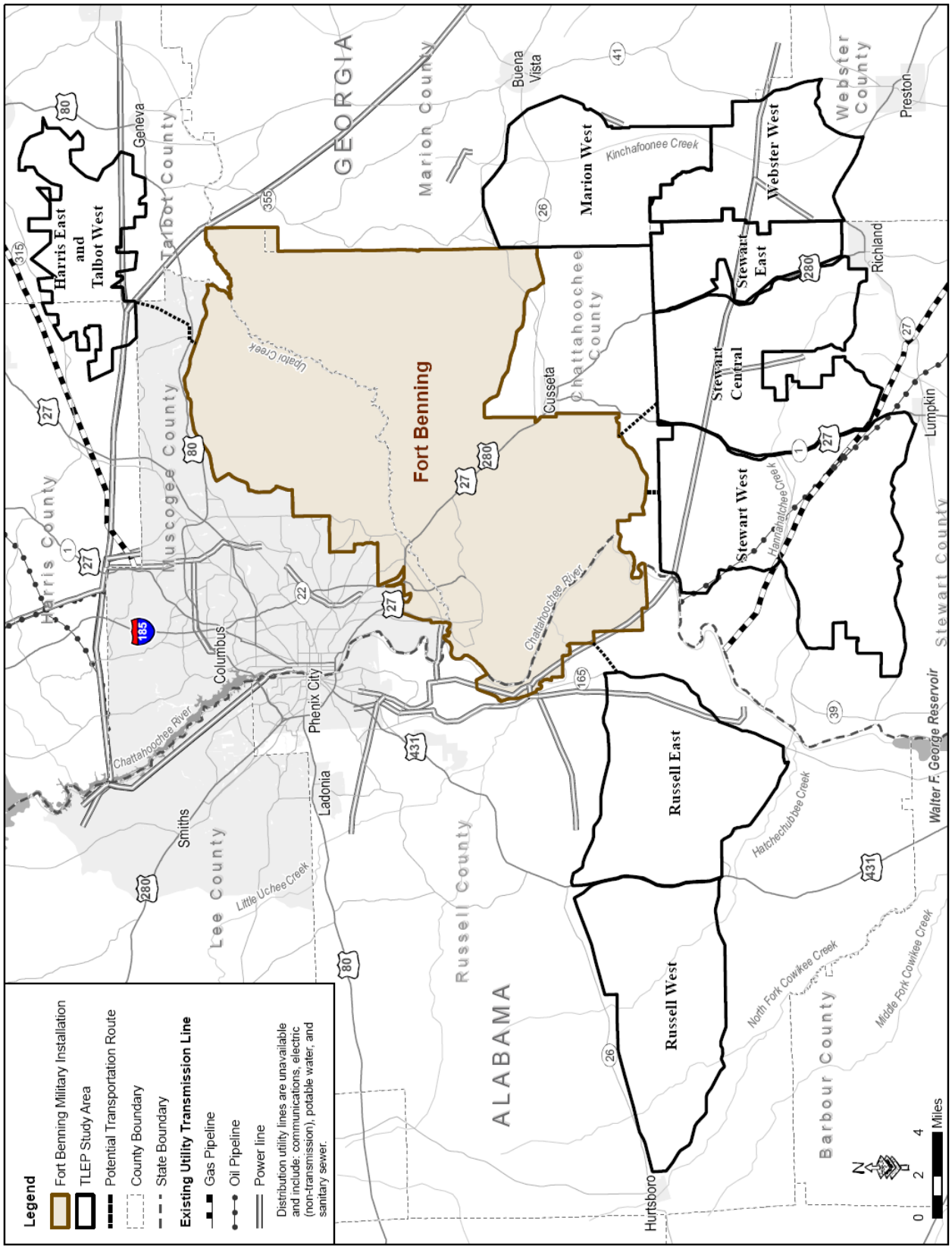


Figure 3.12-1. Existing Electrical Transmission Lines, and Gas and Oil Pipelines within the TLEP Study Area

Table 3.12-2. Public Water Wells within the TLEP Study Area

TLEP Study Area Location	Number of Public Water Wells	Name of Well
Russell West	1	Hurstboro Well 3
Russell East	1	Ft. Mitchell Well 4
Stewart West	0	N/A
Stewart Central	0	N/A
Stewart East	1	N/A
Webster West	0	N/A
Marion West	0	N/A
Harris East and Talbot West	0	N/A

Source: Personal Communication, Laughlin, B. 2010 and Stapel, J. 2011

N/A = not applicable

The area surrounding Fort Benning, including the TLEP study area, has a low-density population and generally rural landscape. In rural areas, many of the utilities are provided by the counties or the residents are in charge of acquiring their own utilities. As discussed above, many residents in rural areas rely on septic systems to treat their wastewater, private wells for drinking water, and residential propane tanks to utilize as a substitute for natural gas. The locations of public water supply drinking wells within the TLEP study area are considered sensitive information by both Georgia and Alabama, and, therefore, their exact locations have not been supplied by either state. Furthermore, no information exists on the number of single-residence wells within the TLEP study area. Private companies and cities provide utilities in many of the county seats; however, the more developed municipalities were purposely excluded from the TLEP study area. Therefore, the discussions below are on a countywide basis.

3.12.1.1.1 RUSSELL COUNTY, ALABAMA

Russell East, Russell East transportation route, and Russell West are located within Russell County, Alabama. Russell County receives electricity from Alabama Power. Alabama Power is the second largest subsidiary of Southern Company, serving homes, businesses, and industries in the southern two-thirds of Alabama. More than 78,000 miles of power lines carry electricity to customers throughout 44,500 square miles (Southern Company, 2010b). Russell County Water and Sewer Authority provides water service to approximately 5,700 customers in rural Russell County. Russell County Water and Sewer Authority produces nearly 750,000 gallons per day (gpd) of water from groundwater wells and purchases 800,000 gpd from the City of Phenix City, Alabama (Russell County Water and Sewer Authority, 2010a). Although the majority of the population within the Russell County portion of the TLEP study area utilize septic systems, the Russell County Water and Sewer Authority is now offering developers options to tie into larger municipality infrastructure. For example, developers can tie-in to the Phenix City sewer system through an agreement as well as decentralized package systems with effluent discharge being sent to Phenix City's wastewater plant (if close enough in proximity). Other options include underground drip irrigation, creek/river discharge and common area irrigation (vegetation, golf courses, ball fields, etc.) (Russell County Water and Sewer Authority, 2010b). Russell County is served natural gas by Alagasco, the largest distributor of natural gas in Alabama with approximately 440,000 customers (Alagasco, 2010). Communications in Russell County are provided by AT&T (Personal Communication, Chomas, C., 2010). AT&T serves customers nationwide with a concentration in 22 states with 46.6 million access lines (AT&T, 2010).

3.12.1.1.2 STEWART COUNTY, GEORGIA

Stewart East, Stewart Central, and Stewart West are located within Stewart County, Georgia. These areas are provided electricity by Georgia Power, the same company that currently provides power to Fort Benning, as well as Sumter EMC. Georgia Power serves 2.35 million customers in 155 of Georgia's 159 counties through a network of 14 generating plants and 20 hydroelectric dams spread across the state (Southern Company, 2010a). Sumter EMC is a not-for-profit electric utility that provides energy to more than 19,500 customers in all or parts of 11 counties in Georgia. Sumter EMC is responsible for more than 3,000 miles of distribution line that covers 2,200 square miles throughout southwest Georgia (Sumter EMC, 2010). Drinking water is supplied by groundwater and provided and treated by Stewart County. The water plant has a capacity of 324,000 gpd and current demand averages 250,000 gpd. Stewart County has an elevated storage capacity of 329,000 gallons (Georgia Facts, 2010f). Wastewater is also handled by Stewart County and the wastewater treatment plant has a capacity of 200,000 gpd; however, it currently treats an average of 90,000 gpd. There is currently an expansion planned, which is in the design phase (Georgia Facts, 2010f). Stewart County is provided natural gas by Southern Natural Gas Company. Southern Natural Gas operates a 7,600-mile long natural gas pipeline, which serves major markets across the southeastern U.S. This system transports more than 3 billion cubic feet of natural gas per day (Hoovers, 2010). Communications in Stewart County are provided by AT&T as discussed for Russell County in Section 3.12.1.1.1 (Personal Communication, Osting, 2010).

3.12.1.1.3 CHATTAHOOCHEE COUNTY, GEORGIA

The proposed Stewart West transportation route and Stewart Central transportation route are located within Chattahoochee County, Georgia. The existing Installation covers 80 percent of Chattahoochee County (Unified Government Offices of Cusseta-Chattahoochee County, 2009). The existing utilities on Fort Benning are discussed in Section 3.12.1.1. Sumter EMC provides electricity for the remainder of Chattahoochee County, as discussed for Stewart County in Section 3.12.1.1.2. There are no wastewater or natural gas lines located throughout Chattahoochee County outside of the Installation. County residents rely on septic systems to treat their wastewater and residential propane tanks in lieu of natural gas (Personal Communication, Weaver. S, 2010). Drinking water is supplied by the Unified Government of Cusseta-Chattahoochee County through four permitted public water supply wells (Personal Communication, Weaver S., 2010). The public water supply has an elevated storage capacity of 140,000 gallons. The source of the water is 4 deep wells with a pumping capacity of 258 gallons per minute (Georgia Facts, 2010a). Communications in Chattahoochee County outside of the existing Installation is provided by AT&T, as discussed for Russell County in Section 3.12.1.1.1 (Personal Communication, Weaver S., 2010).

3.12.1.1.4 WEBSTER COUNTY, GEORGIA

Webster West is located within Webster County, Georgia. Webster County is provided electricity by Georgia Power and Sumter EMC, as discussed in Section 3.12.1.1.2. Potable water is provided to Webster County by the County, which has a plant capacity of 500,000 gpd and an average consumption of 80,000 gpd. The County has an elevated storage capacity of 264,000 gallons. The source of the water is groundwater from 3 deep public water supply wells with a pumping capacity of 350 gallons per minute (Georgia Facts, 2010b). There are no wastewater or natural gas lines located in Webster County. The residents rely on septic systems to treat their wastewater and residential propane tanks in lieu of natural gas (Personal Communication, Witt. B, 2010). Communications in Webster County are provided by Windstream, which has 3.4 million access lines in 23 states (Windstream, 2010).

3.12.1.1.5 MARION COUNTY, GEORGIA

Marion West is located within Marion County, Georgia. Marion County is provided electricity by Georgia Power and Sumter EMC, as discussed in Section 3.12.1.1.2. There are no natural gas lines located in Marion County. The residents rely on residential propane tanks in lieu of natural gas (Personal Communication, Summer, 2010). Drinking water and wastewater services are provided by the County, which has a water plant capacity of 1 mgd and an average daily consumption of 800,000 gallons. Marion County has an elevated storage capacity of 300,000 gallons as well as ground storage capacity of 150,000 gallons. The source of water is 3 deep public water supply wells with a pumping capacity of 650 gallons per minute (Georgia Facts, 2010c). Water is also obtained from Kinchafoonee Creek, which has an average flow of 204 cubic feet per second. The wastewater plant has a capacity of 250,000 gpd with an average daily load of 170,000 gpd (Georgia Facts, 2010c). Communications in Marion County are provided by AT&T, as discussed in Section 3.12.1.1.1 (Personal Communication, Summer, 2010).

3.12.1.1.6 TALBOT COUNTY, GEORGIA

Talbot West is located within Talbot County, Georgia. Electricity in Talbot County is provided by Upsom EMC and Flint Electric. Upsom EMC has over 1,240 miles of lines serving 8,830 electric meters and 6,650 members. Upsom EMC is 1 of 42 electric cooperatives in Georgia and serves portions of 6 counties (Upsom EMC, 2010). Flint Electric has more than 6,200 miles of distribution lines that provide electric power to more than 80,000 meters. Flint Electric provides service to portions of 17 Georgia counties including Talbot (Flint Energies, 2010). There are no wastewater or natural gas lines located throughout the rural area of Talbot County. The residents rely on septic systems to treat their wastewater and residential propane tanks in lieu of natural gas (Personal Communication, Ison, 2010). The residents in rural areas also rely on private wells for drinking water. The City of Talbotton does offer municipal water and sewer, however, the City is not located within the TLEP study area and its services do not extend into the TLEP study area. Communications in Talbot County are provided by Windstream, as discussed for Webster County in Section 3.12.1.1.4.

3.12.1.1.7 HARRIS COUNTY, GEORGIA

Harris East is located within Harris County, Georgia, and is provided electricity by Georgia Power and Diverse Power. Georgia Power also provides power to Fort Benning, as discussed in Section 3.12.1.1.2. Diverse Power is a member-owned, non-profit electric cooperative that provides electric service to more than 23,000 residential, commercial, and industrial consumers in Troup, Heard, Harris, Meriwether, Muscogee, and Coweta counties in Georgia as well as Chambers County in Alabama (Diverse Power, 2010). Drinking water and wastewater services are provided by Harris County. The water plant has a capacity of 122,400 gpd with a planned expansion to 190,000 gpd in the near future. There is an average daily consumption of 85,000 gallons and the source of the water is groundwater. The county has an elevated storage capacity of 265,000 gallons. The wastewater plant capacity is 99,000 gpd, which has an average daily load of 54,000 gallons (Georgia Facts, 2010d). Natural gas is not available outside of the cities; therefore, residents rely on residential propane tanks as an alternative to natural gas. Communications in Harris County are provided by AT&T, as discussed in Section 3.12.1.1.1 (Personal Communication, Jarrett, 2010).

3.12.1.1.8 MUSCOGEE COUNTY, GEORGIA

The Muscogee transportation route is located in Muscogee County and is provided electricity by Georgia Power, as discussed in Section 3.12.1.1.2. The county provides water and sewer to the rural areas (Personal Communication, Muscogee County, 2010). The county potable water plant has a capacity of 67 mgd with an average daily consumption of 32 mgd. The county has a storage capacity of 15.2 mgd. The

source of water is Lake Oliver on the Chattahoochee River, which has a daily flow of 5,370 cubic feet per second average. The wastewater plant capacity is 40 mgd with an average daily load of 22.8 mgd. There are plans to expand the system by an additional 40 mgd (Georgia Facts, 2010e). Natural gas is provided by Atmos Energy, which also serves Fort Benning. Atmos Energy is the largest natural gas-only distributor in the U.S. Atmos Energy delivers natural gas to 3.2 million residential, commercial, industrial, agricultural, and public-authority customers in 12 states (Atmos Energy, 2010). Communications in Harris County are provided by AT&T, as discussed in Section 3.12.1.1.1.

3.12.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to facilities that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to utilities would occur from an action that would cause an impairment of utility service to local communities, homes, or businesses.

3.12.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. In addition, no acquisition of land would occur within the TLEP study area to Federal ownership and management. Utilities would not be affected under the No Action Alternative; therefore, negligible impacts to existing conditions of utilities within the TLEP study area (Section 3.12.1.1) would occur.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to utilities would be the subject of future NEPA analysis.

3.12.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

3.12.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have negligible impacts on utilities. As shown in Figure 3.12-1, Alternative 1 contains approximately 18 miles of utility lines for electricity. Webster West contains the bulk of the utility lines with approximately 11 miles of electrical lines, while Stewart East contains the remaining 7 miles of electrical lines. No utility lines are located in Marion West. Information on communication lines, potable water and sanitary sewer lines was not available; however, as previously discussed, the majority of sanitary waste in highly rural areas is processed through on-site septic systems and private wells are utilized for drinking water. Therefore, it is assumed no major water or wastewater lines exist in Alternative 1. Property to be acquired would be subject to existing easements. Utilities and easements that serve residences not acquired would be left in place. The Army would lease existing utility ROWs back to the associated companies, allowing them access rights.

3.12.2.2.2 ARMY MANAGEMENT

There would be negligible impacts to utilities from Army management. To avoid potential impacts to adjacent sensitive resources and utilities, the Army would implement oversight measures to reduce any adverse effects from a proposed facility's construction and operation.

3.12.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Under Alternative 1, minor adverse impacts resulting from Army construction of training infrastructure on newly acquired lands would occur. During construction of new facilities and training areas, construction equipment, especially trenching equipment, could accidentally sever or damage existing underground utility lines. Additionally, large construction equipment could accidentally damage overhead power or communication lines. The Army, however, would locate and verify all utilities during the site-specific evaluation, which would take place during the acquisition process. Furthermore, Fort Benning would locate and assess existing utilities on a site-by-site basis prior to any development of proposed training maneuver routes. Such occurrences would be minimized by locating and demarcating the alignments of existing utilities prior to construction. Therefore, short-term, minor impacts to existing utility lines could occur during construction.

The Army would potentially construct new facilities to support field training in newly acquired lands. Short-term minor impacts are expected to affect existing utilities during construction as water and electricity would be utilized for the construction of new facilities. Once the site-specific evaluation takes place, the Army would decide what structures would be preserved, upgraded for reuse, or demolished. Construction of training facilities (e.g., buildings) may include the need for utilities. Due to the rural nature and the common existing use of septic systems and potable water wells within Alternative 1, construction of septic systems and potable water wells (if water and wastewater are not transported on- and off-site) would be likely. As existing training ranges typically use propane or gas for electrical sources, the potential also exists for the construction of connections to existing gas lines if generators are not used for electrical supply. The size and length of new connection lines to existing utilities would depend upon the requirements of future training facilities and proximity to existing utilities. To the extent possible, facilities requiring utility connections would be located near existing lines. Follow-on NEPA analysis would be conducted for any new facilities and associated infrastructure improvements which would address potential impacts to utilities and environmental impacts from utility line construction and connections.

3.12.2.2.4 ARMY TRAINING

The primary minor adverse impacts include potential damage to utilities during construction and training, periodic interruptions to gain access to electrical lines during training, and the potential requirement for utility use during the operations of training facilities. There may be long-term minor impacts from Army training to the existing electrical lines located on newly acquired land. These existing electrical lines that serve residences not acquired would be left in place after Army acquisition and the Army would maintain the existing utility ROWs leases that transverse through the newly acquired land. The Army would lease these existing ROWs back to the electricity companies, allowing them access rights. Access, however, could be periodically interrupted by training missions and would require coordination with Fort Benning, causing a minor adverse impact.

Long-term, minor adverse impacts to utility corridors could occur if underground utility corridors become susceptible to damage from military training. Similar to construction activities, underground utilities could be adversely impacted by heavy equipment/vehicles and would need to be located prior to implementation of any training activity. The intersection of proposed training maneuver routes with underground pipelines would be demarcated and reinforced. Crossings by heavy equipment, if necessary during training, would occur at designated reinforced crossings to prevent utility line damage, avoiding impacts.

As previously stated, to support the need of new facilities, connections to existing utility systems may be required. Potable water would either be trucked into the new training areas or supplies would be provided by newly-constructed potable water wells if existing suitable wells did not exist. Wastewater would either be trucked off-site (e.g., latrines) or would be placed into newly-constructed septic systems if

suitable septic systems did not exist. Electrical supplies would be likely provided by natural gas lines or propane tanks. Follow-on NEPA analysis would be conducted for any new facilities which would address potential impacts to utilities and environmental impacts from operations of these facilities.

Fort Benning has existing conservation programs which would be implemented on newly acquired lands to further reduce energy and water demand. Such initiatives currently underway at Fort Benning include biomass conversion for energy production and a pilot project for wind turbine design to generate power from HVAC system outflows which promote energy conservation. Water conservation measures have reduced water consumption at Fort Benning by 74 percent over the past 5 years.

3.12.2.3 ALTERNATIVE 2

This alternative proposes acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Overall potential impacts to utilities would be similar to those described under Alternative 1 (Section 3.12.2.2). With regard to utilities, the implementation of Alternative 2 would result in negligible impacts as a result of Federal acquisition of land; negligible impacts as a result of Army management; minor adverse impacts as a result of Army construction and upgrades of infrastructure; and long-term minor adverse impacts as a result of Army training.

Alternative 2 collectively contains approximately five miles of electrical lines. Similar impacts to electrical lines under Alternative 1 would occur, however, to a lesser extent given that there is approximately one-fourth the mileage of power lines in the study area. The proposed transportation route from Russell East to the existing Installation boundary does not include any electrical, gas, or oil pipelines. As discussed under Alternative 1, information on communication lines, potable water and sanitary sewer lines is not available; however, the majority of sanitary waste in highly rural areas is processed through on-site septic systems and private wells are utilized for drinking water; therefore, it is assumed no major water or wastewater lines exist in Alternative 2. All existing utilities within Alternative 2 would be located and verified during the site-specific evaluation, which would not take place until the lands are acquired. Furthermore, Fort Benning would locate and assess existing utilities on a site-by-site basis prior to any development of proposed training maneuver routes. No additional impacts beyond those discussed in Alternative 1 would be anticipated for utilities under Alternative 2.

3.12.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Overall potential impacts to utilities would be similar to those described under Alternative 1 (Section 3.12.2.2). With regard to utilities, the implementation of Alternative 3 would result in negligible impacts as a result of Federal acquisition of land; negligible impacts as a result of Army management; minor adverse impacts as a result of Army construction and upgrades of infrastructure; and long-term minor adverse impacts as a result of Army training.

Alternative 3 collectively contains approximately 19 miles of electrical lines, 8 miles of gas pipelines and 13 miles of oil pipelines. The proposed transportation routes from Stewart West and Stewart Central to the existing Installation boundary do not include any electrical, gas, or oil pipelines. As discussed under Alternative 1, existing utilities that serve residences not acquired would remain in place after the Army acquisition. The Army would lease these existing ROWs back to the electricity, gas, and oil companies, allowing them access rights. Access, however, could be periodically interrupted by training missions and would require coordination with Fort Benning, causing a minor adverse impact. Alternative 3 contains

the most utilities of the five alternatives, and, therefore, the frequency of the minor adverse impact may be more often as opposed to the other four alternatives.

As discussed under Alternative 1, information on communication lines, potable water and sanitary sewer lines was not available; however, the majority of sanitary waste in highly rural areas is processed through on-site septic systems and private wells are utilized for drinking water; therefore, it is assumed no major water or wastewater lines exist in Alternative 3. All existing utilities within Alternative 3 would be located and verified during the site-specific evaluation, which would not take place until the lands are acquired. Furthermore, Fort Benning would locate and assess existing utilities on a site-by-site basis prior to any development of proposed training maneuver routes. No additional impacts beyond those discussed in Alternative 1 would be anticipated for utilities under Alternative 3.

3.12.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Overall potential impacts to utilities would be similar to those described under Alternative 1 (Section 3.12.2.2). With regard to utilities, the implementation of Alternative 4 would result in negligible impacts as a result of Federal acquisition of land; negligible impacts as a result of Army management; minor adverse impacts as a result of Army construction and upgrades of infrastructure; and long-term minor adverse impacts as a result of Army training.

Alternative 4 collectively contains approximately 17 miles of electrical lines and 0.3 miles of gas pipeline, located at the southeast corner of Stewart Central. The proposed transportation route from Stewart Central to the existing Installation boundary does not include any electrical, gas, or oil pipelines. As discussed under Alternative 1, existing utilities that serve residences not acquired would remain in place after the Army acquisition. The Army would lease these existing ROWs back to the electricity and gas companies, allowing them access rights. Access, however, could be periodically interrupted by training missions and would require coordination with Fort Benning, causing a minor adverse impact.

As discussed under Alternative 1, information on communication lines, potable water and sanitary sewer lines is not available; however, the majority of sanitary waste in highly rural areas is processed through on-site septic systems and private wells are utilized for drinking water; therefore, it is assumed no major water or wastewater lines exist in Alternative 4. All existing utilities within Alternative 4 would be located and verified during the site-specific evaluation, which would not take place until the lands are acquired. Furthermore, Fort Benning would locate and assess existing utilities on a site-by-site basis prior to any development of proposed training maneuver routes. No additional impacts beyond those discussed in Alternative 1 would be anticipated for utilities under Alternative 4.

3.12.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Overall potential impacts to utilities would be similar to those described under Alternative 1 (Section 3.12.2.2). With regard to utilities, the implementation of Alternative 5 would result in negligible impacts as a result of Federal acquisition of land; negligible impacts as a result of Army management; minor adverse impacts as a result of Army construction and upgrades of infrastructure; and long-term minor adverse impacts as a result of Army training.

Alternative 5 collectively contains approximately 15 miles of electrical lines, 8 miles of gas pipelines and 13 miles of oil pipelines. The proposed transportation route from Stewart West to the existing Installation

boundary does not include any electrical, gas, or oil pipelines. As discussed under Alternative 1, existing utilities that serve residences not acquired would remain in place after the Army acquisition. The Army would lease these ROWs back to the electricity, gas, and oil companies, allowing them access rights. Access, however, could be periodically interrupted by training missions and would require coordination with Fort Benning, causing a minor adverse impact. Alternative 5 and Alternative 3 are extremely similar and only differ by four miles of utilities. Therefore the frequency of the minor adverse impact to utilities may be more often as opposed to Alternatives 1, 2, and 4.

As discussed under Alternative 1, information on communication lines, potable water, and sanitary sewer lines is not available; however, the majority of sanitary waste in highly rural areas is processed through on-site septic systems and private wells are utilized for drinking water; therefore, it is assumed no major water or wastewater lines exist in Alternative 5. All existing utilities within Alternative 5 would be located and verified during the site-specific evaluation, which would not take place until the lands are acquired. Furthermore, Fort Benning would locate and assess existing utilities on a site-by-site basis prior to any development of proposed training maneuver routes. No additional impacts beyond those discussed in Alternative 1 would be anticipated for utilities under Alternative 5.

3.12.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts within the ROI for utilities and would be expected to occur with the implementation of the Proposed Action (Alternative 1, 2, 3, 4, or 5). A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.2.

Utilities within the TLEP study area include electricity, oil, and gas pipelines. In conjunction with the projects listed in Section 3.1.3.2, the Proposed Action would contribute to an increased demand for these utilities services through the introduction of new development. Impacts to utilities associated with the Proposed Action, in combination with other proposed or reasonably foreseeable future projects, are not expected to result in any significant impacts; however, follow-on NEPA analysis would be conducted for the construction and operation of site-specific facilities which would include, as necessary, an evaluation of utility requirements and potential impacts.

As shown in Section 3.1.3.2, Russell and Chattahoochee counties have regional development plans, which involve improvements to regional utility infrastructure. The water and sewer systems of Russell County, Phenix City, and Fort Mitchell are proposed to be merged and Chattahoochee County plans to build a new sewer system and sewage treatment plant. These initiatives would serve to upgrade and improve supply and distribution of water and wastewater within the ROI, providing beneficial cumulative impacts to users within the ROI served by these municipalities. The Army would not directly or indirectly add cumulative impacts to these initiatives.

It is important to note that the states of Georgia, Alabama, and Florida have been in dispute regarding the withdrawal and use of water from the Apalachicola-Chattahoochee- Flint and Alabama-Coosa-Tallapoosa River basins. The Proposed Action would not result in an increase in personnel or training from existing levels, and thus no increase in regional water consumption is expected. Therefore, the dispute over water withdrawal and water use is not anticipated to be affected by the Proposed Action.

3.12.4 PROPOSED MITIGATION

The Army would reinforce the points where proposed maneuver training routes would cross underground utilities. Heavy equipment would be required to use these designated crossing points to prevent utility line damage.

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3.13 HAZARDOUS AND TOXIC SUBSTANCES AND WASTE

3.13.1 AFFECTED ENVIRONMENT

This section provides a summary of relevant laws and regulations and defines hazardous materials and toxic substances (Section 3.13.1.1) and the plans that are currently in place to ensure compliance with the applicable requirements (Section 3.13.1.2). This section also discusses current use of hazardous materials at Fort Benning (Section 3.13.1.3) and the Fort Benning hazardous waste management program (Section 3.13.1.4). Section 3.13.1.5 discusses solid waste management. Section 3.13.1.6 summarizes how Fort Benning handles other toxic substances, including asbestos, lead-based paint (LBP), and polychlorinated biphenyls (PCBs). Section 3.13.1.7 discusses existing compliance-related cleanup sites on Fort Benning properties. These discussions are followed by a brief discussion of the potential hazardous wastes that might be located within the TLEP study area (Section 3.13.1.8). The ROI for hazardous and toxic substances and waste encompasses all areas within the TLEP study area and associated underlying groundwater aquifers.

3.13.1.1 REGULATORY BACKGROUND AND DEFINITIONS

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. The terms "hazardous material," "toxic substance," and "hazardous waste" are used in this section and are defined in terms of their unique applications under specific Federal regulations.

Hazardous substances are defined and regulated in the U.S. primarily by laws and regulations administered by the U.S. Occupational Safety and Health Administration (OSHA), EPA, and the U.S. Department of Transportation (DOT). Each agency incorporates hazardous substance terminology in accordance with its unique Congressional mandate. The OSHA regulations categorize substances in terms of their impacts on employee and workplace health and safety, the DOT regulations in terms of the safety in transportation, and the EPA regulations in terms of protection of the environment and the public health.

The OSHA Hazard Communication regulation (29 CFR 1910.1200) defines a hazardous chemical as any chemical that is a physical or health hazard. The definition includes chemicals that are carcinogens, toxins, toxic agents, irritants, corrosives, and sensitizers; agents which damage the lungs, skin, eyes, or mucous membranes; chemicals which are combustible, explosive, flammable, unstable (reactive), or water-reactive; oxidizers; as well as chemicals that may produce or release harmful dusts, gasses, fumes, vapors, mists, or smoke. Currently, OSHA sets standards and regulates workplace exposure to over 400 substances, including common materials such as paints, fuels, and solvents.

The EPA administers the regulation of hazardous materials, toxic substances, and hazardous wastes under Federal programs including the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Emergency Planning and Community Right-To-Know Act (EPCRA), RCRA, and TSCA. DoD installations are required to comply with these laws and all other applicable Federal, state, and DoD regulations, as well as 40 CFR 112, *Oil Pollution Prevention*; EO 13101, *Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition*; and EO 13148, *Greening the Government Through Leadership in Environmental Management.*

In CERCLA Section 101(14), the EPA defines the term "hazardous substance" by reference to provisions in other environmental statutes that identify substances as hazardous. The EPA definition includes any item or chemical that can cause harm to people, plants, or animals when released by spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment and any substance for which a reportable quantity is established in 40 CFR 302.4,

List of Hazardous Substances and Reportable Quantities. CERCLA addresses hazardous waste by requiring the cleanup of historically-contaminated sites.

Hazardous wastes are primarily identified and regulated under RCRA, which defines hazardous waste as any solid, liquid, contained gaseous or semisolid waste, or any combination of wastes that could pose a substantial hazard to human health or the environment. Under RCRA, waste may be classified as hazardous because of its toxicity, reactivity, ignitibility, or corrosivity. In addition, certain types of waste are specifically listed (i.e., identified) as hazardous in 40 CFR 261 Subpart D, *Identification and Listing of Hazardous Waste*.

The promulgation of TSCA represented an effort by the Federal government to address those chemical substances and mixtures for which it was recognized that the manufacture, processing, distribution, use, or disposal may present an unreasonable risk of injury to health or the environment, and to effectively regulate these substances and mixtures in interstate commerce. Toxic chemical substances regulated by the EPA under TSCA include asbestos, lead, PCBs, and radon, and the TSCA Chemical Substances Inventory lists information on more than 62,000 chemicals and substances. The TSCA and CAA also set standards for the use, management, and disposal of asbestos, LBP, and PCBs.

The DOT Hazardous Materials Regulations (49 CFR 171) define a hazardous material as a substance or material that has been determined to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce. The DOT definition includes hazardous substances, hazardous wastes, and marine pollutants.

The Military Munitions Rule (40 CFR 266), promulgated in 1997, identifies the management standards that apply to military munitions wastes if they are deemed hazardous under the Military Munitions Rule or 40 CFR 261. Military munitions used for their intended purposes on ranges, or collected for further evaluation, such as recycling, are not considered waste per the Military Munitions Rule (40 CFR 266.202) as incorporated by reference by the State of Georgia Environmental Rule 391-3-11-.10(3) and adopted by the State of Alabama ADEM Administrative Code 335-14-7.13 and 335-14-6.31.

Finally, AR 200-1, *Environmental Protection and Enhancement,* outlines Army environmental responsibilities, including responsibilities for the management of hazardous waste and hazardous and toxic materials. AR 200-1 requires Army installations to minimize the use of hazardous materials, as well as establish management procedures to ensure proper handling throughout their life cycle including procurement, storage, use, and disposal. In addition, installations are required to develop plans to ensure that hazardous materials and toxic substances are managed in compliance with applicable regulations.

3.13.1.2 ENVIRONMENTAL COMPLIANCE MANAGEMENT PLANS

To meet applicable regulatory requirements, Fort Benning maintains multiple environmental compliance plans. These plans support long-term goals such as enhancing quality of life and protecting Fort Benning's environmental resources.

Fort Benning's Integrated Environmental Compliance Management Plan (IECMP) provides a single plan that integrates multiple environmental compliance plans and management programs. The IECMP complies with applicable laws, regulations, and policy directives and supports Fort Benning's goal of implementing an integrated Environmental Management System. The integration of these plans minimizes duplication, reduces risk of harm to individuals and the environment, and reduces the potential for regulatory non-compliance violations (Fort Benning, 2008b).

The IECMP incorporates the following plans related to hazardous materials, hazardous wastes, and toxic substances: the SPCC Plan; the PCBs Management Plan; the Storage Tank Management Plan, the Lead Management Plan, the Hazardous Waste Management Plan (HWMP), the Pest Management Plan, the Asbestos Management Plan (AMP), the Pollution Prevention Management Action Plan, the Used Oil Recycling Plan, and the U.S. Army Defense Environmental Restoration Program Compliance-Related

Cleanup Installation Action Plan (IAP) (Fort Benning, 2008b). These plans are discussed further in the relevant sections below.

3.13.1.3 HAZARDOUS MATERIAL USE

On Fort Benning, a variety of hazardous materials are used during routine operations such as vehicle and equipment maintenance, military training activities, Installation upkeep, and administrative and housing functions. Table 3.13.1 identifies some of the most common materials used. Hazardous materials used during military training activities include nuclear, biological, and chemical (NBC) kits, propellants, ration heaters, and calcium hypochlorite. Hazardous materials used in the maintenance of facilities, equipment, and vehicles include paints and paint-related materials, stains, adhesives, solvents, and coatings. Batteries and POLs are used to power both military and civilian equipment and vehicles, and pesticides are used to control plant and animal pests throughout the Installation. When not in use, these materials are generally stored at maintenance facilities in the cantonment area.

Table 3.13-1. Common Hazardous Materials Used at Fort Benning

NBC Kits	Compressed Gases
Aerosol Paints, Lubricants & Enamel Paints	Pesticides, Insecticides, Rodenticides Herbicides
Paint and Paint Related Material from Paint Shops	Propellants
Flammable Stains/Coatings	Smoke Pots
Cleaning Products	Flammable Adhesives
Photographic Chemicals	Solvents (including parts washer solvent)
Batteries (nickel cadmium, mercury, lithium, and magnesium)	Calcium Hypochlorite
POLs	Flameless Ration Heaters from MREs
	Fluorescent Light Tubes

Source: Fort Benning, 2005
MRE = Meals-Ready-to-Eat; NBC = nuclear, biological, and chemical; POL = petroleum, oils, and lubricants

The garrison activities and tenants at Fort Benning procure hazardous materials through several supply channels. The primary supply channel is the Hazardous Materials Management Program, which is centrally managed by the Directorate of Logistics (DOL). The DOL maintains a contract with Shaw Infrastructure, Inc. to operate a Centralized Hazardous Materials Control Center (CHMCC) for the procurement and distribution of products needed to maintain the Installation's facilities and to sustain the military mission (USACE, 2007).

The CHMCC contractors, who are trained in hazardous materials management, utilize the Army supply system to conduct materials requisition and issue transactions. These transactions are entered into an Army-approved database program that relies upon a process of review and authorization to limit the types and quantities of hazardous materials that may be brought to the Installation. Through the use of the database, the CHMCC staff assists in ensuring user accountability for issued materials by providing a means of tracking each material through its life cycle. When the user has emptied the container or no longer needs the product, he/she can bring the container back to the CHMCC so that a final disposition entry can be made in the database or so that the remaining quantity of product can be reissued to another user to reduce unnecessary waste disposal.

The use of pesticides at Fort Benning is governed under the regulations promulgated by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The Installation has an IPMP, as required under AR 200-1, which outlines the approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks. It aims at reducing the use of potentially toxic chemicals by emphasizing non-chemical strategies; however, the use of pesticides may be required, in combination with other methods, to control certain pests. The IPMP

outlines the approach to protect sensitive environmental areas and endangered species habitat during pesticide applications. It also describes the methods used to address pesticide spills.

Bulk quantities of fuels (e.g., heating oil, JP-8, gasoline, diesel) and other POLs are managed in underground storage tank (USTs) and above ground storage tanks (ASTs) located across the Installation. Emergency generators are typically supplied with fuel (JP- 8, diesel, or motor gasoline) stored in tanks; however, a few emergency generators on the Installation are fueled by natural gas and do not have an associated oil tank. All of these storage facilities represent potential sources of leaks and spills. The ASTs and USTs at Fort Benning are managed in accordance with the Storage Tank Management Plan to ensure compliance with all applicable Federal, state and local regulations, as well as AR 200-1. The plan describes the basic requirements for operating storage tanks and includes an inventory of all the storage tanks at the facility, as well as their date of installation, capacity, and contents (Fort Benning, 2007b).

POLs at Fort Benning are managed in compliance with the requirement set forth in the current SPCC Plan. The bulk of the POLs handled at Fort Benning are JP-8 jet fuel and almost all fuel is stored in ASTs (Fort Benning, 2008a). The SPCC Plan provides guidance for protection of human health and the environment by outlining policies and procedures for the prevention, control, and handling of POL spill incidents. The SPCC Plan also ensures that proper procedures are incorporated into the day-to-day operations of those Installation organizations that operate and maintain the affected facilities. The IECMP also includes annexes, such as the NPDES section, that include specific information pertaining to SPCC Plan requirements.

The IECMP includes a section pertaining to spill response. This section, the Emergency Procedures Core Plan, establishes a response management system and describes the steps necessary to initiate, conduct, and terminate an emergency response action. These steps include recognition, notification, and initial response (assessment, mobilization, and implementation). The response management system also establishes command and control, provides a communications system, and assigns responsibilities for each organization that may be called upon to respond to a spill of oil or hazardous substances (Fort Benning, 2008a).

3.13.1.4 HAZARDOUS WASTE MANAGEMENT

AR 200-1 outlines Army environmental responsibilities, including responsibilities for the management of hazardous wastes and hazardous and toxic materials. AR 200-1 requires Army installations to minimize the use of hazardous materials, as well as establish management procedures to ensure proper handling throughout their life cycle including procurement, storage, use, and disposal. In addition, installations are required to implement a HWMP to ensure that hazardous waste is managed in compliance with applicable regulations. AR 200-1 also includes requirements for the management of toxic substances including PCBs, asbestos, and LBP in a manner that minimizes human exposure and environmental risk.

Routine operations across Fort Benning generate a variety of hazardous wastes, including various solvents; paints; antifreeze; aerosols; contaminated filters, rags, and absorbents; weapon cleaning patches and sludges; and some items managed as universal wastes, such as used batteries and fluorescent light tubes. The Centralized Accumulation Points and Satellite Accumulation Points are located throughout the Installation and contain a variety of wastes, which are typically stored in 5-gallon pails, 55-gallon drums, and other similar-sized containers.

Fort Benning's EMD oversees the management of hazardous waste on behalf of the military units that generate the waste, and implements provisions of the HWMP. The plan outlines the requirements for collection and storage of hazardous wastes and ensures that the wastes are transported offsite in accordance with applicable Federal, state, and DoD regulations. Requirements for inspection of storage sites, training of personnel, and record-keeping are outlined in the plan.

The EMD Environmental Programs Management Branch annually trains approximately 1,000 workers, inspects nearly 500 waste accumulation areas, and provides program oversight for the disposal of over

300,000 pounds of hazardous and toxic waste (USACE 2009). Currently, Fort Benning operates as an RCRA Large Quantity Generator (Facility I.D. Number GA3210020084) and manages compliance with the relevant regulations through its HWMP.

3.13.1.5 SOLID WASTE MANAGEMENT

Solid waste generated at the Installation includes waste generated from Family housing, administrative areas, troop units, and contractors. Two separate solid waste haulers operate under contract on Fort Benning. All of Fort Benning's solid waste goes to a transfer station owned and operated by Waste Management, which also owns and operates a permitted sanitary landfill located in Smiths, Alabama. The landfill has projected current and future capacity of approximately 75 years. Waste Management, Inc. is also the solid waste collector for Post Family housing (Fort Benning, 2008d).

Fort Benning's policy on recycling is governed by the October 2007, Policy Memorandum #200-1-8, entitled "Qualified Recycling Program." Under this policy, Army personnel and contractors are required to actively participate in the recycling program, and all of the proceeds from the program are retained by the Installation. One recycling center processes recyclable items from industrial work areas, barracks, and Family housing areas. Recyclable items include paper (approximately 420 tpy), cardboard (approximately 1,500 tpy), aluminum and scrap metal (approximately 3,000 tpy), glass (approximately 200 tpy), and plastic (approximately 100 tpy). Also, about 91 tons of tires, 92 tons of oil, and 300 tons of ammunition-related recycling (i.e., brass, links, shells, fuzeheads) are processed annually. Recyclable materials are turned-in to the Installation Defense Reutilization Marketing Service and the Material Recycling Facility (MRF) for processing (Fort Benning, 2008d).

Family housing waste is collected curb-side from housing units located on the Installation and collected by Waste Management, Inc. under a contract with Residential Communities Initiative, manager of family housing property. Family housing waste generally consists of food wastes, metal, plastics, paper, glass, etc. (Fort Benning, 2008d). Fort Benning has a recycling program in place as outlined in its Integrated Solid Waste Program (Fort Benning, 2008d).

Administration area waste is collected from various sized storage containers located on the Installation. Administration area waste generally consists of office paper products, food wastes (from mess halls and restaurants), and cardboard and cans from receiving, mess halls, motor pools, etc. Office buildings have collection bins located inside the buildings and pickup is scheduled or on a call-in basis. Cardboard dumpsters for recycling are located near many offices, mess-halls, and motor pools. Recyclable material is collected from the recycling trailers, administration areas, and the cardboard dumpsters delivered to the Fort Benning Material Recovery Facility to be packaged and sold. Yard waste material consists of leaves, limbs, grass clippings, etc. collected from the Family housing areas, Soldier's barracks, and maintenance of the common grounds. Yard waste is mulched and recycled as much as possible. Troop unit waste is generated by Army troops that have been on field exercises. Troop units collect their own waste and bring it to the MRF where it is placed in 20 and 40 cubic yard roll-off containers and emptied by MDI Waste Services on an as-needed basis. Contractors and other users do not have permission to dispose of waste on Fort Benning. All construction and demolition wastes are taken off-Post by the contractor to a permitted recycling or disposal facility (Fort Benning, 2008d).

3.13.1.6 OTHER TOXIC SUBSTANCES

3.13.1.6.1 ASBESTOS-CONTAINING MATERIALS

Asbestos-containing materials (ACM) in buildings and asbestos-related projects are regulated by OSHA under 29 CFR 1920, *Procedure for Variation from Safety and Health Regulations under the Longshoreman's and Harbor Workers' Compensation Act* and 29 CFR 1926, *Safety and Health Regulations for Construction,* and by the EPA under 40 CFR 61, *National Emission Standards for*

Hazardous Air Pollutants. Asbestos has been used in many building components at Fort Benning, including pipe insulation, sealants, roofing materials, transite boards, ceiling tiles, floor tile and accompanying mastics, and other miscellaneous building materials. Asbestos is not harmful as long as it is encapsulated within these building materials; however, when the ACM begins to degrade or is disturbed due to construction, demolition, or renovation projects, there is a risk of exposing workers and other persons to asbestos fibers. Asbestos must be handled only by trained personnel, and specific measures must be in place to limit asbestos emissions during construction, demolition or renovation projects.

Fort Benning's AMP outlines the procedures that are followed when ACMs are encountered. Routinely, all Fort Benning facilities scheduled for maintenance, renovation, remodeling, and demolition are inspected for the presence of ACMs. When required by law or as a precautionary measure, ACM is removed through outside contracts by licensed specialized firms. Removed ACM is transported offsite by appropriately licensed transporters and disposed in appropriately permitted landfill facilities in accordance with applicable Federal, state, local, and DoD regulations.

3.13.1.6.2 LEAD-BASED PAINT

Lead was a common constituent of house paints until the Federal government banned the residential use of paint with lead content greater than 0.06 percent by weight in 1978. Some states stopped its use even earlier. Lead can become airborne from degrading paint, and can be ingested or inhaled by people. The toxic effects of lead are more pronounced in children, and LBP-abatement regulations are especially meant to limit exposure of young children to lead. TSCA is the primary law that regulates the management and abatement of LBP in residential structures. LBP debris and other items contaminated with lead may be regulated under RCRA and require disposal as hazardous waste if lead levels in the waste are high enough. AR 200-1 requires Army installations to develop and implement lead management programs.

Paint is considered LBP if the surface coating contains lead in concentrations greater than 1.0 milligrams per square centimeter or 0.5 percent by weight. LBP inspections are conducted on painted surfaces in cantonment buildings as part of the Post-wide asbestos and lead survey program. Lead content of paint is communicated to occupants, contractors, and maintenance personnel to ensure that they follow procedures that minimize disturbance to the painted surfaces.

There are several structures and buildings 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 in order to minimize the potential for creation of respirable dust, direct contact with the LBP surfaces, and contamination of the surrounding environment. Fort Benning's Lead Management Plan addresses LBP risk assessment as well as handling and disposal procedures for LBP, coatings, and LBP-contaminated soils. The plan also includes safety procedures for the workers who conduct this work. All construction contractors are required to follow plan procedures. Also, in accordance with the Lead Management Plan, lead-contaminated waste is disposed as hazardous waste.

3.13.1.6.3 POLYCHLORINATED BIPHENYLS

PCBs are synthetic compounds that were commonly used in the past as insulating materials in electrical capacitors, in transformer dielectric fluid, as plasticizers in waxes, in paper manufacturing, and many other applications. PCBs are very persistent and remain in the environment for long periods of time, and have been linked to cancer and other adverse health effects. PCBs are no longer commercially manufactured within the U.S., but they continue to be present in items that were manufactured before they were banned in 1979, such as PCB-containing transformers and capacitors. The management and disposal of PCB-containing items is regulated by TSCA and 40 CFR 761.

Transformers at Fort Benning are located either on pads or on poles and are equipped with compartments for oil having a capacity of 20 to 40 gallons, depending on the size of the transformer. The oil used in these transformers is classified as either PCB/PCB-contaminated, or non-PCB. 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 has a PCB Management Plan that establishes 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 KLSF, which is under the management of Interior Electric (USACE, 2007). The non-Federal owners of the electric system on the Installation are responsible for any PCB spills and other spills resulting from the operation of those electric systems.

3.13.1.7 EXISTING CLEANUP SITES

Past resource and waste management practices at Fort Benning have resulted in the presence of toxic and hazardous waste contamination at some locations. In response, Fort Benning has undertaken mitigation and cleanup activities under its Installation Restoration Program (IRP) to manage these sites, which are referred to as Solid Waste Management Units (SWMUs). The Fort Benning EMD 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 (OMA)-SWMUs or as Environmental Restoration, Army (ER,A)-SWMUs. The OMA-SWMU sites are being managed under the 2005 Fort Benning Environmental Action Plan (EAP), while the ER,A-SWMU sites are being managed under the 2005 Fort Benning IAP. The cleanup activities initiated under the EAP are directed at contamination primarily resulting from current operations, and the contaminants of concern include POLs, trichloroethylene (TCE), metals, volatile organic compounds (VOCs), pesticides, and leachate (USACE, 2007). The IAP is specifically focused on contamination resulting from past activities, and the contaminants of concern include gasoline (including its constituents, benzene, toluene, ethylbenze, and xylenes), paint, TCE, and leachate (USACE, 2007). Both the EAP and the IAP have been developed through consultation and coordination with the U.S. Army Environmental Command (USAEC), EPA, GEPD, and the public. There are currently 27 OMA-SWMU sites categorized as Active Site Investigations under the EAP and 30 ER,A-SWMU sites categorized as Active under the IAP (USACE, 2007).

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 utilize the project areas are not exposed to unsafe conditions. SWMUs that need corrective action are identified on a GIS 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 (LUCs) 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.

When contamination is found in existing buildings or on a project site, an investigation is performed to delineate the nature and extent of the contamination prior to construction, and land use may be restricted. For some locations where contamination has occurred in the past, 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 all exposure levels of any contaminants are below all EPA and GEPD screening levels and no protective measures or additional cleanup or LUCs are necessary.

3.13.1.8 HAZARDOUS WASTE POTENTIAL WITHIN THE TLEP STUDY AREA

No Phase I surveys have been conducted by the Army within the TLEP study area to identify potential hazardous wastes, USTs, small landfills, or other potential waste-containing sites. Prior to acquisition, an initial survey for hazardous waste contamination would be conducted.

As shown in Table 3.2-3 (see Section 3.2), the TLEP study area consists mostly of forest/timber production and agricultural land. Based on the history of the area and known land uses, various solid and hazardous wastes may be found abandoned on acquired properties. Such materials may include drums with or without materials inside, batteries, old paint, pesticides, herbicides, and other chemicals. In addition, contaminated sites may be present due to past use including agricultural use of pesticides and the treatment of lumber with creosote. Storage tanks that either presently contain or previously contained fuel or other petroleum products may also be present in the TLEP study area.

A search through the EPA databases (http://www.epa.gov/emefdata/em4ef.home) was conducted to locate any known regulated sites within the TLEP study area that may have been impacted by hazardous and toxic substances and waste. The EPA databases provide information about environmental activities that may affect air, water, and land. They track various types of environmental data, including air releases, toxic releases, hazardous wastes, water discharge permits, and Superfund sites. Of the 16 databases searched, the most pertinent for identifying potential contaminated sites in the study area included the following:

- ***Biennial Reporting (BR).*** Biennial Reports compile detailed information on the generation of hazardous waste from large quantity generators and on waste management practices from treatment, storage, and disposal facilities.
- ***Brownfields (BMS).*** The Brownfields Management System stores information reported by the EPA Brownfields grant recipients on properties assessed or cleaned up with grant funding. A "brownfield site" is a property where the redevelopment or reuse of which may be complicated by the presence of a hazardous substance, pollutant, or contaminant.
- ***Superfund (CERCLIS).*** The Superfund program is administered by the EPA to locate, investigate, and clean up uncontrolled hazardous waste sites throughout the United States.
- ***Resource Conservation and Recovery Act Information (RCRAInfo).*** Hazardous waste generators, transporters, treaters, storers and disposers of hazardous waste are required to provide information on their activities to state environmental agencies. These agencies then provide the information to regional and national EPA offices through the Resource Conservation and Recovery Act Information System.
- ***Permit Compliance System (PCS).*** The Permit Compliance System provides information on companies that have been issued permits to discharge wastewater into rivers. The database includes information on when a permit was issued and expires, how much the company is permitted to discharge, and the actual monitoring data showing what the company has discharged.
- ***Toxics Release Inventory (TRI).*** The Toxics Release Inventory contains information about more than 650 toxic chemicals that are being used, manufactured, treated, transported, or released into the environment. Manufacturers of these chemicals are required to report the locations and quantities of chemicals stored on-site to state and local governments. The reports are then compiled by the EPA.
- ***Aerometric Information Retrieval System (AIRS) / AIRS Facility Subsystem (AFS).*** Information on air releases is contained in the Aerometric Information Retrieval System, a computer-based repository for information about air pollution in the United States. This information comes from source reports by various stationary sources of air pollution, such as

electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce.

- ***Facility Registry System (FRS).*** The Facility Registry System is a centrally managed database that identifies facilities, sites, or places subject to environmental regulations or of environmental interest. FRS incorporates information from program national systems, state master facility records, and data collected from the EPA's Central Data Exchange registrations and data management personnel.

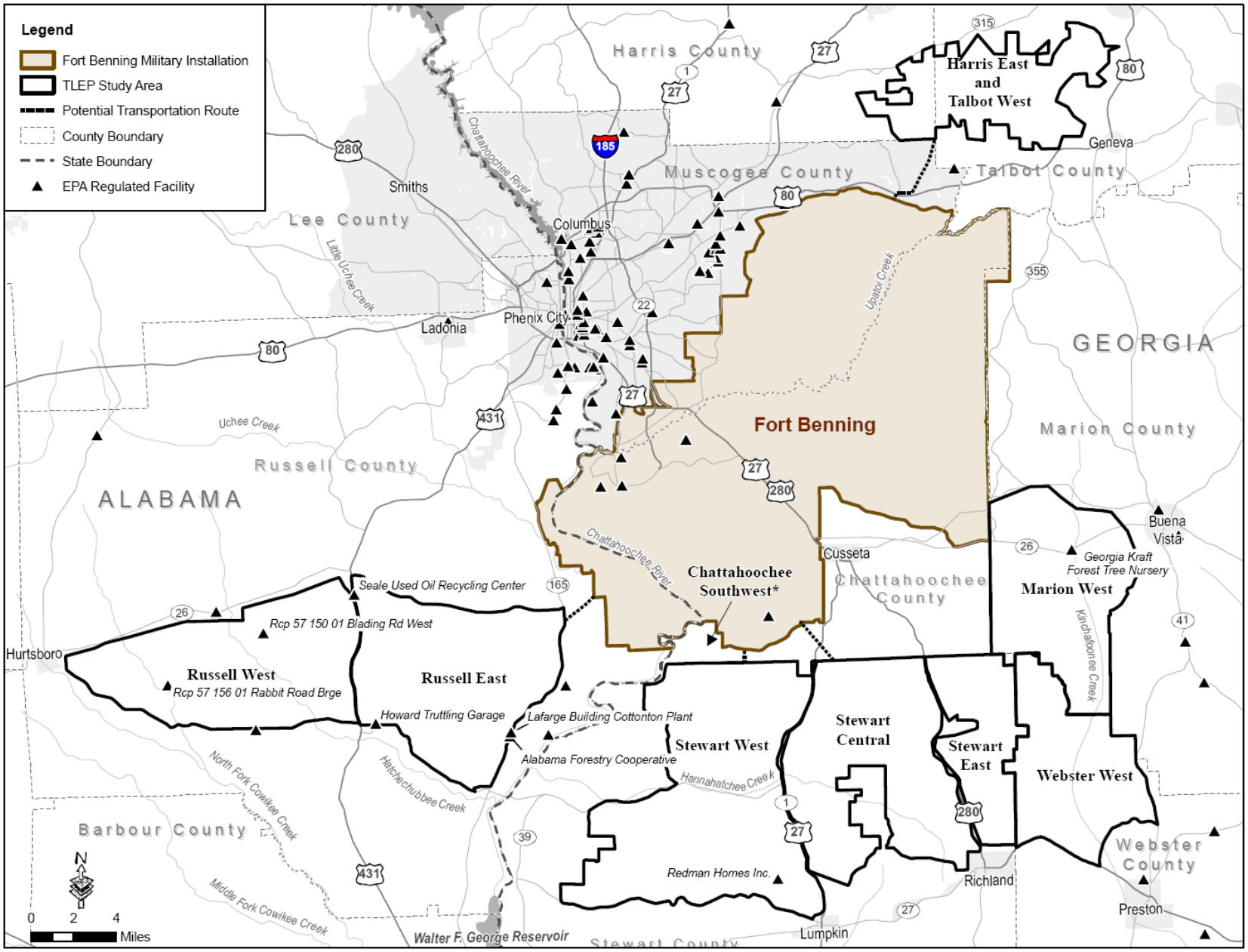
The search of the EPA databases indicates that there are six EPA-regulated facilities located within the limits of the TLEP study area (see Table 3.13-2 and Figure 3.13-1). The first four facilities listed in Table 3.13-2 are closed; the status of the other two sites is not known. In addition, there are numerous facilities located in the region around Fort Benning, primarily to the north and west near Phenix City and Columbus. There are no properties within the TLEP study area where contamination is known to exist. Also, no state or county permitted landfills were identified in the TLEP study area.

As discussed in Section 3.13.2.2.1, identification of potential contaminated sites would occur during the land acquisition process. The Army would investigate the TLEP study area and prepare an ECP/Phase I report before any real property is acquired or transferred.

Table 3.13-2. EPA-Regulated Facilities in the TLEP Study Area

EPA ID	TLEP Study Area Location	Facility Name	Regulatory Driver	Site Description
110007087473	Stewart West	Redman Homes, Inc.	Clean Air Act	Air permit for mobile home manufacturing; permanently closed 1/20/09
110005665672	Marion West	Georgia Kraft Forest Tree Nursery	Resource Conservation and Recovery Act	RCRA Permit for sawmill, Inactive status; last update in 2000
110023134099	Russell West	Russell County Commission, Rcp 57 150 01, Blading Road West	Clean Water Act	NPDES Permit; Highway Construction; Permit Expired 10/10/06
110020426118	Russell West	Russell County Commission, Rcp 57 156 01, Rabbit Road Bridge	Clean Water Act	NPDES Permit; Highway Construction; Permit Expired 7/31/06
110037453485	Russell East	Alabama Forestry Cooperative	Clean Water Act	NPDES Permit
110010108025	Russell East	Lafarge Building Cottonton Plant	Clean Water Act	NPDES Permit; Ready-mixed concrete

EPA = U.S. Environmental Protection Agency; NPDES = National Pollutant Discharge Elimination Standard; RCRA = Resource Conservation and Recovery Act; TLEP = Training Land Expansion Program



Source: EPA, 2010g

Figure 3.13-1. EPA Regulated Facilities in the Vicinity of the TLEP Study Area

3.13.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to hazardous and toxic substances and waste that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to hazardous and toxic substances would occur if Army actions create considerable risk to human health or safety, including direct human exposure, substantial increase in environmental contamination or violation of applicable Federal, state, DoD, and local regulations.

Potential impacts of the No Action Alternative and the Proposed Action have been assessed with regard to changes in the volume of hazardous and toxic materials and waste managed by the Installation, as well as changes in environmental conditions in the TLEP study area. Any wastes, toxic substances, or cleanup sites that are generated or identified as a result of the Proposed Action would be managed according to applicable Federal and state requirements as detailed in the Installation's existing management plans. These include the HWMP, the LBP Management Plan, the AMP, and the Compliance-Related Cleanup IAP.

3.13.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the potential cleanup sites that exist in the TLEP study area would not be brought under Army management and remediated; therefore, existing environmental impacts at these sites would not be mitigated, if present. Such sites could include auto repair shops, fuel storage facilities, and land used for treating timber. Since the land under consideration for acquisition by the Army is not owned or managed by other Federal, state, or local government agencies, it is assumed that no remediation plans or projects have been developed for a majority of these sites. It is possible, however, that private property owners have already identified such sites, and planned and/or implemented measures to remediate historical environmental impacts.

Without land acquisition, the MCoE JBO requirement to move the ARC field training would require the Army to pursue other options as discussed in Section 2.3.9. These other options are beyond the scope of this EIS. Changes in training and associated impacts to hazardous and toxic substances and waste would be the subject of future NEPA analysis.

3.13.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Overall, with regard to hazardous and toxic substances and waste, the implementation of Alternative 1 would result in negligible impacts as a result of Federal acquisition of land; minor beneficial impacts as a result of Army management; minor to moderate short-term adverse impacts as a result of Army preparation of newly acquired land; and moderate, long-term adverse impacts as a result of Army training. Alternative 1 of the Proposed Action does not involve an increase in the amount or intensity of training taking place at Fort Benning; therefore, there would not be a significant, long-term increase in the quantity of hazardous materials used or hazardous and solid waste generated by the Installation. Impacts related to the four stages of the Proposed Action under Alternative 1 are further discussed in this section.

3.13.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have negligible impacts on toxic and hazardous substances. Identification of potential contaminated sites would occur during the land acquisition process. As required by EPA and DoD policy, the Army would prepare an ECP report to provide information

focusing on ground or water contamination for the property to inform decision making regarding property transfer before any real property is acquired or transferred as part of Alternative 1. The ECP report would provide the Army with information about baseline environmental conditions in Alternative 1 lands to further identify and characterize contamination potential and to identify any remediation measures. The ECP assessment also assists in determining appropriate responsibilities, asset valuation, and liabilities with other parties to a transaction. The ECP report would be prepared using technical guidance presented in American Society for Testing and Materials (ASTM) Standard E1527-05*, Standard Practice for Conducting Environmental Site Assessments: Phase I Environmental Site Assessment Process*; ASTM D6008-05, *Standard Practice for Conducting Environmental Baseline Surveys*; and DoD policy.

These guidance documents provide a systematic framework for identifying recognized environmental concerns for real property by using an environmental records review process, visual site inspections, and interviews with personnel knowledgeable about present and past uses of the subject property. Usually no environmental sampling and analysis is performed as part of the Phase I ECP report preparation. When present, recognized environmental concerns are further investigated during Phase II Environmental Site Assessments and other studies that may be performed after acquisition.

3.13.2.2.2 ARMY MANAGEMENT

Overall, Army management of land acquired under Alternative 1 would lead to beneficial environmental impacts. As discussed above, the ECP report, prepared prior to acquisition, would identify areas where a release of hazardous substances or petroleum products may have occurred prior to Federal ownership. Army construction, upgrades, and ongoing management of training land would result in identification of sites requiring further investigation and follow-on actions. If contamination is present at a specific site, additional investigations would be conducted to determine the nature and extent of contamination, and the risks associated with the subject area. All environmental investigations would be performed in accordance with applicable regulatory standards.

Contaminated sites may be present in Alternative 1 lands due to past agricultural use of pesticides, the treatment of lumber with creosote, POL spills from vehicles, or illegal dumping, etc. Storage tanks that either contain or previously contained fuel or other petroleum products may also be present in Alternative 1 lands. Such sites, discovered prior to or after acquisition, would be investigated to determine if contamination is present. The investigation results would be used to determine if avoidance, LUCs, or cleanup measures would be appropriate. LUCs are administrative restrictions placed on sites to limit exposure to contaminated soil and groundwater until the concentrations are at levels that allow for unrestricted use of the land. LUCs would be implemented to protect human health and the environment until cleanup of the area is completed. As funding becomes available, these sites would be remediated by the Installation EMD to applicable regulatory standards in coordination with the GEPD.

Once Alternative 1 lands are under Army control, Fort Benning has management programs and plans in place that guide personnel in handling hazardous materials and wastes, including the HWMP. Any unknown wastes found in Alternative 1 lands would be removed, characterized, and disposed of as appropriate. Such wastes could include drums with or without materials inside, batteries, old paint, pesticides, herbicides, and other chemicals. Over time, it is expected that most, if not all, waste materials that may have historically been discarded in Alternative 1 lands would be removed, thus mitigating the environmental impacts that would have occurred if these materials were allowed to remain in place. A minor, short-term increase would occur in the amount of hazardous waste disposed by Fort Benning as any historical contamination is removed and disposed; however, this increase should have no significant adverse effects on hazardous waste disposal capacity in the region.

3.13.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Army construction and upgrades to training infrastructure could result in minor to moderate, short-term adverse environmental impacts due to the use of hazardous materials in construction-related activities. There would be a temporary increase in hazardous material use as Fort Benning constructs and upgrades training infrastructure on the acquired land. The materials used could include paints, solvents, and petroleum products. These materials would be used and managed in accordance with applicable Federal and state regulations as detailed in the Installation's existing management plans and procedures.

Also, there may be a requirement to construct select facilities on the acquired land, depending on distances from the training fields to classrooms and vehicles/equipment storage areas. Examples of these new facilities that would have a hazardous substance component include vehicle maintenance shops, refueling points, and storage buildings for ammunition and equipment. Construction and operation of these facilities would also be in accordance with applicable Federal and state regulations as detailed in the Installation's existing management plans and procedures.

Hazardous and other regulated waste generation could increase temporarily, in proportion to any increases in hazardous material use during construction-related activities; however, such increases would be minor and would not significantly affect hazardous waste disposal capacity in the region. Similarly, solid waste generation would increase temporarily during site preparation activities (e.g., land clearing, demolition or renovation of existing structures). Solid waste would primarily consist of cleared vegetation, construction and demolition debris (e.g., scrap wood, concrete, piping, etc.). Solid waste would be recycled whenever practical. Any solid waste that could not be recycled would be managed in accordance with applicable Federal and state regulations as detailed in the Installation's existing management plans and procedures.

Implementing Alternative 1 could lead to a minor, short-term increase in personnel exposure to toxic substances including asbestos, LBP, and PCBs. USACE real estate tax record investigations estimate that there are 292 structures within Alternative 1. During the construction phase, modifying or removing existing facilities on newly acquired land may result in contact with and exposure to asbestos, LBP, PCBs, and other regulated materials, if present. Any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures in order to minimize the risk of exposure to humans and the environment. If necessary, building materials and other components and equipment containing these materials would be removed or abated.

Implementing Alternative 1 would also impact one EPA-regulated facility (see Table 3.13-2). The site would be investigated and then managed or closed in accordance with applicable regulations. Any wastes present on the site would be properly removed and disposed.

In summary, Army construction and upgrades to training infrastructure could result in minor to moderate, short-term adverse environmental impacts due to a temporary increase in hazardous material use, a temporary increase in hazardous waste generation, and an increased risk of exposure to hazardous or toxic substances during demolition or renovation activities on the newly acquired land.

3.13.2.2.4 ARMY TRAINING

Moderate, long-term adverse impacts would be associated with Army training on land acquired under Alternative 1. Since Alternative 1 does not include an increase in the total amount of training activities taking place at Fort Benning, including live-fire training, there would be no net increase in hazardous material use. Some of the live-fire training occurring at Fort Benning, however, may be transferred to newly acquired land; therefore, this land could likely become contaminated with metals and other munitions constituents associated with live-fire training. Standard Army environmental BMPs for small arms training (e.g., planting vegetation, improving stormwater management, and using geosynthetic liners) may be implemented to minimize impacts (USAEC, 2005).

Other impacts that could occur in association with Army training and hazardous material use under Alternative 1 include fuel spills. While minor spills could occur due to tactical vehicle and equipment failures, larger spills could occur from mobile fuel tankers (MFTs) that are used to refuel vehicles and helicopters at forward locations. In order to minimize the risk of such spills, each MFT carries a copy of an oil spill response plan, as well as spill kits. In addition, standard fueling procedures minimize the likelihood of any spills occurring, and if a spill does occur, the procedures minimize the likelihood the spill would reach surface water bodies (Section 3.13.2.2.2).

Army training under Alternative 1 would not result in a net increase in the quantity of hazardous waste generated. Because a portion of Fort Benning's training activities would be transferred from existing ranges to the new ranges that would be developed, the point of generation of some of the hazardous waste would change accordingly, resulting in a one-to-one reduction in the amount of hazardous waste generated. This waste would be handled in accordance with Fort Benning's existing hazardous waste management procedures.

The potential for adverse impacts resulting from live-fire training exercises would be reduced through Army management of range sites. The Army has published the *Army Small Arms Training Range Environmental Best Management Practices Manual,* which describes BMPs that may be used to minimize contaminant transport off-range (USAEC, 2005). In addition, the BMPs Manual describes the steps that need to be followed in conducting range assessments to determine the extent of contamination and off-site transport. BMPs described in the manual fall into three categories: lead transport minimization, pollution prevention, and lead removal. BMPs that help minimize contaminant transport include the following:

- ***Operational changes,*** such as range management and minimizing firing into water bodies;
- ***Vegetative solutions,*** which help minimize soil erosion;
- ***Stormwater management,*** which reduces contact between contaminated soils and stormwater flow, minimizes the flow of stormwater off-range, and reduces soil erosion;
- ***Improvements in berm design*** that would minimize the likelihood of soil erosion and help retain spent small arms rounds within the berm;
- ***The use of geosynthetic liner materials*** that help mitigate transport of munitions constituents into groundwater; and
- ***Soil amendments*** that stabilize metals in soil and reduce their mobility.

Overall, the potential for moderate adverse impacts would be anticipated with the implementation of Army training in Alternative 1. Land within Alternative 1 is currently comprised of timberland and agricultural land, so the introduction of metals from spent munitions, hazardous materials from training activities, fuel spills, etc. into the newly acquired land would constitute a long-term adverse impact. Adherence to the Installation's management plans and procedures (see Section 3.13.2.2.2), however, would minimize the risk of exposure to humans and the environment.

3.13.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

Alternative 2 has a similar land use history as Alternative 1. These land areas are not contiguous to Fort Benning and would require the Army to obtain a transportation route into the training lands. Since Alternative 2 contains additional land associated with the corridors, the potential exists for additional sites requiring remediation to be present.

Implementing Alternative 2 could lead to a minor, short-term increase in personnel exposure to toxic substances including asbestos, LBP, and PCBs. USACE real estate tax record investigations estimate that

there are 302 structures within Alternative 2. Any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures in order to minimize the risk of exposure to humans and the environment.

Implementing Alternative 2 would also impact four EPA-regulated facilities. As with Alternative 1, the facilities would be investigated and then managed or closed in accordance with applicable regulations. Any wastes present on the sites would be properly removed and disposed. Additional sites may be discovered during the ECP/Phase I Environmental Site Assessment studies conducted for Alternative 2 lands. All sites, discovered prior to or after acquisition, would be further investigated to determine the nature and extent of contamination, if present, and the risks associated with the subject area. The investigation results would be used to determine if avoidance, LUCs, or cleanup measures would be appropriate. All environmental investigations would be performed in accordance with applicable regulatory standards.

Overall impacts to hazardous and toxic substances and waste would, therefore, be similar to those described under Alternative 1 (Section 3.13.2.2). With regard to hazardous and toxic substances and waste, the implementation of Alternative 2 would result in negligible impacts as a result of Federal acquisition of land; minor beneficial impacts as a result of Army management; minor to moderate short-term adverse impacts as a result of Army preparation of newly acquired land; and moderate, long-term adverse impacts as a result of Army training.

3.13.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

These land areas have a similar land use history as those in Alternatives 1 and 2. Under this alternative, one or more ROW easements would be required in Chattahoochee County in order to provide direct access to these land areas. Since Alternative 3 contains additional land associated with the corridors, the potential exists for additional sites requiring remediation to be present.

Implementing Alternative 3 could lead to a minor, short-term increase in personnel exposure to toxic substances including asbestos, LBP, and PCBs. USACE real estate tax record investigations estimate that there are 186 structures within Alternative 3. Any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures in order to minimize the risk of exposure to humans and the environment.

Implementing Alternative 3 would impact one EPA-regulated facility. The property would be investigated and then managed or closed in accordance with applicable regulations. Any wastes present on the property would be properly removed and disposed. Additional properties may be discovered during the ECP/Phase I Environmental Site Assessment studies conducted for Alternative 3 lands. All properties, discovered prior to or after acquisition, would be investigated to determine the nature and extent of contamination, if present, and the risks associated with the subject area. The investigation results would be used to determine if avoidance, LUCs, or cleanup measures would be appropriate. All environmental investigations would be performed in accordance with applicable regulatory standards.

Overall impacts to hazardous and toxic substances and waste would, therefore, be similar to those described under Alternative 1 (Section 3.13.2.2). With regard to hazardous and toxic substances and waste and solid waste, the implementation of Alternative 3 would result in negligible impacts as a result of Federal acquisition of land; minor beneficial impacts as a result of Army management; minor to moderate short-term adverse impacts as a result of Army preparation of newly acquired land; and moderate, long-term adverse impacts as a result of Army training.

3.13.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

These land areas have a similar land use history as those in Alternatives 1, 2, and 3. Under this alternative, one or more ROW easements would be required in Chattahoochee County in order to provide direct access to these land areas. ROWs would also be required for access to the Russell East property. Since Alternative 4 contains additional land associated with the corridors, the potential exists for additional sites requiring remediation to be present.

Implementing Alternative 4 could lead to a minor, short-term increase in personnel exposure to toxic substances including asbestos, LBP, and PCBs. USACE real estate tax record investigations estimate that there are 278 structures within Alternative 4. Any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures in order to minimize the risk of exposure to humans and the environment.

Implementing Alternative 4 would not impact any EPA-regulated facilities. Potential contaminated properties may be discovered during the ECP/Phase I Environmental Site Assessment studies conducted for Alternative 4 lands. All sites, discovered prior to or after acquisition, would be investigated to determine the nature and extent of contamination, if present, and the risks associated with the subject area. The investigation results would be used to determine if avoidance, LUCs, or cleanup measures would be appropriate. All environmental investigations would be performed in accordance with applicable regulatory standards.

Overall impacts to hazardous and toxic substances and waste would, therefore, be similar to those described under Alternative 1 (Section 3.13.2.2). With regard to hazardous and toxic substances and waste, the implementation of Alternative 4 would result in negligible impacts as a result of Federal acquisition of land; minor beneficial impacts as a result of Army management; minor to moderate short-term adverse impacts as a result of Army preparation of newly acquired land; and moderate, long-term adverse impacts as a result of Army training.

3.13.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

These land areas have a similar land use history as those in Alternatives 1 through 4. Under this alternative, one or more ROW easements would be required in Chattahoochee County in order to provide direct access to these land areas. ROW easements would also be required for access to the Harris East and Talbot West properties. Since Alternative 5 contains additional land associated with the corridors, the potential exists for additional sites requiring remediation to be present.

Implementing Alternative 5 could lead to a minor, short-term increase in personnel exposure to toxic substances including asbestos, LBP, and PCBs. USACE real estate tax record investigations estimate that there are 93 structures within Alternative 5. Any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures in order to minimize the risk of exposure to humans and the environment.

Implementing Alternative 5 would impact one EPA-regulated facility. The property would be investigated and then managed or closed in accordance with applicable regulations. Any wastes present on the property would be properly removed and disposed. Additional sites may be discovered during the ECP/Phase I Environmental Site Assessment studies conducted for Alternative 5 lands. All sites, discovered prior to or after acquisition, would be investigated to determine the nature and extent of

contamination, if present, and the risks associated with the subject area. The investigation results would be used to determine if avoidance, LUCs, or cleanup measures would be appropriate. All environmental investigations would be performed in accordance with applicable regulatory standards.

Overall impacts to hazardous and toxic substances and waste would, therefore, be similar to those described under Alternative 1 (Section 3.13.2.2). With regard to hazardous and toxic substances and waste, the implementation of Alternative 5 would result in negligible impacts as a result of Federal acquisition of land; minor beneficial impacts as a result of Army management; minor to moderate short-term adverse impacts as a result of Army preparation of newly acquired land; and moderate, long-term adverse impacts as a result of Army training.

3.13.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts within the ROI for toxic and hazardous substances that would be expected to occur with the implementation of the alternatives. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.2.

No significant adverse impacts are expected as a result of implementing the Proposed Action, when considered together with the projects listed in Section 3.1.3.2. Army training could lead to moderate cumulative adverse impacts. A minor, temporary increase in hazardous waste disposal could occur as the Army identifies and removes waste materials from acquired land. This increase, however, would not lead to a cumulative increase in hazardous waste generation beyond the capacity of local or regional disposal facilities, even in combination with other projects. Army training, however, would cause moderate adverse cumulative impacts through increasing the use and accumulation of hazardous materials within the newly acquired land. Army management of newly acquired land in accordance with Army, Federal, state and local regulations would offset some of these impacts.

3.13.4 PROPOSED MITIGATION

No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.

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3.14 SAFETY

3.14.1 AFFECTED ENVIRONMENT

This section provides a summary of relevant Army programs and regulations regarding safety (Section 3.14.1.1), Fort Benning safety programs (Section 3.14.1.2) and a summary of any existing local jurisdiction safety plans (Section 3.14.1.3). The ROI for safety encompasses the Installation and the TLEP study area. A discussion of emergency medical and fire response resources is provided in Section 3.10.1.5.

3.14.1.1 ARMY SAFETY

The Army Safety Program, AR 385-10, governs Army policies, responsibilities, and procedures to protect and preserve Army personnel and property against accidental loss. The regulation provides for operational safety, safe and healthy work places, and assures compliance with applicable safety laws and regulations. Army policy dictates that all Army plans, programs, decision processes, operations, and activities effectively integrate the following principles:

- Accidents are an unacceptable impediment to Army missions, readiness, morale, and resources requiring accident risk management to be employed by decision makers.
- Every level of decision making will utilize the risk management process to avoid unnecessary risk to missions, personnel, equipment, and the environment.
- The acquisition process for materials, equipment, facilities and systems will maximize the use of engineering design to control unnecessary risks.
- Life-cycle safety considerations will be considered in the acquisition, use, and disposal of chemicals and hazardous materials such that public health and safety is not endangered or compromised.
- Appropriate action is taken to quickly correct nonconformities with standards, hazards, and accident causes.
- Work performance standards for military and civilian managers and supervisors include accident prevention and occupational health and are rated on these aspects.

A key principal of the safety program is risk management. It is not possible to eliminate all safety risks associated with an activity, but it is possible to minimize the risk through a risk management program. This program allows Army leadership to assess the risk involved for each safety hazard, determine impacts to the mission or personnel should the event occur, and estimate the probability of it occurring. An extreme example of this would be an operation needed to transit a field littered with UXO. The safety hazard would be inadvertent detonation of ordnance; the impact could be loss of life, serious injury, and/or equipment destroyed; and the likelihood of this occurrence could be high; therefore, the risk would be considered catastrophic. Army leadership can minimize this risk by sending in an ordnance disposal team prior to crossing or find another way around the field and still meet mission objectives. Using risk management as a tool allows decision-makers to prioritize the risks involved so the operation can be implemented in a safe manner.

Safety programs are required to include accident reporting, workplace safety, transportation safety, as well as Family and off-the-job safety for all installations, and (where applicable) range safety, explosive safety, aviation safety, tactical safety, radiation safety, and system safety.

Army Accidents Investigation and Reporting, Pamphlet 385-40, provides implementing instructions for the investigation and reporting of Army accidents, as directed by AR 385–10. Accidents are investigated to the degree necessary to identify the immediate errors, failures, and system inadequacies that may have caused, or contributed to, the accident being investigated. The techniques and procedures contained in the

pamphlet and in AR 385–10 are used in preparation of all accident reports. In addition, recommendations are provided in accident reports in order to remedy the causes and minimize the chances for similar recurrences.

Workplace Safety applies to on-the-job safety and implements the requirements of 29 CFR 1910 *et seq*. These requirements include protective clothing and equipment, hazard materials communication, health and safety standards for the workplace, on-the-job reporting requirements, and a myriad of other requirements designed to protect the health and safety of workers.

Transportation Safety entails a large part of Army functions because most troop movements are performed using ground-based vehicles. AR 385-55, *Prevention of Motor Vehicle Accidents*, provides the policies and procedures to install a transportation safety program at Army installations. This regulation includes both on-the-job and off-the-job safety requirements. On-the-job requirements describe safe handling, loading, and operation of government-owned vehicles ranging from automobiles to trucks to troop carriers to tanks. Vehicular accidents of Soldiers while off-duty are also a prime concern for the Army. Off-the-job topics stress training for vehicle operation for four-wheeled vehicles and motorcycles, seatbelt use, counseling, enforcement, and other prevention programs.

In addition to transportation, Family and off-the-job safety is a critical part of safety and training programs for the Army. The Army provides training for off-duty activities such as recreation, in-home hazards, travel, and other topics.

Range Safety covers prevention of accidents on Army ranges. AR 385-63, *Range Safety*, prescribes policies and responsibilities for ranges on the use of live firing of small arms, rockets, guided missiles, and lasers, and provides guidance for using risk management. SDZs are a key aspect of providing safe range operations. The SDZ is an "invisible" line that surrounds the firing range and ordnance impact area portions of a range and provides a buffer area to protect personnel from the non-dud producing rounds that may be ricocheted during operation of the range. Weapons safety requirements direct Soldiers to orient the barrels of their weapons downrange within the SDZ to ensure the safety of others. For each training scenario on a range, the SDZ is computed to take into account the firing positions and ordnance used, so the SDZ exclusion zone will vary. The SDZ is an "exclusion" or safety zone for personnel on or in the vicinity of the range. Fragment or projectile scatter has an approximately one in a million chance of landing outside of the SDZ. SDZs are updated on the basis of data derived from research and development, testing, and/or actual firing experience and differ depending on the type of activity occurring on the range (small arms training versus tank gunnery) and the type of ammunition being fired on the range. The area comprising the SDZ is closed to all personnel not directly using the range complex during currently ongoing exercises. DA Pamphlet 385-63, *Range Safety,* provides a standard methodology used for the construction of weapons-specific SDZs.

Explosive safety entails the use, storage, and disposition of ordnance on Army facilities. The *U.S. Army Explosive Safety Program,* AR 385-64*,* provides the guidance for implementing explosive safety programs that comply with DoD Standard 6055.9, *DoD Ammunition and Explosives Safety Standards*. This includes explosive safety arcs around storage facilities, prescribes the coordination process between the Army and the DoD Explosive Safety Board (DDESB), site survey requirements, and transportation of explosives.

Aviation Safety involves all safety aspects of aircraft operations and responsibilities for personnel working in or around aircraft such as pilots and crew or maintenance personnel as well as individuals flying aboard aircraft. *Army Aviation Accident Prevention*, AR 385-95, details the responsibilities and policies regarding aviation safety. Clear Zones and Accident Potential Zones are established near military airfields based on the analysis of military aircraft accident history and a determination of where, within the airfield environs, an accident is likely to take place and how large an impact area is likely to result from any single accident. LUCs are implemented in these areas to reduce the level of risk associated with these zones.

3.14.1.2 INSTALLATION SAFETY PROGRAMS

At Fort Benning, the Directorate of Public Safety commands the Military Police Units, the Fort Benning Fire Prevention and Protection Division, and the Post Safety Office. This Directorate ensures unity of effort among Fort Benning emergency services to ensure a safe and secure environment to work, train, live, and play.

3.14.1.2.1 PUBLIC SAFETY

Existing Fort Benning security procedures include access controls points and barriers to ensure public safety and limit unauthorized access to the Installation. The current TLEP study area is non-secured. Existing road and trail networks within the TLEP study area currently allow uncontrolled access.

3.14.1.2.2 TRANSPORTATION SAFETY

Fort Benning provides transportation safety briefings for on- and off-duty personnel and Families. On-the-job requirements describe safe handling, loading, and operation of government-owned vehicles including automobiles, trucks, troop carriers, and tanks. Off-the-job safety stresses training for vehicle operation for four-wheeled vehicles and motorcycles, seatbelt use, counseling, enforcement, and accident prevention programs. Section 3.11 contains a description of existing road and transportation conditions within the TLEP study area.

3.14.1.2.3 CONSTRUCTION SAFETY

Construction and demolition activities are typically performed or contracted by the USACE, following procedures set forth in the *USACE Safety and Health Manual* 385-1-1 (USACE, 2003). This manual outlines all of the requirements to comply with OSHA standards during the construction and demolition process. Non-usage contracts would not necessarily be required to follow the USACE manual, but would be required to comply with all applicable OSHA standards and regulations. There are numerous structures in the TLEP study area that would require demolition or relocation. Initial tax record investigation by the USACE Savannah District revealed the following structure estimates: West Russell has 117 structures; Russell East has 185 structures; Stewart West has 93 structures; Stewart Central has 93 structures; Stewart East has 46 structures; Webster West has 149 structures; Marion West has 97 structures; and there are 2 structures in proximity to the proposed transportation routes through Chattahoochee County. No structures were identified by the USACE in Harris East or Talbot West.

3.14.1.2.4 EXPLOSIVE SAFETY

Infantry training at Fort Benning has been conducted since the establishment of the Installation in 1918. Infantry training has required, and continues to require, the use of "blank" as well as "live" ammunition. The type of ammunition used for training purposes is very diverse. It encompasses virtually every weapon system, from small caliber individual weapons to air-delivered 500-pound bombs, with the exception of some long-range artillery guns or missiles and air defense systems. Blank ammunition and various pyrotechnic simulators are used throughout the entire training area. Live-fire training is conducted in designated ranges and training areas, with projectiles directed towards designated ordnance impact areas.

Explosive safety quantity distance arcs are imaginary arcs surrounding ammunition storage igloos to provide a safety buffer in case of a detonation inside the bunker. Certain activities and personnel density limits are instituted within these arcs to protect people and facilities from explosion and fragmentation.

The main "dudded" ordnance impact areas on-Post are compartments A20 and K15 with 9,300 and 5,500 acres, respectively. Smaller isolated "dudded" ordnance impact areas are found in the periphery of the

main ordnance impact areas and within the Malone Range Complex (USACE, 2009). The Fort Benning military and civilian personnel and the community are routinely advised and reminded not to handle any suspected UXO, and to report suspicious ordnance to the Explosive Ordnance Detachment and to the Director of Public Safety through calling 911. UXO warning articles are periodically published in the Fort Benning Bulletin, as well as in the Post newspaper, *The Bayonet*.

Under current conditions, no UXO is likely to exist within the TLEP study area. The establishment of dudded impact areas in the future would be evaluated by the Army in follow-on NEPA analysis.

3.14.1.2.5 RANGE SAFETY - SURFACE DANGER ZONES

Fort Benning currently offers 119 ranges, including 34 basic marksmanship ranges, 11 direct-fire gunnery ranges, 16 collective live-fire ranges, 32 indirect firing facilities, 7 special live-fire ranges, and 19 non-live-fire facilities, covering a total of 3,173 acres (USACE, 2009). An additional 3,612 acres are currently under construction and predominately associated with the approved DMPRC, Infantry Platoon Battle Course, and Infantry Squad Battle Course.

The area comprising the SDZ is closed to all personnel not directly using the range complex during currently ongoing exercises. The acreage associated with the SDZ for the current ranges equals 52,396 acres for the maximum extent of SDZ.

Unauthorized persons are prohibited from entering impact areas and other areas known or suspected to contain UXO by use of positive controls, which include fencing and posting of UXO hazard warning signs. All normal vehicular and foot traffic approaches to ranges and impact areas are guarded by range guards, properly instructed in their duties, or closed off by appropriate barriers, as determined by the Installation range control officer. When barriers are used, appropriate signs are posted. The warning signs are placed to ensure they are visible to individuals attempting to enter training complex live-fire areas at any point around its perimeter (U.S. Army, 2003).

3.14.1.3 LOCAL JURISDICTION SAFETY PLANS

There are no safety plans in place for jurisdictions within the TLEP study area. See Section 3.10 which contains information on law enforcement, fire protection, and medical services within the TLEP study area.

3.14.2 ENVIRONMENTAL CONSEQUENCES

This section provides a discussion of the potential impacts to safety that could result from the alternatives described in Section 2.3. Section 3.1.3 describes the overall approach for analyzing potential impacts and defines each impact rating. A significant impact to safety would occur if military and civilian personnel are exposed to safety risks that do not comply with applicable regulations, policies, agreements, and action-specific safety reviews.

3.14.2.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the acquisition and use of additional land to support Fort Benning training requirements would not occur. Under the No Action Alternative, there would be no new adverse environmental impacts regarding safety within the TLEP study area and there would be no change from current conditions as described under the affected environment sections.

The current intensity of training and scheduling conflicts would continue to occur at Fort Benning. In addition, retaining the current size of Fort Benning would prevent ARC field training on newly acquired lands, requiring the Army to pursue other options, such as conducting ARC training at another military installation or the use of mobile training teams. These other options are beyond the scope of this EIS. Changes in training and associated impacts to safety would be the subject of future NEPA analysis.

3.14.2.2 ALTERNATIVE 1

This alternative proposes Army acquisition, management, preparation, and training on approximately 75,800 acres in Marion, Webster, and Stewart counties, Georgia. Alternative 1 includes Marion West (which is contiguous to Fort Benning), Webster West, and Stewart East (see Figure 2.3-1, Section 2.3).

Overall, the implementation of Alternative 1 would result in minor beneficial impacts as a result of Army management; minor, short-term adverse impacts to safety as a result of Army construction and upgrades; and minor impacts as a result of Army training.

3.14.2.2.1 FEDERAL ACQUISITION OF LAND

Federal acquisition of land would have negligible impacts on safety.

3.14.2.2.2 ARMY MANAGEMENT

Fort Benning has management programs and plans in place that guide personnel in all matters of safety, including accident prevention, contracting safety, explosives safety management, public safety, aviation safety, etc. Army management would mitigate safety impacts occurring from training activities on the newly acquired land providing an overall beneficial impact on safety.

3.14.2.2.3 PREPARATION OF NEWLY ACQUIRED LAND

Construction Safety

Under Alternative 1, preparation of newly acquired land would have short-term minor adverse impacts to safety. Earth-moving operations would be required to construct and upgrade the training infrastructure within the area to ensure mobility and base support for strike, sustainment, and logistics forces. Heavy-duty vehicular equipment including dozers, scrapers, loaders, excavators, and dump trucks would perform the necessary activities that may involve excavation, clearing, and grubbing. During the construction and upgrade phases, use of these vehicles and equipment would pose safety risks to the personnel working and/or monitoring these activities. The risks of accidents would likely increase with the increased travel distances to Marion West, Webster West, and Stewart East (see *Transportation Safety* below).

In addition, based on USACE real estate tax record investigations estimates, there are approximately 292 structures within Alternative 1 that would require demolition or relocation. Implementing Alternative 1 could lead to a minor, short-term increase in personnel exposure to toxic substances. During the construction phase, modifying or removing existing facilities on newly acquired land may result in contact with and exposure to asbestos, LBP, PCBs, and other regulated materials. To safeguard workers and the environment, any modifications to these facilities would be carried out in accordance with the Installation's management plans and procedures following applicable guidelines and regulations (see Section 3.13).

Increased risk to safety during the construction phase, however, would be mitigated by adherence to existing safety practices. Most of the proposed construction and demolition activities for Alternative 1 would be performed or contracted by the USACE and would follow the *USACE Safety and Health Manual* 385-1-1. This safety manual outlines all of the requirements to comply with OSHA standards during the construction and/or demolition process. As with all work on Fort Benning, OSHA requirements and other applicable worker safety regulations would be followed. In addition, appropriate measures to limit unauthorized persons from accessing areas during construction, demolition, timber harvest/slash removal, and maintenance are required (see *Public Safety* below).

In summary, preparation of newly acquired land under Alternative 1 would have short-term minor adverse impacts to safety, which would be mitigated by adherence to existing safety practices.

3.14.2.2.4 ARMY TRAINING

Specific training activities, including equipment and vehicles, that will be conducted under the Proposed Action are discussed in Section 2.2.5. Details on the field training to be conducted in the acquired lands are in Section 2.2.5.2.

Since the Proposed Action does not involve an increase in the number of troops, vehicles, or equipment currently at Fort Benning projected under BRAC and MCoE, no new adverse impact to safety would be expected as a result of training. In general, expanding training onto the newly acquired lands would reduce pressure on existing training fields and would have a beneficial impact on safety.

The addition of Marion West, Webster West, and Stewart East, however, into the existing Fort Benning land area would result in more miles traveled for both on- and off-road vehicles during maneuver training and other training activities. Overall minor adverse impacts are anticipated from Army training. Potential transportation safety, public safety, explosive safety and range safety impacts resulting from Alternative 1 are further discussed within this section.

Transportation Safety

The Fort Benning Safety Office provides in-depth transportation training for on- and off-duty personnel. These training activities would be provided and the requirement would apply to all activities conducted on the newly acquired lands included under Alternative 1. Despite efforts to train personnel, accidents still occur and would likely increase proportionally with the number of people and vehicles accessing the new training fields. Tank and heavy vehicle drivers also receive intense accident avoidance training and should minimize accidents if encounters with citizens trespassing onto Installation lands occur on tank trails (see *Public Safety* below).

Public Safety

Existing Fort Benning security procedures include ACPs and barriers to ensure public safety and limit unauthorized access to the Installation. The boundaries of Alternative 1 would require fencing to prevent public access. The installation of fencing as part of infrastructure upgrades would minimize safety risks in the portions of the newly acquired land where training activities would be conducted and where homes are in close proximity to future boundaries. Without fencing, unauthorized personnel could trespass onto Fort Benning, posing a safety risk to those who may inadvertently wander onto the ranges. For new personnel and those allowed access to the newly acquired land, general safety briefings and safety orientation would continue to be provided.

Explosive Safety

The newly acquired land would be used for live-fire and non-live-fire training. Live-fire training would be conducted in designated ranges and training areas. For the immediate future, there is no need to establish a dudded impact area. Ordnance would be used in strict compliance with Army and DoD regulations to assure the safe use of these items.

Range Safety - Surface Danger Zones

SDZs would be required to meet the requirements of AR 385-63, and therefore, controls would be in place to prohibit entry by unauthorized personnel. Among the duties of a Range Safety Officer (RSO), present at each active firing range, is to ensure there are no unauthorized personnel or equipment located downrange while the range is being used. A long-term solution would be to construct fencing to prevent unauthorized entry onto ranges within newly acquired lands.

In summary, expanding training onto the newly acquired lands under Alternative 1 would have a minor impact on safety. Safety risks introduced to the new training areas, however, would result from tank and heavy vehicles traffic; public access concerns; ordnance use; and range requirements. The implementation of all existing safety programs should minimize any safety hazards. Unauthorized entry

onto newly acquired Installation lands would be minimized by erecting fences and ensuring that RSOs undertake thorough review of downrange activities prior to range use. Under these circumstances, safety would be protected and not be significantly impacted.

3.14.2.3 ALTERNATIVE 2

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,300 acres in Russell County, Alabama. Alternative 2 includes Russell West and Russell East (see Figure 2.3-1, Section 2.3).

These alternative study areas are not contiguous to Fort Benning and would require the Army to obtain transportation routes onto the training lands. Compared with the No Action Alternative, the risks of accidents would likely increase proportionally with the increased travel distances to Russell West and Russell East.

Overall impacts to safety would be similar to those described under Alternative 1 (Section 3.14.2.2). With regard to safety, the implementation of Alternative 2 would result in negligible impacts as a result of Federal acquisition of land; beneficial impacts as a result of Army management; minor short-term adverse impacts as a result of Army preparation of newly acquired land; and minor, long-term adverse impacts as a result of Army training.

3.14.2.4 ALTERNATIVE 3

This alternative proposes Army acquisition, management, preparation, and training on approximately 82,800 acres in Stewart County, Georgia. Alternative 3 includes Stewart West and Stewart Central (see Figure 2.3-1, Section 2.3).

Under this alternative, one or more transportation routes would be required in Chattahoochee County in order to provide direct access to these land areas. Compared with the No Action Alternative, the risks of accidents would likely increase proportionally with the increased travel distances to Stewart West and Stewart Central.

Overall impacts to safety would be similar to those described under Alternative 1 (Section 3.14.2.2). With regard to safety, the implementation of Alternative 3 would result in negligible impacts as a result of Federal acquisition of land; beneficial impacts as a result of Army management; minor short-term adverse impacts as a result of Army preparation of newly acquired land; and minor, long-term adverse impacts as a result of Army training.

3.14.2.5 ALTERNATIVE 4

This alternative proposes Army acquisition, management, preparation, and training on approximately 80,900 acres in land area in Russell County, Alabama and Stewart County, Georgia. Alternative 4 includes Russell East and Stewart Central (see Figure 2.3-2, Section 2.3).

Under this alternative, one or more transportation routes would be required in Chattahoochee County in order to provide direct access to these land areas. Transportation routes to the Russell East property would also be required. Compared with the No Action Alternative, the risks of accidents would likely increase proportionally with the increased travel distances to Russell East and Stewart Central.

Overall impacts to safety would be similar to those described under Alternative 1 (Section 3.14.2.2). With regard to safety, the implementation of Alternative 4 would result in negligible impacts as a result of Federal acquisition of land; beneficial impacts as a result of Army management; minor short-term adverse impacts as a result of Army preparation of newly acquired land; and minor, long-term adverse impacts as a result of Army training.

3.14.2.6 ALTERNATIVE 5

This alternative proposes Army acquisition, management, preparation, and training on approximately 81,600 acres in land area in Stewart, Harris, and Talbot counties, Georgia. Alternative 5 includes Stewart West, Harris East, and Talbot West (see Figure 2.3-2, Section 2.3).

Under this alternative, one or more transportation routes would be required in Chattahoochee County in order to provide direct access to these land areas. Transportation routes to the Harris East and Talbot West properties would also be required. Compared with the No Action Alternative, the risks of accidents would likely increase proportionally with the increased travel distances to Stewart West, Harris East, and Talbot West.

Overall impacts to safety would be similar to those described under Alternative 1 (Section 3.14.2.2). With regard to safety, the implementation of Alternative 5 would result in negligible impacts as a result of Federal acquisition of land; beneficial impacts as a result of Army management minor short-term adverse impacts as a result of Army preparation of newly acquired land; and minor, long-term adverse impacts as a result of Army training.

3.14.3 CUMULATIVE IMPACTS

This section discusses cumulative impacts within the ROI for safety that would be expected to occur with the implementation of the alternatives. A complete description of the cumulative impacts methodology and a list of applicable past, present, and reasonably foreseeable future projects is included in Section 3.1.3.

No significant adverse impacts to safety are expected as a result of implementing the Proposed Action, when considering the projects listed in Section 3.1.3.2. Land acquired by Fort Benning under the Proposed Action would be transferred from private property owners to military use. Economic growth associated with the expansion of Fort Benning may have adverse impacts on safety in the community by bringing more people to the area, resulting in more construction and traffic. Other non-military population growth and economic development in the area would likewise increase the potential for safety risks.

Also, the construction phase of the Proposed Action, given the other transportation and development projects listed in Section 3.1.3.2, would have a cumulative increase in volumes of heavy vehicles and equipment expected during construction (especially with concurrent projects). This could have cumulative adverse impacts on safety, not only for personnel working and/or monitoring these projects, but also for the surrounding community. Adverse construction impacts, however, would be minor, short-term, and localized.

Army training could lead to minor cumulative impacts on public safety and transportation safety in the area. Safety risks would result from tank and heavy vehicle traffic; unauthorized public entry onto active training areas; and the use of ordnance. Army management would mitigate safety impacts occurring from training activities on the newly acquired land.

3.14.4 PROPOSED MITIGATION

No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.

3.15 ENVIRONMENTAL EFFECTS SUMMARY

Both the No Action Alternative and the Proposed Action alternatives would result in some degree of adverse effect on most environmental resources. Table 3.15-1 at the end of this section presents a summary of the environmental and socioeconomic consequences of the alternatives analyzed in this EIS. Implementation of Fort Benning's resource management plans and programs, mandated by the Army, would aid in avoiding significant adverse effects of the Proposed Action for the some of the affected resources. Proposed mitigation has been identified (see Section 3.16) for those resource areas that would have potential adverse environmental impacts.

Fort Benning has a number of existing measures it proposes to employ as part of the Proposed Action to avoid, minimize, rectify, reduce, or compensate for adverse effects associated with implementation. These measures include implementation of the following resource management programs to mitigate potential adverse impacts associated with Army construction and training on newly acquired land:

- Integrated Natural Resource Management Plan
- Integrated Cultural Resources Management Plan
- Integrated Pest Management Plan
- Endangered Species Management/Component Plans
- Forest Management Plan
- Integrated Training Area Management Program
- Development and Implementation of Watershed Management Plans
- Fort Benning NEPA Program
- Gopher Tortoise Conservation Plan

The purpose of Fort Benning's resource management plans and programs is to sustain Army training land and environmental resources. Implementation of these plans and programs on newly acquired land would lessen levels of potential impacts projected from future development and training activities regarding the level of effects of the Proposed Action resource areas of concern (Sections 3.2 through 3.14). Funding availability within the Army and DoD fluctuates from FY to FY. As such, the programs above are implemented using available funds to provide the maximum benefit attainable to meet best the stated goals and objectives of each plan or program. Analysis within this document assumes current levels of funding and implementation of Fort Benning's resource management of its existing land base would be expanded onto newly acquired land over a period of years. The level of resourcing of these programs will fluctuate in accordance with Army budgeting priorities from year to year.

Collectively, the Proposed Action resource management measures discussed in Section 2.2.3 and the proposed mitigation summarized in Section 3.16 would integrate environmental stewardship and resource management requirements with training requirements on any newly acquired land in order to sustain training land and enhance and protect natural resources for current and future use. These measures would rectify adverse effects caused by Army acquisition of the additional land by repairing, rehabilitating, or restoring the affected environment and would reduce or eliminate the adverse effects over time through preservation and maintenance operations.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Land Use							
Army Acquisition	Sig	Sig	Sig	Mod	Mod[2]		
Army Management	Neg	Neg	Neg	Neg	Neg		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Min to Mod	Min to Mod	Min to Mod	Min to Mod	Min to Mod		
Overall Impact	Sig	Sig	Sig	Mod	Mod	Neg	Mod
Airspace							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Mod	Mod	Mod	Mod	Mod		
Army Preparation	Neg	Neg	Neg	Neg	Neg		
Army Training	Min	Mod	Min	Mod	Mod		
Overall Impact	Mod	Mod	Mod	Mod	Mod	Min	Ben/Mod[3]
Air Quality							
Army Acquisition	Ben	Ben	Ben	Ben	Ben		
Army Management	Mod	Mod	Mod	Mod	Mod		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Min	Min	Min	Min	Min		
Overall Impact	Mod	Mod	Mod	Mod	Mod	Neg	Mod

[1] Impact Intensity Key: Neg = negligible; Min = minor; Mod = moderate; Sig = significant; Ben = beneficial. Descriptions of impacts (i.e., negligible, minor, moderate, significant, and beneficial) are provided in Section 3.1.3.1 of the EIS. Impacts are overall effects expected to occur for each resource from Army acquisition, management, construction, and training for each alternative.

[2] Impacts to prime farmland cannot be fully determined within the Harris and Talbot counties portion of Alternative 5 due to the lack of available soils data.

[3] It is anticipated moderate cumulative effects to airspace would occur if the Army were to be granted RA above the newly acquired land; however, the actual ability of the Army to use any of the airspace in a newly acquired area would not be fully understood until the acquisition is well underway and the pattern of land acquisition is known. At that time, the Army would coordinate with the FAA to determine what, if any, change of airspace use would be required.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Noise							
Army Acquisition	Ben	Ben	Ben	Ben	Ben		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Sig	Sig	Sig	Sig	Sig		
Overall Impact	Sig	Sig	Sig	Sig	Sig	Neg	Min
Soils							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Mod	Mod	Mod	Mod	Mod		
Overall Impact[4]	Min	Mod	Mod	Mod	Mod	Mod	Min
Water Resources (Surface Water, Groundwater and Floodplains)							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Mod	Mod	Mod	Mod	Mod		
Overall Impact[5]	Min	Mod	Mod	Mod	Mod	Mod	Min

[4] As Alternative 2, 3, 4 and 5 contain a larger distribution of highly erodible soils compared to Alternative 1, a higher potential exists for more widespread impacts. These sensitive soils would be less likely to be avoided during Army training activities and would, therefore, likely require additional funding for management and repair of training areas. Overall impacts from Army training to soils, regardless of Army management, therefore, would likely remain moderate.

[5] As Alternative 2, 3, 4 and 5 contain a greater amount of streams/creeks, avoidance of these areas may be less likely during construction of trail networks and during Army training. Overall impacts to surface water, regardless of Army management, would likely remain moderate.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Water Resources (Wetlands)							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min to Mod	Min to Mod	Min to Mod	Min to Mod	Min to Mod		
Army Training	Min	Min	Min	Min	Min		
Overall Impact	Mod[6]	Min	Min	Min	Min	Mod	Neg
Biological Resources (Vegetation)							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Mod	Mod	Mod	Mod	Mod		
Overall Impact	Ben	Ben	Ben	Ben	Ben	Mod	Min
Biological Resources (Wildlife and Aquatic Life)							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Mod	Mod	Mod	Mod	Mod		
Overall Impact	Ben	Ben	Ben	Ben	Ben	Mod	Min

[6] As Alternative 1 contains the greatest density of wetlands among the Proposed Action alternatives, avoidance of wetland areas may be less likely during construction of facilities and during training. Overall impacts to wetlands from Army construction and training, regardless of Army management, would likely remain moderate due to the higher density of wetlands.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Biological Resources (Proposed, Endangered, Threatened and Candidate Species)							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Neg	Neg	Neg	Neg	Neg		
Army Training	Neg	Neg	Neg	Neg	Neg		
Overall Impact	Ben	Ben	Ben	Ben	Ben	Mod	Neg
Cultural Resources							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Mod to Sig	Mod to Sig	Mod to Sig	Mod to Sig	Mod to Sig		
Army Training	Mod to Sig	Mod to Sig	Mod to Sig	Mod to Sig	Mod to Sig		
Overall Impact[7]	Ben	Ben	Ben	Ben	Ben	Mod	Ben
Socioeconomics (Population and Housing, Environmental Justice and Protection of Children, Public Services)							
Army Acquisition	Sig	Sig	Sig	Sig	Sig		
Army Management	Neg	Neg	Neg	Neg	Neg		
Army Preparation	Neg	Neg	Neg	Neg	Neg		
Army Training	Neg	Neg	Neg	Neg	Neg		
Overall Impact	Sig	Sig	Sig	Sig	Sig	Neg	Neg

[7]Although the potential for moderate to significant impacts exists from Army training, unavoidable adverse impacts to NRHP resources and NRHP-eligible resources would be mitigated through processes outlined in the HPC. Overall beneficial impacts would be anticipated for cultural resources that may not otherwise be maintained under existing ownership and land use practices.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Socioeconomics (Economic Development and Employment, Taxes and Revenue)							
Army Acquisition	Sig	Mod	Sig	Sig	Sig		
Army Management	Neg	Neg	Neg	Neg	Neg		
Army Preparation	Ben	Ben	Ben	Ben	Ben		
Army Training	Neg	Neg	Neg	Neg	Neg		
Overall Impact	Sig	Mod	Sig	Sig	Sig	Neg	Neg
Traffic and Transportation							
Army Acquisition	Sig	Sig	Sig	Sig	Sig		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training[8]	Min	Mod	Mod	Mod	Mod		
Overall Impact	Sig	Sig	Sig	Sig	Sig	Neg	Sig
Utilities							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Neg	Neg	Neg	Neg	Neg		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Min	Min	Min	Min	Min		
Overall Impact	Min	Min	Min	Min	Min	Neg	Neg

[8] Unlike Alternative 1, Army training impacts to Alternatives 2, 3, 4 and 5, would be moderate. These alternatives each include the establishment of a transportation route and transportation upgrades that could result in additional impacts to traffic and transportation during Army training in comparison to Alternative 1.

Table 3.15-1. Summary of Environmental and Socioeconomic Effects[1]

Areas of Concern	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	No Action Alternative	Cumulative Impacts
Hazardous and Toxic Substances and Waste							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min to Mod	Min to Mod	Min to Mod	Min to Mod	Min to Mod		
Army Training	Mod	Mod	Mod	Mod	Mod		
Overall Impact	Min	Min	Min	Min	Min	Min	Mod
Safety							
Army Acquisition	Neg	Neg	Neg	Neg	Neg		
Army Management	Ben	Ben	Ben	Ben	Ben		
Army Preparation	Min	Min	Min	Min	Min		
Army Training	Min	Min	Min	Min	Min		
Overall Impact	Min	Min	Min	Min	Min	Neg	Min

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3.16 PROPOSED MITIGATION SUMMARY

The proposed mitigation was developed based on the analysis of potential resource impacts. The mitigation is proposed for implementation based on their ability to be enacted, the affordability, and the likelihood of their effectiveness. Final decisions regarding adoption and implementation of proposed mitigation will be made in the Army ROD.

Most potential adverse impacts identified in this EIS would be either negligible or could be avoided through adherence to existing Fort Benning resource management practices on any newly acquired land. Unavoidable adverse impacts, however, would potentially result from implementation of the Proposed Action. Table 3.16-1 identifies potential mitigation measures identified within this EIS.

Table 3.16-1 Proposed Mitigation

Land Use	Alternative
• Fort Benning would work with local jurisdictions to update the regional Joint Land Use Study and assist the local governments affected by land acquisition in redefining their land use plans around the future Installation border (i.e., including the newly acquired lands). This action may help identify specific future mitigation measures as specific Army training areas and activities are identified.	All
• Mitigation for loss of private recreation lands would be accomplished through Fort Benning's continued work with the local community to maximize recreational opportunities in ways that are compatible with Fort Benning's need to meet unit training requirements.	All
Airspace	**Alternative**
• Future changes to airspace use would be coordinated with the FAA. The configuration of newly acquired lands along with existing Army land holdings would dictate any airspace request change and would drive specific mitigation measures in coordination with the FAA. No specific mitigation measures have been identified in this EIS; however, Section 3.3.4 contains potential measures that would be considered for modifications to airspace in future coordination with the FAA.	All
Air Quality	**Alternative**
• No mitigation measures for air quality would be required under the Proposed Action. Compliance with existing regulations, permits, and plans would be required for activities associated with Army resource management, construction, and training, which would reduce the level of effect to less than significant.	All
Noise	**Alternative**
• No mitigation measures for noise would be required under the current Proposed Action. As training activities, infrastructure, and facilities are proposed in the future, subsequent NEPA analysis and comprehensive noise modeling would be conducted, which will more specifically address potential noise impacts, where necessary, to determine the specific impacts of those activities. Mitigation measures, if required, would be determined at that time.	All
Soils	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All
Water and Wetland Resources	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All

Table 3.16-1 Proposed Mitigation

Biological Resources	Alternative
• Mitigation measures will be determined through consultation with the USFWS regarding potential impacts from construction and training to any Federally-listed species in an alternative study area	All
Cultural Resources	**Alternative**
• No mitigation measures for cultural resources would be required under the Proposed Action. The specific NEPA and NHPA Section 106 process for future site-specific construction and training areas would include consultation to develop mitigation for the potential or actual loss of any identified resources.	All
Socioeconomics and Environmental Justice	**Alternative**
• The Army would carefully refine the boundaries of prospective acquisition areas as feasible to avoid encompassing residences at the periphery of the areas to minimize potential impacts from demolition of housing and displacement of population. Such measures would be particularly effective where clusters of residences are situated in proximity to potential boundaries of the lands to be acquired.	All
• The Army would give specific consideration to minimize acquisition of properties in Census blocks having the highest percentages of minority and low-income populations to reduce potential environmental justice impacts.	All
• Fort Benning would continue to explore potential mechanisms to reduce the impacts on county revenues that may result from TLEP land acquisition.	All
Traffic and Transportation	**Alternative**
• The Army would take reasonable measures to ensure roadway access to communities outside the newly acquired lands would remain unrestricted. These measures may include building new roads and allowing controlled access across the newly acquired lands.	All
Utilities	**Alternative**
• The Army would reinforce the points where proposed maneuver training routes would cross underground utilities. Any heavy equipment on these routes would be required to use these designated crossing points to prevent utility line damage.	All
Hazardous and Toxic Substances and Waste	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All
Safety	**Alternative**
• No mitigation has been identified; however, specific future mitigation measures may be identified in follow-on NEPA analysis as specific Army training areas and activities are identified.	All

3.17 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Consistent with its mission, Fort Benning, by implementing the Proposed Action, would continue to provide trained, agile, adaptive, and ready Soldiers and leaders for an Army at war, while developing future requirements for the individual Soldier and Maneuver Force and providing a world class quality of life for our Soldiers and Army Families. To address the deficiencies of available training land, Fort Benning would begin to develop training infrastructure and conduct Soldier training on newly acquired land. The collective whole of these training infrastructure improvements and training actions, as described in the Proposed Action (see Section 2.2), inherently involves activities that can generate adverse environmental effects that might not be avoidable or otherwise subject to mitigation.

This EIS has identified the likely adverse environmental effects associated with Fort Benning's proposal to acquire and use additional training land. Unavoidable impacts to resources would likely result from the following types of activities: the use of vehicles and equipment in the field during training; the construction of facilities to support various ongoing and new requirements; the introduction of new systems with attendant new doctrine, performance characteristics, and training requirements. Although the type and likely intensity of potential impact have been predicted within this document, appropriate follow-on NEPA analysis would be required to supplement site-specific construction and training actions once the Army has acquired additional land and has begun to field assess resource locations and site planning for training activities. In most instances, the severity of the effects could be lessened by implementing existing Fort Benning resource management programs (see Section 2.2.3).

Most potential adverse impacts identified in this EIS would be less than significant after employment of proposed mitigation as outlined in Section 3.16. Some unavoidable adverse impacts, however, could result from implementation of the Proposed Action or alternatives. Probable unavoidable impacts that would result from the implementation of the Proposed Action include:

- Ground disturbance during construction, off-road vehicle maneuvers, and temporary construction (excavation) activities during training with changes/losses in vegetation cover types and associated wildlife habitat. Implementation of resource management programs would aid in reducing overall impacts through monitoring, managing degraded sites by stabilizing vegetative cover following construction and training activities, and preventing the spread of invasive species.
- Transfer of land with prime farmland soils and the conversion of timber and agricultural land uses to training land use. Coordination would be conducted with the NRCS, and an AD-1006 form would be completed for each parcel containing prime farmland soil in timbered/agricultural production.
- Increased noise from introduction of training activities within newly acquired land and temporary increase due to construction activities.
- Erosion of soils during off-road vehicle maneuvers, with short-term air quality degradation from dust generation. It would not be feasible to employ erosion control measures during training activities; however, the ITAM program would likely address most areas prone to erosion following training exercises.
- Potential impacts to surface water from construction of water crossings. These potential impacts, however, would be temporary in nature. Studies conducted by the USGS have shown that use of hardened low-water crossings by the Army do not have detectable impacts to stream water quality or benthic conditions compared to upstream and downstream locations; therefore, military training involving crossing streams at designated water crossings would cause little to no adverse long-term impacts to stream quality or aquatic habitat.

- Potential impacts to wetlands from construction and training activities. Evaluating wetlands prior to siting of facilities would greatly reduce impacts to wetland resources; however, unavoidable impacts may still occur. Unavoidable impacts to wetlands would be permitted and mitigated through the Section 404 process.
- Loss of undeveloped land and wildlife habitat for the construction of new training facilities and maneuver trails. Construction of new facilities would be sited in lower-quality habitat such as recently clear-cut areas, where feasible. Unavoidable impacts, however, would likely occur to some habitats associated with riparian areas and mature forests.
- Potential impacts to plants and animals, including sensitive species, are not expected to cause population-level adverse impacts. Individual species, however, may be lost during clearing of land for construction of new facilities or during training events.
- Potential loss of undetected archaeological sites in training areas. Areas would be evaluated for cultural resource potential and surveyed prior to construction; however, the potential exists for undetected sites to be disturbed during construction or training activities.
- Loss of tax revenues from transfer of residential and commercial land to Federal ownership.

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Steuber, George – Deputy Garrison CDR

Veenstra, Linda – Environmental Law Specialist

Weekley, Fredrick – Range Management Officer

Savannah Army Corps of Engineers

Hinley, John – Real Estate

Thomas, John (Rick) – Chief Acquisition Branch

U.S. Army Environmental Law Division

Howlett, David – TJAG

Keefe, Thad – FORSCOM

U.S. Army Environmental Command

Reilly-Hauck, Jill – Project Manager

Webster, Ronald D – EIFS Analyst

Specpro

Hawn, Doug
- B.S. Wildlife and Fisheries Science
- Years Experience: 21
- EIS: Project Management;
- Wetlands; Waste; and Biological Resources

Hyder, Fatima
- M.A. in Journalism
- B.S. in Communications
- Years experience: 15
- Technical Editing

Stair, David
- B.A. Organismal and Systems Biology
- Years Experience: 30
- EIS: Wetlands; Soils; Botany; Surface Water, and Biological Resources

Tate, Jane
- Ph.D. Ecology
- B.S. Psychology
- Years Experience: 27
- EIS: NEPA Specialist/Reviewer

Potomac-Hudson Engineering

Becker, Anthony
- M.S. Biology
- B.S. Biology
- Years Experience: 6
- EIS: Biological Resources

Cornwall, Camilla
- M.S. Soil Science
- B.S. Conservation of Soil
- Years Experience: 7
- EIS: Soils/Wetlands

DiPaolo, Paul
B.S. Environmental Science and Policy
Years Experience: 1
EIS: Document Preparation and Information Management

Grieshaber, Joseph
M.B.A. Finance
M.S. Biology
B.S. Biology
Years Experience: 36
EIS: Socioeconomics

Martin-McNaughton, Jamie
B.S. Geology-Biology
Years Experience: 5
EIS: Land Use

Naumann, Robert
M.S. Environmental Science
B.S. Natural Resources
Years Experience: 12
EIS: Project Manager

Ong, Cynthia
M.S. Environmental Science
B.S. Civil Engineering
Years Experience: 8
EIS: Deputy Project Manager

Schueler, Stacey
B.S. Environmental Science
Years Experience: 9
EIS: Surface Water and Floodplains/Utilities

Shinkle, Deborah
B.A. Environmental Studies
Years Experience: 8
EIS: GIS Analyst

Spangenberg, Rachel
B.S., Biology
Years Experience: 23
EIS: Technical Review; QA/QC

Walker, Debra
B.S. Biology
Years Experience: 33
EIS: Program Manager/Quality Assurance

Unter, Irene
P.E. Civil Engineering
B.A. Environmental Studies
Years Experience: 26
EIS: Hazardous/Toxic Substances; Safety

LPES

Lavallee, Timothy
M.S. Civil/Environmental Engineering
B.S. Mechanical Engineering
Years Experience: 20
EIS: Air Quality, Noise, and Transportation

New South Associates

Joseph, J.W., PhD, RPA
Ph.D. Historical Archaeology
M.A. American Civilization
B.A. Anthropology
Years Experience: 31
EIS: Cultural Resources Specialist

Keith, Scot, MS, RPA
M.S. Anthropology/Archaeology
B.A. Anthropology
Years Experience: 18
EIS: Archaeologist

Price, David
M.A. - History with emphasis in Public History
B.A. - American Studies
Years Experience – 6
EIS - Historian

Tankersley, Matthew William, MHP
Historical Preservation MHP
Anthropology B.S.
Years Experience: 11
EIS: Cultural Resource GIS Specialist

PlanIt[2]

Boose, Brian
B.S. Biological Sciences/Ecology
Years Experience: 21
EIS: Cumulative Impacts

Humes, Thomas
B.S. General Studies
Years Experience: 2
EIS: Cumulative Impacts

McNutt, Erin J.
B.S. Ecology
Years Experience: 1
EIS: Cumulative Impacts

Rexroad APG

Rexroad, Joe
B.A. Architecture & Urban Design
Years Experience: 24
EIS Role: Air Space Analysis

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6 ACRONYMS

Acronym	Definition
°F	Fahrenheit
05GA	Raju Airport, private use
2AL8	Finkley Farm Airport
3rd HBCT/3rd ID	3rd Heavy Brigade Combat Team, 3rd Infantry Division
7A9	Peterson Field Airport
A/D	approach/departure
AADT	Annual Average Daily Traffic
AAP	Army Alternate Procedures
AAS	analysis of alternatives study
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ACP	access control point
ACUB	Army Compatible Use Buffer
ADCNR	Alabama Department of Conservation and Natural Resources
ADEM	Alabama Department of Environmental Management
ADNL	A-weighted day-night average sound level
AFB	Air Force Base
AG	Adjutant General
AGL	above ground level
AL	Alabama
AL05	Sehoy Airport
AL51	Flying C's Plantation Airport, private use
AL56	Jones Light Aviation Airport, private use
ALDOT	Alabama Department of Transportation
AMLAP	Army Major Land Acquisition Proposal
AMP	Asbestos Management Plan
APDC	Area Planning and Development Commission
APE	Area of Potential Effect
APOE	Aerial Port of Embarkation

Acronym	Definition
AQCR	air quality control region
AR	Army Regulation
ARC	Army Reconnaissance Course
ARFORGEN	Army Force Generation
ARPA	Archaeological Resources Protection Act
ARRM	Requirements Model
ARTCC	Air Route Traffic Control Center
ASOS	Air Support Operations Squadron
AST	above ground storage tank
ASTM	American Society for Testing and Materials
ATC	air traffic control
BA	Biological Assessment
BACT	Best Available Control Technology
BCT	Brigade Combat Team
BFV	Bradley Fighting Vehicle
BIDS	Biological Integrated Detection System
BMP	best management practice
BRAC	Base Closure and Realignment Commission
C	candidate
CAA	Clean Air Act
CAS	close air support
CDID	Capabilities Development and Integration Directorate
CDNL	C-weighted day-night average sound level
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHMCC	Centralized Hazardous Materials Control Center
CME	Christian Methodist Episcopal
CO	carbon monoxide
CO_2	carbon dioxide
COF	Company Operations Facility

Acronym	Definition
CR	County Road
CRM	Cultural Resource Management
CSG	Columbus Metropolitan Airport
CWA	Clean Water Act
CWW	Columbus Water Works
DA	Department of the Army
dB	decibel
dBA	A-weighted decibel
dBC	C-weighted decibel
dBP	peak level
DCA	Directorate of Communities
DCO	Direct Commission Officer
DDESB	DoD Explosive Safety Board
DEIS	Draft Environmental Impact Statement
DL	de-listed
DMPRC	Digital Multi-Purpose Range Complex
DNL	day-night average sound level
DoD	Department of Defense
DOE	Department of Energy
DOL	Directorate of Logistics
DOT	U.S. Department of Transportation
DPTMS	Directorate of Plans, Training, Mobilization, and Security
DPW	Directorate of Public Works
DZ	drop zone
EA	Environmental Assessment
EAP	Environmental Action Plan
ECP	Environmental Condition of Property
EIFS	Economic Impact Forecasting System
EIS	Environmental Impact Statement
EMD	Environmental Management Division
EMS	Emergency Medical Service

Acronym	Definition
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-To-Know Act
ER,A	Environmental Restoration, Army
ERMP	Extended Range Multipurpose
ESA	Endangered Species Act
ESMC	Endangered Species Management Component
ESMP	Endangered Species Management Plan
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FIRM	Flood Insurance Rate Map
FL	Flight Level
FM	Field Manual
FMTV	Family of Medium Tactical Vehicle
FNSI	Finding of No Significant Impact
FORSCOM	U.S. Army Forces Command
FPPA	Farmland Protection Policy Act
FY	Fiscal Year
GaANG	Georgia Army National Guard
GAC	Georgia Administrative Code
GDNR	Georgia Department of Natural Resources
GDOT	Georgia Department of Transportation
GEPD	Georgia Environmental Protection Division
GHG	greenhouse gas
GIS	geographic information systems
gpd	gallons per day
GPS	global positioning system
HAP	hazardous air pollutant
HBCT	Heavy Brigade Combat Team

Acronym	Definition
HEL	highly erodible land
HEMTT	Heavy Expanded Mobility Tactical Truck
HET	Heavy Equipment Transport
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HPC	Historic Properties Component
HTMW	Hazardous and Toxic Materials and Waste
HUC	hydrologic unit code
HWMP	Hazardous Waste Management Plan
I	Interstate
I3MP	Installation Information Infrastructure Modernization Program
IAP	Installation Action Plan
IBCT	Infantry Brigade Combat Team
IBLOC	Infantry Basic Officer Leadership Course
ICRMP	Integrated Cultural Resources Management Plan
IECMP	Integrated Environmental Compliance Management Plan
IFR	Instrument Flight Rules
INRMP	Integrated Natural Resources Management Plan
IONMP	Installation Operational Noise Management Plan
IPMP	Integrated Pest Management Plan
IRP	Installation Restoration Program
ISA	International Standard Atmosphere
ISTD	International Student Training Detachment
ISR	intelligence, surveillance, and reconnaissance
ITAM	Integrated Training Area Management
JBO	Jeopardy Biological Opinion
JTAC	Joint Terminal Attack Controller
K-value	susceptibility to water erosion factor
$K	thousands of dollars
km	kilometer
KEUF	Weedon Field Airport
KLSF	Lawson Army Airfield

Acronym	Definition
LBP	lead-based paint
L_{eq}	equivalent sound level
LESA	Land Evaluation and Site Assessment
LRR	Land Resource Region
LOS	level of service
LS	slope length and steepness factor
LUC	land use control
LUPZ	Land Use Planning Zone
LURS	Land Use Requirements Study
m	meter
$M	millions of dollars
mm	millimeter
MACH	Martin Army Community Hospital
MACT	Maximum Available Control Technology
MBTA	Migratory Bird Treaty Act
MC3	Maneuver Captains Career Course
MCoE	Maneuver Center of Excellence
MedEvac	medical evacuation
METL	Mission Essential Task List
MFT	mobile fuel tankers
mgd	million gallons per day
MLRA	major land resource area
MMBtu/hr	million British Thermal Units per hour
MOA	Military Operations Area
MOU	Memorandum of Understanding
MSA	Metropolitan Statistical Area
MRF	Material Recycling Facility
MSL	mean sea level
MSR	main supply route
MTR	Military Training Route
MTV	Medium Tactical Vehicle

Acronym	Definition
MWR	Morale, Welfare, and Recreation
NAAQS	National Ambient Air Quality Standard
NAGPRA	Native American Graves Protection and Repatriation Act
NAHRGIS	Natural, Archaeological, and Historic Resources Geographical Information System
NAS	National Airspace System
NBC	nuclear, biological, and chemical
NEPA	National Environmental Policy Act
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NM	nautical miles
NNSR	Nonattainment New Source Review
NOA	Notice of Availability
NOTAM	Notice to Airmen
NO_x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination Standard
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSPS	New Source Performance Standards
NTU	nephelometric turbidly unit
NWI	National Wetland Inventory
O_3	ozone
OCGA	Official Code of Georgia Annotated
OCS	Officer Candidate School
OMA	Operation and Maintenance, Army
ORAP	Operational Range Assessment Program
OSHA	U.S. Occupational Safety and Health Administration
PCB	polychlorinated biphenyls
PHEL	potentially highly erodible land
PILT	Payments in Lieu of Taxes
PM_{10}	particulate matter with an aerodynamic diameter of 10 microns or less

Acronym	Definition
$PM_{2.5}$	particulate matter with an aerodynamic diameter of 2.5 microns or less
POI	Program of Instruction
POLs	petroleum, oils, and lubricants
PSD	Prevention of Significant Deterioration
PTE	potential to emit
R	runoff factor
RA	Restricted Area
RCRA	Resource Conservation and Recovery Act
RCW	red-cockaded woodpecker
ROD	Record of Decision
ROI	Region of Influence
ROW	right-of-way
ROWPU	Reverse Osmosis Water Purification Unit
RPA	reasonable and prudent alternative
RPMP	Real Property Master Plan
RSO	Range Safety Officer
RTLP	Range and Training Land Program
S	State Protected (Alabama)
SBCT	Stryker Brigade Combat Team
SDWA	Safe Drinking Water Act
SDZ	Surface Danger Zone
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SLC	Armor School Scout Leaders Course
SMP	Smoke Management Plan
SMZ	streamside management zone
SO_2	sulfur dioxide
SOP	Standard Operating Procedure
SPOE	Seaport of Embarkation
SPCC	Spill, Prevention, Control, and Countermeasure
SPL	sound pressure level

Acronym	Definition
SR	State Route
SSG	Staff Sergeant
SUA	Special Use Airspace
SWMU	Solid Waste Management Units
SWPPP	Stormwater Pollution Prevention Plan
T&E	threatened and endangered
TAA	tactical assembly area
TCE	trichloroethylene
TCP	Traditional Cultural Property
TDY	temporary duty
TEMF	Tactical Equipment Maintenance Facility
THPO	Tribal Historic Preservation Officer
TLEP	Training Land Expansion Program
TMDL	total maximum daily load
TNC	The Nature Conservancy
TOW	Tube launched optically tracked wire command guided missile
tpy	tons per year
TRACON	Terminal Radar Approach Control
TSCA	Toxic Substances Control Act
TUAV	Tactical Unmanned Aerial Vehicle Systems
U.S.	United States
UAS	Unmanned Aerial System
UFC	Unified Facilities Criteria
UGA	University of Georgia
URA	Uniform Relocation Assistance and Real Property Acquisition Policies Act
USACE	U.S. Army Corps of Engineers
USAEC	U.S. Army Environmental Command
USASOCOM	U.S. Army Special Operations Command
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USAPHC	U.S. Army Public Health Command (formerly USACHPPM)
USC	United States Code

Acronym	Definition
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
VEC	valued environmental component
VFD	volunteer fire department
VFR	Visual Flight Rules
VOC	volatile organic compound
VOR-DME	Very High Frequency Omni-Directional Range-Distance Measuring Equipment
VORTAC	Very High Frequency Omni-Directional Range/Tactical Aircraft Control
WHPP	Wellhead Protection Plan
WMA	Wildlife Management Area
WMU	watershed management unit

FORT BENNING
TRAINING LAND EXPANSION

Draft Environmental Impact Statement

May 2011

Appendices

APPENDICES

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APPENDIX A

Public Involvement
Scoping Comment Matrix

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Date	Name	Concerns	Response
6/14/2010	Brice Patterson	Is the intent of Fort Benning to acquire 82,000 acres of this 23,000 acre study, regardless of the outcome of the EIS? Can Fort Benning operate with just a small portion of this area of interest? We have 8,000 acres of family land (timber) in Stewart Co. that may be affected and are very concerned. Does Fort Benning require 82,000 acres of additional acreage in order to be able to train? Maybe better use of current training facilities.	The EIS includes a No Action alternative; the outcome may be no land acquisition. The decision to be made is discussed in Section 1.5.2.
6/14/2010	Mike Corcoran	The proposal for land acquisition in Russell Co. would emasculate the county in tax base and infrastructure and will be met with resistance. A number of African Americans are going to be adversely impacted and civil rights issues may not be at stake. South of Fort Benning along the river is devoid of substantive population. I hear there are environmental concerns there, but surely we aren't putting woodpeckers ahead of human beings and family legacies.	See Section 3.10.2 for a discussion of potential impacts to tax and revenue and Environmental Justice. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/14/2010	James Cook	Please contact me with information when the next meeting will be held. I want to attend.	Comment noted.
6/14/2010	Larry J. Laney	The loss of revenue and potential revenue for the entire Russell County. Decrease in property values and that the decrease in services for county residents. The possible loss of Oliver Elementary and increase in transportation cost to get the students south and west of the proposed area to the high school and middle school. One of the most important is the displacement of many residents that could do nothing about it.	See Section 3.10.2 for a discussion of potential impacts to tax and revenue and public services. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/14/2010	William M. Green	What is the timeline for this study? Will all 82,000 be in one location? Has anyone thought of the impact on Russell Co. Schools: Lost tax money? Relocation of 2 schools and students? Transportation issues with population of south end of county?	Please see Section 1.5 "Scope, Decision to be Made, and Framework for Analysis" regarding a general timeline and the EIS process. See Section 3.10.2 for a discussion of potential impacts to tax and revenue and public services. Alternatives 2 and 4 contain discussions pertaining to Russell County.

Date	Name	Concerns	Response
6/14/2010	Abbie Dillard	We are not willing persons! Over half of our land is in the Marion Co. study area. Our house is 300 yards inside Chattahoochee Co, built in 1832 and the land has been in our family over 100 years. I am concerned about the quality of life should the Marion land be selected and the emotional impact to our family! Additionally, our land is in a conservation easement. If forced to sell to the Army we would owe penalty taxes on all the land since it is in the same easement. We have several neighbors who live along Liberty Hill Road in Marion Co. If the Army decides to buy the Marion Co. land and would move the line east of Woodbridge Road, these home owners would not have to be displaced from their homes.	Comments noted. Georgia provides an exception to the penalty provision if certain agricultural or conservation land in a tax relief program is acquired by the Federal government.
6/14/2010	Tommy Wilkinson	The impact of the water and noise. This proposal should not even be considered knowing the green space and wildlife that will be impacted. People that have moved into rural areas did so wanting to live in peace, not around a lot of dust and noise. Thanks Move to the desert where you won't disturb whole communities. Land acquisition would be easier. Please do something about the Oscar Complex noise.	Please see Section 3.5 regarding noise, Section 3.7 regarding water resources and Section 3.8 regarding wildlife.
6/14/2010	John Torbert	You might consider Talbot County. The terrain may be steeper, but there are about 20-30,000 acres owned by just two or three parties including Mead.	Based on scoping comments, Alternative 5 has been included for analysis in the EIS which includes lands in Talbot and Harris counties.
6/14/2010	Kathy Taylor	My concerns have been calmed. I feel if the need is there for my land to be used for training, relocating the lease we could do. My land meets timberland, and I was not sure the effect on our day to day lives would be.	Comment noted.
6/14/2010	James Head	Limit input from the Nature Conservancy. Talbot County! Other areas to consider are from Oglethorpe Power Plant to Box Springs to Talbotton; north and west of Highway 80. Mostly timber company land; very few residents as opposed to some of the areas being considered. Check with MeadWestvaco and Wells Real Estate Investment (Timberland II) and Saunders-Alexander Group.	Comment noted. Based on scoping comments, Alternative 5 has been included for analysis in the EIS which includes lands in Talbot and Harris counties.

Date	Name	Concerns	Response
6/15/2010	Mike Corcoran	Population density of the county; Tax base values of county; Value of infrastructure network (roads, water, etc); Strategic damage of cutting Russell Co into half making the county less functional. Take the land south of installation and east of river all the way to Georgetown, Ga.	See Section 3.10.2 for a discussion of impacts to tax and revenue, Section 3.11.2 for transportation and 3.12.2 for utilities. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/15/2010	Gentry Lee	Dividing a county in half; Reducing tax base of county by 20% or more; Land that has been in families for generations lost; Utility structure have to be moved. It is probably less infrastructure and population in the Georgia areas than Russell County.	See Section 3.10.2 for a discussion of impacts to tax and revenue, Section 3.11.2 for transportation and 3.12.2 for utilities. The EIS compares impacts by Alternative.
6/15/2010	Dr. William B. Smith	The meeting was useless for me. No definite area was shown on the map of Russell County. Roads should be on maps for reference.	Please see the updated maps in this document.
6/15/2010	Steve Lamb	The government does not pay taxes on property. So who is going to compensate the county for the taxes we are going to lose? What about the noise?	Please see Section 3.5 regarding noise and 3.10 regarding tax and revenue.
6/15/2010	Clarence L. Miller	1. How will you address the presence of historical markers? 2. Preferred a more general presentation format for all to hear the same information at the same time, and then allow questions answered. 3. Consider forming an advisory group (for and against) 4. Prefer presenting to the public more detailed information at the point of "notice of intent" 5. This location is not conducive for public meeting. Too hot can be hazardous to one's health 6. The information via newspaper did not provide adequate notice.	Regarding comment #1, please see Section 3.9, Cultural Resources. Comments 2 - 6 noted.
6/15/2010	Maledia Quinn	I came up for the initial land expansion study areas and still feel lost. No one has an answer. Every response was vague. I understand the importance of training but people need straight forward answers.	Comment noted.
6/15/2010	David Bounds	Southern Natural Gas Company has a high pressure natural gas pipeline in Stewart and Russell Counties. For more information, you can contact me at the information below.	Section 3.12 contains utilities identified within the study area. A gas pipeline was identified in Stewart County which terminates at the Chattahoochee River.

Date	Name	Concerns	Response
6/15/2010	Daryl Szarenski	This little seminar was highly uninformative. A more detailed map would have been great instead of the map made by a first grader. Fort Benning's lack of planning when they agreed to bring Fort Knox scares me in the lack of competence in our officers. Do I need to look for a new place or not? How bad are you going to screw me on a fair market value? Please try to get your [act] together before you displace a ton of families.	Comment noted.
6/15/2010	Mike McKenzie	Nope	Comment noted.
6/15/2010	Gordon E. Cox	In Russell County the tax revenue will be greatly affected. Highways are a concern – closing. County roads would greatly affect school transportation with the most of the tank training on the East of Ft. Benning. Would it not be better to keep as much as possible in the same area? As you have heard by now, not in my back yard.	See Section 3.10.2 for a discussion of impacts to tax and revenue, and Section 3.11.2 for transportation. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/15/2010	Bob Franklin	The property tax loss to Russell Co would be unbearable. The proposed map would also divide our county to the point that the southern half may want to become part of Barbour Co. Any of the property in Georgia looks good.	See Section 3.10.2 for a discussion of potential impacts to tax and revenue. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/15/2010	JoAnne C. Laney	It will hurt the county on a whole because of reducing the tax base! Nothing that I have heard will help in supporting the school systems. The additional people will pay sales tax unless they all go to the PX.	See Section 3.10.2 for a discussion of impacts to tax and revenue impacts.
6/15/2010	Charles A. Johnson	How much of our tax base will Russell Co lose? How will this affect budgeting for county comm., school district, and sheriff's department? When will more detailed and exact information be made available to the public? At what point (if ever) would the Army consider the use of Imminent Domain? If the purchase of land goes through, what criteria would the Army use to decide whether it would acquire additional land? Get all land in Georgia! Please don't play bureaucratic games and be honest and direct with the good people of Russell County.	See Section 3.10.2 for a discussion of impacts to tax and revenue impacts. Alternatives 2 and 4 contain discussions pertaining to Russell County. Section 2.2.2 discusses the acquisition and transfer of land ownership and Appendix F contains information in the Federal Relocation Assistance Program. Decision criteria will be listed in the Record of Decision (after the Final EIS is prepared).

Date	Name	Concerns	Response
6/15/2010	Harold Weinbaum, Jr.	Prior to this land acquisition idea in Alabama, land that could have been used in now BRAC housing subdivisions built by speculators, south of the air borne drop zone, west of Alabama 165, again subdivisions are built. True maps are not available so I don't know if I'm to be put on the trail of tears by the proposed Alabama portion. I say stay west and south along the river in Georgia.	Comment noted. Please see the updated maps in this document.
6/15/2010	Carolyn Kirkland	Our concerns are the land usage, schools, and servicing the fire department. Alabama is short on money now. How are they going to help provide funds? The increase class size. The fire departments are can keep up with the calls now and the equipments they had to purchase.	See Section 3.2.2 for a discussion on land use, and 3.10.2 for a discussion of impacts to public services and schools and taxes and revenue. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/15/2010	Minnie L. Jackson	Those who desire to sell their property before they heard of this plan need are left to wonder about money things including housing values. Please keep us concerned! Our community in Russell County needs to be better informed about these potential… This meeting was not adequately advertised to this community! It was in the paper once and some don't read paper everyday! We had no time to plan.	Comment noted. You have been added to the EIS mailing list.
6/15/2010	Cliff Streetman	Multi-purpose land use such as: wildlife, wetlands. I manage a thousand acre quail plantation with a 160 year history! We would oppose in part of encroaching on our land.	See Section 3.2 regarding land use conflicts, recreation, and hunting, 3.7 for wetlands and 3.8 for wildlife.
6/15/2010	John Hulse	If Ft. Benning has identified needs for training they should be able to proceed without hindrance. The lives of soldiers depend on training and their lives/training should take precedence over all other impediments to the process. Good Luck.	Comment noted.
6/15/2010	Rick Perry	In Russell County the west and southern parts of the county are the most economically depressed county areas. Concern is how to keep this expansion from further isolating those parts of Russell Co both physically and economically. Also, what will Russell County have to do when it loses 1/3 of its property tax revenue? Will it transfer lost revenue to extra taxes on the rest of landowners? I welcome the possible land expansion into the county.	See Section 3.10.2 for a discussion of impacts to tax and revenue. Alternatives 2 and 4 contain discussions pertaining to Russell County.

Date	Name	Concerns	Response
6/15/2010	Charles C. Miller	Enclosed please find the copy of your scoping comment, United States Army Fort Benning Training Land Expansion Study. See attached sheets and please send these attached copies to General Ferriter and Colonel Macdonald. My great grandfather purchased Moss Hill Plantation in 1843. My family has owned and resided on the property for the past 167 years. This land is located in the 4 corners area of Chattahoochee, Marion, Webster, and Stewart counties of Georgia. The main house, located just across the line in Marion County, is a replica of the Hermitage built by President Andrew Jackson located in Nashville, TN. I have lived in this home for over 40 years and my son; Craig C. Miller has constructed a home in the original Oak Tree Grove. The Moss Hill Plantation is a fully developed 1,482.06 acres working cattle and timber farm that includes an overseer's home, two equipment sheds, and complete shop, tractors, and farm equipment. It has wells for cattle drinking and improved pastures, fenced and crossed fenced, 3 fishponds that include a cabin, which is located at one of the ponds. I am sure that your research of the four corners area of Georgia you are studying will show that this land has been owned by the same families for many generations. The money is not as important as the fact that this is my land and it is not for sell at any price!! I am confident that most of my neighbors feel as strongly as I do.	Comment noted.
6/16/2010	Jeanette Cameron	Thank your staff for the wonderful job educating our community. My only concern is that you keep educating us with all and frequent updates to the project.	Comment noted.
6/16/2010	Charles D. Patterson	Have Gopher Tortoise that lives on my land in Stewart county. Also red, white, and black woodpecker.	Section 3.8 contains a discussion of wildlife within the study area, including portions of Stewart County.

Date	Name	Concerns	Response
6/16/2010	Dallas P. Jankowski	The land in the northeast corner of Stewart county is home to the relict trillium plant, Catawba lilies, and Gopher Tortoise. This land is also the edge of the Piedmont Plateau where it meets the coastal plain. It is quite hilly and sandy and very erodible. Yes, the property in the other study areas which is flatter and has been tilled for years.	Section 3.6 contains a discussion of landforms and soil erodibility. Section 3.8 contains a discussion of wildlife within the study area, including portions of Stewart County.
6/17/2010	Julius McAllister, Jr.	Our land has been in the family for 100 years. We would like to keep it in the family. We are south of 26 highway – 2 ½ miles from Chattahoochee County.	Comment noted.
6/17/2010	Silva Thomaston	My family has a family cemetery. I DO NOT want to leave my mother if we have to move. It may not be your priority but it is mine. Please take this into consideration.	Section 3.9 contains cemeteries identified within the study area and discusses management of cemeteries on Army lands.
6/17/2010	Bill Addison	Please have maps showing roads. There's no way to determine where you're going to purchase land. Just a roundabout. I live close to your lines but no one is sure.	Please see the updated maps in this document.
6/17/2010	Range Addison	On all maps please put GA or County highways/roads/mile markers. Why use our tax dollars and do ½ a job? No move please.	Please see the updated maps in this document.
6/17/2010	Tommy McAllister	I am Tommy McAllister. I live 7 miles west of Buena Vista on McAllister Road off Hwy 26. Along with my cousins and brother we own altogether 1000 acres of land. This land has been in our family for 100 years. We have no intention of selling or moving off our land. Our place has a wet land (swamp) and also a rail road track that goes through our place.	Comment noted.

Date	Name	Concerns	Response
6/17/2010	Jim Howell	I have a number of concerns about potential land expansion into Marion County. 1) I built a custom home with extra lumber and my house shakes when Benning goes on its training mode. By purchasing additional land, Benning will only be closer and the quality of life will be affected in a manner I do not wish. 2) The land will be deeded to the Dept of Defense which will allow for training. This plan calls for a "buffer area." But as time goes and leadership changes, we could easily see the new area become active training area. 3) History in both Chattahoochee and Marion counties demonstrate diminished value of property not only adjacent to the base but in a "halo" zone. The depth of the zone in Marion County goes 2-3 miles past the physical boundaries. I worked all my life to build a home and have a 50 acre farm. The value of that hard work will become a silent theft. 4) The same department of the military help _____ a deal with Muscogee County and need to remove a large chunk of Chattahoochee County without that Chattahoochee county government knowledge. Now the same crowd is back trying to spread economic prosperity to the area. History once again shows that a training facility goes to Columbus for movies, groceries, cars, and other commerce. They (Columbus) will receive the magic gold dust being offered. 5) New housing – will potential buyers want to live near a live fire training program. Not even your soldiers want to place their families in that environment. That's why they go to Columbus!! 6) Loss of tax revenue – stated in the tax assessors meeting in Cusseta, Benning representative stated the state will offset the loss created by federal government expansion. This is not true. I called 7 counties with military bases in GA and no one has ever heard of such. In Florida, that does occur, but not in Georgia. 7) Redistribution of loss digest value to the current property owners will result in higher taxes to those who remain. This is a severe penalty for the people in the affected are to pay. 8) I often watch the Columbus City Council meeting on cable. I have seen for 20+ years the Garrison Commander at the table located adjacent to City Council. Only lately do we see a Benning rep at the other county government meetings. Perception leans toward the surrounding counties getting the remaining crumbs. 9) Over a million dollars annually is generated from timber tax in Marion County. State law defers the tax of timber until time of sale. We have 17 years of unpaid tax on each acre of land. The land owner will have to make up the loss of this revenue unless the federal government picks up the tab. 10) Several years ago, a bomb fell off a Navy jet heading to Benning and landed in Marion County. I talked to the Air Force Colonel from Robbins AFB who had to clean the mess up. The Air Force Colonel told me each bomb was laced with radiation. Wow. Why do we need something like that in our community? We have given so much already. Please take the show to Alabama and let them enjoy the promised gold dust.	1 & 2 - Section 3.2 discusses land use conflicts and buffers. 3, 4, 5, 8 & 10- Comment noted. 6, 7 & 9 - Section 3.10.2 contains a discussion of the loss of taxes and revenue.

Date	Name	Concerns	Response
6/17/2010	Donna Scott	Concerned about loss of land. Have private cemetery on said land – do not wish to lose or have to move. Do not wish to lose peace, quiet, or worry about children losing in any way.	Comment noted. Section 3.9 contains a discussion of cemeteries.
6/17/2010	Craig C. Miller	I want to be notified before anyone enters my property for any type of study. I not only live on this land, I run a cattle/timber farm for a living. During your study please consider that I am a black Angus/timber farmer. If you take my land that has been in my family over 150 years you put my farm out of business.	Comment noted.
6/17/2010	Sherry Schiro	Our land is in the conservation program. ½ miles from highway 26. 12 family subdivisions. ½ mile from _____ creek. 1 mile from railroad tracks. Wildlife – bobcats, deer, woodpeckers, panther, beavers, wild turkey, etc. Off Burginville Rd. I am concerned that our subdivision might be surrounded by the new training land.	Comment noted.
6/17/2010	John Rustin	If taxes are going to increase	Section 3.10.2 contains a discussion on impacts to taxes and revenue.
6/17/2010	Linda W. Rustin	Effect on ponds and wildlife.	Section 3.7 contains a discussion of water resources and 3.8 contains a discussion of wildlife.
6/17/2010	John Daniel	If any additional land is needed and will be utilized, then consideration should be given for expansion. Do not take property that will not be used.	Section 1.5.2 "Scope, Decision to be Made, and Framework for Analysis" contains a discussion of the land requirement.

Date	Name	Concerns	Response
6/17/2010	Claudine Morgan	This letter is in response to the BRAC move from Ft Knox to Ft Benning. We are not opposed to this move, but we do have some concerns about the effect it will have on Marion County. Our main concerns are: 1. Whatever the amount of acreage is acquired by this will be a reduction in our tax digest and our tax base. We would like to see the government subsidize our county for that loss in tax revenue. 2. Marion County runs adjacent to Muscogee County, which is where a lot of our citizens commute to work every day. We will be able to have continued access through Hwy 26 to commute to Columbus? 3. We would like to see an advertising campaign when this takes place to promote our county, so that Marion County does not become the county that has become undesirable to live because of the training in Marion County. How about encouraging some of the employees and servicemen to live in Marion County? We own a farm in Marion County and have family members that have served in the armed forces and are proud to see growth within our military complexes. We do want Ft. Benning to be mindful of our way of life and not to destroy our small county by shutting us off from Muscogee County and making our county undesirable to live in. We also must have tax revenue to sustain our county and not place that burden o taxes on the private landowners who make their living on land. Marion County is a rural area and there are still a lot of family farms who pay a lot of taxes on this land. We need the governments' help to help us in our tax situation. Thank you for your attention to this matter. We appreciate what Ft. Benning has meant to our area in the past and hope that this expansion will continue to aid all the surrounding areas in growth as well.	1- Section 3.10.2 contains a discussion on impacts to taxes and revenue. 2 - Section 3.11.2 contains a discussion of potential impacts to transportation. 3 - Comment noted.
6/17/2010	Emily Suzanne Underwood	We just would like to stay informed on the process. I am in real estate and, as you know, need time to prepare for a move. If you need it, we are willing.	Comment noted.
6/18/2010	Ronnie Yancey	We are property owners in the Brooklyn community and do not want to sell our property.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	John Ruse	Area of paved road County Road 61 and 62 (Paul Stephens Road) Old Homestead go back to original Civil War days and some property owners have a long history here. I hope they consider their ancestor, John Radney, Tomich Welch, Paul Stephens. Although I live in this area I have more concerns for those elders. I appreciate your work, and hope you consider this. Thank you.	Comment noted.
6/18/2010	Horis Yancey	I am others in the community consider our area a bird sanctuary. I am a property owner. I own a church and gallery in the Brooklyn area. I would like any and all information available.	Comment noted.
6/18/2010	Kathleen Miller	We are at 6754 Seminole Road in Webster County, Georgia. We have 46 acres including our road entrance. Our place is our second family residence. We have a cabin 24 by 36 and camper with barn. Our land is bordered on two sides by beautiful spring fed, clear creeks. These rolling creek beds have every tree, Magnolia, Hickory, Elm, Persimmon, Oaks, Holly, Chestnut, Sweet Gum, Dogwoods, several wild grapes and berries, butterflies, deer, turkey, all kinds of birds, fox and rabbits.	Comment noted.
6/18/2010	Robin Whipley	Losing my new built home. We built our house one year ago and have developed our land. I have a farm with lots of animals. Not in Webster.	Comment noted.
6/18/2010	Preston Boggus	Would talk sale land	Comment noted.
6/18/2010	Ernest Callom, Jr.	This is mass confusion. I talked to one person and could hardly hear him for all the noise. My land is not for sale, and I wouldn't think of another place I would live. The environment would certainly suffer and the peace and quiet we enjoy would be gone. This is no way to have a sensible meeting in my opinion – I got nothing out of it. Yes, use the land the greedy developers are building those shotty houses all over Ft. Mitchell.	Comment noted.
6/18/2010	Richard L. Payne	I own property (50 acres/2 houses/fish pond/boat dock and shelter/food plots/_____/landscaping/etc) in the northwest section of the southernmost ____ area which encompasses a large portion of Stewart County. I have spent the last 14 years of my life (now 68 years old) making this property my retirement home and _____place. My holdings are not for sale at any price. Please exempt me from any government/military takeover/condemnation.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	Amanda Huskins	If you are going to take land up to our property, lease purchase ours too. Our way of life would be EXTREMELY disturbed with a base in the back yard. We are raising two small children and would like to do so in quiet, calm area.	Comment noted.
6/18/2010	Angela Welch	We had every intention of spending the rest of our lives where we currently reside and really do not want to move. We are also very concerned about the elderly and the poor who live in our area and in Stewart County. More than 20% of the county is below poverty level. To force them to move could be devastating to them. We are also concerned about the noise level with the expansion if we do not sell/move. Expansion will dislocate lots of wildlife and do away with hunting land that my husband has hunted in all his life. Our grandkids are starting to hunt and will have to place to hunt. Our biggest concern is losing the land and home that we have worked so hard for. We had hoped to retire son and have everything paid for – this will put a halt to our plans. Go to desert - unpopulated area with same terrain.	Section 3.10.2 contains a discussion of impacts to low income populations and Appendix F contains information on the Federal Relocation Assistance Program. Section 3.5.2 contains a discussion on potential noise impacts. Section 3.2.2 contains a discussion of impacts to recreation, including hunting. Section 3.8.2 contains a discussion of wildlife impacts.
6/18/2010	Susan Sellers	As a grower of native Georgia trees, I'm concerned about the implications this land expansion would create for long-leaf pines and loblolly pines – currently being reintroduced. Having watched my father spend the part of 30+ years growing these trees, it saddens me to see his work destroyed. Please consider your purchase outside of the Stewart/Webster county areas.	Section 3.8 contains a discussion of vegetation and Army forest management.
6/18/2010	Kay Nolin	Not a willing seller, with multiple canyon gullies up to 80 ft deep, highly erodible soil, property totals 11.5 acres – 1 acre wide which is not suitable for training. This will be the second time I have had to submit land to a government agency. I had to sell land and rebuild my home when 280/520 was 4-laned.	Comment noted.
6/18/2010	Grady J. McCain	The major concern for me would be what happens to the families their churches and way of life that we the people have chosen to have for our families.	Section 3.10 contains a discussion of socioeconomic factors.
6/18/2010	Gylnn Cobb	Current church near our home 150 years old – if land taken all around – will we still be able to attend services on Sundays?	Section 3.10 contains a discussion of socioeconomic factors.
6/18/2010	Lilly Day	No I think any expansions would only have a positive impact on the community.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	Charles Pate, Jr.	I live on the edge of Richland and absolutely do not want to have my home and land taken. There is a church up the road in Red Hill where my grandma and granddad are buried. I own a spot there to be buried with them and my parents. I do not wish for this to be disturbed either. My family also owns a logging company and I am concerned about how this land issue will affect our business.	Section 3.10 contains a discussion of socioeconomic factors; Section 3.9 contains a discussion of cemeteries.
6/18/2010	Eileen Creene	I am in full favor for this. I believe it is what this area needs. It will bring people to our area and maybe our area will grow. I am from originally the West Point, NY area – I grew up all my life right behind the West Point training center and as far as am concerned it was not bad. Yes there was some noise but not so much as to disturb you. I wish you all the luck.	Comment noted.
6/15/2010	Peggy Neal	From the map presented at this public informational meeting, discerning which property in Russell County is under consideration for acquisition is difficult if not impossible. The representatives at this meeting said, since there are no roads on this map, they cannot say exactly where the boundaries lie concerning land being considered. If now or sometime in the future the above property is considered, these are factors present we would like to bring to your attention: wetlands, flood plain, wildlife, Indian artifact location (including possible undisturbed burial mounds), Aesthetics of area where creeks join, possible historical value -- old federal road and east/west Indian trail. The Neal-owned property in this area has been in the family since it was purchased from the Young family who purchased it from the Indians! Neals have their homes here and count this land dear to our hearts. Hopefully, there will be other land the military will find more useful for its purposes.	Please see the updated maps in this document. Section 3.7 contains a discussion of wetlands and floodplains, Section 3.8 contains a discussion of wildlife, and Section 3.9 contains a discussion of cultural resources, including Native American.
6/17/2010	Seth McAllister	Marion County is filled with many different terrains and obstacles that would cause issues for Fort Benning expansion. The current map would consume a primary school, several wetlands, many creeks, many farmers' homes, businesses, and my home. There are thousands of acres of timberlands for sale in surrounding counties. This would affect homes, schools, or wetlands.	Please see the updated maps in this document including those in Section 3.6 for location of erodible soils, and 3.7 for streams and wetlands. Section 3.10 contains a discussion of socioeconomic factors including schools and business.
6/18/2010	Kim Day	It would be a positive impact on the community.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	Wanda G. Barrows	I am extremely upset about the proposed taking of land in my jurisdiction. I do not agree with this proposal. This piece of land was purchased by my grandfather years ago! I would be devastated if this should come to pass. I also have an elderly mother who will be upset and since she is in poor health – I would not like to see her affected by this!! If I could vote on this my answer would be NO!	Comment noted.
6/18/2010	Lonnie Irving	I have no intentions of selling our land. My family and I have lived and worked on our farm since the early 1900s. Please consider this as my firm statement to you that our land is not for sale under any condition or at any price.	Comment noted.
6/15/2010	Filbrick Woodall	Not for sale!	Comment noted.
6/14/2010	Jane Luckett	Okay. My name is Jane Luckett. I live in Upatoi Ridge. I've lived out there since June of 2007. In March of 2008 we started having a lot of increased noise out there and come to find out that they were running tanks behind my property and shooting tanks to the point where it was rattling my house, rattling my windows, my light fixtures, caused my dog to go literally nuts where he started being destructive in the house. I had no results calling range control, calling the Post or anything to find out what was going on or how long this was going to go on. It had gotten to the point where they were shooting at 4 o'clock in the morning, trying to go to work off two hours sleep. Had to see a physician for medication to sleep. Ended up taking the dog to Auburn. The dog has to be on medications now the rest of his life because of the noise issue with it. Ended up calling Sanford Bishop's office and talking with him and he sent down a representative from the EPA to come down there and -- Mr. Ellis Leader (phonetic) was sent down. He came to my house with Alicia from JAG who is the chief of JAG and one other gentleman out there that took the information for me to file a claim. I've yet -- this claim was filed in March, it's been over 16 months, I've yet to hear anything about the claim, to repair the damage to my house, the vet bill or anything. They keep telling me they need more information. Nobody has come to my house requesting more information. No attempts have been made to even come to me and say hey, we're going to pay or we're not going to pay it or anything. And you know, all I can say is if I had known they were doing this out there I wouldn't live there. I don't know what else to say, you know, they can have my house.	Comment noted. It does not appear that your property is located within the study area.

Date	Name	Concerns	Response
6/15/2010	Dennis Figuett	All right. I was wanting to see a road map of Russell County with y'alls boundaries on it or proposed boundaries on it. That's what I would what to see then I could tell more about where my property is located on here on this. I think it's right on the edge of it, that's what I wanted to see.	Please see the updated maps in this document.
6/15/2010	Amanda Jenkins	I completely understand the need for expansion. The only concern that I have for Russell County is number 1, they're taking away the area. And what the expansion was going to mean from Fort Knox down, moving down to Ft. Benning and the growth that we have already seen here in Russell County by real estate wise, building houses, et cetera, et cetera, until they can get a clear understanding of what exactly is going to be taken, if anything from our area, of course, everybody is up in arms about it. My concern, I know the Government does not pay taxes and therefore how would we -- and I say we, the Russell County Commission, how would we recoup the money from the land that's taken because we would be in essence hit double. A lot of what is supposedly going to be taken is timber land, et cetera and you know, what honestly they pay taxes twice, on the property they have and then when they sell the timber they're taxed again. So how are we going to be compensated? That's it.	See Section 3.10.2 for a discussion of impacts to tax and revenue impacts. Alternatives 2 and 4 contain discussions pertaining to Russell County.

Date	Name	Concerns	Response
6/15/2010	Charles C. Miller, Jr.	I would like to tell you I own 1500 acres of land in the four county joining areas, Stewart, Webster, Marion and Chattahoochee. The farm has got 11 acres in Chattahoochee; the balance of the farm is in Stewart, Webster and Marion County. And my great grandfather bought the farm in 1843. We have been in possession and lived on it since then. I live on it now, my son does, his two daughters are the sixth generation to live on it. The farm has been reforested for years, hardwood, pine, it's a cattle farm. It's cross-fenced, wells. Water where the cattle won't get in the creeks and branches and all that junk with ASS advisory. And then we've got the hay fields in good shape and we have spent thousands of dollars on the land. And we sure would like not to see the Army tanks riding on it. I do not want to sell my land, it's not for sale. Because the only way that we leave (inaudible) which I know you can't. But the land has been with us with forever and it's home and we don't want to be uprooted in this live. And I've got surveys and everything if you need them. I do very accurate surveys of the farm, I'll be glad to bring them to you if you'll be interested in meeting, if you'd like to see them. There's four ponds on it and I don't do good on the radio.	Comment noted.

Date	Name	Concerns	Response
6/15/2010	Harold A. Weinbaum, Jr.	All right. My name's Harold Weinbaum. I live in Ft. Mitchell, Alabama. I was transplanted to Russell county by the United States Army back in 1959. However, I first came in 1954 as a Reservist. After I was transplanted at Ft. Benning I spent four tours in and out of Ft. Benning and retired here in 1976. Fortunately I'm still living. According to the diagram on the maps published in the paper and on the TV, it looks likes I might fall within the boundaries of this maneuver area they're proposing in Alabama. Personally, having served at Ft. Benning and seen all the ranges there I think they need to keep any additions in Georgia, not gobble up Russell County. I don't want to be placed on the "Trail of Tears", like they did our Native Americans years ago.	Comment noted.
6/15/2010	Rick Perry	Okay. My concern is the southern and western parts of Russell County are the most economically depressed areas of Russell County. They're already considered kind of as a second Russell County, isolated already economically, distance, et cetera from the rest of Russell County. My concern here is the dividing of this part of Russell County away from the rest of Russell County by way of the military reservation. I understand the public roads, the major part of those roads would have to be kept open but I still have grave concerns what it will do to those most economically depressed in those areas. I am also concerned about the – what will happen to the land taxes of everybody else in the county after approximately a third of the property is taken away and taken off the tax rolls. Those are my major concerns.	See Section 3.10.2 for a discussion of impacts to tax and revenue impacts and to low income populations. Alternatives 2 and 4 contain discussions pertaining to Russell County.
6/15/2010	James Rudd	Yeah. I'm just concerned about them taking the land and all and not being able to find another place to live and all. I don't want to be kicked out in the cold. And that's basically my concern now. That's it.	Appendix F contains information on the Federal Relocation Assistance Program.
6/16/2010	Jack Yates	Jack Yates. I'm the chairman of the Chattahoochee County Industrial development Authority. And we own 692 acres just to the east of Riverbend Park on Riverbend Road. We're very concerned about what, if any, plans you have for that acreage. We have a tenant in there now that's using the entire parcel. And the land is also pledged as collateral for a bond issue. We arranged for that tenant in the amount of 4 million dollars so there's about 3.7 million left. So we'd like for you to take this into consideration when you're making your plans and keep us advised at to what if anything may be done with it or around it. That's about it.	Comment noted.

Date	Name	Concerns	Response
6/17/2010	Silva Thomaston	Okay. The thing is when we came to the BRAC meetings a couple of years ago, it's been about maybe two or three years ago, I don't remember, they swore up and down, because this was brought up multiple times, we are not looking for land. We are not buying land. We have too much land now. That is exactly what they said. And then this comes up and that's very disturbing when you're sitting there telling me oh, we're not going to do this and then -- because one of the ladies, when we came in said they began discussing this ten years ago. So y'all can see my concern that if you told me one thing a couple of years ago then you changed it, I am worried you're going to change your word again. Does that make sense. But I mean, you understand that's my concern is that they're going to change their word again.	Comment noted.
6/18/2010	Ronnie Yancey	Okay. My wife and I own some property up in Brooklyn community. We've got a home and she's got a small church and an art gallery and we have no interest in selling or getting rid of it or anything like that. And that's the only thing I needed to say about that.	Comment noted.
6/18/2010	Robin Whipkey	My husband and I built our house two years ago from scratch, did it ourselves. Bought 35 acres down Seminole Road. We have since worked on our property non- stop in two years making it exactly what we want. And sold half of our land to our best friends who built their house right next to us. I have horses. I have ducks. I have -- if you could imagine building everything just exactly how you want it and then finding out that somebody wants to take it, it is so disturbing and heart breaking and I can't even imagine starting over. So that's what I have to say.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	Arthur Wilson	All right. The reason I'm here, my name is Arthur Wilson and the reason I'm here I'm concerned about the survey of land. That I don't want -- well, I belongs to a church on Highway 39 going towards Omaha, Georgia. Going toward -- it's about a quarter of a mile off Highway 27 going down Highway 39 toward Omaha Georgia. It's a church setting there by the name of Lou St. Mathis AME Church and it sets on about an acre of land there. The church do and we have a cemetery on this land. And my concern is about the church and the cemetery. This land was donated to the church, whoever owned it at the time said as long as we have a church there it would belong to the church. So now my concern is that we needing more land for cemetery purpose for that church and that's how I got interested in this. And I started talking to one of the guys that manage this land and he told me to be in this meeting to understand what was going on about this land. Because -- that the Government was interested in buying 84 -- I think it was 8400 acres or something like that. And my concern is about my church and the cemetery. And that's it. That's why I'm here.	Section 3.9 contains a discussion of cemeteries and churches.

Date	Name	Concerns	Response
6/18/2010	D.H. Woody Murrah	Okay. The expansion, 82,000 plus acres in Stewart, County will remove approximately three- quarters of million dollars off our tax base every year to infinite. We cannot afford it. We don't want it. I represent a group called Concerned Citizens of Stewart, County of which I am vice chairman of the group. Ft. Benning currently has 182,000 acres, 12,000 of those 182 are located in Alabama. I feel like and we feel like, the group feels like Alabama should accept their share of supporting Ft. Benning. They certainly like the money it generates. They have no problem with that. Let's let them shoulder some of the tax responsibility. Use the Russell County track. You're looking at 82,000 totally in Russell County, we would like to see you go there. That would bring Russell County's total to 90,000, still Georgia has almost twice as much and you have to realize in a county like Stewart, three-quarters of a million dollars is roughly 28 percent of on your tax base. We are currently in a bare bones situation, we don't have any frills, no fancy, no nothing. We've got basic county services and we struggle monthly to pay the bills. We cannot afford to take that three-quarter million dollar lick. Other mitigating factors are noise, it will generate a tremendous amount of noise. One thing that we do have going in Stewart County is a fairly large out of State hunting population. People come in here for the deer, the pigs, the turkey, the dove, the quail, you'll disrupt the wild life. I don't care how many impact studies you do, how many surveys you do, they're all bullshit. When you actually get out there in the field and start blasting them big cannons and blasting them tanks, you're going to run all the wild life out of here. They're not going to put up with it. Again, we'll have to eat that. I would appreciate you looking real, real seriously at the Alabama side. It will fill all your needs and it will bring Alabama closer in balance with Georgia as far as Ft. Benning goes. Thank you.	See Section 3.2 for a discussion of recreation, including hunting, Section 3.10.2 for a discussion of impacts to tax and revenue, and Section 3.5.2 contains a discussion of noise. Alternatives 2 and 4 contain discussions pertaining to Alabama (Russell County).

Date	Name	Concerns	Response
6/18/2010	Loree Iaconangelo	This is Loree Iaconangelo. My comment is based upon possible Ft. Benning expansion to include Webster County. To include the possible purchase of my home or my husband and mine's home. I'm greatly pained by it, not so much for myself and my husband because we are a military family. We've been in the area for three years. I certainly love the area and we plan to make this our retirement home no matter where the Army took us. What upsets me probably the most is that this is one of the most patriotic and military supportive communities that I have ever come across and most of this families have been here for years and years and some of the property has been handed down through the families. And to think that they would have to relocate, they could never replace what they have built in this area. The other thing that pains me is this is a rural community. We made a decision to live our life this way. Yes, we do commute back and forth to work to Columbus, to Americus, wherever we might go but we chose to live a certain lifestyle. And as everybody knows more and more of the country side is being developed and to see a rural area like this, it's to me you're taking part of America's heartland. And I understand being a military family that sometimes that's just the price you pay for freedom, but at the same time you're also breaking the spirit of some of the people that have made this country great and strong to begin with. So with that being said, thank you.	Comment noted.
6/18/2010	Charles Pate, Jr.	My main concerns-- my name's Charles Pate, Jr., 923 Lovens Mill Road, Richland, Georgia. I live right on the outskirts of town, probably within a half mile of Richland City limits. And I mean, I'm concerned mainly about losing my house and my land because I do not want to move. Also there is a church a few miles back up the Road on 520, that's in a community called Red Hill where my grandma and my grandfather are buried and myself and my parents also have plots to be placed there also. And I'm just concerned about, you know, if you did go into that area what do you do about the cemetery. Do they go around it, do they move bodies. I mean, I know nothing about this and really those are my only concerns. I just don't want to lose my house since I'm so close to town and worried about any family up there at the church.	Comment noted.

Date	Name	Concerns	Response
6/18/2010	Bill House	Okay. My concerns are with the Army holding meetings with our elected officials so they can come to us as a smaller group and explain to us exactly what is going on. I haven't learned much here tonight. I have other concerns. I was assured that the highways couldn't being closed and we couldn't be forced around the Fort Benning to get to Columbus. And I feel confident that the lady I spoke with knew what she was talking about. But by what maps I've seen and I know they're not accurate, but if the Army takes 30 or 35 percent of our county, I'm real concerned on what what's going to do with us on our tax base for the rest of the county. And I was wondering if the Federal Government is going to supplement the county in any way on these taxes.	Please see the updated maps in this document. Section 3.10.2 discusses potential impacts to taxes and revenue and Section 3.11.2 discusses potential impacts to transportation.
6/18/2010	Sue Whipkey	Stewart County is concerned about the loss of revenues to our tax base. We would also like to address the money that we have lost from the specialized assessment, the timber companies are in and they most likely are the ones that you'll get the land from. We would like to know if there is some way that the county could be compensated. We would like for you to consider that. Thank you.	Section 3.10.2 discusses potential impacts to taxes and revenue. Alternatives 1, 3, 4 and 5 contain discussions on Stewart County.
6/18/2010	Faye Brown	All right. My name is Faye Brown. I don't really want to move. I like where I live, but if Ft. Benning decides to expand in our area, all we ask is that we get a fair price for our property and our home, give us time to relocate.	Comment noted. Appendix F contains information on the Federal Relocation Assistance Program.

Date	Name	Concerns	Response
6/18/2010	Marcus Whatley	This is a comment I made on 6/18 of 2010 by Marcus Whatley. I'm environmentalist of Russell County. My thoughts on this project is basically as follows. The Russell County soil situation in the -- particularly down towards highway 51 along that is a fairly good sand content that will allow for continuous training even during our wetter periods of the year. Closer to towards the river around 165 and the lower part of this study here looks like it may have a higher clay content. However, it is still highly travelable to me. I think it would be a good idea to go ahead and purchase this land in Russell County for several reasons. One of them being is that the City of Columbus is land locked on three different locations. And so their population move must be north. If Ft. Benning were to purchase this property and possibly run an extension if 165 – excuse me, 185 through Ft. Benning spilling out around the Fort Mitchell area and travelling on the northern part of the study area, looping back up at one -- at I85 in Tuskeegee National Forest in Macon County. That would give the access of the troop movement, which would bypass Columbus and Phenix City and allow that troop movement if they were deployed in a westerly location and allow for direct, without traveling through major cities for that area. It would bypass all the major population centers. Highway 80 is currently already approved for a four-lane by the State but not funded. And that study was done through from Phenix City all the way through and intersecting at Tuskeegee National Forest, which that area around the national forest of course would be of benefit because that wouldn't have to be purchased. Also through this section of Macon County is partially populated and also would be a good area to latch into as far – since you already would have the right of way with partial right away of Highway 80. In addition to that it would be of benefit to the local economy in that Columbus being land locked on three sides with then have a spill out area around Fort Mitchell and allow to have some areas to buy property and whatever for housing that would be north of your study area. So that would have a benefit from that particular standpoint as well. I think that basically concludes my comments.	Section 3.6 contains a discussion of soils and erodibility. Section 3.11 contains a discussion of traffic and transportation.

Date	Name	Concerns	Response
6/18/2010	Peggy Wilson	I think the only thing that I really want to see is that after the land study and after it's, I guess it's been compacted down to the 82,000 acres or so, is to actually see a revamping of the map and to see what they actually propose to do with those potential acreages. Like, are they going to be bombing in particular areas or just maneuvers or exactly what are they going to be using that land for.	Section 2.2.4 and 2.2.5 discuss potential construction and use of lands following acquisition.
6/18/2010	David Pate	All right. Well, basically we don't want to sell any of on your land for one thing. I think I can speak for you, too, she don't want to sell anything either. We basically been on -- our family has been on the property we're on for nearly 200 years I guess and we just we don't want to move anywhere. We like staying where we're at. It ain't much but we're at home there and we want to stay there the rest of our lives. We want our kids to be able to stay there. And we also wanted to mention about some cemeteries that are in the woods around there that we would very much like to keep access to. You know, we'd like to know are we going to be able to continue to go visit these cemeteries even though the land around it is all timber company land. We'd like to be able to visit those cemeteries any time we want to as well without a lot of trouble. I know a lot of times, you know, you might say well, you can go visit the cemetery but you've got to go to main post up there and get a pass and then come all the way back and go, you know, show this man the pass and then you go through another gate and have to show this guy the pass. And I want to be able to just ride over there and see the cemetery because that's where all my ancestors or a lot of them are buried at. And that's about it I guess.	Section 3.9 discusses cemeteries.
6/18/2010	Karyl Wiegand	I don't really want to sell either because I just spent ten years working on that house and I have just purchased the land behind us, 70 acres and I've got my mom up there. So I really don't want to sell because by the time you buy it, if you buy it, I'll be over 70 years old and I don't want to move, not at that age anyway, so but that's all. The land is fine otherwise. Okay.	Comment noted.

Date	Name	Concerns	Response
6/15/2010	Robert Bennett	Hello, My wife's family are large land owners in Stewart County. We have a large parcel of land off of Hwy 39 above and a little left of Providence Canyon State Park. This is where my wife and I hope to retire and in the past have collected fossil crocodile bones and shark teeth. We are of course concerned that the land will be acquired for Your proposed expansion and would like more information. Thank you for your time.	Please see the updated maps in this document. It does not appear at this time that your land is in our study area.
6/15/2010	Ruthie Hamlin	Is there an established timeline? As you may imagine, many of us are sitting on pins and needles, not knowing whether to buy the new bush hog, repair fences, etc. and these decisions have a large impact right now.	Please see Section 1.5 "Scope, Decision to be Made, and Framework for Analysis" regarding a general timeline and the EIS process.

Date	Name	Concerns	Response
6/15/2010	Matthew Moye	The Pasaquan Historical Society board of trustees wants the planners at Ft. Benning and in the Department of Defense to be fully aware that the property known as "Pasaquan" is apparently located within the boundaries which Ft. Benning has recently published as the target area for its expansion. Pasaquan is located in Marion County, about four miles northwest of Buena Vista on Eddie Martin Road. This property is listed on the National Register of Historic Places. Pasaquan is a collection of buildings and masonry walls and other surfaces which are painted in elaborate designs. The artist, Eddie Martin, worked on this project continuously from the mid-1950s to the mid-1980s, a testament to the extensive and significant work represented in this property. Further, the nature of Pasaquan makes it sensitive to future operations at Ft. Benning. The walls and the painted surfaces are highly susceptible to environmental changes. We request that Ft. Benning should study the impact of noise, vibrations, air quality, flight patterns, troop training, and its other operations on Pasaquan. Pasaquan was conceived as a religious site specific to this location by the historical figure, Eddie Martin. Modern academics have noted that there are no more than a half-dozen other visionary-art sites in the entire world which can compare in extent and quality to those of Pasaquan. The Pasaquan board has spent the last six years working steadily through a series of steps to prepare for the ultimate conservation of this site. These include the now-successful application for National Register listing, the preparation of a business plan to operate the site as a tourism attraction, providing a history of independent audits demonstrating our fiscal responsibility, the retention of the architectural firm Lord, Eck & Sargent of Atlanta to prepare a conservation/preservation plan, and proposals for financial accomplishment of these plans. While we support Ft. Benning's international purpose and its role in the community, we feel that Ft. Benning should avoid buying land in the immediate vicinity of Pasaquan. We also ask that Ft. Benning's operations in its nearby existing tracts be planned so as to minimize the environmental impact on Pasaquan. Thank you for your consideration.	Section 3.9 contains a discussion of historic properties. It does not appear Pasaquan is located within the study area. The boundary of the study area is to the south and west of 137.
6/28/2010	Bobby Waldrop	If Ft. Benning adds land from Marion, Webster, Chattahoochee, and Stewart Counties, many civilian hunters will lose hunting leases. Would FB consider allowing civilians to hunt on the reservation? My opinion is that if it is working at Fort Stewart, it could also be successful at FB.	Section 3.2 contains a discussion of recreation, including hunting.

Date	Name	Concerns	Response
6/30/2010	Fred Kaeserman	I have been reading with great interest about the Training land Expansion at Ft. Benning. I would like to know how this may impact the hunters who are now leasing thousands of acres that will become Ft. Benning. Would it be possible to continue leasing the land from Ft. Benning or possibly open the entire reservation to hunting where feasible? Maybe something similar to Ft. Stewart.	Section 3.2 contains a discussion of recreation, including hunting.
6/29/2010	J Harrison	I am an avid hunter and am concerned about the purchase of land in the different counties. I would appreciate any consideration for opening the land up to the general public for hunting. I understand the need for training and what it involves, but we also need hunting to provide food for families and to keep the deer population down as not to hurt the farmers by eating and destroying their property.	Section 3.2 contains a discussion of recreation, including hunting.
7/4/2010	Abbie Dillard	Our house is 300 yards from the Marion Co. study area in the south east corner of Chattahoochee Co.. Over half of our land is included in the Marion County study. Our house was built in 1832 and has been in our family over 100 years. Our family will be devastated by the loss of our family heritage! We are not willing to sell our land to the army. If we are forced to sell, what quality of life can we continue to have living so close to live firing and heavy maneuvers? Our land is composed of sandy rolling hills with many streams and wet lands. We are very concerned about the degradation of the environment, pollution of our water, air quality from Benning's burning, and effects on the endangered animals we have seen on our property. We are also concerned about the sustainability of our county services with the erosion of the tax base and the increase in property taxes that will result. Will we be compensated for the cost of planting existing timber as well as the value of future harvests? Our property is in a conservation easement. If we sell part of our land to the army, we will not only have to pay penalties on the land sold, but will also be fined on the land we retain. Will we be compensated for this?	Section 3.4 contains a discussion of air quality. Section 3.6 contains a discussion of soils and erodibility. Section 3.7 contains a discussion of water resources, including wetlands. Section 3.8 contains a discussion of biological resources, including protected species. Section 3.10 contains a discussion of taxes and revenue. Georgia provides an exception to the penalty provision if certain agricultural or conservation land in a tax relief program is acquired by the Federal government.

Date	Name	Concerns	Response
7/8/2010	Mary Jo Page Marion County Commissioner	The positive aspects of BRAC has faded quickly because of the announced land acquisition project. The goal of acquiring 82,800 acres from surrounding counties for training purposes for Ft. Benning military base has raised many questions. The negative reactions of Marion County residents are varied and I deem it necessary to state some of those which my constituents have expressed to me as their county commissioner. 1. To lose tracts of acreage will reduce our digest thus less property tax revenue. Marion County Board of Commissioners, Board of Education and Buena Vista City Council will get less revenue to use in the respective budgets. We cannot fathom a loss of this magnitude. 2. This expansion of Ft. Benning's training ground will not likely bring in any commercial industry or business into our county to offset the loss of revenue. 3. There will be more noise pollution in this expansion of training ground. In fact, the maneuver of two heavy battalions to simulate a war situation is disturbing for residents who will be living in the adjacent area. 4. This announcement of land purchase is a very serious concern to citizens in our community and was not made public until most recently. This is not good public relations for Ft. Benning and Marion County.	1 & 2 - Section 3.10.2 contains a discussion of impacts to taxes and revenue and business, Alternative 1 includes Marion County. 3 - Section 3.5.2 contains a discussion of noise impacts. 4 - Comment noted.

Date	Name	Concerns	Response
7/9/2010	Lewis Olin Hollomon	Recently, I attended meetings at the Infantry Museum and the Hotel in Richland to learn more about the proposed expansion of Fort Benning. At those meetings, I was asked to state any concerns I may have about the expansion regarding the property I own near the Brooklyn community in Stewart County, Georgia. My concerns include the fact that I have lived on this property my entire life, over 65 years. I am disabled, as is my wife, and my income comes mainly from this property. I have two houses on the property and my daughters both have houses also on the property. We have timber, hunting preserve, and livestock, as well as 10 barns and storage buildings, farm equipment, hunting camp, 5 fish ponds, and numerous historical gravesites. My family has lived on this property since the 1880s and we have no desire to move or sell any portion of this property. Soil erosion has been a constant problem, as evidenced by the numerous canyons on the property and the conservation efforts of the 1930s, which continue to help control soil erosion. The last two times the Department of Transportation decided to widen US Highway 280, they changed their decision to straighten the curves of the highway because of the detrimental environmental impact that would occur with this change. During the 1930s, terraces and extensive plantings of rhododendron were installed in efforts to control erosion, which remain in place today. There are numerous canyons on the property, along with a major creek and a sand-branch. Tributaries to these waters run in every bottom. There are 5 fish ponds on the property, which serve as holding basins in times of heavy rains, and gradually allow the rainwater to escape without major erosion. In the late 1980s there was a plan to put a nuclear waste sight in Stewart County next to my land. This plan was abandoned after an Environmental Impact Study determined that the area was the location of the refill area of the underground aquifer for south Georgia. Then the state of Florida objected because they determined that if the south Georgia aquifer became contaminated it would affect the water supply in north Florida. Following Florida's objection, the plan was dropped. A few years later there was a proposal for putting a garbage dump in the same location with a "liner" to protect the ground water. Once again, objections were made by south Georgia and the state of Florida. After further examination, it was decided to put the dump in Taylor County, Georgia, where it is today, because in that location it would not contaminate the aquifer. Then the state of Georgia decided the best use of this land was for a wildlife refuge that would not cause contamination. Today the area is a wildlife preserve for that reason. I recently checked on building a 100 acre lake on my property for wildlife and recreation. When I contacted the company to build the lake, I was told that I could not build the lake in this area unless I got permission from the federal government and it was determined to be safe for the area since it had already been determined to be environmentally fragile. I cannot see how the land could be used for military training if it has already been determined that disturbing the land will have such a detrimental impact on the aquifer, ground water, and ecosystem. I believe that a real study of the history of the area and its impact on the environment and the people involved should be thoroughly explored. I feel there is adequate land from timber companies available and there should be no reason my property should be considered for the Fort Benning expansion. The land contains many canyons, and is not flat or near flat overall. It would not be suitable for the movement of tanks/heavy equipment, therefore, it would be neither desirable nor feasible to use this land for the Fort Benning expansion. In addition, I have no desire to sell any of the property. I sincerely hope that you will take these concerns into consideration when choosing the area to expand Fort Benning. My family has a long and storied history in this area and plan to continue to live here for the next century.	Section 3.6 contains a discussion on soil erosion and Section 3.7 contains a discussion on water resources.

Date	Name	Concerns	Response
7/9/2010	Chaudron Gille	As a member of the Dillard family, owners of the Dilland, Inc. property in Marion and Chattahoochee counties, I am writing to express my opposition to the sale of the Dilland property to the army for the planned expansion of Ft. Benning. While I understand the army's need for additional land in order to accommodate its expanded mission, I believe that this could be achieved without taking any additional land in Chattahoochee county and by limiting the Marion County acquisitions to land east of McAllister and Woolridge Roads. My opposition to the sale of the Dilland property is based on several factors: 1. This land and farm have been in my family for over 100 years. My parents live in the farmhouse that pre-dates the Civil War. It has been gathering place for our family for generations, and is at the center of my and my children's heritage and sense of identity. 2. As stewards of this land and its resources, our family corporation chose several years ago to place the land in a conservation easement. If forced to sell the land, the terms of the conservation easement would be violated, and the fines owed for the change in status would effectively erase any financial gain from selling the land. This would, in effect, leave my parents without the financial resources to relocate, and wipe out the investment that other family members have made in the land as well. 3. Chattahoochee County is one of the poorest counties in the state of Georgia. I have watched the changes to the community over the last decade as they have struggled to bring health care into the community, create job opportunities, and build a high school. The ability to offer basic services to a community is directly tied to the resources that community has. If more land is taken out of the tax base for Chattahoochee County, it will have a devastating effect on the revenue for the county and on the remaining tax payers. 4. Even if the land in Chattahoochee County is spared, I am concerned about the quality of life my parents and their neighbors would enjoy if the adjoining land in Marion County is being used for firing exercises and maneuvers. 5. And finally, this is an area that supports diverse wildlife, everything from quail, turkey and deer to black bear and Florida panthers. I am concerned about the impact on the wildlife of the area.	1. Comment noted. 2. Appendix F contains information on the Federal Relocation Assistance Program. Georgia provides an exception to the penalty provision if certain agricultural or conservation land in a tax relief program is acquired by the Federal government. 3. Section 3.10.2 contains a discussion on impacts to taxes and revenue. 4. Comment noted. 5. Section 3.8 contains a discussion of wildlife.

Date	Name	Concerns	Response
7/10/2010	Laura & Warren Flatt	We would like to the opportunity to comment on the Land Expansion proposed by Fort Benning. My family and I live on Hitchitee Creek Road in Louvale, Ga. We have owned and lived on this land for over 25 years. My husband originally purchased the land because his brothers had also bought adjoining land. Until very recent years, we were completely surrounded by family members and family-owned property. Even now, we still have family around us. We have no desire to move or sell our land. We choose to live in this quiet section of country because we enjoy the beauty and privacy of it. The peacefulness and the beauty of the quiet are priceless. I don't hear cars and boom boxes up and down my road. I hear the peaceful sound of crickets and birds. That peace and quiet is part of the reason we are here. And while our little 5 acre plot may not seem like much to anyone else, to us, it is very important. We have worked hard over the years to make it what we want. My husband cleared this land himself years ago and has no desire to start over somewhere else. The peaceful benefits of living where we do cannot have a pricetag put upon them. Indeed, what price would you put upon the beautiful sunsets that I watch from my kitchen window and living room glass doors? My view of the sun setting here is just one of the many intangible benefits of being in this location. Or how about the ability to sit in the rocker on my front porch and watch the moon rise over the edge of the woods? Or what about the ability to look out my front window and see a deer that has wandered into my front yard? Or the ability to hop in the car and ride a little way down the road to the river to walk around Riverbend Park or watch the sunset there? We support Fort Benning in many respects. My father served in the Army for over 32 years. My father-in-law served in the army for 21 years. My husband and I both grew up in military families with Fort Benning an integral parts of our lives. Our fathers fought in Korea and Vietnam. They served our country and fought for our freedoms, which include our rights to the land we own. We understand the importance of Fort Benning and its' economic impact on the region. However, we should not be forced to give up our home and all that we hold dear here. We've been told that if Fort Benning were interested in our property that they will offer us market value for our property, including all the buildings that are on it. I say, so what if you give me what you deem "fair market value" for my property? Intangibles aside, there is no way we could take that "fair market value" amount and go buy another five acres in our region with the same amount of square footage, same amount of land and same storage and garage buildings for the dollars you offer. Truth be told, Stewart County is one of the poorest counties in Georgia. The price of land here is inexpensive compared to other counties in the area, as is the price of houses. There is no way we could replicate what we have somewhere else for that "fair market price". And again, beyond the prices and appraisal values, there are the intangibles that cannot be replaced. Moreover, how could you replicate the community and our families that are near and precious to us? My children have grown up with family on adjoining land. My daughter has planted trees in our front yard with her father and uncle that lives across the road. I have a dogwood I planted in memory of a childhood best friend. These things can't be moved and they cannot be replicated. We have no desire to move. No desire to relocate anywhere else. I know that in the big scheme of things our little 5-acre plot seems insignificant to your plans. But this is our family, our life, our community. There are other families up and down our little road that feel the same way. We ask that you take these things into consideration.	Comments noted.

Date	Name	Concerns	Response
7/14/2010	Rena Cobb	I apologize for not having gotten my comments to you sooner. Looking at the map, it seems that the best locations are West of 520 in Stewart and Chattahoochee Counties. Here in the northwest section of Webster County doesn't offer very much and there are so many private landowners. When my husband retired from the army January 1, 1969, we remained at Fort Polk, LA until summer since we had two children is school there and didn't want to uproot them in mid-term. We moved first to Columbus thinking there would be jobs there, but not so. We moved to Richland and began completing a shell home here in Webster County on the farm (where he had grown up) in late '69 or early '70 and moved out here the summer of '70. Now, three of our children have their homes out here and my husband's brother's children are also out here plus his widow. We hear the guns of Fort Benning and are very thankful that we still have young men training to defend this great nation! They don't bother us in the least! We hope that our little piece of land doesn't catch anyone's eye and don't believe it will!	Comments noted.
7/22/2010	Michael Sharpe	My name is Michael Sharpe. Currently I serve in the capacity of Trustee over family land in Stewart Co., Ga. A portion of the land is approximately one mile from Omaha. I am pro military. A graduate of infantry and jump school at Ft. Benning in the mid 70's. However my current assignment is to keep my family together. One way of meeting this goal is by keeping the family's land in the family. The land in question was owned and farmed by my grandfather-Charles W. Ford. My great-grandfather George W. Ford who was born into slavery in Russell County, Alabama. George Ford acquired land in the Florence/Grass Creek area near Omaha, Ga. As you can see our roots run very deep in Stewart Co. We just this past July 4th celebrated our 84th family reunion, which initially was started in Grass Creek by George 'Wash' Ford. During the reunion an announcement was made that Ft. Benning was expanding into Stewart Co. This information sadden my 84 year old mother and some of her younger siblings. Because this land is precious in our family, we strongly feel that it should remain in our family. As the Trustee, my vote is that Ft. Benning not expand into Stewart Co., Ga. My grandfather donated eight [8] acres to Stewart Co. back in the fifties to build a school. It would have been proper and decent for the county to return the land once it was no longer being utilized for that purpose. In my opinion this family has already given up enough. Again, I ask you to please not support Ft. Benning's expansion into Stewart County.	Comments noted.

Date	Name	Concerns	Response
8/19/2010	Theresa Temples	My name is Theresa Temples I know my email shows up Smith but that is wrong. The guy who worked on my computer gave it back like this. Just to clarify so you are not confused. My Daddy Mr. James C. Dykes owns some land at 41 JC. Rd. in Seale Alabama and I take care of his bills and stuff and I also live on the property as well as my two brothers and their families. I have seen a map of the study area and it appears we are in the area. I was just wondering if there will be any more meetings and if so when. Also I was wondering how long it will be before the study is done and the people will know if their land will have to be sold or given up? I was told by someone who lives in Hatchechubbee that they had received a letter stating options but this could just be hear say. Please keep me updated at this email address if at all possible on how things will be handled and what the people being effected need to do. Not being in the military, some of us around here are allergic to change so we need time to adapt to it. Some of the land areas around here have been in peoples families for years. We have several little projects we wanted to do such as cement the dog pen and fix the back door trim and paint some things but if this change is coming soon we may want to reconsider some of our spending plans. Thank you for any information you can share with me.	Comments noted. You have been added to the EIS mailing list.
8/24/2010	Gwen Hogan	I'm aware that Ft. Benning is planning to buy an additional 82,000+ acres of land in Stewart, Marion, Chattahoochee, Webster and Russell counties, and a large part of it is land that is leased by hunters. When the sale is final, many hunters will have no hunting land. Currently Ft. Benning allows hunting to active and retired military and civil service employees and their dependants. When they buy the land, I think that Ft. Benning should be open to the general public for hunting, like Ft. Stewart. Can anything be done about this?	Section 3.2 contains a discussion of recreation, including hunting.

Date	Name	Concerns	Response
9/9/2010	Richard Paine	While I understand the necessity to expand Fort Benning's land area, I am distressed to find my home and property located within one of the proposed expansion study areas (southernmost expansion plan into Stewart County, GA). My property is located in the northwest corner of this study area. Should this plan go forward, fair market value for my house and property seems of little consolation since these are not for sale at any price. I therefore request that my holdings in Stewart County, GA be excluded from any government or military takeover/condemnation. I have strived to be a productive and patriotic citizen of the United States of America throughout my lifetime. It would be a great personal tragedy to become an emotional and financial victim of my own government.	Comments noted.
9/17/2010	Frank H. Bailey	My property is 364 Zion hill rd hatchechubbee ala please don't take my land it is all I have . It's on county rd 65 Russell co.	Comments noted.
12/7/2010	John Daniel	I made a statement at the meeting in Buena Vista, which was: " Fort Benning does not currently utilize all of its acreage now, if additional land is not needed, leave it in private hands. The must be a need for additional land and a plan to utilize all available land before any additional purchase should be made."	Section 1.5.2 "Scope, Decision to be Made, and Framework for Analysis" contains a discussion of the land requirement.

APPENDIX B
Agency Coordination

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CF: DRW
EMD

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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POC
John Brown
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Col. Tom Macdonald
Garrison Commander
Department of the Army
Installation Management Command
Southeast Region
35 Ridgeway Loop, Room 385
Fort Benning, GA 31905

SUBJECT: Acquisition of Additional Training Land for Fort Benning

Dear Major General Ferriter:

Thank you for you letter of April 15, 2010, providing the Region notice regarding the Army's decision to acquire approximately 82,800 acres to address the Army's determination that Fort Benning has a training land shortfall.

According to the Associate Press articles in local papers posted on the Internet, the real estate and environmental study should begin this summer with an environmental impact statement (EIS) to follow in October 2011. Due to the heightened sensitivity of the proposed land acquisition, we encourage the Army to consider preparing an EIS. For example, the Department of Navy prepared an EIS for its proposed introduction of the F/A-18 EF (Super Hornet) Aircraft to the East Coast of the United States and this expansion of Fort Benning may have similar impacts. The NEPA process encourages and facilitates government transparency with the affected public. Moreover, if the NEPA process is implemented effectively such that it allows for interested public involvement in your expansion plans, such involvement may help the Fort to both find the best environmental alternative that will meet the Fort's mission and garner support by the public.

In conducting the appropriate NEPA analysis and preparing the appropriate NEPA documents, we encourage the Army to explore alternatives to impacting wetlands and streams, mitigation alternatives consistent with 40 CFR Part 230 (April 2008) Federal Rule – Compensatory Mitigation for Losses of Aquatic Resources, alternatives to Red Cockaded Woodpecker (RCW) impacts and alternative RCW impacts alternatives, community impacts alternatives – particularly regarding noise, health, and traffic impacts, impacts to existing utilities (drinking water, wastewater treatment, waste collection, etc.), and water quality related impacts, particularly existing impaired streams, aquatic ecosystems, and erosion and stormwater runoff type impacts. Additionally, impacts to lands acquired pursuant to the Army's Compatibility Use Buffer and noise contours.

Of particular interest is the use of these lands for live fire training and the resulting cumulative impacts to the surrounding ecosystem. The Fort's range areas, particularly now with the expected increase in student numbers undertaking training in the Armor and Infantry schools, and their associated berms represent the potential for emerging mini toxic dump sites. The soil berms serve to collect spent ammunition (lead and tungsten) that over time can accumulate into concentrations that will threaten surface and ground water supplies, e.g., lead contamination associated with storm-water runoff, and will require costly clean up. Furthermore, DoD Directive Number 3200.15 states DoD's policy that planning and management for the DoD range sustainment program shall identify range environmental considerations and safety factors that may influence current or future range activities, including reasonably anticipated future uses if the range has a finite withdrawal or lease period that shall not be renewed. Additionally, DoD Directive Number 4715.11 states DoD's policy is to ensure the long term viability of operational ranges while protecting human health and the environment, limit the potential for explosive mishaps and the damaging effects of such to personnel, operational capability, property, and the environment, design and use operational ranges and the munitions used on them to minimize harmful environmental impacts and to promote resource recovery and recycling. EPA is aware that, and encourages the use of those technologies that could minimize or eliminate this concern.

Of additional interest is the potential for use, exposure to, and the accumulation of potentially toxic materials (beryllium, dicholorobenzenes, dioxin, DNT, lead, nanomaterials, NDMA, PBDEs& PBBs, PFOS/PFOAs TCP, tetrachloroethylene, 1,4-dioxane, Chromium VI, Naphthalene, Perchlorate, RDX, and TCE). These contaminants represent the potential for adverse health effects on operating forces, DoD employees, the public, and the surrounding ecosystem, potentially reducing training/readiness and use restrictions on ranges, and increased operation and maintenance and/or clean up costs, which may amount to a drain or diversion of resources from mission needs. Perchlorate is reportedly a growing issue that must be proactively addressed. The proposed NEPA documents should discuss the potential for use and increased use of these contaminants in light of the proposed action and how they may pose human heath and environmental risks.

EPA's biggest concern with the proposed action is the potential impacts to aquatic habitats, water resources, and wetlands. Compounding these concerns is the potential existence of a number of impaired-listed streams within the area of the proposed action. EPA notes the Fort's past efforts to minimize impacts, e.g., while stream floodplains on the Fort are extensive, military training within these floodplains is minimal. We encourage the Army to continue its ecosystem preservation and restoration efforts as part of its land training expansion plans. EPA also notes that it is the range and maneuver areas that will have the greatest impact to these resources.

Thank you for the opportunity to provide NEPA-related scoping comments, see enclosure. EPA Region 4 would like offer the Army our expertise and experience in many potential environmental issues that may arise as part of the expansion, e.g., air quality, aquatic resource impacts, and environmental justice. If you wish to discuss this matter further, please contact Beth Walls (404-562-8309 or walls.beth@epa.gov) of my staff for NEPA-related issues and Bob Lord (404-562-9408 or lord.bob@epa.gov) for aquatic-resource-related issues .

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc: Mr. Bob Purtiman
Ms. Kim Raymer
District Engineer, Savannah District, U.S. Army Corps of Engineers
District Engineer, Mobile District, U.S. Army Corps of Engineers

United States Department of the Interior

FISH AND WILDLIFE SERVICE
1208-B Main Street
Daphne, Alabama 36526

DEC 0 3 2010

IN REPLY REFER TO:
2011-CPA-0016

Department of the Army
Installation Management Command
Headquarters, United States Army Garrison
Attn: Mr. John J. Brent, Environmental Management Division
6751 Constitution Loop, Suite 550
Fort Benning, GA 31905-4500

Dear Mr. Brent:

We are responding to your letter, dated October 8, 2010, requesting review of a proposal by the U.S. Army at Fort Benning, Georgia to acquire up to 82, 800 acres for expansion of the fort's training area into Russell County, Alabama. We have reviewed the information and are providing the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et.) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. et seq.).

We understand that the proposed training area would support the Maneuver Center of Excellence and Forces Command and the United States Army Special Operations Command units for combat and combat support training. The following protected species may be found in Russell County and should be evaluated in any NEPA document produced for this site. Our office does not have historical records to document their presence on this tract of land; therefore, confirmation of their presence by field surveys would be required before an affect determination could be made.

Red-cockaded woodpecker (*Picoides borealis*); endangered

The red-cockaded woodpecker is 18 to 20 cm long with a wing span of 35 to 38 cm. There are black and white horizontal stripes on its back, and its cheeks and under parts are white. Its flanks are black streaked. The cap and stripe on the side of the neck and the throat are black. The male has a small red spot on each side of the black cap. After the first post fledgling molt, fledgling males have a red crown patch. Egg laying occurs during April, May, and June with the female utilizing her mate's roosting cavity for a nest. Most often, the parent birds and some of their male offspring from previous years form a family unit called a group. Commonly, these groups are comprised of three to five birds. Rearing the young birds becomes a shared responsibility of the group. This bird's range is closely tied to the distribution of southern pines. Historically, the red-cockaded woodpecker occurred from East Texas and Oklahoma, to Florida, and north to New Jersey. Open stands of pines with a minimum age of 60 years provide suitable nesting habitat. Longleaf pines (*Pinus palustris*) are most commonly

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used, but other species of southern pine are also acceptable. Dense stands (stands that are primarily hardwoods, or that have a dense hardwood understory) are avoided. Foraging habitat is provided in pine and pine hardwood stands 30 years old or older, with foraging preference for pine trees 10 inches or more in diameter. In good, well-stocked pine habitat, sufficient foraging substrate can be provided on 80 to 125 acres.

Shinyrayed pocketbook mussel (*Hamiota subangulata*); endangered

The shinyrayed pocketbook is a medium sized species that reaches approximately 85 mm in length. The shell is sub-elliptical, with broad, somewhat inflated umbos and a rounded posterior ridge. The shell is fairly thin but solid. The surface is smooth and shiny, light yellowish brown with fairly wide, bright emerald green rays over the entire length of the shell. Older individuals may appear much darker brown with obscure raying. Female specimens are more inflated postbasally, whereas males appear to be more pointed posteriorly. The nacre is white, with some individuals exhibiting a salmon tint in the vicinity of the umbonal cavity. This mussel may be found in the Chattahoochee River and its tributaries.

Georgia rockcress (*Arabis georgiana*); candidate
The Georgia rockcress (is a slender, erect biennial, with white flowers produced on a leafy stem to 9 dm in height. Leaves disposed at the base and along the stem, are alternate, lanceolate to narrowly elliptic, 1-5 cm long, and slightly clasp the stem. The flowers are produced in a terminal inflorescence that is sometimes loosely branched; 4-merous with petals 6-9 mm long. The fruit is an erect pod roughly 1 mm wide and 5-7 cm long. Flowering season: late March to early May. This species is associated with shallow soil accumulations on rocky bluffs, ecotones of gently sloping rock outcrops, outcrops along rivers, and sandy loam along eroding riverbanks. It is occasionally found in adjacent mesic woods but it will not persist in heavily shaded conditions. Requires high to moderate light conditions, occurs on soils which are circumneutral to slightly basic. Be aware that this species prefer disturbed areas and continued vigilance for their occurrence within the training area is warranted. Being a candidate species affords this species no protection under the Endangered Species Act (ESA) but does warrant a precautionary warning that if formally listed in the future, re-initiation of consultation under section 7 of the ESA may be required.

The U.S. Fish and Wildlife Service welcome the opportunity to work with the military in the development of this training area in eastern Alabama. If you need additional information, please contact Mr. Bruce Porter at (251) 441-5864.

Sincerely,

William J. Pearson
Field Supervisor
Alabama Ecological Services Field Office

cc: Mr. Tom Sinclair, USFWS Region 4 Ecological Services, Atlanta, GA

STATE OF ALABAMA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
WILDLIFE AND FRESHWATER FISHERIES DIVISION
64 NORTH UNION STREET, SUITE 567
POST OFFICE BOX 301456
MONTGOMERY, ALABAMA 36130-1456
(334) 242-3465
FAX (334) 242-3032
www.outdooralabama.com

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GOVERNOR

M. BARNETT LAWLEY
COMMISSIONER

M. N. "CORKY" PUGH
DIRECTOR

FRED R. HARDERS
ASST. DIRECTOR

The mission of the Wildlife and Freshwater Fisheries Division is to manage, protect, conserve, and enhance the wildlife and aquatic resources of Alabama for the sustainable benefit of the people of Alabama.

November 5, 2010

John J. Brent
Chief, Environmental Management Division
Department of the Army
Installation Management Command
Southeast Region
35 Ridgway Loop, Room 385
Fort Benning, Georgia 31905

Dear Mr. Brent:

The Alabama Division of Wildlife and Natural Resources (ADWFF) has reviewed the study area in Russell County, Alabama for the proposed Fort Benning Training Land Expansion Program (Proposed Action). Based on our review of the Proposed Action study area, we provide the following comments:

- A review of available information by the Division of Wildlife and Freshwater Fisheries personnel has determined that this project may impact a number of state- and federally-protected species. In addition, Russell County harbors numerous aquatic and terrestrial species designated as a greatest conservation need (GCN) species in Alabama's Comprehensive Wildlife Conservation Strategy (http://www.outdooralabama.com/research-management/cwcs/). GCN is a conservation planning rather than a regulatory designation intended to identify species that are declining and in need of active conservation, with the intent of avoiding the need for regulatory protection. Enclosed is a list of sensitive species that may be present within or near the Proposed Action study area. Federally-protected species are under the jurisdiction of the U. S. Fish and Wildlife Service. Please contact that agency regarding potential impacts to federally-protected species (251-441-5181).

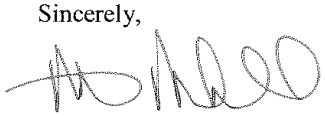
- Expanding the boundaries of Fort Benning will provide new conservation opportunities for sensitive aquatic and terrestrial species in Russell County. In particular, the Proposed Action would allow lands to be available for Red-cockaded Woodpecker reintroductions and longleaf pine restoration. These lands would connect Red-cockaded Woodpeckers through landscape corridors to existing populations for the continued recovery of this species. The ADWFF welcomes these opportunities that the proposed expansion may create and look forward to cooperating with the Department of the Army in the conservation of natural resources in the State of Alabama.

- The Proposed Action would eliminate private lands that are currently used for wildlife-oriented activities (i.e., hunting and fishing). We recommend the Department of the Army consider the potential for public wildlife-oriented activities within the study area in Alabama.

- The ADWFF is aware that certain water bottoms incorporated in the study are State-owned. Please coordinate with the State Lands Division (334-242-3484) in matters related to State-lands and State-owned water bottoms within the proposed study area.

We look forward to continuing our coordination with you on the development and preparation of an EIS for the Proposed Action. Further coordination should be directed to this office (334-242-3851 or Matthew.Marshall@dcnr.alabama.gov).

Sincerely,



Matthew D. Marshall
Environmental Coordinator

Enclosure

Rare and Sensitive Species of Russell County, Alabama.

Species Name	Listing Status		GCN Priority
Common *Scientific*	Federal[1]	State[2]	Rank[3]
Mammals			
Southeastern Pocket Gopher *Geomys pinetis*	--	S	P2
Birds			
Bachman's Sparrow *Aimophila aestivalis*	--	--	P2
Bald Eagle *Haliaeetus leucocephalus*	--	S	--
Common Ground-dove *Columbina passerina*	--	S	--
Cooper's Hawk *Accipiter cooperii*	--	S	--
Kentucky Warbler *Oporornis formosus*	--	--	P2
Osprey *Pandion haliaetus*	--	S	--
Red-cockaded woodpecker *Picoides borealis*	E	S	P1
Swainson's Warbler *Limnothlypis swainsonii*	--	--	P2
Wood Thrush *Hylocichla mustelina*	--	--	P2
Wood Stork *Mycteria americana*	E	--	P2
Worm-eater Warbler *Helmitheros vermivorus*	--	--	P1
Reptiles			
Alligator Snapping Turtle *Macrochelys temminckii*	--	S	P2
Coal Skink *Eumeces anthracinus*	--	--	P2
Eastern Coachwhip *Coluber flagellum*	--	S	--
Eastern Kingsnake *Lampropeltis getula getula*	--	--	P2
Florida Pine Snake *Pituophis melanoleucus mugitus*	--	S	P2
Gopher Tortoise *Gopherus polyphemus*	--	S	P2
Southeastern Five-lined Skink *Eumeces inexpectatus*	--	--	P2
Fish			
Broadstripe Shiner *Pteronotropis euryzonus*	--	--	P2
Dusky Shiner *Notropis cummingsae*	--	--	P2
Halloween Darter *Percina crypta*	--	S	P1
Shoal Bass *Micropterus cataractae*	--	--	P2
Mussels			
Delicate Spike *Elliptio arctata*	--	--	P1
Downy Rainbow *Villosa villosa*	--	--	P2
Gulf Moccasinshell *Medionidus penicillatus*	E	--	P1
Oval Pigtoe *Pleurobema pyriforme*	E	S	P1

Continued.

Species Name	Listing Status		GCN Priority Rank[3]
Common *Scientific*	Federal[1]	State[2]	
Rayed Creekshell *Anodontoides radiatus*	--	--	P2
Sculptured Pigtoe *Quadrula infucata*	--	--	P1
Shiny-rayed pocketbook *Hamiota subangulata*	E	S	P1
Southern Elktoe *Alasmidonta triangulate*	--	--	P1
Crayfish			
Spur Crayfish *Procambarus lewisi*	--	--	P2

[1] Federally listed as Endangered (E) by U.S. Department of the Interior.
[2] State Protected (S), either by Rule 220-2-.92, Nongame Species Regulation or by Rule 220-2-.98, Invertebrate Species Regulation, both of which read "It shall be unlawful to take, capture, kill, or attempt to take, capture, or kill; possess, sell, trade for anything of monetary value, or offer to sell or trade for anything of monetary value, the following species....."
[3] GCN species are subdivided into Priority 1/Highest Conservation Concern (P1) and Priority 2/High Conservation Concern (P2) but all are considered to be in serious decline and in need of active conservation.

Georgia Department of Natural Resources
2 Martin Luther King, Jr. Dr., SE, Suite 1154, Atlanta, Georgia 30334-9000
Mark Williams, Commissioner
Environmental Protection Division
F. Allen Barnes, Director
Phone: 404/656-7802 FAX: 404/651-9425

January 12, 2011

BY E-MAIL

Ms. Monica Manganaro
Department of the Army
Installation Management Command Southeast
Garrison Command
35 Ridgeway Loop, Room 385
Fort Benning, Georgia 31905

RE: Preliminary solicitation for Comments for the *Environmental Impact Statement for (EIS) for the Training Land Expansion in Marion, Webster, Chattahoochee, Stewart, Talbot, and Harris Counties, Fort Benning, GA* dated December 22, 2010

Dear Ms. Manganaro:

Thank you for the opportunity to provide preliminary comments on the *Environmental Impact Statement for (EIS) for the Training Land Expansion in Marion, Webster, Chattahoochee, Stewart, Talbot, and Harris Counties, Fort Benning, GA*. We have no preliminary comments. We look forward to reviewing and commenting on the EIS.

Should you have any questions concerning this correspondence, please contact Amy Potter at (404) 656-2833.

Sincerely,

Jim Ussery, P.E.
Assistant Director

File: NEPA (G)
S:\RDRIVE\AMY\DoD Unit\NEPA\benning\prelim comments on EIS train land expansion.doc

STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE
EXECUTIVE DIRECTOR

TEL: 334-242-3184
FAX: 334-240-3477

October 25, 2010

John J. Brent
U.S. Army Management Command
6751 Constitution Loop, Suite 550
Fort Benning, Georgia 31905-4500

Re: AHC 11-0025
82,800-Acre Expansion
Fort Benning
Russell County, Alabama

Dear Mr. Brent:

Thank you for the information forwarded by your office. Regarding archaeological resources, we request that a cultural resource assessment be conducted by a professional archaeologist when the expansion area is identified. This assessment should include photographs, dates of construction and documentation for all structures identified in the expansion area. A copy of the Russell County Historic Structure Survey is available for viewing in our office and the Historic Chattahoochee Commission in Eufaula has a copy for viewing.

We appreciate your continued efforts on this project. Should you have any questions, please contact Greg Rhinehart at (334) 230-2662. Please have the AHC tracking number referenced above available and include it with any correspondence.

Truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/AMH/gcr

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
HISTORIC PRESERVATION DIVISION

CHRIS CLARK
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

October 28, 2010

John J. Brent
Chief, Environmental Management Division
Department of the Army
Installation Management Command
Southeast Region
Garrison Command
35 Ridgway Loop, Room 385
Fort Benning, Georgia 31905
Brittnea.horton@us.army.mil

RE: Fort Benning: Acquisition of 82,800 Acres for Training Land Expansion Program
Chattahoochee, Harris, Marion, Muscogee, Stewart, Talbot, and Webster Counties, Georgia
HP-100518-004

Dear Mr. Brent:

The Historic Preservation Division (HPD) has received initial information concerning the above referenced project. Our comments are offered to assist the US Department of the Army and Fort Benning in complying with the provisions of Sections 106 and 110 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for notifying our office of the proposed acquisition of 82,800 acres for the expansion of training capability, referred to as the Fort Benning Training Land Expansion Program. We look forward to receiving the cultural resource surveys when they become available.

Please refer to project number **HP-100518-004** in future correspondence regarding this project. If we may be of further assistance, please do not hesitate to contact me at (404) 651-6624.

Sincerely,

Elizabeth Shirk
Environmental Review Coordinator

ES: mn

cc: Allison Slocum, River Valley RC

254 WASHINGTON STREET, SW | GROUND LEVEL | ATLANTA, GEORGIA 30334
404.656.2840 | FAX 404.657.1368 | WWW.GASHPO.ORG

APPENDIX C

Soil Properties within the TLEP Study Area

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Soil Orders and Great Groups within the TLEP Study Area

Due to the large TLEP study area, the soils mapped within this EIS are organized and analyzed in this section to a level of detail corresponding to their great group classification level in the USDA soil taxonomy system (NRCS, 2010[1]). Soil great groups are the third category in the soil classification system, and they are defined largely by the presence or absence of diagnostic horizons[2] and the arrangement of those horizons. Dominant soil series, complexes or undifferentiated groups within each great group and a brief description of their properties (depth, drainage class, parent material, and landscape position) are listed for the TLEP study area. Soil slopes and erodibility vary across the great groups, and are discussed and analyzed separately. A complete listing of the soils and their properties at the soil series level (sixth and most detailed category) are provided in Table C-9. Figures C-1 and C-2 show the great groups within the TLEP study area. Spatial data for Harris and Talbot County soil surveys is currently being developed by the NRCS and is not available for release and incorporation into this Draft EIS. Therefore, as no digital data are available for either Harris or Talbot counties, Harris East and Talbot West have been excluded from the great group figures. The Final EIS will be updated with this information if it becomes available. Specific soil properties of these great groups within the TLEP study area are discussed below.

Great groups are the third category of classification in the U.S. Department of Agriculture soil classification system. For example, Ultisol is the soil order, Udult is the suborder, and Hapludults is the great group.

Soil orders are the highest category in the USDA soil classification system. Soil orders occurring within the TLEP study area include:

- **Entisols** are soils with little or no development of pedogenic horizons, and are considered very young soils in terms of soil genesis.
- **Inceptisols** are young soils with slightly to moderately developed pedogenic horizons.
- **Alfisols and Ultisols** are older soils with well-developed horizons. They are similar soils, however, Alfisols differ from Ultisols in that they have a naturally higher base saturation (or pH), paler colors, and less weathered clays.
- **Vertisols** are soils developed in smectitic clays that shrink and swell with drying and wetting. This causes mixing of the soil, which in turn prevents the development of pedogenic horizons.

[1] USDA, NRCS. 2010. Soil Survey Staff. Keys to Soil Taxonomy, 11th ed. USDA-Natural Resources Conservation Service, Washington, DC. 2010.

[2] Diagnostic horizons are a particular set of observable or measurable soil properties that are used in Soil Taxonomy to classify a soil. These horizons are thought to be the marks left on the soil as a result of the dominant soil-forming processes. In many cases they are thought to occur in conjunction with other important accessory properties. The utilization of diagnostic horizons in the classification process allows the grouping of soils that have formed as a result of similar genetic processes. The grouping, however, is done on the basis of observable or measurable properties rather than by speculation about the genetic history of a particular soil.

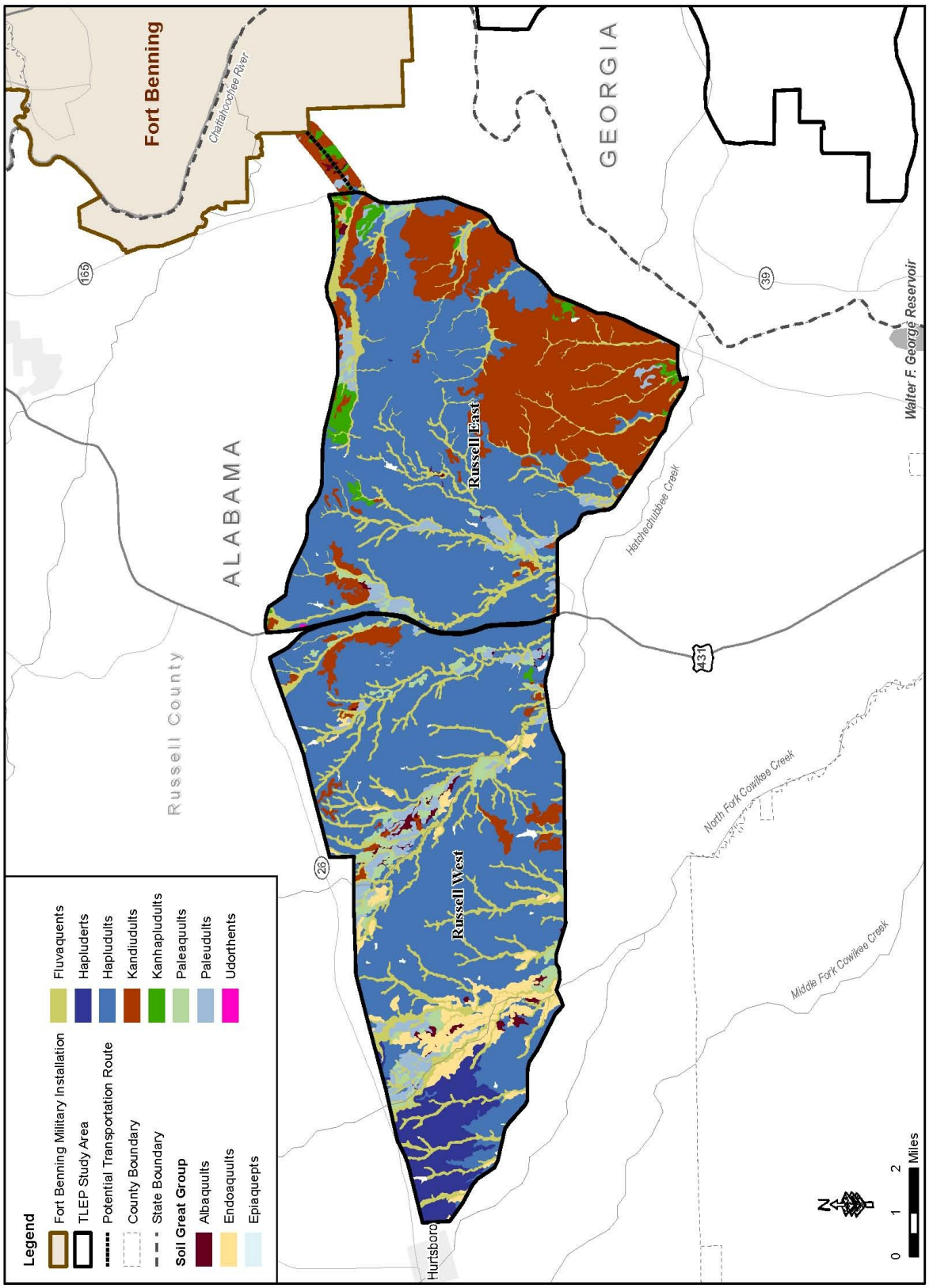

Figure C-1. Russell West and Russell East Soil Great Groups

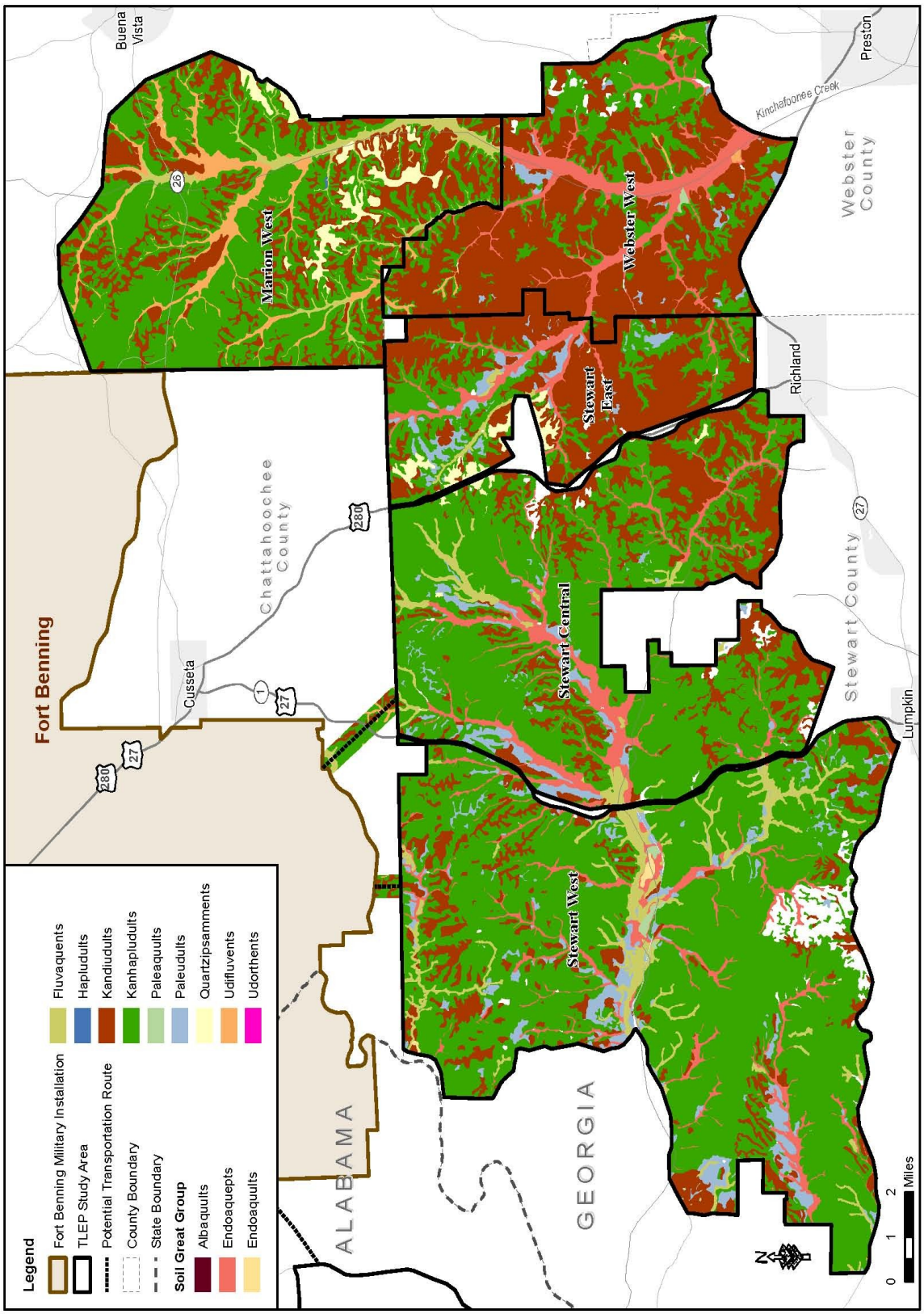

Figure C-2. Stewart West, Central, and East, Webster West, and Marion West Soil Great Group

Russell West

Table C-1 contains a breakdown of the great groups within Russell West. A complete listing of soil map units and associated soil properties within Russell West can be found in Table C-9. Russell West falls entirely within the Alabama and Mississippi Blackland Prairie MLRA (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Alabama and Mississippi Blackland Prairie MLRA).

Table C-1 Great Group Distribution in Russell West

Great Group	Percentage
Hapludults	65
Fluvaquents	12
Hapluderts	7
Endoaquults	5
Paleudults	3
Paleaquults	3
Kandiudults	3
Albaquults	1
Kanhapludults	<1

The soil orders in Russell West are primarily Ultisols, however, Vertisols and Inceptisols also occur throughout the area. Floodplain great groups include Fluvaquents (Kingston, Mantachie, and Iuka complex), which are frequently flooded and formed in loamy alluvium on floodplains (12 percent); Endoaquults (Wahee and Bladen complex), which are occasionally flooded and formed in clayey sediments on low stream terraces (5 percent); Paleaquults (Lynchburg and Ocilla complex), which are rarely flooded and formed in sandy and loamy sediments on low stream terraces (3 percent); and Albaquults (Bladen series), which are very deep, poorly drained soils formed in clayey sediments in shallow depressions on low terraces (1 percent). Upland soils include Hapludults, which are by far the most widespread great group in Russell West (65 percent). Hapludults (dominant series include Conecuh, Gritney, Dogue, Luverne, and Springhill) are very deep, well-drained to moderately well-drained fine sandy loams that formed on stream terraces, toe slopes, side slopes, and broad and narrow ridgetops. They formed in clayey or loamy marine sediments, except for Dogue that formed in alluvium. Hapluderts (Hannon series) are very deep, moderately well drained soils on sideslopes and broad ridgetops that formed in clayey sediments overlying soft limestone or alkaline clays (7 percent). These soils contain high amounts of shrink-swell clays that make them unstable. Paleudults (Ocilla and Goldsboro series) are very deep, moderately well-drained soils on low stream terraces along large streams. They formed in sandy and loamy sediments. Kandiudults (3 percent) (Troup-Springhill-Luverne and Troup-Alaga complexes, and Fuquay series) are very deep, somewhat excessively drained sandy loams on side slopes and narrow and broad ridge tops. Kanhapludults (Uchee-Cowarts complex) are very deep, well drained soils on ridgetops and sideslopes that formed in sandy and loamy marine sediments (less than one percent).

Russell East

Table C-2 contains a breakdown of the great groups within Russell East. Soil map units and associated soil properties are listed in Table C-9 Russell East falls within the Southern Coastal Plain and Alabama and Mississippi Blackland Prairie MLRA (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain and Alabama and Mississippi Blackland Prairie MLRA).

Table C-2 Great Group Distribution in Russell East

Great Group	Percentage
Hapludults	53
Kandiudults	31
Fluvaquents	11
Paleudults	3
Kanhapludults	2
Paleaquults	1
Albaquults	<1
Udorthents	<1
Hapluderts	<1

The soil orders in Russell East are primarily Ultisols with some Entisols interspersed. The floodplain great group soils are Fluvaquents (Kingston, Mantachie, and Iuka complex) (11 percent) and Albaquults (Bladen series) (less than 1 percent). Upland great groups include Hapludults (dominant soils include Conecuh and Dogue series, and Luverne-Springhill complex) (53 percent), Kandiudults (Troup-Springhill-Luverne and Troup-Alaga complexes, and Fuquay series) (31 percent), Paleudults (Goldsboro and Ocilla series) (3 percent), Kanhapludults (Uchee-Cowarts complex) (2 percent), and Hapluderts (Hannon series) (less than 1 percent). Udorthents (Udorthents-Urban land complex) (less than 1 percent) are earthen materials highly disturbed by construction activities, or areas covered by impermeable surfaces.

Stewart West

Table C-3 contains a breakdown of the great groups within Stewart West. Soil map units and associated soil properties for Stewart West are listed in Table C-9. Stewart West falls fully within the Southern Coastal Plain MLRA (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain MLRA).

Table C-3 Great Group Distribution in Stewart West

Great Group	Percentage
Kanhapludults	69
Kandiudults	10
Endoaquepts	7
Paleudults	6
Fluvaquents	5
Paleaquults	<1
Endoaquults	<1
Hapludults	<1
Miscellaneous unclassified soils	3

The soil orders in Stewart West are primarily Ultisols with a few Entisols and Inceptisols interspersed. The floodplain great groups are Endoaquepts (Kingston and Bibb undifferentiated groups) (seven percent), Fluvaquents (Oclockonee, Iuka, and Bibb undifferentiated groups) (five percent), Paleaquults

(Rains series) (less than one percent), and Endoaquults (Wahee series) (less than one percent). These are very deep, poorly to well-drained soils that formed in stratified loamy and sandy alluvium on floodplains. The majority of the great groups in Stewart West have been mapped as Kanhapludults (mainly Nankin-Cowarts, Nankin-Cowarts-Maubila, and Ailey-Cowarts complexes) (69 percent). They are very deep, well-drained to moderately well-drained soils formed in loamy and clayey marine deposits on summits, shoulders and backslopes of interfluves[3]. Kandiudults (Troup, Lucy, and Orangeburg series) are very deep, well-drained to excessively drained soils formed in sandy and loamy marine deposits on backslopes and summits of broad interstream divides (10 percent). Paleudults (Bonneau, Blanton, and Goldboro series) are very deep, well drained soils formed in marine deposits on summits of interfluves (less than one percent). Hapludults (Kolomoki series) are very deep, well-drained soils formed in alluvium on river terraces (less than one percent). Miscellaneous unclassified soils are composed primarily of Gullied land-Nankin-Ailey complex, which major component is Gullied land that consists of areas that have been severely disturbed by erosion and have slopes greater than 35 percent (3 percent).

Stewart Central

Table C-4 contains a breakdown of the great groups within Stewart Central. Soil map units and associated soil properties for Stewart Central are listed in Table C-9. Stewart Central falls fully within the Southern Coastal Plain MLRA (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain MLRA).

Table C-4 Great Group Distribution in Stewart Central

Great Group	Percentage
Kanhapludults	62
Kandiudults	19
Endoaquepts	10
Paleudults	4
Fluvaquents	2
Miscellaneous unclassified soils	2
Quartzipsamments	<1
Paleaquults	<1

The soil orders in Stewart Central are primarily Ultisols with some Inceptisols and a few Entisols interspersed. The floodplain great groups are Endoaquepts (Kingston and Bibb undifferentiated groups) (10 percent), Fluvaquents (Oclockonee, Iuka, and Bibb undifferentiated groups) (4 percent), and Paleaquults (Grady series) (less than 1 percent), as described in Section 3.6.1.2.3. The majority of the great groups in Stewart Central have been mapped as Kanhapludults (mainly Nankin-Cowarts, and Ailey-Cowarts complexes) (62 percent), and Kandiudults (Troup, and Orangeburg series) (19 percent). These soils, along with Paleudults (Bonneau series) (four percent) and Miscellaneous unclassified soils (two percent) were described in Section 3.6.1.2.3. Quartzipsamments (Lakeland series) are very deep, excessively drained soils formed in marine deposits on backslopes of broad interstream divides (less than one percent).

[3] An interfluve is the region of higher land between two rivers that are in the same drainage system.

Stewart East

Table C-5 contains a breakdown of the great groups within Stewart East. Soil map units and associated soil properties for Stewart East are listed in Table C-9. Stewart East falls within the Southern Coastal Plain and the Carolina and Georgia Sand Hills MLRAs (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain and the Carolina and Georgia Sand Hills MLRAs).

Table C-5 Great Group Distribution in Stewart East

Great Group	Percentage
Kandiudults	50
Kanhapludults	30
Endoaquepts	7
Paleudults	7
Quartzipsamments	4
Fluvaquents	1
Miscellaneous unclassified soils	1

The soil orders in Stewart East are primarily Ultisols. Inceptisols and Entisols also occur throughout Stewart East. The floodplain great groups are Endoaquepts (Kingston and Bibb undifferentiated groups) (7 percent) and Fluvaquents (Oclockonee, Iuka, and Bibb undifferentiated groups) (1 percent). The majority of the great groups in Stewart East are mapped as Kandiudults (Troup, Orangeburg, and Lucy series) (50 percent) and Kanhapludults (Nankin-Cowarts, Ailey-Cowarts, and Nankin-Cowarts complexes) (30 percent). As in Stewart Central, areas have also been mapped as Paleudults (Bonneau series) (7 percent), Quartzipsamments (Lakeland series) (4 percent), and miscellaneous unclassified soils (1 percent), as described in Section 3.6.1.2.4.

Webster West

Table C-6 contains a breakdown of the great groups within Webster West. Soil map units and associated soil properties for Webster West are listed in Table C-9. Webster West falls within the Southern Coastal Plain and Carolina and Georgia Sand Hills MLRAs (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain and Carolina and Georgia Sand Hills MLRAs).

Table C-6 Great Group Distribution in Webster West

Great Group	Percentage
Kandiudults	55
Kanhapludults	27
Endoaquepts	14
Paleudults	2
Miscellaneous unclassified soils	1
Udifluvents	1

The soil orders in Webster West are primarily Ultisols, however Inceptisols also occur throughout Webster West. The floodplain great groups are Endoaquepts (Kingston and Bibb undifferentiated groups) (55 percent) and Udifluvents (Ochlockonee, Iuka and Bibb complex) (1 percent). The majority of the great groups in Webster West are mapped as Kandiudults (Troup, Orangeburg, and Lucy series) (55 percent), and Kanhapludults (Nankin-Cowarts complex) (27 percent). Paleudults (Bonneau series) (2

percent), along with the other soils in Webster West were described previously in Section 3.6.1.2.6. Miscellaneous unclassified soils are described in Section 3.6.1.2.3.

Marion West

Table C-7 contains a breakdown of the great groups within Marion West. Soil map units and associated soil properties for Marion West are listed in Table C-9. Marion West falls within the Southern Coastal Plain and Carolina and Georgia Sand Hills MLRAs (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Coastal Plain and MLRAs).

Table C-7 Great Group Distribution in Marion West

Great Groups	Percentage
Kanhapludults	49
Kandiudults	31
Udifluvents	9
Fluvaquents	6
Quartzipsamments	5
Hapludults	<1

The soil orders in Marion West are primarily Ultisols, however, Entisols also occur throughout the section. The floodplain great groups are Udifluvents (Iuka series) (9 percent), and Fluvaquents (Bibb series) (6 percent). The majority of the great groups in Marion West are mapped as Kanhapludults (Nankin series, and Vaucluse-Ailey complex) (49 percent) and Kandiudults (Troup and Orangeburg series) (31 percent). The soils have been described in Section 3.6.1.2.6. Quartzipsamments (Lakeland series) are very deep, excessively drained soils formed in marine deposits on broad interstream divides (5 percent), and Hapludults (Eunola series) are very deep, moderately well drained soils formed in alluvial sediments on stream terraces (less than 1 percent).

Harris East and Talbot West

As previously stated, there are not any published Soil Survey digital data available for Talbot West and the Harris East. Harris East and Talbot West are situated primarily within the Southern Piedmont MLRA. A small fraction in the southeastern area of Harris East and Talbot West is within the Carolina and Georgia Sand Hills MLRA (see Table 3.6-1 for distribution and Section 3.6.1.1 for description of the Southern Piedmont and Carolina and Sand Hills MLRAs).

The soil orders in the Muscogee County located in the proposed transportation route are predominantly Kandiudults (39 percent) and Kanhapludults (36 percent). The floodplain great groups are Udifluvents (3 percent), and Fluvaquents (2 percent). The soils have been described in Section 3.6.1.2.6). The route is entirely within the Southern Coastal Plain (NRCS, 2006e[4]).

Soil Map Units and Associated Properties within the TLEP Study Area

Tables C-8 through C-15 contain soil map units and relevant properties (prime farmland classification, erosion potential, flooding frequency, hydric classification, runoff and taxanomic group) by each TLEP study area.

[4] USDA, NRCS. 2006e. Soil Survey Geographic (SSURGO) database for Muscogee County, Georgia. U.S. Department of Agriculture, Natural Resources Conservation Service. Texas. 2006.

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
AaB	Ailey loamy coarse sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	101
AaC	Ailey loamy coarse sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	11
Bh	Bibb sandy loam, frequently flooded	Consociation	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric	Not available in table	Fluvaquents	2129
COC	Cowarts and Ailey soils, 5 to 12 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	348
COE	Cowarts and Ailey soils, 12 to 25 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	4604

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
CWE	Cowarts and Ailey soils, 18 to 25 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	8
DoB	Dothan loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	168
DoC	Dothan loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	105
EmB	Esto sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	3
EtA	Eunola sandy loam, 0 to 3 percent slopes, occasionally flooded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	Occasional	0-14	Not hydric	Not available in table	Hapludults	10
FuB	Fuquay loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	22

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
FuC	Fuquay loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	100
GrB	Greenville sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	3
Iu	Iuka sandy loam, occasionally flooded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	Occasional	0-14	Partially hydric	Not available in table	Udifluvents	2849
LaB	Lakeland sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Quartzipsamments	1487
LaC	Lakeland sand, 5 to 12 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Quartzipsamments	21
LaE	Lakeland sand, 12 to 25 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Quartzipsamments	10

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
LuB	Lucy loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	317
LuC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	392
NaB	Nankin sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	231
NaC	Nankin sandy loam, 5 to 12 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	4200
NkE3	Nankin sandy clay loam, 12 to 25 percent slopes, severely eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	2975
OrB	Orangeburg loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	1019

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
OrC	Orangeburg loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	1965
OrD2	Orangeburg sandy loam, 8 to 12 percent slopes, eroded	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	43
TrB	Troup loamy sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	2941
TrC	Troup loamy sand, 5 to 12 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	2963
TrE	Troup loamy sand, 12 to 25 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kandiudults	259
VAC	Vaucluse and Ailey soils, 5 to 12 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	112

Table C-8: Soil Map Units and Associated Properties for Marion West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
VAE	Vaucluse and Ailey soils, 12 to 25 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Not available in table	Kanhapludults	3729
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	29

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
AaB	Ailey loamy coarse sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	<1
AaC	Ailey loamy coarse sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	4
AeB	Ailey loamy sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	39
AeC	Ailey loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	53
AoE	Ailey-Cowarts complex, 8 to 25 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	1,148

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
ArC	Arents reclaimed land, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Unknown	Medium		43
BeB	Benevolence loamy sand, 0 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	48
BeC	Benevolence loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2
Bh	Bibb sandy loam, frequently flooded	Consociation	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric		Fluvaquents	7
BnB	Blanton loamy sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	354

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
BnC	Blanton loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	293
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	701
BoC	Bonneau loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	330
CoC	Cowarts loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	619
FeA	Faceville sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	41

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
FeB	Faceville sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	191
FeC	Faceville sandy loam, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	37
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Partially hydric	Medium	Paleudults	2
GrA	Grady clay loam, ponded	Consociation	Not classified	Not available in table	Not available in table	None	75-100	All hydric	Low	Paleaquults	5
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	53

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	513
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	142
GuF3	Gullied land-Nankin-Ailey complex, 15 to 90 percent slopes, severely eroded	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			627
Iu	Iuka sandy loam, occasionally flooded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	Occasional	0-14	Partially hydric		Udifluvents	3
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric	Negligible	Endoaquepts	3,822

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
LkC	Lakeland sand, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Quartzipsamments	96
LkD	Lakeland sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Quartzipsamments	47
LmB	Lucy loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	293
LmC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	304
LmD	Lucy loamy sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	4

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
LuC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric		Kandiudults	<1
NaC	Nankin sandy loam, 5 to 12 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	10
NcB	Nankin-Cowarts complex, 2 to 5 percent slopes	Complex	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	89
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	4,800
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	18,218

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
NkE3	Nankin sandy clay loam, 12 to 25 percent slopes, severely eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	43
NnE3	Nankin sandy clay loam, 18 to 25 percent slopes, severely eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	2
NoB	Norfolk loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	8
OBB	Ochlockonee, luka, Bibb, soils, 0 to 5 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	Partially hydric	Very low	Fluvaquents	911
OcA	Ocilla loamy sand, 0 to 2 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Partially hydric	Low	Paleudults	48

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	108
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	922
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	853
OgD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kandiudults	73
Pt	Pits	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			3

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
ReA	Red Bay loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	35
ReB	Red Bay loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	213
RsC2	Red Bay sandy loam, 5 to 8 percent slopes, eroded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	219
TrB	Troup sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2,343
TrC	Troup loamy sand, 5 to 12 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kandiudults	13

Table C-9: Soil Map Units and Associated Properties for Stewart Central

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
TrD	Troup sand, 5 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	1,331
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	115

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
AeB	Ailey loamy sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	8
AeC	Ailey loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	40
AoE	Ailey-Cowarts complex, 8 to 25 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	1,059
ArC	Arents reclaimed land, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Unknown	Medium		79
BeB	Benevolence loamy sand, 0 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	122
BeC	Benevolence loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	17

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
BnB	Blanton loamy sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	191
BnC	Blanton loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	376
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	366
BoC	Bonneau loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	241
CoC	Cowarts loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	321
FeA	Faceville sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	117

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
FeB	Faceville sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	225
FeC	Faceville sandy loam, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	49
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Partially hydric	Medium	Paleudults	25
GsA	Greenville sandy clay loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	46
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	149
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	295

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
GuF3	Gullied land-Nankin-Ailey complex, 15 to 90 percent slopes, severely eroded	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			11
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric	Negligible	Endoaquepts	1,232
LkC	Lakeland sand, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Quartzipsamments	643
LkD	Lakeland sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Quartzipsamments	48
LmB	Lucy loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	439

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
LmC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	249
LmD	Lucy loamy sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	155
NcB	Nankin-Cowarts complex, 2 to 5 percent slopes	Complex	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	10
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	550
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	3,023
NoB	Norfolk loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	12

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
OBB	Ochlockonee, luka, Bibb, soils, 0 to 5 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	Partially hydric	Very low	Fluvaquents	191
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	98
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	975
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	421
OgD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kandiudults	20

Table C-10: Soil Map Units and Associated Properties for Stewart East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
ReA	Red Bay loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	1
TrB	Troup sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2,387
TrD	Troup sand, 5 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2,515
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	56

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
AeB	Ailey loamy sand, 2 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	20
AeC	Ailey loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	88
AoE	Ailey-Cowarts complex, 8 to 25 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	1,366
ArC	Arents reclaimed land, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Unknown	Medium		124
BeB	Benevolence loamy sand, 0 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	58
BeC	Benevolence loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	13

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
BnB	Blanton loamy sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	756
BnC	Blanton loamy sand, 5 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Paleudults	653
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	1,345
BoC	Bonneau loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	525
COE	Cowarts and Ailey soils, 12 to 25 percent slopes	Undifferentiated group	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	7
CoC	Cowarts loamy sand, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	493

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
CyD	Cowarts-Maubila-Ailey complex, 5 to 15 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	64
FeB	Faceville sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	50
FeC	Faceville sandy loam, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	23
GoA	Goldsboro loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Partially hydric	Medium	Paleudults	306
GrA	Grady clay loam, ponded	Consociation	Not classified	Not available in table	Not available in table	None	75-100	All hydric	Low	Paleaquults	18
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	53

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
GsC	Greenville sandy clay loam, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	51
GuF3	Gullied land-Nankin-Ailey complex, 15 to 90 percent slopes, severely eroded	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			1,516
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric	Negligible	Endoaquepts	3,870
KoA	Kolomoki fine sandy loam, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	Rare	0-14	Not hydric	Very low	Hapludults	4
LkC	Lakeland sand, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Quartzipsamments	7

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
LmB	Lucy loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	568
LmC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	248
LmD	Lucy loamy sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	108
LuC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric		Kandiudults	8
NaC	Nankin sandy loam, 5 to 12 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric		Kanhapludults	1
NcB	Nankin-Cowarts complex, 2 to 5 percent slopes	Complex	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	270

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	11,897
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	19,569
NmF	Nankin-Cowarts-Maubila complex, 15 to 45 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	5,648
NoA	Norfolk loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	62
NoB	Norfolk loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	175

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
OBB	Ochlockonee, luka, Bibb, soils, 0 to 5 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	Partially hydric	Very low	Fluvaquents	2,566
OcA	Ocilla loamy sand, 0 to 2 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Partially hydric	Low	Paleudults	59
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	195
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	474
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	224

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
OgD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kandiudults	22
Pt	Pits	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			6
RaA	Rains sandy loam, 0 to 2 percent slopes, occasionally flooded	Consociation	Not classified	Not available in table	Not available in table	Occasional	0-14	All hydric	Low	Paleaquults	120
ReA	Red Bay loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	21
TrB	Troup sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2,162
TrC	Troup loamy sand, 5 to 12 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric		Kandiudults	7

Table C-11: Soil Map Units and Associated Properties for Stewart West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
TrD	Troup sand, 5 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	1,028
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	139
WhA	Wahee fine sandy loam, 0 to 2 percent slopes, rarely flooded	Consociation	Not classified	Not available in table	Not available in table	Rare	0-14	Partially hydric	Low	Endoaquults	85

Table C-12: Soil Map Units and Associated Properties for Webster West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
ArC	Arents, reclaimed land, 0 to 8 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric			270
BoB	Bonneau loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	408
BoC	Bonneau loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Paleudults	143
CoB	Cowarts-Nankin complex, 2 to 5 percent slopes	Complex	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kanhapludults	2
FeA	Faceville sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	32
FeB	Faceville sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	64

Table C-12: Soil Map Units and Associated Properties for Webster West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
FeC	Faceville sandy loam, 5 to 8 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	64
GsB	Greenville sandy clay loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	32
KBA	Kinston and Bibb soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	All hydric	Negligible	Endoaquepts	3,535
LmB	Lucy loamy sand, 0 to 5 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	977
LmC	Lucy loamy sand, 5 to 8 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	408
LmD	Lucy loamy sand, 8 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	41

Table C-12: Soil Map Units and Associated Properties for Webster West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
NcD	Nankin-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	2,297
NcF	Nankin-Cowarts complex, 15 to 35 percent slopes	Complex	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kanhapludults	4,515
NoA	Norfolk loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	19
NoB	Norfolk loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	41
OBB	Ochlockonee, luka, and Bibb, soils, 0 to 5 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not available in table	Not available in table	Frequent	0-14	Partially hydric		Udifluvents	193

Table C-12: Soil Map Units and Associated Properties for Webster West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
OcA	Ocilla loamy sand, 0 to 2 percent slopes	Consociation	Farmland soils of statewide importance	Not available in table	Not available in table	None	0-14	Partially hydric	Low	Paleaquults	35
OeA	Orangeburg loamy sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	212
OeB	Orangeburg loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	1,315
OgC2	Orangeburg sandy loam, 5 to 8 percent slopes, eroded	Consociation	All areas are prime farmland soils	Not available in table	Not available in table	None	0-14	Not hydric	Medium	Kandiudults	543
OgD2	Orangeburg sandy loam, 8 to 15 percent slopes, eroded	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	High	Kandiudults	120
RaA	Rains sandy loam, 0 to 2 percent slopes, occasionally flooded	Consociation	Not classified	Not available in table	Not available in table	Occasional	0-14	All hydric	Negligible	Endoaquepts	<1

Table C-12: Soil Map Units and Associated Properties for Webster West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
TrB	Troup sand, 0 to 5 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	7,362
TrD	Troup sand, 5 to 15 percent slopes	Consociation	Not classified	Not available in table	Not available in table	None	0-14	Not hydric	Low	Kandiudults	2,959
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	86

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
AnA	Annemaine fine sandy loam, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Hapludults	361
BdA	Bladen fine sandy loam, 0 to 1 percent slopes, occasionally flooded	Consociation	Not classified	Not highly erodible land	Not highly erodible land	Occasional	0-14	All hydric	Not available in table	Albaquults	49
BeA	Bladen loam, 0 to 1 percent slopes, ponded	Consociation	Not classified	Not highly erodible land	Not highly erodible land	None	75-100	All hydric	Not available in table	Albaquults	30
BnB	Blanton loamy sand, 0 to 5 percent slopes	Consociation	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Paleudults	199
CnB	Conecuh fine sandy loam, 1 to 3 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	3,659
CoC2	Conecuh loam, 3 to 8 percent slopes, eroded	Consociation	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	6,442

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
CwB	Cowarts loamy sand, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kanhapludults	70
DgA	Dogue fine sandy loam, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Hapludults	1,114
DoA	Dothan fine sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kandiudults	91
DoB	Dothan fine sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	213
FpA	Fluvaquents, ponded	Consociation	Not classified	Not highly erodible land	Not highly erodible land	Frequent	75-100	All hydric	Not available in table	Fluvaquents	21
FuB	Fuquay loamy fine sand, 0 to 5 percent slopes	Consociation	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	870

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
GoA	Goldsboro loamy fine sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Paleudults	484
GrB	Gritney fine sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	12
HaB	Hannon clay loam, 1 to 3 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapluderts	5
KMA	Kinston, Mantachie, and luka soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not highly erodible land	Not highly erodible land	Frequent	0-14	Partially hydric	Not available in table	Fluvaquents	4,381
LnB	Luverne sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	570
LnC2	Luverne sandy loam, 5 to 10 percent slopes, eroded	Consociation	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	1,575

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
LsE	Luverne-Springhill complex, 15 to 25 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	7,665
LyA	Lynchburg loamy fine sand, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Paleaquults	297
MxA	Maxton loamy sand, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Hapludults	85
OcA	Ocilla loamy fine sand, 0 to 2 percent slopes, rarely flooded	Consociation	Not classified	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Paleudults	469
OrA	Orangeburg fine sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kandiudults	50
Pt	Pits	Consociation	Not classified	Not highly erodible land	Not highly erodible land		0-14	Not hydric	Not available in table		13

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
RbA	Red Bay sandy loam, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	17
SbB	Springhill sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kanhapludults	109
TaB	Troup-Alaga complex, 0 to 5 percent slopes	Complex	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	1,200
TsE	Troup-Springhill-Luverne complex, 10 to 30 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kandiudults	10,052
UcD	Uchee-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kanhapludults	628
UdA	Udorthents-Urban land complex, 0 to 2 percent slopes	Complex	Not classified	Not highly erodible land	Not highly erodible land		0-14	Not hydric	Not available in table	Udorthents	13

Table C-13: Soil Map Units and Associated Properties for Russell East

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	108

Table C-14: Soil Map Units and Associated Properties for Russell West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
BnB	Blanton loamy sand, 0 to 5 percent slopes	Consociation	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Paleudults	36
CnB	Conecuh fine sandy loam, 1 to 3 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	5,172
CoC2	Conecuh loam, 3 to 8 percent slopes, eroded	Consociation	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	14,973
DgA	Dogue fine sandy loam, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Hapludults	2,136
FuB	Fuquay loamy fine sand, 0 to 5 percent slopes	Consociation	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	383

Table C-14: Soil Map Units and Associated Properties for Russell West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
GoA	Goldsboro loamy fine sand, 0 to 2 percent slopes	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Paleudults	296
GrB	Gritney fine sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	2,313
HaB	Hannon clay loam, 1 to 3 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapluderts	850
HnC2	Hannon clay, 3 to 5 percent slopes, eroded	Consociation	All areas are prime farmland soils	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapluderts	236
HnD2	Hannon clay, 5 to 8 percent slopes, eroded	Consociation	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapluderts	1,875

Table C-14: Soil Map Units and Associated Properties for Russell West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
KMA	Kinston, Mantachie, and luka soils, 0 to 1 percent slopes, frequently flooded	Undifferentiated group	Not classified	Not highly erodible land	Not highly erodible land	Frequent	0-14	Partially hydric	Not available in table	Fluvaquents	4,793
LnB	Luverne sandy loam, 2 to 5 percent slopes	Consociation	All areas are prime farmland soils	Potentially highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Hapludults	137
LnC2	Luverne sandy loam, 5 to 10 percent slopes, eroded	Consociation	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	143
LsE	Luverne-Springhill complex, 15 to 25 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Hapludults	1,149
LyA	Lynchburg loamy fine sand, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Paleaquults	1,296

Table C-14: Soil Map Units and Associated Properties for Russell West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
MxA	Maxton loamy sand, 0 to 2 percent slopes, rarely flooded	Consociation	All areas are prime farmland soils	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Hapludults	30
OcA	Ocilla loamy fine sand, 0 to 2 percent slopes, rarely flooded	Consociation	Not classified	Not highly erodible land	Not highly erodible land	Rare	0-14	Partially hydric	Not available in table	Paleudults	1,037
TaB	Troup-Alaga complex, 0 to 5 percent slopes	Complex	Not classified	Not highly erodible land	Not highly erodible land	None	0-14	Not hydric	Not available in table	Kandiudults	50
TsE	Troup-Springhill-Luverne complex, 10 to 30 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kandiudults	759
UcD	Uchee-Cowarts complex, 5 to 15 percent slopes	Complex	Not classified	Highly erodible land	Not highly erodible land	None	0-14	Partially hydric	Not available in table	Kanhapludults	24

Table C-14: Soil Map Units and Associated Properties for Russell West

Map Unit Symbol	*Map Unit Name*	*Soil Map Unit*	*Prime Farmland Soils or Farmland Soils of Statewide Importance*	*Erosion Potential - Water*	*Erosion Potential - Wind*	*Flooding Frequency*	*Ponding Frequency (percent)*	*Hydrid Classification*	*Runoff*	*Tax Group*	*Acres*
UuA	Urbo-Mooreville-Una complex, 0 to 2 percent slopes, frequently flooded	Complex	Not classified	Not highly erodible land	Not highly erodible land	Frequent	15-49	Partially hydric	Not available in table	Epiaquepts	1
W	Water	Consociation	Not classified	Not Applicable	Not Applicable	Not Applicable	0-14	Not Applicable	Not Applicable	Not Applicable	241
WbA	Wahee-Bladen complex, 0 to 1 percent slopes, occasionally flooded	Complex	Not classified	Not highly erodible land	Not highly erodible land	Occasional	0-14	Partially hydric	Not available in table	Endoaquults	2,031

Table C-15: Soil Map Units and Associated Properties for Harris East and Talbot West

Map Unit Symbol	Map Unit Name	Soil Map Unit	Prime Farmland Soils or Farmland Soils of Statewide Importance	Erosion Potential - Water	Erosion Potential - Wind	Flooding Frequency	Ponding Frequency (percent)	Hydrid Classification	Runoff	Tax Group	Acres
Spatial data for Harris and Talbot County soil surveys is currently being developed by the NRCS and is not available for release and incorporation into this Draft EIS. The Final EIS will be updated with this information if it becomes available.											

APPENDIX D

TLEP Study Area Cultural Context and Inventory of Previously Recorded Resources

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Prehistoric and Historic Native American

The cultural prehistory of the Fall Line area of Alabama and Georgia falls into four eras: the Paleoindian, the Archaic, the Woodland, and the Mississippian, while the Protohistoric/Historic Native American era began upon arrival of European explorers to the shores of present-day U.S. Each of these eras is discussed in more detail below.

Paleoindian Era (>13,500 – 10,000 Before Present [B.P.])

The earliest documented human population in the southeastern U.S. (Southeast), Paleoindians have been characterized as mobile hunter-gatherers living in small bands. Although evidence from western North America suggested Paleoindian subsistence relied on large, now-extinct, Pleistocene animals, archaeological finds from eastern North America indicates they probably used a more varied suite of resources, including plants and small game. Researchers suggest that the Paleoindian period in the Southeast was characterized by high mobility, low population density, and a focal hunting economy (Anderson and Sassaman, 1996; Anderson et. al., 1990).

Diagnostic material culture of the period consists mainly of certain distinctive flaked stone tools such as Clovis, Dalton, Hardaway, and Suwannee types. These are most often made from varieties of high quality chert. In spite of increasing research into Paleoindian sites, few sites in the Southeast have produced diagnostic Paleoindian artifacts and most sites consist of only surface materials. Paleoindian artifacts have been found throughout Georgia but most sites are concentrated in the southwestern and northeastern portions of the state. Within Fort Benning, 17 Paleoindian sites are reported; while most of these are classed as General Paleoindian, 1 is classed as Early Paleoindian, 2 as Clovis, and 5 as Dalton (Gougeon, 2006).

Archaic Era (10,000 – 2,700 B.P.)

The Archaic era encompassed adaptation to changing environmental and social conditions, technological innovations, and possibly the introduction or use of domesticated plants. The period is typically divided into early, middle, and late subperiods.

The Early Archaic period is indicated primarily by the appearance of side-notched and later corner-notched flaked stone bifaces; diagnostic types include Big Sandy, Bolen, Taylor, Kirk, Tallahassee, and Palmer. Early Archaic peoples faced a changing environmental situation, as Late Pleistocene conditions gave way to the Holocene, during which the climate became drier and cold-adapted plants and animals went extinct in the region. Subsistence likely expanded to take advantage of newly emerging habitats and resources. Gougeon (2006) reports a total of 136 Early Archaic sites on Fort Benning.

The Middle Archaic period is identified on the basis of stemmed bifaces, including Kirk Stemmed/Kirk Serrated, Morrow Mountain, and Guilford types. A warmer and drier climatic period, known as the Hypsithermal, confronted Middle Archaic people with new environments, and archaeologists generally accept that this circumstance caused significant subsistence and settlement changes. The drier conditions might have caused people to concentrate settlement on reliable water sources. The Middle Archaic record within the Piedmont reveals relatively small sites that are characterized by low artifact diversity and no obvious locational biases, while Middle Archaic activities in the Coastal Plain are not well understood (Elliott and Sassaman, 1995). In the Piedmont, there is a greater reliance on local lithic sources compared to material usage patterns observable at Early Archaic sites, with quartz being the predominant material used for chipped stone tools. Within the bounds of Fort Benning, 71 Middle Archaic sites are reported (Gougeon, 2006), which corresponds with a general statewide pattern of decrease in site frequency from the Early Archaic (Williams, 2000).

This decreasing pattern in site frequency reverses both statewide and within the Fort Benning area during the subsequent Late Archaic period; a total of 312 Late Archaic sites are reported within Fort Benning (Williams, 2000; Gougeon, 2006). Generally, occupation of the Piedmont greatly intensifies during the Late Archaic period, a period marked by the appearance of broad stemmed bifaces in eastern North America. In the southeastern U.S., Savannah River Stemmed Bifaces are a diagnostic Late Archaic projective point/knife type. Populations became more sedentary, with residential base camps often located in floodplain settings, and smaller, special-activity sites (e.g., hunting, resource extraction, and collecting stations) located in the areas surrounding these base camps. Cultural developments associated with this period include increased use of riverine settings and resources, shellfish exploitation, the introduction of soapstone for containers, and the use of ground and polished tools. Finally, the introduction of pottery, the first known to exist in North America, emerged during this era (Elliott and Sassaman, 1995).

The introduction of ceramic technology was an important hallmark of the Late Archaic period. Ceramic containers, the earliest being tempered with fibers, had implications for cooking efficiency and long-term storage. The dispersal of ceramic technology from a core area along the Savannah River was spotty, however, possibly because Late Archaic cultures in the Southeast relied on carved steatite containers, both for cooking and as a component in exchange and alliance networks. Pottery, which could be manufactured anywhere, threatened to undermine long-standing political relationships. Pottery technology became more widely disseminated about 3,500 years ago (Elliott and Sassaman, 1995). Within western Georgia and Alabama, fiber-tempered pottery is generally placed under the Wheeler type name, which is believed to date later than Stallings and St. Simons fiber-tempered wares from the Savannah River Valley and lower Atlantic Coast, respectively.

Woodland Era (2,700-1,100 B.P.)

The transition from Archaic to Woodland culture is marked by the appearance of sand and grit tempered ceramics, sedentism, and horticulture. The period as a whole is characterized by increasing sedentism, more elaborate ceremonial activities, and a diversified subsistence pattern that relied on small game animals, aquatic resources, and agricultural products. A greater amount of information is available for Woodland manifestations as the activities, architecture, and artifacts are generally more concentrated and visible in the archaeological record. This includes evidence of trade goods and earthen architecture, more recognizable stylistic differences in pottery, and the invention and diffusion of the bow and arrow (Espenshade, 2008; Wood and Bowen, 1995). Additionally, the increasing reliance on horticulture, particularly starchy and oily seeded domesticates, appeared as a key parameter for the Woodland period. Reliance on plant food was encouraged by a greater ability to store and prepare cultivated and gathered foodstuffs due to advances in ceramic technology. These developments were gradually adopted over a 1,750-year period that is divided into three cultural sub-periods based on social patterns.

Eighty-eight Early Woodland sites are reported within Fort Benning (Gougeon, 2006). Survey and testing investigations of sites in the area of Walter F. George Reservoir at the southern reaches of Fort Benning (Knight and Mistovich, 1984; Mistovich and Knight, 1986) shed light on Early and Middle Woodland occupation in this area. With relatively meager evidence for occupation during this period in this area, Knight and Mistovich identified Dunlap fabric impressed and plain wares as markers for the Early Woodland period. Check stamped wares (more similar to the Cartersville type found to the north rather than to the Deptford ware of the coast and coastal plain) emerged at the end of the Early Woodland period and continued well into the subsequent Middle Woodland period, while Dunlap fabric impressed decreased in frequency. By approximately 2,000 B.P., Cartersville Simple Stamped and Swift Creek Complicated Stamped wares appear within this ceramic assemblage. Typical sites of this time frame are relatively small seasonal occupations along river terraces and levees. The Swift Creek ceramic tradition

appears to have begun in the area of south-central Georgia and northwest Florida (Williams and Elliot, 1998), and then spread through the Southeast and increased in popularity into the Late Woodland Era.

Widespread social interaction and ceremonialism during the Middle Woodland time frame is markedly visible in the archaeological record of western Georgia and eastern Alabama, as evidenced by a string of sites (e.g., Shorter, Kolomoki, Mandeville, Leake, and Tunnacunnhee) along the major river systems, including the Chattahoochee River. Such sites were large ceremonial centers that people visited for interaction and participation in rituals, including the construction of mounds and other earthworks. Found at most of these sites (excluding Tunnacunnhee), Swift Creek complicated stamped ceramics are believed to be symbols of inclusion in a widespread religious/ideological belief system that extended from the tip of Florida to the Great Lakes (Keith, 2010). Specifically, it appears that the Swift Creek tradition was a regional manifestation of the vast Hopewellian Interaction Sphere, which extended from the Great Lakes to the Gulf Coast. This extensive sphere appears to be locally manifested at specific sites that have a Swift Creek component, but it was not fully adopted by all Woodland communities (see Espenshade, 2008).

While large ceremonial centers are highly visible on the landscape, most Middle Woodland sites in the vicinity of the potential land acquisition sites represent domestic and short-term seasonal occupations along ridges and stream terraces. Gougeon (2006) reports the presence of 174 Middle Woodland sites on Fort Benning. The subsistence strategy of the Middle Woodland was a broad spectrum of gathered, hunted, trapped, and fished resources. In addition, the sub-period is marked by the nascent development of horticulture within the Eastern Agricultural Complex. Intensive plant gathering and hunting dependence, from seasonal and permanent base camps, was common within a more sedentary and less mobile logistical strategy. Masts were an important subsistence staple, and are often recorded in large quantities at Woodland sites. The large quantities are in part due to preservation bias, and shadow the (potential) importance of other plant resources. The decreasing evidence of storage pits, which were widely observed in earlier Woodland contexts, illustrates a shift in technology that possibly used storage vessels and/or above ground storage facilities.

During the late Middle Woodland sub-period, small triangular hafted bifaces are common and Hopewellian-derived items are found at some sites. Hafted bifaces of the Middle Woodland period are generally large and triangular, but less broad than Late Archaic forms. These specimens are often stemmed or "waisted" and can be grouped as Woodland Triangular types. In addition, the Yadkin, Coosa, and Bakers Creek hafted biface types are found in association with Middle Woodland remains.

The transition between the Middle and Late Woodland periods in Georgia is somewhat vague due to the uninterrupted production of Swift Creek ceramics, albeit later varieties. While there is a noticeable decline of Hopewellian manifestations throughout the Southeast, the Swift Creek phase continued, particularly in middle Georgia. According to Wood and Bowen (1995), "Swift Creek sites cluster in relatively high numbers near Columbus (near and within Fort Benning) and Macon at the Fall Line/Sand Hill where major rivers such as the Chattahoochee and Ocmulgee flow from the Piedmont into the Sand Hills." Gougeon (2006) reports that 73 Swift Creek sites are present on Fort Benning. In the vicinity of the potential land acquisition sites, the Swift Creek tradition was influenced by other groups and reflects coastal interaction through Santa Rosa and Weeden Island stylistic influences (Steinen, 1995; Williams and Elliott, 1998).

In addition to large villages near rivers, smaller settlements appeared along creeks in the upper reaches of river catchments during the Late Woodland Era. According to Gougeon (2006), 71 Late Woodland sites are present on Fort Benning. These settlements contained only a few structures or none at all, and probably represent population expansion or the "filling up" of much of the Southeast (Anderson and

Mainfort, 2002). This pattern of smaller sites (possible hamlets or foray sites) and large villages reflects a settlement pattern that may have depended more heavily on agriculture, little or no residential mobility (i.e., foray only), and a smaller resource catchment area.

Late Woodland hafted bifaces are small, triangular, and with a straight to slightly incurvate base, indicating the adoption of the bow and arrow circa 1,300 B.P. According to Whatley (2002), Late Woodland Triangular hafted bifaces are typical of the sub-period, and are similar to later Mississippian Madison and Hamilton types. Size variations of this type can be found from Middle Woodland through historic time frames, although specimens generally become smaller over time.

The transitional period from the Woodland to the Mississippian era, termed the Emergent Mississippian, is somewhat difficult to recognize in the area. This transition was marked by the use of predominantly plain pottery of the Averett series and small triangular projectile points. The Averett culture is discussed in the section below.

Mississippian Era (A.D. 1,100-470 B.P.)

Among archaeologists, consensus is that the Mississippian period marks the establishment of chiefdoms and the broad reach of social, political, and religious cultural manifestations across the Southeast. The extension and enforcement of these cultural norms occurred through a complicated network of villages and mound centers such as seen at the Macon Plateau sites (Hally and Rudolph, 1986) that reflect an interaction sphere throughout the Southeast (Schnell and Wright, 1993).

Conventionally, the Mississippian period was marked by significant population growth, the presence of flat-topped mounds, open plazas, defensive palisade walls, permanent occupation, agriculture based subsistence, and new ceramic types. Though mound centers are the most noticeable Mississippian sites, these larger centers played a role within a larger settlement pattern of smaller sites. Mound sites such as Kyle, located in Muscogee County and Abercrombie, located on the opposite side of the river in Russell County, Alabama appear to be representative of a pattern in the lower Chattahoochee Valley of paired single mound centers (Blitz and Lorenz, 2006). Multi-mound centers are also present in the valley downstream of Fort Benning, and include Rood's Landing, Singer-Moye, and Cemochechobee (Blitz and Lorenz 2006; Schnell et. al., 1981). Non-mound sites are represented in the vicinity by small farmsteads or hamlets that were dispersed to exploit favored croplands and aquatic environments.

Chronologically and culturally, the period from circa 1,100 to 700 B.P. is referred to as the Averett phase, during the latter portion of which (i.e., after 900 B.P.) local peoples (commonly referred to as the Averett culture) in the Fort Benning area built the mounds at Kyle and Abercrombie. Following this phase, Blitz and Lorenz (2006) argue that non-local Mississippian peoples (often referred to as the Rood culture) migrated to the lower Chattahoochee Valley and constructed mounds at fortified sites somewhat south of Fort Benning; this phase is known as Rood I and dates circa 900-800 B.P. From approximately 800 until 600 B.P., there is considerable evidence for interaction among Mississippian mound centers throughout the Southeast. It appears that by 700 B.P, the indigenous Averett populations abandoned the single mound centers they had established in the Fort Benning area. After approximately 550 B.P., it appears that pan-southeastern interaction declines sharply, as measured via prestige items with inter-regional symbolism (Blitz and Lorenz, 2006).

Mississippian subsistence practices throughout most of Georgia was based on the cultivation of maize and indigenous starchy seed plants, as well as hunting of deer, raccoon, turkey, waterfowl, and fish. The dispersed site pattern discussed above was likely utilized to exploit deer during the colder months and practice agriculture during the warmer months. Additional protein sources included fish, mussels, and gastropods or trapped animals. Springs, shoals, and oxbow environments also may have played a

significant role in food acquisition. The ability to predict food resources within a relatively small catchment area and technological advancements in food storage (i.e., corn-cribs) allowed for large sedentary villages and greater socio-political and ritual complexity.

Averett phase pottery assemblages are dominated by plain wares, while complicated stamped wares occur as well, leading Blitz and Lorenz to postulate a cultural connection with peoples to the north in the upper Chattahoochee and Etowah river valleys. Rood ceramic types included Moundville Incised and Cool Branch Incised. Circa A.D. 1400, Rood ceramic types began to drop off in popularity, replaced by non-local Fort Walton Incised and Lamar Complicated Stamped wares; this change in material culture is believed to reflect changing social and political identities during this period of declining political integration (Blitz and Lorenz, 2006).

The co-occurrence of Fort Walton and Lamar ceramic types during the time period circa 600 – 450 B.P. is known as the Bull Creek phase, named after the archaeological site of the same name where Bull Creek empties into the Chattahoochee River northwest of the boundary of Fort Benning (Ledbetter, 1997a). Knight and Mistovich (1984) recorded numerous small farmsteads dating to this period in the Walter F. George Reservoir area.

Protohistoric and Historic Native American Era (A.D. 1540 – 1827)

The arrival of European explorers to the shores of the southeastern U.S. marks the beginning of this era, a time when European societies began interacting with Native American societies. In Georgia, this period encompasses sixteenth-century expeditions of three Spaniards, de Soto, de Luna, and Pardo (Smith, 1992). The cultural traditions of the Late Mississippian and Protohistoric Native Americans changed drastically due to the arrival of Europeans, as the traditional ways of life were disrupted by disease, population decline and fragmentation, warfare, and the geopolitical tug-of-war between European nations over resources and territory in the Southeast. As a result, many of the surviving Native Americans banded together into a loose confederacy that came to be known as Creek Native Americans; Creek Native American groups were often made up of peoples of differing ethnicities and cultures. In general, Lower Creeks refers to those Native Americans living in Georgia along the Chattahoochee, Flint, Ocmulgee, and Oconee Rivers, while Upper Creeks refers to those living within the Tallapoosa, Coosa, and Alabama River watersheds. Gougeon (2006) reports a total of 384 Protohistoric and Historic Native American components within Fort Benning; 21 of which are of the former and the remaining 363 of the latter.

In the vicinity of the potential land acquisition sites, the Protohistoric time frame encompasses the Abercrombie phase (1550 – 1650), which covers the period of initial contact between European explorers and indigenous peoples. Named after the mound site in Russell County, which is believed to have been the town of Coweta that was abandoned as a result of Spanish raiding and burning in 1685 (Blitz and Lorenz, 2006), Abercrombie phase sites occur almost exclusively in the area of Russell and Muscogee counties. These sites are marked by shell and non-shell tempered pottery, with burnished, incised, and plain wares common. Within Fort Benning, Gougeon (2006) reports a single Abercrombie phase site.

The Native American archaeological correlate of the Spanish and British colonial period at Fort Benning is the Blackmon phase (1650 – 1715). Prior to 1685, the Spanish influenced trade, exploration, and other activities in the region. In 1670, the English established Charles Town (now Charleston) along the coast of present-day South Carolina, attempting to wrest political and economic control of the region from Spain. In the next few years, raids by coalitions of Native Americans and the English caused the Spanish to abandon many of these missions and retreat to St. Augustine. Based in Charles Town, the English established widespread trading networks with the Native Americans, trading in deerskins, furs, weapons, and slaves. In an attempt to maintain control, the Spanish burned several Native American towns along

the Chattahoochee River, and subsequently built Fort Apalachicola south of present-day Columbus. As a result, many of the Native Americans migrated to the Fall Line area of the Ocmulgee River, closer to English traders and the protection they provided. During the period from 1670 to 1715, the project vicinity may have been nearly de-populated; no Blackmon phase sites are reported within Fort Benning by Gougeon (2006). During the Blackmon phase, shell tempering is common, including in a variant of Ocmulgee Fields Incised; other wares include Kasita Red Filmed and Walnut Roughened. The Chattahoochee Brushed ceramic type may occur in very low frequencies. In addition to items produced by the Creeks, Historic Native American sites commonly contain Euroamerican ceramics, bottle glass, nails, gun parts, glass beads, and other imported items.

Unfair trading practices and enslavement of Native Americans on the part of the English eventually caused the Native Americans to revolt, leading to the Yamassee War (1713-1715), during which a large coalition of Native American groups attacked English settlements around Charles Town. The Creek Native Americans living along the Ocmulgee River allied with the Yamassee Native Americans, and were forced to retreat to the Chattahoochee River for protection by the Spanish shortly after 1715, which represents the beginning of the Lawson Field phase (ca. 1715 – 1838) (Braley, 1995). A high frequency of Lawson Field phase sites (63 as reported by Gougeon (2006)) within Fort Benning reflects the return of Creek peoples to the Chattahoochee Valley from the Ocmulgee River settlements. Many of these settlements represent small single- or multi-family farmsteads; two concentrations of these sites occur, one in northern Fort Benning along Kendall Creek, and the other in the southern portion of the reservation along the Chattahoochee River.

The largest and most prominent Creek town in the area was Kasita, which was located on the Chattahoochee River at Fort Benning's Lawson Field. The archaeological remains of this important Creek capital peace town were investigated by New South Associates (O'Steen et. al., 1997) and Panamerican Consultants, Inc. (Jackson, 2004). Ceramics common at Kasita and other Lawson Field phase sites include those found in the previous phase, while Chattahoochee Brushed pottery is common as well. On the Georgia side of the Chattahoochee River, Creek occupation of the area ended in 1827, due to the Creek Indian Land Cession resulting from the Treaty of Indian Springs (1825), and Muscogee County was formed in 1826, from land acquired in this land cession.

Historic Context

Fort Benning and the TLEP study area are located on the Chattahoochee River in both Georgia and Alabama. Fort Benning was established in 1918, during World War I and has played a significant role in training Army infantry for every major American conflict of the 20th and 21st centuries. The 287-square mile area now occupied by the Installation, however, has a rich cultural history that stretches back thousands of years. The area's past mirrors many of the themes that shaped the larger history of the Chattahoochee River valley region in Georgia and Alabama. This historic context is presented for both states, and is followed by a summary of county histories for the counties within the TLEP study area.

Georgia Historic Overview

The majority of Fort Benning is located in Muscogee and Chattahoochee counties in west Georgia, near the city of Columbus, with a small portion located across the Chattahoochee River in Russell County, Alabama. Georgia has a distinguished history in the South and the nation as the last of the original 13 American colonies; and by 1860, was the region's most populous state. The state was first settled during the colonial contests fought by the Spanish, French, and English in the 17th century. The Spanish were the first Europeans to explore the region during the 16th and 17th centuries. While they succeeded in establishing a chain of Catholic missions in north-central Florida and along the Georgia Sea Islands, they never established a permanent settlement in Georgia (Spalding, 1991; Ledbetter, 1997b).

The most notorious of the Spanish explorers was Hernando de Soto, who in 1540, marauded through the region in a search of gold. Members of de Soto's expedition recorded their route through the Southeast and details of the native people who lived there, creating a rare account of Native American life at the time of European contact. De Soto never passed through the Chattahoochee Valley, but his party moved near the area, and his soldiers may have had contact with Native Americans whose ancestors later settled the Chattahoochee River valley near Fort Benning (Cobb and Inscoe, 2010; Kane and Keeton, 1998).

The French also vied for control of the Southeast, but it was the English who were ultimately successful in settling the region, first with the 1670 settlement of Charles Town, and later by establishing the colony of Georgia. The English sought trade and military alliances with Native Americans against the Spanish in Florida, which led to intertribal warfare and slave raiding. Coastal Georgia Native Americans rebelled against the English in the 1715 Yamassee War, which was ultimately rebuffed as the colonists forced their attackers to withdraw west, eventually to the Chattahoochee Valley. Conflict with Native Americans in Georgia continued, especially after the Revolutionary War, until their ultimate forced removal by the U.S. government (Ledbetter, 1997b; Cobb and Inscoe, 2010).

The drive to found the new colony of Georgia was led by James Oglethorpe, an aristocrat and member of English Parliament. Under Oglethorpe's leadership, the colony was first envisioned as a refuge for England's unemployed, persecuted Protestants, and others who wanted to settle in the New World. In reality, its foremost purpose was to serve as a military buffer between the English colony of South Carolina and Spanish Florida. Oglethorpe and his associates received a royal charter in 1732, created a board of trustees to rule the colony, and named it for Britain's King George. The colony's first settlement of Savannah followed in 1733 (Coleman, 1991). In 1739, Oglethorpe visited Creek Native American villages on what would become Fort Benning to improve ties with the Creek and other Native Americans as a hedge against Spanish and French influence in the region (Kane and Keeton, 1998).

Slavery was originally prohibited in Georgia, but trustees lifted the ban in 1751 and ushered in a coastal plantation economy based on rice and sea-island cotton. Most of the colony's settlement remained close to the coast until the 1793 invention of the cotton gin by Eli Whitney, which along with rampant land speculation and the construction of the railroad in the 1830s, encouraged frontier settlement and development of cotton plantations based on slave labor across central Georgia (Cobb and Inscoe, 2010).

Settlement of the Georgia frontier, and the Fort Benning area, was encouraged by the writings of naturalist and explorer William Bartram, whose mid-1770s descriptions of the area's natural beauty encouraged land-hungry colonists to move west and north from the colony's coast (Kane and Keeton, 1998). The Creeks were ultimately forced to cede their territory in western Georgia and Alabama, opening a vast swath of territory to settlement. Georgia claimed former Creek territory along the Chattahoochee River and established Muscogee County, future home to Fort Benning, in 1825 (Ledbetter, 1997b).

As one of the South's largest and increasingly industrialized states, Georgia played a key role in the Confederacy and Civil War. It was the fifth state to secede from the Union in 1861, and it provided a number of men who served in the Confederate government, including its Vice President, Alexander Stephens, and Secretary of State, Robert Toombs. The Union's most decisive military incursion into the Deep South was General William T. Sherman's campaign from Chattanooga to Atlanta in the spring and summer of 1864, which led to the fall of Atlanta and the infamous "March to the Sea." Reconstruction was a time of incredible tension and violence in Georgia, which made it the last former Confederate state readmitted to the Union (Cobb and Inscoe, 2010).

The late 19th and early 20th centuries were marked by efforts to create a "New South" of industry and capital centered on Atlanta, but tensions simmered beneath the image of progress. While state leaders and the press championed industrial development, the majority of rural Georgians struggled to survive as farmers in the post-slavery era of low cotton prices and agricultural depression. At the same time, the rise of the Jim Crow era of discrimination against African Americans led to a half century of legally mandated racial segregation that characterized Georgia and the rest of the South (Cobb and Inscoe, 2010).

Fort Benning was established near Columbus in 1918, near the end of World War I to provide a site large enough to train Army infantry and artillery units. The area's terrain, climate, and transportation made it ideal for this purpose. First known as Camp Benning, the Post was located on a site about three miles from downtown Columbus on what is today a large shopping center. This original site was determined to be too small for the infantry school and it moved 9 miles south to a former 1,800-acre plantation property purchased from Arthur Bussey (Kane and Keeton, 1998).

Troops first arrived in October 1918, and its name changed to Fort Benning in 1922. The Post boomed with construction during the public works projects of the Great Depression and New Deal, continued to grow during World War II, and was for a time considered the largest infantry training school in the world (Bartley, 1991). After World War II, the Installation's mission expanded to include the 11th Air Assault Division and the School of the Americas. Fort Benning continues to play a major role in the local economy and culture of Muscogee and Chattahoochee counties (Diamond, 2010).

Alabama Historic Overview

Alabama was shaped by many of the same historic trends that influenced the development of its neighbor Georgia. Originally home to Creek, Cherokee, and Choctaw Native Americans, the state was invaded by European explorers and settlers beginning with de Soto, who visited the Coosa River region in 1540. De Soto's explorations brought disease and death that decimated native populations in Alabama and the Southeast (Atkins, 1994). From the 16th to the 19th century, Alabama played a significant role in the imperial warfare and intrigue among the Spanish, French, and English who vied for control of the Southeast. The French reached Mobile in 1702, and established the first permanent European settlement in Alabama on the Mobile River (Flynt, 2008).

Following the American Revolution, the new nation of the U.S. in 1798, reorganized the previously contested portions of the colony of Georgia and French lands in Alabama as the Mississippi Territory. Intense population growth and the acquisition of Native American lands spurred the creation of two states from the territory, with Alabama established in 1819. Native American removal continued apace as settlers from Georgia, Tennessee, and the Carolinas poured into Alabama, some of who brought slaves and established wealthy cotton plantation districts in the Tennessee River Valley and fertile Black Belt region of the mid-state. By 1860, almost half of the state's population was enslaved (Flynt, 2008; Rogers et. al., 1994).

With its slave-based agricultural economy, Alabama was mired in the sectionalism of the 19th century that led to the Civil War. The state seceded from the Union in January of 1861, and shortly thereafter Jefferson Davis was inaugurated as the president of the Confederate States of America in Montgomery, the first Confederate capitol. A large majority of the state's population supported the Confederate cause and provided a steady supply of troops and leaders for the war, as well as agricultural supplies and weapons (Rogers et. al., 1994).

The end of the war brought the end of slavery, but certainly not the deeply entrenched belief in racial superiority among Alabama's ruling white elite. Following the political and cultural turbulence of the Reconstruction period of the 1870s, the state's white elite regained power, systematically disenfranchised

blacks, and used state government to promote industrialization, often for its own financial benefit. North Alabama witnessed an industrial boom as extractive industries capitalized on coal, iron, and steel to transform towns like Birmingham, Anniston, Gadsden, and Bessemer. The textile industry made inroads into Huntsville and other locales in the piedmont and Chattahoochee River valley. Industrial growth was enhanced by the construction of railroad lines across the state (Rogers et. al., 1994).

As in neighboring Georgia at the time, most people in Alabama continued to make their living by farming, even as cotton prices plummeted and costs increased. As more and more farmers fell into the traps of the sharecropping and tenant systems of the era, many turned to political populism and national farm organizations like the Grange and Farmers' Alliance. While many gains were made through the creation of farm cooperatives, the Democrats in control of state politics ultimately blocked efforts to create populist third parties that threatened their rule (Rogers et. al., 1994).

The first half of the 20th century was marked by the further entrenchment of upper class white rule with the creation of the state's 1901 constitution, a document that is still in place today. The constitution created a strict set of discriminatory residency, literacy, property, and taxation requirements that effectively disenfranchised all black people in the state, as well as many poor whites. Few progressive reforms were passed in the era, as public education and state services remained limited and short of the state's needs (Rogers et. al., 1994).

The New Deal and World War II eras finally brought some modernization to what was still a largely rural, undeveloped state. The Tennessee Valley Authority brought electricity to the northern part of the state and encouraged the spread of other local utilities. The war ushered in an era of tremendous industrial prosperity and the promise of paying jobs and mobility for the state's many poor farmers. Cities like Mobile and Childersburg boomed with shipyards and factories, and struggled to provide housing and public services to their burgeoning populations. It was an era that brought more changes to Alabama society than any other period since the Civil War (Rogers et. al., 1994).

Increased opportunity and mobility also energized African Americans and the nascent Civil Rights movement that gripped Alabama and the South in the post-war period. Alabama was a central battleground during the struggle as the state's white supremacist government fought to preserve itself in the era after the landmark Brown vs. Board of Education decision in 1954. While the movement was based on the non-violent teachings of Martin Luther King, Jr. and others, white violence was stoked by the Ku Klux Klan and others. Infamous confrontations between peaceful Civil Rights protestors and white authorities in Birmingham and on Selma's Edmund Pettus Bridge garnered national attention and remained a stain on Alabama's reputation for decades thereafter (Rogers et. al., 1994).

County Histories

Russell County, Alabama

The Alabama Territorial General Assembly established Russell County in 1832, from former Creek Native American lands. It was named for Colonel Gilbert C. Russell of Mobile, a prominent officer who fought in the Creek Wars. The early settlement of the county followed the 1813 construction of Fort Mitchell, the "Gateway to the West," which provided military protection for white settlers in the region and was one of the starting points for the Trail of Tears in the 1830s. Settlers from Georgia, the Carolinas, and Virginia poured in and established the county's first permanent settlement at Glennville Beat, as well as other early villages at Cottonton, Uchee, Hurtsboro, and Girard (Siebenthaler, 2007).

Girard was the location of the Battle of Girard, one of the last battles of the Civil War that took place a week after General Robert E. Lee surrendered at Appomattox. Union forces under General James H. Wilson prevailed in the battle by capturing the two bridges that connected the county with Columbus,

Georgia, which gave the general access to that state (Siebenthaler, 2007). Girard was the first county seat in 1832, but it was later moved to Crawford in 1834, then Seale in 1868. In 1926, the county established dual seats in both Seale and Phenix City but then made Phenix City the sole seat in 1934. The Seale courthouse served as a school gym and meeting house after 1934, and was restored in 1974 (Siebenthaler, 2007).

The county's economy historically revolved around farming, especially cotton, corn, and cattle. Farm goods were transported via easy access to the Chattahoochee River. Manufacturing and industry came to the county with the damming of the river in the 1940s, especially textiles. The river has continued to play a large role in the county's development, with most of the local business sector clustered along its banks. Farming makes up less than one percent of employment in Russell County, as the economy has diversified with a number of educational institutions and manufacturers (Siebenthaler, 2007).

Stewart County, Georgia

The Georgia legislature created Stewart County in 1830, and named it for Daniel Stewart, a veteran of the French and Indian and Revolutionary Wars, and great-grandfather of U.S. President Theodore Roosevelt. There is extensive evidence of Native American prehistory in the county, including the Rood and Singer-Moye Mounds that date to the Mississippian period. White settlers drove the last of the Creek Native Americans out of the county in 1836. The June 9, 1836 Battle of Shepherd's Plantation was one of the last skirmishes between white settlers and Native Americans in the state (Moye, 2008).

The county is located 20 miles south of Columbus on the Chattahoochee River. Its early history between 1836 and 1850, is characterized by a population boom and development of extensive cotton agriculture and river trade. The 1845 census counted a population of over 14,000, with 8,497 whites and 5,744 blacks (White, 1849). With extensive areas of good alluvial soil adjacent to its river and many creeks, by 1850, it was one of Georgia's top three cotton producers, baling 7.6 million pounds in 1850.

The county seat of Lumpkin served as the area's center for government, commerce, and stagecoach routes. By the middle of the 19th century it had a population of about 1,000 with a county courthouse (rebuilt in 1895 by architect T. F. Lockwood and again after a fire in 1923), 3 hotels, 2 churches, male and female academies, 7 stores, 5 groceries, and various craftsmen including tailors, blacksmiths, carriage makers, and a cabinet maker. Professionals included 10 lawyers, 4 doctors, and a minister (White, 1849). Richland is the only other incorporated town in the county, which is also home to the unincorporated communities of Omaha and Louvale (Moye, 2008).

In the 1850s, Stewart County began to decline after it was bypassed by the railroad, which was routed north and south of the county to connect Savannah with west Georgia's cotton districts. The railroad did not reach Stewart until 1885, which led to the incorporation and growth of Richland. At the same time, the area's intensive cotton production led to devastating soil erosion and created a number of large gullies in the county. Despite the introduction of peanuts and professional forestry as agricultural alternatives to cotton, the county continued to lose population in every decade of the 20th century (Moye, 2008).

In response to economic stagnation, local citizens worked to encourage heritage tourism of the county's historic towns and cultural resources. The 1965 restoration of Lumpkin's historic stagecoach hotel, the 1836 Bedingfield Inn, is considered the first small-town community preservation effort in the state. Following the success of this restoration, Joseph B. Mahan, Jr. and a group of local preservationists founded a local living-history museum near Lumpkin called Westville, named after Jonesboro collector and museum operator John Word West. Westville was the state's earliest major effort in living history and historic preservation with a collection of relocated historic buildings from the antebellum period. Since it's opening in the late 1960s, Westville has maintained a premier collection of buildings, artifacts,

and costumed staff members who interpret the rural Georgia past to school groups and other visitors. Other recreational attractions in the county include the 1971 Providence Canyon, which is actually a series of erosion gullies caused by poor farming methods, and Florence Marina State Park on the Chattahoochee River (Moye, 2008).

Chattahoochee County, Georgia

Chattahoochee County was established in 1854, from portions of Muscogee and Marion counties. It was named for the river that forms its western boundary. Previously part of Muscogee County with the seat of justice at Columbus, the newly created county had to select a new county seat but had no suitable towns from which to choose. At that time the county had only 3 small post offices serving the rural population of 16,343, including 9,711 whites and 6,632 blacks (White, 1849).

In response, the county surveyed the new town of Cusseta and auctioned off its lots in May of 1854. The town was named after the Cussetah, a tribe of Creek Native Americans who lived in Kasita, "the Peace Town of the Lower Creeks," which previously stood on the site of the General's Headquarters at Fort Benning. Kasita was one of the oldest and most important towns of the Lower Creeks, with a population of almost 2,000 in 1832 (Grimsley, 2010b; Unified Government of Cusseta-Chattahoochee County, n.d.). By 1896, Cusseta had a population of around 300 and had benefited economically from the construction of the Columbus and Southern Railroad, and the Buena Vista and Ellaville Railroad, which opened up travel and trade opportunities, especially for farmers (Nesbitt, 1896).

The county's first two-story wooden Georgian-style courthouse was built by slave labor in 1854, and served as the center of local government until a brick courthouse replaced it in 1974. The original courthouse is preserved at Westville, a living-history site in neighboring Stewart County (Grimsley, 2010b; Unified Government of Cusseta-Chattahoochee County, n.d.).

Located on the fertile floodplain of the Chattahoochee River, agriculture dominated the nineteenth and early twentieth century economy of the county. By 1890, the county's rural farming population numbered 4,902. As in the rest of the region, cotton was the major cash crop, with almost 6,000 bales produced in 1900. Other major crops were rice, peanuts, sugar cane, oats, sweet potatoes, peas, along with figs, apple, peach, and plum orchards (Grimsley, 2010b; Nesbitt, 1896).

In 1918, Fort Benning was established and now occupies the majority of the county's area. The Main Post is the primary hub of activity and is a major contributor to the local economy with more than 22,000 active duty personnel and over 6,000 civilian employees (Grimsley, 2010b).

By 1960, the county had a population of just over 13,000, which rose to about 25,000 in 1970. By 1980, however, the county's population had dropped to near 20,000 (Georgia Historical Society, 1981).

Webster County, Georgia

Webster County was created in 1853, from parts of Lee and Stewart counties. Originally known as Kinchafoonee, the county's name was changed to Webster in 1856, after Daniel Webster, the New Hampshire orator and statesman. The county's first settlement was Lanahassee, near the creek bearing the same name, but later moved three miles east, renamed Preston, and made the county seat in 1856. The rural county covers an area of 210 square miles and has only 2 incorporated communities, Preston and Weston. The 2000 census counted a population of 2,390, down from its all-time high of 6,618 in 1900. In more recent years, the population has increased by approximately six percent.

Webster County possessed large areas of fertile soil and many creeks that made cotton the area's cash crop until the boll weevil crisis of the early 20th century (White, 1849). Farmers responded by adopting

other crops like peanuts and corn. The area's extensive pine forests were also exploited for the lumber industry in the twentieth century, which is an ongoing industry today.

The Webster County Courthouse was built in Preston in 1915. The two-story brick neoclassical building was designed by T. F. Lockwood Sr., the architect who also designed the courthouses in Stewart and Jasper counties in Georgia. Both the Webster County Courthouse and jail are listed on the NRHP (Holbrook, 2007).

Marion County, Georgia

Like several of its neighboring counties, Marion County was established by the Georgia state legislature in 1827, following land cessions by the Creek Native Americans in 1825. It was carved from Lee and Muscogee counties and named after the Revolutionary War hero General Francis "Swamp Fox" Marion of South Carolina. The first county seat was at Horry, but it was later moved to Tazewell in 1838. From Tazewell the seat was transferred to Pea Ridge in 1849, and later renamed Buena Vista. By that time Buena Vista had a population of 200 served by a brick courthouse, 2 large taverns, 2 churches, 4 dry goods stores, 2 groceries, 7 lawyers, and 3 physicians (Lyles, 2003; White, 1849).

Early white settlers were attracted to Marion County by the state's 1827 land lottery and the promise of rich soil that would support intensive cotton cultivation. By 1850, the population was just over 10,000, of whom 3,604 were slaves. The county did not have access to river or rail, so farm products were shipped 33 miles west to Columbus for export. Primary crops were cotton, corn, rice, potatoes, peas, and sugar cane. County mills included a wool-carding mill at Tazewell, 2 merchant mills, 10 saw mills, and 8 grist mills (White, 1849).

The railroad did not reach Marion County until 1884, but it did little to join the county to the industrializing "New South." Agricultural depression, the boll weevil infestation, and bank panics encouraged many of Marion County's citizens to move from the county (Lyles, 2003).

A notable local personality of the 20th century was Eddie Owens Martin, an artist and visionary who left the county for New York City in the 1920s. Immersed in the city's art scene, Martin changed his name to St. EOM and returned to Buena Vista, where he transformed his inherited estate into a visionary art site known as Pasaquan in the 1950s. Pasaquan is now owned and managed by the Pasaquan Preservation Society (Lyles, 2003).

Harris County, Georgia

Harris County was established in 1827, from parts of Muscogee and Troup counties in western Georgia along the border with Alabama. It was named after Charles Harris, Esq., an English-born lawyer and state representative who moved to Georgia in 1788 (White, 1849). Bordered by the Chattahoochee River on the west, the county contains 360 square miles and a number of creeks that empty into the river.

After the area's native Creek Native Americans, who had built known mounds along Mulberry Creek, were forced out in 1826, white settlers took advantage of state land lotteries to obtain land. Most of the county's first white settlers were from Georgia, the Carolinas, and Virginia, including W.C. Osborn, W. Switzer, General McDougald, and General Low. The first county seat was incorporated at Hamilton in 1828, and 2 decades later it had a small population of about 400, with a courthouse, jail, 2 churches, and separate male and female schools. Hamilton's current brick courthouse was erected in 1908. By 1849, the county had 9 rural post offices and a population of 7,166 whites, 6,972 blacks, for a total of 14,138. That year, Harris County also contained three merchant mills, six grist mills, eight saw mills, and two distilleries. The main agricultural crops were cotton, corn, and wheat (White, 1849).

Other communities in the county are Pine Mountain, Shiloh, and Waverly Hall. As was the case across the region, agriculture was the main economic activity in the county's early history, but manufacturing and tourism are now the largest employers (Cooksey, 2007).

Talbot County, Georgia

Talbot County was created from a portion of Muscogee County in 1827, by the Georgia legislature, the same year that it created adjacent Harris County. The county contains 393 square miles with the Flint River forming its northeastern boundary. Talbotton is the county seat, and both it and the county are named for Captain Matthew Talbot, a native of Virginia who settled in Wilkes County and later served as a state representative, senator, and ex-officio Governor after the death of Governor Rabun (White, 1849). The county's last Creek Native American residents were forcibly removed in 1836. Population growth continued through the nineteenth century, reaching just over 14,000 in 1845, with 8,016 whites and 6,176 black slaves (White, 1849).

The first session of the Georgia Supreme Court was held in Talbotton in January 1846, at the Claiborne Hotel. By that time, the town had a brick courthouse, jail, Masonic hall, male and female academies, and three churches representing the Methodists, Baptists, and Episcopalians. By 1850, Talbot County had a population of 16,534, over half of whom were slaves, and at the time was the fifth most populous county in the state. The county's many creeks supported several mills, including 15 saw mills and 25 grist mills (White, 1849). The primary crops during the 19th century were cotton, corn, wheat, rye, oats, and potatoes, though peaches and livestock played increasingly prominent roles, especially after the boll weevil devastated cotton production in the 1920s. Other towns in the county include Geneva, Junction City, and Woodland (Webb, 2004; White, 1849).

Muscogee County, Georgia

Muscogee County was established in 1825, in west central Georgia along the Chattahoochee River, which also forms the state line with adjacent Alabama. The county seat is Columbus, the third largest city in the state and historically a major center for agriculture, trade, and industry in west Georgia. Originally much larger than it is now, Muscogee County was created from land between the Flint and Chattahoochee Rivers that was ceded to the State of Georgia by the Creek Native Americans in the Treaty of Indian Springs. Several counties were created from this land, including Carroll, Coweta, Lee, and Troup, a total land area of approximately 2,000 square miles. The size of Muscogee County was reduced as additional smaller counties were carved from it, including the 1854 creation of Chattahoochee County to the south (Grimsley, 2010a).

Georgia had an intense interest in establishing a town at the Fall Line of the Chattahoochee River to strengthen the state's western border and take advantage of the natural shipping and industrial advantages of the area. The state established Columbus in 1828, near the river's Coweta Falls, the northernmost navigable point on the river from the Gulf of Mexico, to serve as the county seat. The county soon platted the town and auctioned off lots to the public, with certain lots reserved for a courthouse, schools, a jail, and cemetery. Additionally, a tract of almost 400 acres was designated the City Commons and reserved for public use (Grimsley, 2010a; Columbus Consolidated Government n.d.).

Located at the head of river navigation in a major agricultural region, Columbus boomed as a center of the cotton trade and manufacturing in the 19th century. Building on its natural advantages, investors harnessed the power of the river and its falls to transform Columbus into one of the South's earliest and largest manufacturing towns, with a number of textile, saw, and grist mills. Steamboats played a large role in the city's early trade history, followed by the railroad in 1851. The city's warehouses, merchants, and other professionals served cotton planters and farmers within a 50-mile radius (Ledbetter, 1997b; Lupold, 2010; Grimsley, 2010a).

By the eve of the Civil War, Muscogee County had a population of over 16,000, making it the fourth most populous county in the state. Columbus' manufacturing infrastructure made the town a major producer of military goods during the war, including swords, canons, ironclad ships, paper, and clothing. The town hosted one of the last military actions of the war on April 16, 1865, when the Union captured the city and destroyed many of its mills and factories (Grimsley, 2010a).

The county gradually recovered from the devastation of the war and diversified its economy in the late 19th and early 20th centuries. The creation of Fort Benning in 1918, had a huge impact on the future of the county, as the Army gradually acquired 287 square miles of land in Muscogee County and adjacent Chattahoochee County (Grimsley, 2010a). Today, Muscogee County and Columbus are home to major corporations, such as AFLAC and Synovous, as well as the U.S. Army and Fort Benning.

The following tables contain an inventory of identified cultural resources in the TLEP study area. Tables D-1 through D-9 contain a listing of previously recorded archaeological sites within the TLEP study area. Tables D-10 through D-13 contain a listing of previously recorded architectural resources within the TLEP study area.

Table D-1. Previously Recorded Archaeological Sites in Russell West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Russell	1RU142 SCR41	Early Archaic; Middle Archaic; Late Archaic; Early Woodland; Middle Woodland; Late Woodland	Unknown
Russell	1RU143	Unknown Native American	Unknown
Russell	1RU175	Historic Non-Native American	Unknown
Russell	1RU206	Historic Non-Native American	Unknown
Russell	1RU286	General Woodland; General Mississippian; Historic Non-Native American	Unknown
Russell	1RU504 Watermelon Creek	Middle Woodland; Late Woodland	Unknown
Russell	1RU508 Urchin Creek	Middle Archaic	Unknown

NRHP = National Register of Historic Places

Table D-2. Previously Recorded Archaeological Sites in Russell East

County	Site Number/Name	Cultural Affiliation	NRHP Status
Russell	1RU13	Middle Woodland	Unknown
Russell	1RU155	Historic Non-Native American	Unknown
Russell	1RU173	Historic Non-Native American	Unknown
Russell	1RU197	Historic Non-Native American	Unknown
Russell	1RU218 Bird House	Unknown Native American	Unknown
Russell	1RU249	Historic Non-Native American	Unknown
Russell	1RU250	Historic Non-Native American	Unknown
Russell	1RU251	Unknown Native American	Unknown
Russell	1RU269	Historic Non-Native American; Unknown Native American	Unknown
Russell	1RU32 New Hope Church	Unknown Native American	Unknown
Russell	1RU33 Horse Head	Unknown Native American	Unknown

NRHP = National Register of Historic Places

Table D-3. Previously Recorded Archaeological Sites in Stewart West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW132 Little Hannahatchee	General Woodland; General Mississippian	Unknown
Stewart	9SW138 Louvale Bypass 2	Unknown Native American	Unknown
Stewart	9SW139 Louvale Bypass 1	Unknown Native American	Unknown

Table D-3. Previously Recorded Archaeological Sites in Stewart West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW140	Unknown Native American	Recommended Ineligible
Stewart	9SW142	Historic Non-Native American; Unknown Native American	Recommended Ineligible
Stewart	9SW144 County Road 58-1	Late Archaic; General Woodland; General Mississippian	Recommended Ineligible
Stewart	9SW145	Unknown Native American	Recommended Ineligible
Stewart	9SW153 Hilltop	Unknown Native American	Recommended Ineligible
Stewart	9SW154 Colochee Creek 2	Late Woodland; Historic Non-Native American; General Paleo Native American; General Archaic	Unknown
Stewart	9SW155 Colochee Ridge	Late Woodland; Late Mississippian; Historic Non-Native American; General Mississippian	Recommended Ineligible
Stewart	9SW157 High Hill	Historic Non-Native American; General Woodland	Recommended Ineligible
Stewart	9SW166 Frogbottom Creek	Late Archaic; Historic Non-Native American; General Woodland	Unknown
Stewart	9SW167	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW168	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW169	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW170	Middle Woodland; Late Woodland; Historic Non-Native American	Unknown
Stewart	9SW171	Late Archaic; Historic Non-Native American; General Woodland	Unknown
Stewart	9SW172	Historic Non-Native American; General Woodland	Unknown
Stewart	9SW173	Middle Archaic; Late Archaic; Historic Non-Native American	Unknown
Stewart	9SW174	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW175	Unknown Native American	Recommended Ineligible
Stewart	9SW176	Historic Non-Native American; Unknown Native American	Recommended Ineligible
Stewart	9SW178	Historic Non-Native American	Unknown

Table D-3. Previously Recorded Archaeological Sites in Stewart West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW179	Unknown Native American	Recommended Ineligible
Stewart	9SW180	Historic Non-Native American; General Woodland	Unknown
Stewart	9SW181	Historic Non-Native American; General Woodland	Unknown
Stewart	9SW182	Early Archaic; Historic Non-Native American	Recommended Ineligible
Stewart	9SW183	Middle Woodland; Late Woodland; Historic Non-Native American; General Woodland	Unknown
Stewart	9SW184	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW185	Historic Non-Native American	Unknown
Stewart	9SW186	Historic Non-Native American	Unknown
Stewart	9SW187	Historic Non-Native American	Unknown
Stewart	9SW188 Frog Bottom 1	Late Woodland; Late Mississippian; General Woodland; Unknown Native American	Unknown
Stewart	9SW190	Historic Non-Indian	Unknown
Stewart	9SW191	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW192	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW193	Unknown Native American	Unknown
Stewart	9SW194	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW195	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW204	Historic Non-Native American; Unknown Native American	Unknown
Stewart	9SW208	Historic Non-Native American	Recommended Ineligible
Stewart	9SW209 Frog Bottom 2	Historic Non-Native American; Protohistoric	Recommended Ineligible
Stewart	9SW210 Frog Bottom 3	Early Archaic; Late Archaic; General Woodland	Recommended Ineligible
Stewart	9SW211 Frog Bottom 3	Historic Non-Native American	Unknown
Stewart	9SW214	Unknown Native American	Recommended Ineligible

Table D-3. Previously Recorded Archaeological Sites in Stewart West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW215 Mead Corporation BP	Historic Non-Native American	Recommended Ineligible
Stewart	9SW216 Holder Borrow Pit 1	Unknown Native American	Recommended Eligible
Stewart	9SW217 Holder Borrow Pit 2	Unknown Native American	Recommended Ineligible
Stewart	9SW218	Unknown Native American	Recommended Ineligible
Stewart	9SW45 Osborne's	Late Woodland; General Mississippian	Unknown
Stewart	9SW50	Early Woodland; Middle Woodland; Late Woodland; Early Mississippian; Middle Mississippian; Historic Native American; General Woodland	Unknown
Stewart	9SW51	Historic Native American	Unknown
Stewart	9SW59 Halliday	Middle Archaic; Late Archaic; Early Woodland; Middle Woodland; Late Woodland; Middle Mississippian; Late Mississippian; Historic Non-Native American	Unknown
Stewart	9SW61	Middle Woodland; General Mississippian	Unknown
Stewart	9SW64	Historic Non-Native American	Recommended Eligible
Stewart	9SW65	Historic Non-Native American	Unknown

NRHP = National Register of Historic Places

Table D-4. Previously Recorded Archaeological Sites in Stewart Central

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW109	Historic Native American	Recommended Ineligible
Stewart	9SW110	Early Mississippian; Historic Native American; General Woodland	Recommended Ineligible
Stewart	9SW111	Historic Non-Native American	Recommended Eligible
Stewart	9SW112	Early Archaic; Middle Archaic; Late Archaic; Historic Native American; Historic Non-Native American; General Woodland	Recommended Ineligible

Table D-4. Previously Recorded Archaeological Sites in Stewart Central

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW113	Late Archaic; Middle Woodland; Late Woodland; Early Mississippian; Historic Native American; Historic Non-Native American	Recommended Eligible
Stewart	9SW114	General Woodland; General Mississippian	Recommended Ineligible
Stewart	9SW115	Late Archaic; Late Woodland; Early Mississippian; Historic Native American; Historic Non-Native American	Recommended Eligible
Stewart	9SW116	Late Woodland; Early Mississippian; Historic Non-Native American	Recommended Ineligible
Stewart	9SW117	General Woodland; General Mississippian	Recommended Ineligible
Stewart	9SW118	Early Mississippian; Historic Native American; Historic Non-Native American; General Woodland	Unknown
Stewart	9SW119	Unknown	Recommended Ineligible
Stewart	9SW120	Unknown	Recommended Ineligible
Stewart	9SW121	Historic Non-Native American; General Archaic	Recommended Ineligible
Stewart	9SW122	Late Archaic; General Woodland; General Mississippian	Recommended Ineligible
Stewart	9SW123	Late Archaic; Historic Non-Native American	Recommended Ineligible
Stewart	9SW125	Historic Non-Native American	Recommended Ineligible
Stewart	9SW127	Unknown	Recommended Ineligible
Stewart	9SW128	Unknown	Recommended Ineligible
Stewart	9SW129	Unknown	Recommended Ineligible
Stewart	9SW130	Unknown	Recommended Ineligible
Stewart	9SW131	General Archaic	Recommended Ineligible
Stewart	9SW141	Unknown Native American	Recommended Ineligible
Stewart	9SW143	Unknown Native American	Recommended Ineligible

Table D-4. Previously Recorded Archaeological Sites in Stewart Central

County	Site Number/Name	Cultural Affiliation	NRHP Status
Stewart	9SW156 Bentley	Unknown Native American	Recommended Ineligible
Stewart	9SW206 Black Creek 1	Early Woodland; Historic Non-Native American; General Woodland	Recommended Ineligible
Stewart	9SW207 Black Creek 2	General Woodland; Unknown Native American	Recommended Ineligible
Stewart	9SW229	Historic Non-Native American; Unknown Native American	Recommended Ineligible
Stewart	9SW38 Davis Pond	Late Archaic; Unknown	Unknown
Stewart	9SW41 Pleasant Valley	Middle Archaic; Early Mississippian; Middle Mississippian; Late Mississippian; General Archaic	Unknown
Stewart	9SW42	Middle Woodland; Late Mississippian	Unknown
Stewart	9SW43 Hant	Early Woodland	Unknown
Stewart	9SW44 Hannahatchee	Middle Archaic; Early Woodland; Late Mississippian	Unknown
Stewart	9SW46 Lamar Swamp K	Middle Archaic; Early Woodland; Late Mississippian	Unknown

NRHP = National Register of Historic Places

Table D-5. Previously Recorded Archaeological Sites in proximity to the Chattahoochee Transportation Routes

County	Site Number/Name	Cultural Affiliation	NRHP Status
Chattahoochee	9CE1323	General Woodland; General Mississippian	Unknown
Chattahoochee	9CE2087	Historic Non-Native American; Unknown Native American	Recommended Ineligible
Chattahoochee	9CE54 Cany Creek	Middle Woodland; Historic Native American; General Mississippian	Unknown
Chattahoochee	9CE568	Historic Non-Native American; Unknown Native American	Recommended Ineligible
Chattahoochee	9CE603	Historic Non-Native American	Recommended Ineligible
Chattahoochee	9CE604	Late Archaic	Recommended Ineligible
Chattahoochee	9CE605	Historic Non-Native American	Unknown
Chattahoochee	9CE606	Unknown Native American	Unknown
Chattahoochee	9CE607	Unknown Native American	Recommended Ineligible

Table D-5. Previously Recorded Archaeological Sites in proximity to the Chattahoochee Transportation Routes

County	Site Number/Name	Cultural Affiliation	NRHP Status
Chattahoochee	9CE608	Early Archaic; Early Woodland; Middle Woodland; Late Woodland	Determined Eligible
Chattahoochee	9CE609	Unknown Native American	Unknown
Chattahoochee	9CE610	Late Archaic; Middle Woodland; General Woodland	Unknown
Chattahoochee	9CE611	General Archaic; Unknown Native American	Unknown
Chattahoochee	9CE612	Late Mississippian; Historic Native American	Unknown
Chattahoochee	9CE613	Historic Non-Native American	Unknown
Chattahoochee	9CE614	Historic Non-Native American	Unknown
Chattahoochee	9CE615	Unknown Native American	Unknown
Chattahoochee	9CE83	Unknown	Unknown
Chattahoochee	9CE84	Unknown	Unknown
Chattahoochee	9CE85	Unknown	Unknown
Chattahoochee	9CE86	Unknown	Unknown
Chattahoochee	9CE87	Unknown	Unknown

NRHP = National Register of Historic Places

Table D-6. Previously Recorded Archaeological Sites in Webster West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Webster	9MR15 Church Hill Cemetery	Historic Non-Native American	Recommended Eligible
Webster	9MR17 Shiloh Marion Baptist Church Cemetery	Historic Non-Native American	Listed

NRHP = National Register of Historic Places

Table D-7. Previously Recorded Archaeological Sites in Marion West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Marion	9MR1 Jernigan's 1	Middle Woodland; Early Mississippian; Late Mississippian; Historic Native American	Unknown
Marion	9MR2 Jernigan's 2	Historic Native American	Unknown
Marion	9MR25 Ida Bob Taylor	Early Archaic; Late Archaic; Middle Woodland; General Mississippian	Unknown

Table D-7. Previously Recorded Archaeological Sites in Marion West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Marion	9MR8	General Woodland; General Mississippian	Recommended Eligible

NRHP = National Register of Historic Places

Table D-8. Previously Recorded Archaeological Sites in Harris East and Talbot West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Harris	9HS42	Late Archaic	Unknown
Harris	9HS43	Historic Non-Native American; Unknown Native American	Unknown
Harris	9HS44	Unknown Native American	Unknown
Harris	9HS45	General Archaic	Unknown
Harris	9HS46	Historic Non-Native American; Unknown Native American	Unknown
Harris	9HS47	Unknown Native American	Unknown
Harris	9HS48	Unknown Native American	Unknown
Harris	9HS49	Middle Archaic; Late Archaic; Unknown Native American	Unknown
Harris	9HS50	General Archaic; Unknown Native American	Unknown
Harris	9HS51	Middle Archaic; Late Archaic; Historic Non-Native American; General Woodland; General Mississippian	Unknown
Harris	9HS52	Unknown Native American	Unknown
Harris	9HS54	Unknown Native American	Unknown
Harris	9HS55	General Archaic; Unknown Native American	Unknown
Harris	9HS56	Late Archaic	Unknown
Harris	9HS57	General Archaic; Unknown Native American	Unknown
Harris	9HS58	Historic Non-Native American	Unknown
Harris	9HS59	Middle Archaic; Late Archaic	Unknown
Harris	9HS60	Middle Archaic; Late Archaic	Unknown
Harris	9HS61	Early Archaic	Unknown
Harris	9HS62	Historic Non-Native American	Unknown
Harris	9HS63	Late Archaic	Unknown
Harris	9HS64	Unknown Native American	Unknown
Harris	9HS65	Late Archaic	Unknown

Table D-8. Previously Recorded Archaeological Sites in Harris East and Talbot West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Harris	9HS66	General Archaic	Unknown
Harris	9HS67	Middle Archaic; Late Archaic; Historic Non-Native American	Unknown
Harris	9HS68	Historic Non-Native American; Unknown Native American	Unknown
Harris	9HS69	Unknown Native American	Unknown
Harris	9HS70	Unknown Native American	Unknown
Harris	9HS71	Unknown Native American	Unknown
Harris	9HS72	Unknown Native American	Unknown
Harris	9HS73	Unknown Native American	Unknown
Harris	9HS74	Middle Archaic; Late Archaic; Historic Non-Native American; General Woodland; General Mississippian	Unknown
Harris	9HS75	Historic Non-Native American; Unknown Native American	Unknown
Harris	9HS76	Late Archaic; Historic Non-Native American; General Woodland; General Mississippian	Unknown
Harris	9HS77	Unknown Native American	Unknown
Harris	9HS78	Unknown Native American	Unknown
Harris	9HS79	Unknown Native American	Unknown
Harris	9HS80	Unknown Native American	Unknown
Harris	9HS81	Late Archaic	Unknown
Harris	9HS82	Historic Non-Native American; Unknown Native American	Unknown
Harris	9HS83	Historic Non-Native American	Unknown
Harris	9HS84	Unknown Native American	Unknown
Harris	9HS85	Unknown Native American	Unknown
Harris	9HS86	Unknown Native American	Unknown
Harris	9HS87	General Archaic; Unknown Native American	Unknown
Harris	9HS88	Unknown Native American	Unknown
Harris	9HS89	Middle Archaic	Unknown
Harris	9HS90	Late Archaic	Unknown
Harris	9HS91	Unknown Native American	Unknown
Harris	9HS92	Unknown Native American	Unknown
Harris	9HS93	Late Archaic	Unknown
Harris	9HS94	Unknown Native American	Unknown

Table D-8. Previously Recorded Archaeological Sites in Harris East and Talbot West

County	Site Number/Name	Cultural Affiliation	NRHP Status
Harris	9HS95	Unknown Native American	Unknown
Harris	9HS96	Middle Archaic	Unknown
Talbot	9TA114	Historic Non-Native American	Recommended Ineligible

NRHP = National Register of Historic Places

Table D-9. Previously Recorded Archaeological Sites in proximity to the Muscogee Transportation Route

County	Site Number/Name	Cultural Affiliation	NRHP Status
Muscogee	9ME17	Unknown Native American; Possible Muscogee Creek (Upatoi Complex [?] noted on site form)	Unknown
Muscogee	9ME240	Historic Cemetery	Unknown

NRHP = National Register of Historic Places

Table D-10. Previously Recorded Architectural Resources in the Russell County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Russell West					
Russell West	RU-330/Chappell House	Single Dwelling	circa 1925	Potentially Eligible	2
Russell West	RU-259/Chatfield House	Dwelling with Outbuildings	circa 1900	Potentially Eligible	2
Russell West	RU-229/Bishop House	Single Dwelling	circa 1860	Potentially Eligible	2
Russell West	RU-216/Sanders House	Single Dwelling	circa 1920	Potentially Eligible	2
Russell East					
Russell East	RU-185/Starke House	Single Dwelling	circa 1890	Potentially Eligible	2, 4
Russell East	RU-215/Hudson House	Single Dwelling	1944	Potentially Eligible	2, 4
Russell East	RU-27/"Bird's Nest," Lyman Martin House	Single Dwelling	circa 1858	Potentially Eligible	2, 4

Table D-10. Previously Recorded Architectural Resources in the Russell County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Russell East	RU-34/Cool Springs Baptist church	Church	circa 1840	Potentially Eligible	2, 4
Russell East	RU -211/Pitts Barn	Agricultural Outbuilding	circa 1893	Potentially Eligible	2, 4
Russell East	RU-33/Frank Pitts Sr. House	Single Dwelling	circa 1894	Potentially Eligible	2, 4
Russell East	RU-29/Burt Farm	Farm Complex	circa 1852	Potentially Eligible	2, 4
Russell East	RU-191	Single Dwelling	circa 1920	Potentially Eligible	2, 4
Russell East	RU-192	Agricultural Outbuilding	Unknown	Unknown	2, 4
Russell East	RU-26/Fanny Howard Plantation	Single Dwelling	circa 1834	Potentially Eligible	2, 4
Russell East	RU-25/Pines Plantation School House	Log School	circa 1840	Potentially Eligible	2, 4
Russell East	RU-182/McCoytown School	School	circa 1910	Potentially Eligible	2, 4
Russell East	RU-168/William Williams House	Single Dwelling	circa 1850	Potentially Eligible	2, 4
Russell East	RU-202/McCoy Tenant House	Single Dwelling	1941	Potentially Eligible	2, 4
Russell East	RU-183/Patterson Tenant House	Single Dwelling	circa 1880	Potentially Eligible	2, 4
Russell East	RU-127/Fitzsimmons House	Single Dwelling with Barn	circa 1880	Potentially Eligible	2, 4
Russell East	RU-169/Patterson Plantation	Farm Complex	1899	Potentially Eligible	2, 4
Russell East	RU-334/St. Joseph's Church	Church	1928	Unknown	2, 4
Russell East	RU-63/Lewis Gardner Pitts House	Single Dwelling	1853	Potentially Eligible	2, 4
Russell East	RU-212	Single Dwelling	Unknown	Unknown	2, 4
Russell East	RU-109/Wiley Stratford House	Dwelling with Outbuildings	circa 1835	Potentially Eligible	2, 4
Russell East	RU-110/John Robert Thomas House	Single Dwelling	circa 1835	Potentially Eligible	2, 4

Table D-10. Previously Recorded Architectural Resources in the Russell County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Russell East	RU-62/William Gatewood Plantation	Single Dwelling	circa 1835	Potentially Eligible	2, 4
Russell East	RU-247	Single Dwelling	Unknown	Unknown	2, 4
Russell East	RU-58/Thacker Howard Owens House	Single Dwelling	circa 1840	Potentially Eligible	2, 4
Russell East	RU-205/Willis Mercantile Store	Commercial	Unknown	Potentially Eligible	2, 4
Russell East	RU-206/Owens House	Single Dwelling	Unknown	Potentially Eligible	2, 4
Russell East	RU-123/Section Foreman's House	Single Dwelling	1901	Potentially Eligible	2, 4
Russell East	RU-120/St. James Baptist Church	Church	circa 1920	Not Eligible (alterations)	2, 4
Russell East	RU-121/Thomas House	Single Dwelling	circa 1850	Potentially Eligible	2, 4
Russell East	RU-122/Thomas Home Place	Single Dwelling	Unknown	Potentially Eligible	2, 4
Russell East	RU-97/Johnson-Chancey House	Farm Complex	1929	Potentially Eligible	2, 4
Russell East	RU-98/Lancaster - May-Sims House	Single Dwelling	circa 1880	Potentially Eligible	2, 4
Russell East	RU-178/Martin Kitchen House	Farm Outbuilding	Unknown	Unknown	2, 4
Russell East	RU-100/Cottonton School	School	circa 1935	Potentially Eligible	2, 4
Russell East	RU-99/Holliday Log Cabin	Single Dwelling	circa 1835	Potentially Eligible	2, 4
Russell East	RU-101/Burch's Quarters Dogtrot House	Single Dwelling	circa 1850	Potentially Eligible	2, 4
Russell East	RU-102/Burch's Quarters Tenant House	Single Dwelling	circa 1850	Potentially Eligible	2, 4
Russell East	RU-107/Burch's Quarters Tenant House	Single Dwelling	circa 1850	Potentially Eligible	2, 4
Russell East	RU-125/Nels Owens House	Single Dwelling	circa 1925	Potentially Eligible	2, 4

Table D-10. Previously Recorded Architectural Resources in the Russell County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Russell East	RU-108/Mt. Lebanon Baptist Church	Church	1947	Unknown	2, 4
Russell East	RU-59/Thomas Nelson Grave Shelter	Structure	1862	Unknown	2, 4

APE = Area of Potential Effect; NRHP = National Register of Historic Places

Table D-11. Previously Recorded Architectural Resources in the Stewart County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Stewart Central					
Stewart Central	ST-58962/ store	General Store	1880	Potentially Eligible	3, 4
Stewart Central	ST-58980/ Mabrey/Bridges House	Single Dwelling	1900	Potentially Eligible	3, 4
Stewart Central	ST-58965/ Louvale School	School	1940	Potentially Eligible	3, 4
Stewart Central	ST-58971/ log corn crib/barn	Single Dwelling	1880	Unknown	3, 4
Stewart Central	ST-58972/ log corn crib / barn	Agricultural Outbuildings	1850	Potentially Eligible	3, 4
Stewart Central	ST-58964/ Dr. W. H. Tatum house; Tatum-Wilder house	Hotel/Inn/Motel/Bed & Breakfast	1883	Potentially Eligible	3, 4
Stewart Central	ST-58983/ A.J. Ivey house; Ivey-Hollomon house	Single Dwelling	1908	Potentially Eligible	3, 4
Stewart Central	ST-58981/ "The Log House at Red Hill"	Single Dwelling	1840	Potentially Eligible	3, 4
Stewart Central	ST-59199	Single Dwelling	1900	Unknown	3, 4
Stewart Central	ST-58973	Single Dwelling	1920	Potentially Eligible	3, 4

Table D-11. Previously Recorded Architectural Resources in the Stewart County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Stewart Central	ST-58982	Single Dwelling	1910	Potentially Eligible	3, 4
Stewart Central	ST-58979	Single Dwelling	1910	Potentially Eligible	3, 4
Stewart Central	ST-58967	Single Dwelling	1910	Unknown	3, 4
Stewart Central	ST-58968	Unknown (Insufficient information)	1910	Unknown	3, 4
Stewart Central	ST-58955	Single Dwelling	1910	Potentially Eligible	3, 4
Stewart Central	ST-58963	Single Dwelling	1900	Potentially Eligible	3, 4
Stewart Central	ST-58961	Single Dwelling	1910	Potentially Eligible	3, 4
Stewart East					
Stewart East	ST-81102/ Nathaniel Prothro, Plantation	Agriculture/Food Processing	1851	Listed	1
Stewart East	ST-58978/ Nathaniel Prothro Plantation Main House	Single Dwelling	1851	Potentially Eligible	1
Stewart East	ST-59259	Single Dwelling	1900	Potentially Eligible	1
Stewart West					
Stewart West	ST-58929/ Ward store & house; Ward-Boyette-Geeslin house	General Store	1880	Potentially Eligible	3, 5
Stewart West	ST-58957/ Marvin Methodist Church	Church/Religious Structure	1900	Potentially Eligible	3, 5
Stewart West	ST-58956/ New Hope Baptist Church	Church/Religious Structure	1901	Potentially Eligible	3, 5
Stewart West	ST-58959/ Antioch Primitive Baptist Church	Church/Religious Structure	1885	Potentially Eligible	3, 5

Table D-11. Previously Recorded Architectural Resources in the Stewart County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Stewart West	ST-58958/ Antioch Institute; Louvale School	School	1870	Potentially Eligible	3, 5
Stewart West	ST-80940/ Louvale Church Row Historic District	District, Educational	1870	Listed	3, 5
Stewart West	ST-58944/ Pleasant Grove Baptist Church	Church/Religious Structure	1910	Potentially Eligible	3, 5
Stewart West	ST-58927/ Walton-Cherry house	Single Dwelling	1858	Potentially Eligible	3, 5
Stewart West	ST-58931/ Green-Williamson house; Joseph Green house	Single Dwelling	1850	Potentially Eligible	3, 5
Stewart West	ST-58948/ Fitzgerald-Childs House; Sylvan Grove	Single Dwelling	1834	Potentially Eligible	3, 5
Stewart West	ST-58966/ black church	Church/Religious Structure	1930	Potentially Eligible	3, 5
Stewart West	ST-58960	Single Dwelling	1900	Potentially Eligible	3, 4
Stewart West	ST-58949	Single Dwelling	1870	Potentially Eligible	3, 5
Stewart West	ST-58952	Single Dwelling	1920	Potentially Eligible	3, 5
Stewart West	ST-58936	Single Dwelling	1880	Potentially Eligible	3, 5
Stewart West	ST-58954	Single Dwelling	1880	Potentially Eligible	3, 5
Stewart West	ST-58930	Single Dwelling	1880	Potentially Eligible	3, 5
Stewart West	ST-59223	Single Dwelling	1910	Potentially Eligible	3, 5
Stewart West	ST-58946	Single Dwelling	1900	Potentially Eligible	3, 5
Stewart West	ST-58953	Single Dwelling	1910	Potentially Eligible	3, 5

Table D-11. Previously Recorded Architectural Resources in the Stewart County APEs

APE	Site ID/Name	Type	Date	NRHP Status	Relevant Alternative
Stewart West	ST-58945	General Store	1900	Potentially Eligible	3, 5

APE = Area of Potential Effect; NRHP = National Register of Historic Places

Table D-12. Previously Recorded Architectural Resources in Webster West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Webster West	WB-14/ Enterprise Baptist Church and Cemetery (also "92" in earlier survey)	Church and Cemetery	circa 1910	Eligible	1
	WB-12/ Greater Goodhope Baptist Church and Cemetery (also "62" in earlier survey)	Church and Cemetery	circa 1940	Potentially Eligible	1
Webster West	WB-16	Store	circa 1890	Potentially Eligible	1
Webster West	WB-15/ cemetery on Seminole Rd	Cemetery	circa 1900	Potentially Eligible	1
Webster West	WB-108/ Antioch Baptist Church Cemetery	Church and Cemetery	circa1858	Potentially Eligible	1
Webster West	WB-107	Store	circa 1910	Potentially Eligible	1
Webster West	WB-106	Store	circa 1900	Potentially Eligible	1
Webster West	WB-105	Store	circa 1890	Potentially Eligible	1
Webster West	WB-104	Store	circa 1900	Potentially Eligible	1
Webster West	WB-103	Store	circa. 1895	Potentially Eligible	1
Webster West	WB-102/ Evans Chapel	School	circa 1910	Potentially Eligible	1
Webster West	WB-101	School	circa 1940	Potentially Eligible	1

Table D-12. Previously Recorded Architectural Resources in Webster West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Webster West	WB-202/ Pickett-Brooks-Shippey Cemetery	Cemetery	circa 1850	Potentially Eligible	1
Webster West	61	Tenant House	Unknown	Unknown	1
Webster West	63	Tenant House	Unknown	Unknown	1
Webster West	64	Farm House	Unknown	Unknown	1
Webster West	71	Log House	Unknown	Unknown	1
Webster West	72	Farm House	circa 1850	Unknown	1
Webster West	73	Tenant House	Unknown	Unknown	1
Webster West	75	Farm House	Unknown	Unknown	1
Webster West	76	Store	Unknown	Unknown	1
Webster West	77	Log Cabin	Unknown	Unknown	1
Webster West	78	Tenant House	Unknown	Unknown	1
Webster West	79	Farm House	Unknown	Unknown	1
Webster West	80 Store at Evans CME Church	Store	Unknown	Unknown	1
Webster West	81	Bungalow	1920s	Unknown	1
Webster West	82	Tenant House	Unknown	Unknown	1
Webster West	83	Farm House	circa 1860	Unknown	1
Webster West	84	Farm House	Unknown	Unknown	1
Webster West	85	Tenant House	Unknown	Unknown	1
Webster West	86	Tenant House	Unknown	Unknown	1
Webster West	87	(no view)	Unknown	Unknown	1

Table D-12. Previously Recorded Architectural Resources in Webster West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Webster West	88	(no view)	Unknown	Unknown	1
Webster West	89	Farm House	Unknown	Unknown	1
Webster West	90	Tenant House	Unknown	Unknown	1
Webster West	91	Tenant House	Unknown	Unknown	1
Webster West	93	Victorian House	(Victorian)	Unknown	1
Webster West	94	Farm House	Unknown	Unknown	1
Webster West	95	Farm House	Unknown	Unknown	1
Webster West	96	Store	Unknown	Unknown	1
Webster West	97	Tenant House	Unknown	Unknown	1
Webster West	98	Farm House	Unknown	Unknown	1
Webster West	99	Barn	Unknown	Unknown	1
Webster West	100	Tenant House	Unknown	Unknown	1
Webster West	101	Farm House	Unknown	Unknown	1
Webster West	102 Antioch Baptist Church	Church	Founded 1868	Unknown	1
Webster West	103	Tenant House	Unknown	Unknown	1
Webster West	104	Tenant House	Unknown	Unknown	1
Webster West	105	Grist Mill	Unknown	Unknown	1
Webster West	106	House/Church	Unknown	Unknown	1
Webster West	107	Farm House	Unknown	Unknown	1
Webster West	108 “Old Blakely House”	Farm House	circa 1840	Unknown	1

Table D-12. Previously Recorded Architectural Resources in Webster West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Webster West	109	Log Barn	Unknown	Unknown	1
Webster West	110	Farm House	Unknown	Unknown	1
Webster West	111	Farm House	Unknown	Unknown	1
Webster West	112	Farm House	Unknown	Unknown	1
Webster West	113	Farm House	Unknown	Unknown	1
Webster West	114	Farm House	Unknown	Unknown	1
Webster West	115	Farm House	Unknown	Unknown	1
Webster West	116	Tenant House	Unknown	Unknown	1
Webster West	117	Tenant House	Unknown	Unknown	1
Webster West	118	Farm House	Unknown	Unknown	1
Webster West	119	(unknown)	Unknown	Unknown	1
Webster West	120	Farm House	Unknown	Unknown	1
Webster West	121	Tenant House	Unknown	Unknown	1
Webster West	122	Bungalow	circa 1910	Unknown	1
Webster West	123	Tenant House	Unknown	Unknown	1
Webster West	124	Tenant House	Unknown	Unknown	1
Webster West	125	Tenant House	Unknown	Unknown	1
Webster West	126	Tenant House	Unknown	Unknown	1
Webster West	127	Farm House	circa 1900	Unknown	1

APE = Area of Potential Effect; CME = Christian Methodist Episcopal; NRHP = National Register of Historic Places

Table D-13. Previously Recorded Architectural Resources in Marion West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Marion West	MR-32/ Primitive Baptist Church and Cemetery	Church	circa 1870	Eligible	1
	MR-31	Folk Victorian Store	circa 1895	Eligible	1
Marion West	MR-45/ Smyrna Presbyterian Cemetery	Cemetery	circa 1863	Unknown	1
Marion West	260	Log House	Unknown	Unknown	1
Marion West	261	Tenant House	Unknown	Unknown	1
Marion West	262	Farm House	Unknown	Unknown	1
Marion West	263	Tenant House	Unknown	Unknown	1
Marion West	429	Bungalow	Unknown	Unknown	1
Marion West	430	Tenant House	Unknown	Unknown	1
Marion West	431	Tenant House	Unknown	Unknown	1
Marion West	432	Tenant House	Unknown	Unknown	1
Marion West	433	Tenant House	Unknown	Unknown	1
Marion West	435	Tenant House	Unknown	Unknown	1
Marion West	436	Store	Unknown	Unknown	1
Marion West	437	Tenant House	Unknown	Unknown	1
Marion West	438	Tenant House	Unknown	Unknown	1
Marion West	584	Tenant House	Unknown	Unknown	1
Marion West	585	Tenant House	Unknown	Unknown	1
Marion West	586	House	Unknown	Unknown	1

Table D-13. Previously Recorded Architectural Resources in Marion West

APE	Site Number/Name	Type	Date	NRHP Status	Relevant Alternative
Marion West	587	Church	Unknown	Unknown	1
Marion West	588	School	Unknown	Unknown	1
Marion West	589	House	Unknown	Unknown	1
Marion West	590	Church	Unknown	Unknown	1
Marion West	591	Farm House	Unknown	Unknown	1
Marion West	599	Farm House	Unknown	Unknown	1
Marion West	600	Plantation	Unknown	Unknown	1
Marion West	601	Tenant House	Unknown	Unknown	1

APE = Area of Potential Effect; NRHP = National Register of Historic Places

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APPENDIX E

Analysis of Socioeconomic Effects – Use of the Economic Impact Forecast System (EIFS)

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Introduction

As a result of the Base Realignment and Closure Act (BRAC) of 2005 and the reorganization of the Army to the Brigade structure, the training demands at Fort Benning have changed, and the Army needs additional land upon which to build critical training facilities. The socioeconomic effects of the troop and civilian growth at Fort Benning, as well as additional expenditures to support their activities, has been previously been addressed. This analysis will address the effects of proposed land acquisition on the multi-county region around Fort Benning and in which land acquisition will occur.

The Model

In order to analyze the total (direct and indirect) regional socioeconomic effects of Fort Benning's proposed land acquisition, the Economic Impact Forecast System (EIFS) (Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994.) is used. It has been a mainstay of Army NEPA practice since its initial development and implementation in the mid-1970s. EIFS provides a mechanism to estimate impacts, and ascertain the "significance" of projected impacts, using the Rational Threshold Value (RTV) technique. EIFS was designed to address NEPA applications, providing a "two-tier" approach to the process; (1) a simple and quick aggregate model (sufficient to ascertain the overall magnitude of impacts) and (2) a more detailed, sophisticated input-output (I-O) model to further analyze impacts that appear significant, in NEPA terms, and worthy of additional expenditures and analyses. This "two-tier" approach is consistent with the notion of a "first tier" analysis, such as this programmatic approach and a "second tier" analysis if RTV (and other) determinations indicate such a need.

Complete documentation of the model, its development, and applicable theoretical underpinnings is available in numerous publications; and these are presented in Annex A, along with a brief presentation of the overall theoretical basis of the model and supporting tools.

The RTV technique (Webster, R.D.; and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978) was developed to measure the regional significance of the EIFS model estimates. This technique relies on the yearly Bureau of Economic Analysis (BEA) time series data on employment, income, and population to evaluate historical trends with in a subject community (region); and uses those trends to measure the "resilience" of the local community to change, or its ability to accommodate such change. This approach has worked well when communicating with affected communities. The combined use of RTV with the EIFS model meet the two pronged approach for significance determinations, intensity and context (CEQ, 1992).

The Analysis of Impacts

To effect these analyses, the inputs to the EIFS model must be estimated. The normal EIFS inputs include:

Number of affected (moving) civilians and their salaries
Number of affected (moving) military employees and their salaries
Percentage of affected military employees living on-post
Changes in local procurement, contracting, and purchases
Definition of the multi-county region of influence (ROI)

This proposed action represents a special case of procurement. While this type of procurement is not a traditional use of the term, the land acquisition does represent an injection of new money into the economic region. These Army expenditures are "exogenous" (originating from outside the region) and will stimulate the same economic growth as any other expenditure or procurement.

The land parcels that are under evaluation are broken into five alternatives. The following table summarizes the alternatives, and the characteristics of the study area. The costs shown are the estimated

market value of the land. The cost of any demolition on the property is also shown. The land costs and the demolition costs represent the total anticipated Army expenditures for the land acquisition.

The Direct Effects of the Procurement

Alternative	Study Area Location	Number of Owners	Number of Structures	Acquisition Cost	Demolition Cost	Total Cost
1	Marion West	162	97	$114,000,000	$2,425,000	
	Stewart East	69	46	$43,000,000	$1,150,000	
	Webster West	260	149	$94,000,000	$3,725,000	
		491	**292**	**$252,000,000**	**$7,300,000**	**$259,300,000**
2	Russell West	355	117	$134,000,000	$2,925,000	
	Russell East	450	185	$211,000,000	$4,625,000	
		805	**302**	**$345,000,000**	**$7,550,000**	**$352,550,000**
3	Stewart West	99	60	$64,000,000	$1,500,000	
		72	33	$69,000,000	$825,000	
	Stewart Central	201	93	$87,000,000	$2,325,000	
		372	**186**	**$221,000,000**	**$4,650,000**	**$225,650,000**
4	Russell East	450	185	$211,000,000	$4,625,000	
	Stewart Central	201	93	$87,000,000	$2,325,000	
		651	**278**	**$299,000,000**	**$6,950,000**	**$305,950,000**
5	Stewart West	99	60	$64,000,000	$1,500,000	
		72	33	$69,000,000	$825,000	
	Harris East	1		$17,000,000	$-	
	Talbot West	1		$47,000,000	$-	
		173	**93**	**$198,000,000**	**$2,325,000**	**$200,325,000**

The totals shown for each alternative represent total costs or expenditures. These must be adjusted to reflect local purchases. Effects on the local economy will occur only in cases where the land is bought locally. If the procurement of the land is made to entities outside the economic region, these effects do not occur. The estimates of local and non-local land purchases was produced from the analysis a file obtained from Fort Benning (Personal Communication, Brosch, 2010). The address (city and zip code) of the owners of individual target parcels was evaluated to see if the owners functioned or lived in the defined economic region. These were tabulated and a "percent local" figure was derived. No data was available for the Harris East or Talbot West during the preparation of the Draft EIS, so these purchases are treated as 100 percent local. The EIFS modeling in the Final EIS will be updated to reflect any new data collected regarding the parcels under consideration for acquisition within Harris and Talbot counties.

These percentages are inserted in the following table for each alternative, and the total local procurement costs for the land in each alternative are calculated.

Alternative	Study Area Location	Total Cost	Percent Local	Local Cost
1	Marion West	$116,425,000	0.69	$80,833,000
	Stewart East	$44,150,000	0.88	$38,852,000
	Webster West	$97,725,000	0.51	$49,839,000
				$169,025,000
2	Russell West	$136,925,000	0.66	$90,370,000
	Russell East	$215,625,000	0.71	$153,093,000
				$243,464,000
3	Stewart West	$65,500,000	0.72	$47,160,000
		$69,825,000	0.72	$50,274,000
	Stewart Central	$89,325,000	0.72	$64,314,000
				$161,748,000
4	Russell East	$215,625,000	0.71	$153,093,000
	Stewart Central	$89,325,000	0.72	$64,314,000
				$217,407,000
5	Stewart West	$65,500,000	0.72	$47,160,000
		$69,825,000	0.72	$50,274,000
	Harris East	$17,000,000	1	$17,000,000
	Talbot West	$47,000,000	1	$47,000,000
				$161,434,000

These totals represent the local procurement costs for each alternative, assuming that all the land in each alternative is purchased, and purchased at one time. The land will likely be purchased in smaller quantities, as opposed to complete acquisition at one time (phone conversation with the U.S. Army Corps of Engineers [USACE] on 15 November 2010). In addition, the approved maximum acquisition is currently set at 82,800 acres (Personal Communication, Fort Benning, 2010). This acquisition strategy and the final size of any land acquisitions will be dictated by the appropriations that are passed to support this effort.

The following table represents the total local costs of a land acquisition in one acquisition and the same purchase in two equal increments.

Alternative	Local Cost		1 Increment	2 Increments
1	$169,025,000		$227,345,000	$113,672,000
2	$243,264,000		$327,024,000	$163,512,000
3	$161,748,000		$186,008,,000	$93,004,000
4	$217,407,000		$292,267,000	$146,133,000
5	$161,434,000		$218,274,000	$109,137,000

Priority will also be likely given to parcels and combinations of parcels that have relatively fewer owners in total (Personal Communication, USACE, 2010). This approach will minimize the logistics and negotiation for the desired land parcels, and will expedite the acquisition process once final decisions are made.

These costs do represent the local inflow of money to the local community, and are used to produce the EIFS estimates for this analysis, as shown in Annex B. These results are shown as percentages of the EIFS variables (business volume, income, employment, and population) and compared to the regional RTVs in the following table:

Percentage Changes in Local Economic Activity and Comparisons to RTVs

Alternative	Variable	1 Increment	2 Increments	RTV
1	Business Volume	3.21	1.60	6.09
	Income	0.94	0.47	6.17
	Employment	1.19	0.59	5.16
	Population	0	0	2.56
2	Business Volume	4.61	2.30	6.09
	Income	1.36	0.68	6.17
	Employment	1.72	0.86	5.16
	Population	0	0	2.56
3	Business Volume	3.05	1.52	6.09
	Income	0.90	0.45	6.17
	Employment	1.14	0.57	5.16
	Population	0	0	2.56
4	Business Volume	4.12	2.06	6.09
	Income	1.21	0.60	6.17
	Employment	1.54	0.77	5.16
	Population	0	0	2.56
5	Business Volume	3.05	1.52	6.09
	Income	0.90	0.45	6.17
	Employment	1.14	0.57	5.16
	Population	0	0	2.56

Annex A - The Economic Impact Forecast System (EIFS) and the Hierarchical Approach.

The Model:

The Economic Impact Forecast System (EIFS) (Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994.) has been a mainstay of Army NEPA practice since its initial development and implementation in the mid-70s. EIFS provides a mechanism to estimate impacts, and ascertain the "significance" of projected impacts, using the Rational Threshold Value (RTV) technique. This analysis and determination can be readily documented, and if significance thresholds are not exceeded, the analysis can be completed. EIFS was designed to address NEPA applications, providing a "two-tier" approach to the process; (1) a simple and quick aggregate model (sufficient to ascertain the overall magnitude of impacts) and (2) a more detailed, sophisticated input-output (I-O) model to further analyze impacts that appear significant, in NEPA terms, and worthy of additional expenditures and analyses. This "two-tier" approach is consistent with the two common levels of NEPA analysis, the Environmental Assessment (EA) and the Environmental Impact Statement (EIS). EIFS has facilitated efficient and effective completion of such analyses for approximately three decades.

Complete documentation of the model, its development, and applicable theoretical underpinnings is available in numerous publications:

Huppertz, Claire E.; Bloomquist, Kim M.; Barbehenn, Jacinda M.; EIFS 5.0 Economic Impact Forecast System, User's Reference Manual; USACERL Technical Report TA-94/03; July 1994.

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U.S. Army, Department of the Army, DA Pamphlet 200-2, "Economic Impact Forecast System-User Instructions", 1980
Webster, R.D. and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N- 49/ADA055561; 1978.
Webster, R.D., Hamilton, J.W., and Robinson, D.P., "The Two-Tier Concept for Economic Analysis: Introduction and User Instructions", USACERL Technical Report N- 127/ADA118855.

These efforts reflect development of a tool for specific NEPA application, following the successful NEPA litigation referenced in the Introduction. As EIFS has been used for Army NEPA analyses, the results of EIFS analyses have been reviewed by stakeholder (affected community) representatives, and, as a result of BRAC application, twice reviewed by the Government Accounting Office (GAO). During such reviews, the analyses and resultant decisions were upheld, and EIFS was lauded as a uniform (non-arbitrary and non-capricious) approach to such requirements. Drawing from a national, uniform database, and using a common, systematic approach, EIFS allowing the improved comparison of project alternatives (the heart of NEPA analysis), and provides comparable analyses across the U.S.

NEPA Process Improvement:

Since NEPA was implemented, it has been commonly criticized as expensive and time-consuming. While these criticisms have been often justified, the President's Council on Environmental Quality (CEQ) has actively promoted NEPA process improvements; first in the publication of the CEQ NEPA regulations (CEQ, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, Reprint, 40 CFR Parts 1500-1508, Executive Office of the President, Council on Environmental Quality, 1992.), and, more recently, through a NEPA anniversary introspective (CEQ, The National Environmental Policy Act: A Study of its Effectiveness After Twenty-five Years, Executive Office of the President, Council on Environmental Quality, January, 1997.) and the formal CEQ NEPA Task Force (CEQ, The NEPA Task Force Report to the Council on Environmental Quality: Modernizing NEPA Implementation; September, 2003.). All three CEQ initiatives call for more "focus" on NEPA documents, eliminating the analyses of minor or unimportant issues, and focusing, instead, on those issues that should be part of an informed agency decision. The use of EIFS, and the "two-tier" approach is consistent with these CEQ recommendations.

Determining Significance:

While EIFS was being developed, communities began to question the rationale for determining the significance of socioeconomic impacts. USACERL was directed to develop a defensible procedure for such a determination, resulting in the Rational Threshold Value (RTV) technique (Webster, R.D.; and Shannon, E.; The Rational Threshold Value (RTV) Technique for the Evaluation of Regional Economic Impacts; USACERL Technical Report TR N-49/ADA055561; 1978). This technique relies on the yearly Bureau of Economic Analysis (BEA) time series data on employment, income, and population to evaluate historical trends with in a subject community (region); and uses those trends to measure the "resilience" of the local community to change, or its ability to accommodate such change. This approach has worked well when communicating with affected communities. The combined use of RTV with the EIFS model meet the two pronged approach for significance determinations, intensity and context (CEQ, 1992).

The initial EIFS implementation (USACERL, 1975) included the analysis of numerous variables: business volume, personal income, employment, government revenues and expenditures, income and employment distribution, local housing impacts, regional economic stability, school system impacts, government bond obligations, population, welfare and dependency, social control, and aesthetic considerations. The selection of these variables was based on the predictive capability of forecasting techniques and data availability. Over some 30 years of practice, pragmatism and sufficiency led to the

use of sales volume, employment, personal income, and population as indicators of impacts (as a "first tier" approximation of effects). These effects can also be readily evaluated (and significance determined) using the BEA time series data. Population, important in its own right, is also a valuable indicator of other factors (e.g., impact on local government revenues and expenditures, housing, local school systems, and the change in welfare and dependency), as impacts on such variables are driven, to a large extent, by a population change.

Using BEA time series data is used to analyze the four variables for the ROI, the RTV model produces thresholds for assessing the magnitude of impacts. The RTV technique is simple, starting with a straight line between the first year of record and the last year of record for that variable, establishing the average rate of change over time. Then, each yearly deviation from that growth rate is calculated and converted to a percentage. The largest historical changes (both increase and decrease) are used to define significance thresholds. The following figure illustrates the RTV concept:

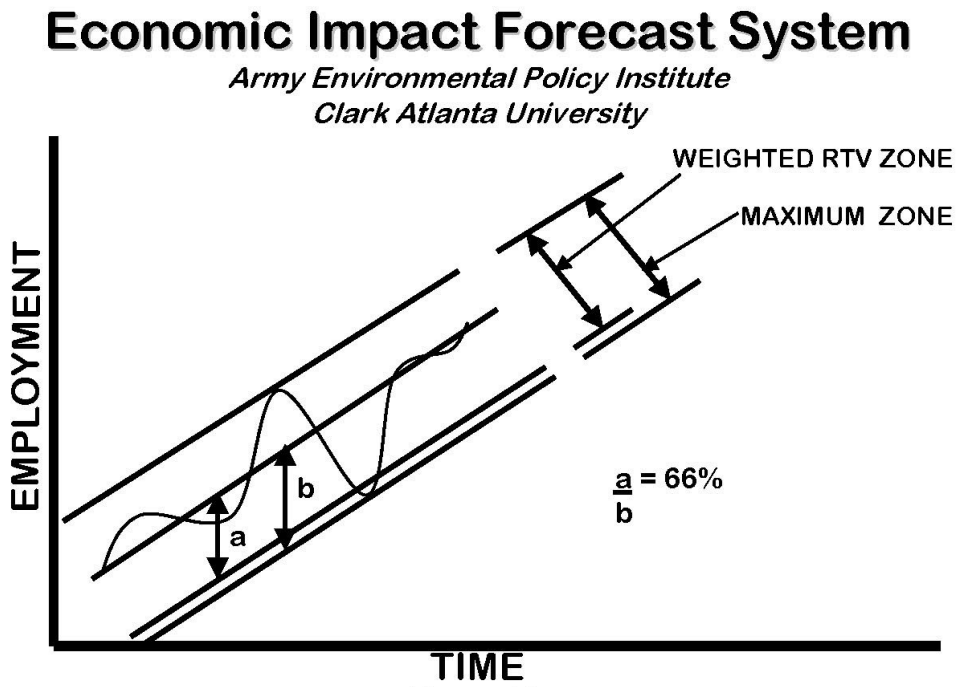

Figure 10
Visual Depiction of the RTV Technique

A "factor of safety" is applied to negative thresholds, as shown in the figure, to produce a conservative analysis; while 100 percent of the maximum positive thresholds is used; as indicated below:

	Increase	Decrease
Total sales volume	100 percent	75 percent
Total employment	100 percent	66 percent
Personal Income	100 percent	66 percent

Total population	100 percent	50 percent

The maximum positive historical fluctuation is used because of the positive connotations generally associated with economic growth. While economic growth can produce unacceptable impacts and the "smart growth" concept is increasingly favored, the effects of reductions and closures are usually much more controversial. These adjustments, while arbitrary, are sensible. The negative sales volume threshold is adjusted by 75 percent, as sales volume impacts can be absorbed by such factors as the manipulation of inventory, new equipment, etc; and the impacts on individual workers or proprietors is indirect, if at all. Changes in employment and income, however, are impacts that immediately affect individuals; thus they are adjusted by 66 percent. Population is extremely important, as an indicator of other social issues, and is thus adjusted by 50 percent.

To adjust dollar amounts for inflation (to create "constant dollars" prior to calculations), the Consumer Price Index (CPI) is used for appropriate years, and all dollar values are adjusted to 1987 equivalents.

The main strength of the RTV approach stems from its reliance on data for each individual ROI. This approach addressed previous criticism of more simple approaches that applied arbitrary criteria to all communities. This approach establishes unique criteria, representative of local community patterns, and, while a community may not completely agree, a common frame of reference is established. Critics of the RTV technique have questioned the arbitrary selection of the maximum allowable deviations to indicate impact significance, but the process has proven workable over the years.

Annex B – Detailed Economic Impact Forecast System (EIFS) Analysis

The analysis of economic effects for the land acquisition can be addressed through a linear approach, as the only input variable for the proposed action is the procurement costs for the land. The following EIFS output indicates a generic $100,000,000 procurement and its effects on the region. To produce the results in the analysis, the actual procurements for each alternative were proportionately calculated, based on this generic model output.

EIFS REPORT

PROJECT NAME

Benning Acquisition $100,000,000 increment

STUDY AREA

13053 Chattahoochee, GA
13145 Harris, GA
13197 Marion, GA
13215 Muscogee, GA
13259 Stewart, GA
13263 Talbot, GA
13307 Webster, GA
01081 Lee, AL
01113 Russell, AL

FORECAST INPUT

Change In Local Expenditures	$100,000,000
Change In Civilian Employment	0
Average Income of Affected Civilian	$0
Percent Expected to Relocate	0
Change In Military Employment	0
Average Income of Affected Military	$0
Percent of Military Living On-post	0

FORECAST OUTPUT

2.55

Sales Volume - Direct	$100,000,000	
Sales Volume - Induced	$155,000,000	
Sales Volume - Total	$255,000,000	1.9%
Income - Direct	$17,297,070	
Income - Induced	$26,810,460	
Income - Total	$44,107,540	0.56%
Employment - Direct	595	
Employment - Induced	922	
Employment - Total	1518	0.71%
Local Population	0	
Local Off-base Population	0	0%

RTV SUMMARY

	Sales Volume	Income	Employment	Population
Positive RTV	6.09 %	6.17 %	.16 %	2.56 %
Negative RTV	-5.09 %	-4.58 %	-8.01 %	-1.46 %

RTV DETAILED

SALES VOLUME

Year	Value	Adj_Value	Change	Deviation	%Devition
1969	1978746	10408204	0	-329575	0
1970	2019176	10055496	-352707	-682282	-6.79
1971	2179400	10395738	340242	10667	0.1
1972	2333214	10779449	383711	54136	0.5
1973	2566386	11163779	384330	54755	0.49
1974	2853646	11157756	-6023	-335598	-3.01
1975	3094870	11110583	-47173	-376748	-3.39
1976	3455486	11748652	638069	308494	2.63
1977	3839916	12249332	500680	171105	1.4
1978	4281506	12673258	423926	94351	0.74
1979	4645820	12357881	-315377	-644952	-5.22
1980	5184358	12131398	-226483	-556058	-4.58
1981	5785012	12322076	190678	-138897	-1.13
1982	6274794	12549588	227512	-102063	-0.81
1983	6746010	13087259	537671	208096	1.59
1984	7681502	14287594	1200334	870759	6.09
1985	8282386	14908295	620701	291126	1.95
1986	8782860	15457834	549539	219964	1.42
1987	9337790	15874243	416409	86834	0.55
1988	9926820	16180717	306474	-23101	-0.14
1989	10458456	16315191	134475	-195100	-1.2
1990	11001132	16391687	76495	-253080	-1.54
1991	11529444	16371810	-19876	-349451	-2.13
1992	12550970	17320339	948528	618953	3.57
1993	12918290	17310509	-9830	-339405	-1.96
1994	13572992	17644890	334381	4806	0.03
1995	14167178	17992316	347426	17851	0.1
1996	14794864	18197683	205367	-124208	-0.68
1997	15810504	18972605	774922	445347	2.35
1998	16871736	20077366	1104761	775186	3.86
1999	17633138	20454440	377074	47499	0.23
2000	18635060	20871267	416827	87252	0.42
2001	19695228	21467799	596531	266956	1.24
2002	20339886	21763678	95879	-33696	-0.15
2003	20898398	21943318	179640	-149935	-0.68

INCOME

Year	Value	Adj_Value	Change	Deviation	%Deviation
1969	999206	5255824	0	-164533	0
1970	1018810	5073674	-182150	-346683	-6.83
1971	1100268	5248278	174605	10072	0.19
1972	1178463	5444499	196221	31688	0.58
1973	1299797	5654117	209618	45085	0.8
1974	1439552	5628648	-25469	-190002	-3.38
1975	1557744	5592301	-36347	-200880	-3.59
1976	1744078	5929865	337564	173031	2.92
1977	1929936	6156496	226631	62098	1.01
1978	2158085	6387932	231436	66903	1.05
1979	2341978	6229661	-158270	-322803	-5.18
1980	2603678	6092607	-137055	-301588	-4.95
1981	2915716	6210475	117869	-46664	-0.75
1982	3159612	6319224	108749	-55784	-0.88
1983	3388150	6573011	253787	89254	1.36
1984	3860426	7180392	607381	442848	6.17
1985	4155832	7480498	300105	135572	1.81
1986	4403639	7750405	269907	105374	1.36
1987	4686880	7967696	217291	52758	0.66
1988	4984440	8124637	156941	-7592	-0.09

1989	5249819	8189718	65080	-99453	-1.21
1990	5520297	8225243	35525	-129008	-1.57
1991	5794576	8228298	3055	-161478	-1.96
1992	6300334	8694461	466163	301630	3.47
1993	6497434	8706562	12101	-152432	-1.75
1994	6822314	8869008	162447	-2086	-0.02
1995	7109576	9029162	160153	-4380	-0.05
1996	7425097	9132869	103708	-60825	-0.67
1997	7931908	9518290	385420	220887	2.32
1998	8463981	10072137	553848	389315	3.87
1999	8851157	10267342	195205	30672	0.3
2000	9341650	10462648	195306	30773	0.29
2001	9875285	10764061	301413	136880	1.27
2002	10196802	10910578	146517	-18016	-0.17
2003	10489993	11014493	103915	-60618	-0.55

EMPLOYMENT

Year	Value	Change	Deviation	%Deviation
1969	168642	0	-1577	0
1970	152034	-16608	-18185	-11.96
1971	149342	-2692	-4269	-2.86
1972	145680	-3662	-5239	-3.6
1973	148303	2623	1046	0.71
1974	148913	610	-967	-0.65
1975	146748	-2165	-3742	-2.55
1976	152876	6128	4551	2.98
1977	159151	6275	4698	2.95
1978	163889	4738	3161	1.93
1979	162835	-1054	-2631	-1.62
1980	162992	157	-1420	-0.87
1981	160891	-2101	-3678	-2.29
1982	163287	2396	819	0.5
1983	164606	1319	-258	-0.16
1984	175226	10620	9043	5.16
1985	178534	3308	1731	0.97
1986	181393	2859	1282	0.71
1987	185423	4030	2453	1.32
1988	189608	4185	2608	1.38
1989	190734	1126	-451	-0.24
1990	189852	-882	-2459	-1.3
1991	186413	-3439	-5016	-2.69
1992	191329	4916	3339	1.75
1993	195064	3735	2158	1.11
1994	197054	1990	413	0.21
1995	200865	3811	2234	1.11
1996	207738	6873	5296	2.55
1997	213851	6113	4536	2.12
1998	219832	5981	4404	2
1999	222265	2433	856	0.39
2000	226199	3934	2357	1.04
2001	223737	-2462	-4039	-1.81
2002	224006	269	-1308	-0.58
2003	223847	-159	-1736	-0.78

POPULATION

Year	Value	Change	Deviation	%Deviation
1969	322520	0	-2517	0
1970	331393	8873	6356	1.92
1971	330895	-498	-3015	-0.91
1972	324022	-6873	-9390	-2.9
1973	317247	-6775	-9292	-2.93
1974	328150	10903	8386	2.56
1975	333873	5723	3206	0.96

1976	339973	6100	3583	1.05
1977	340380	407	-2110	-0.62
1978	348606	8226	5709	1.64
1979	351083	2477	-40	-0.01
1980	351357	274	-2243	-0.64
1981	352090	733	-1784	-0.51
1982	357213	5123	2606	0.73
1983	355801	-1412	-3929	-1.1
1984	357991	2190	-327	-0.09
1985	360345	2354	-163	-0.05
1986	363727	3382	865	0.24
1987	364695	968	-1549	-0.42
1988	365616	921	-1596	-0.44
1989	365943	327	-2190	-0.6
1990	369105	3162	645	0.17
1991	370144	1039	-1478	-0.4
1992	381603	11459	8942	2.34
1993	386283	4680	2163	0.56
1994	391100	4817	2300	0.59
1995	393145	2045	-472	-0.12
1996	396073	2928	411	0.1
1997	401724	5651	3134	0.78
1998	404823	3099	582	0.14
1999	407913	3090	573	0.14
2000	411702	3789	1272	0.31
2001	413637	1935	-582	-0.14
2002	417757	4120	1603	0.38
2003	410623	-7134	-9651	-2.35

Fort Benning and consultants are exploring ways to ensure the EIFS information more accurately reflects the Proposed Action, including land acquisition over several years. Any refinements to the EIFS results will be presented in the Final EIS.

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APPENDIX F

Federal Relocation Assistance Program

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INTRODUCTION

Government programs designed to benefit the public as a whole often result in acquisition of private property, and sometimes in the displacement of people from their residences, businesses, nonprofit organizations, or farms.

To provide uniform and equitable treatment for persons displaced, Congress passed the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, and amended it in 1987. This law, called the Uniform Act, is the foundation for the information discussed in this brochure.

Acquisition and relocation policies and provisions for all Federal and federally assisted programs and projects are contained in the government-wide rule published in the Federal Register on January 4, 2005. The rules are reprinted each year in the Code of Federal Regulations (CFR), Title 49, Part 24. All Federal, State, local government agencies, and others receiving Federal financial assistance for public programs and projects that require the acquisition of real property must comply with the policies and provisions set forth in the Uniform Act and the regulation.

The acquisition itself does not need to be federally funded for the rules to apply. If Federal funds are used in any phase of the program or project, the rules of the Uniform Act apply.

Section 1 of this brochure provides information about relocation assistance advisory service. Section 2 contains information important to you if you are being displaced from a residence. Section 3 contains information for displaced businesses, farms, and nonprofit organizations.

If you are required to move as a result of a Federal or federally assisted program or project, a relocation counselor will contact you. The counselor will answer your specific questions and provide additional information you may need. If you have a disability that prevents you from reading or understanding this brochure, you will be provided appropriate assistance. You should notify the sponsoring Agency if you have special requirements for assistance.

This brochure explains your rights as an owner of real property to be acquired for a federally funded program or project. The requirements for acquisition of property are explained in a brochure entitled Acquisition, Acquiring Real Property for Federal and Federal-aid Programs and Projects. Acquisition and relocation information can be found on the Federal Highway Administration Office of Real Estate Services website www.fhwa.dot.gov/realestate

IMPORTANT TERMS USED IN THIS BROCHURE

Agency
Relocation assistance advisory services and payments are administered at the local level by an Agency responsible for the acquisition of real property and/or the displacement of people from property to be used for a federally funded program or project. The Agency may be a Federal agency, a State agency, a local agency, such as a county or a city, or a person carrying out a program or project with Federal financial assistance. The Agency may contract with a qualified individual or firm to administer the relocation program. However, the Agency remains responsible for the program.

Alien Not Lawfully Present
The law provides that if a displaced person is an alien not lawfully present in the United States such person is not eligible for relocation payments or assistance under the Uniform Relocation Assistance and Real Property Acquisition Policies Act, unless ineligibility would result in exceptional and extremely unusual hardship to the alien's spouse, parent or child, and such spouse, parent or child is a citizen or an alien lawfully admitted for permanent residence.

Business
Any lawful activity, with the exception of a farm operation, conducted primarily for the purchase, sale, lease, and rental of personal or real property; or for the manufacture, processing, and/or marketing of products, commodities, or any other personal property; or for the sale of services to the public; or solely for the purpose of the Uniform Act, an outdoor advertising display or displays, when the display(s) must be moved as a result of the project.

Displaced Person
Any person (individual, family, partnership, association or corporation) who moves from real property, or moves personal property from real property as a direct result of (1) the acquisition of the real property, in whole or in part, (2) a written notice from the Agency of its intent to acquire, (3) the initiation of negotiations for the purchase of the real property by the Agency, or (4) a written notice requiring a person to vacate real property for the purpose of rehabilitation or demolition of improvements, provided the displacement is permanent and the property is needed for a Federal or federally assisted program or project.

Farm
Any activity conducted solely or primarily for the production of one or more agricultural products or commodities, including timber, for sale and home use, and customarily producing such products or commodities in sufficient quantity to be capable of contributing materially to the operator's support.

Nonprofit Organization
A public or private entity that has established its nonprofit status under applicable Federal or State law.

Program or Project
An activity or series of activities undertaken by a Federal agency, or an activity undertaken by a State or local agency with Federal financial assistance in any phase of the activity.

Small Business
A business having not more than 500 employees working at a site which is the location of economic activity and which will be acquired for a program or project, or is displaced by a program or project. A site occupied solely by an outdoor advertising sign(s) does not qualify for purposes of the reestablishment expense benefit.

SECTION 1 – RELOCATION ADVISORY SERVICES

A relocation counselor will contact you and offer relocation assistance service.

Any individual, family, business or farm displaced by a Federal or federally assisted program shall be offered relocation assistance services for the purpose of locating a suitable replacement property. Relocation services are provided by qualified personnel employed by the Agency. It is their goal and desire to be of service to you, and assist in any way possible to help you successfully relocate.

Remember, your relocation counselor is there to **help** and **advise** you, so please be sure to make full use of the counselor's services. Do not hesitate to ask questions and be sure you fully understand all your rights and benefits.

An individual with a disability will be provided the assistance needed to locate and move to a replacement dwelling or site. The individual should notify the Agency of any special requirements for assistance.

RESIDENTIAL ASSISTANCE

A relocation counselor from the Agency will contact and interview you to find out your needs. Relocation services and payments will be explained in accordance with your eligibility. During the initial interview your housing needs and desires will be determined as well as your need for assistance.

The counselor will offer assistance and provide a current listing of comparable properties. You will be provided a written determination of the amount of replacement housing

payment for which you qualify. The counselor can supply information on other Federal and State programs in your area.

Transportation will be offered to inspect housing referrals. The Agency will provide counseling or help you get assistance from other sources as a means of minimizing hardships in adjusting to your new location.

You cannot be required to move unless at least one comparable decent, safe, and sanitary (DSS) replacement dwelling is made available to you.

Please let your counselor know if you locate a replacement dwelling so that it can be inspected to assure that it meets DSS standards.

BUSINESS, FARM, AND NONPROFIT ORGANIZATION ASSISTANCE

A relocation counselor from the Agency will contact and interview you to find out your needs and replacement site requirements and estimate the time needed to accomplish the move. Relocation services and payments will be explained in accordance with your eligibility. It is important to explain to the counselor any anticipated problems. During the initial interview the relocation counselor will ask many questions to determine your financial ability to accomplish the move, including lease terms and other obligations.

The counselor will help determine the need for outside specialists to plan, move, and reinstall personal property. The counselor will identify and resolve any issues regarding

what is real estate and what is personal property to be relocated. The counselor will explore and provide advice as to possible sources of funding and assistance from other local, State, and Federal agencies. In addition, as needed, the relocation counselor will maintain listings of commercial properties and farms.

The goal is to achieve a successful relocation back into the community.

Social Services Provided By Other Agencies

Your relocation counselor will be familiar with the services provided by other public and private agencies in your community. If you have special problems, the counselor will make every effort to secure the services of those agencies with trained personnel who have the expertise to help you. Make your needs known in order that you may receive the help you need.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

SECTION 2 – INDIVIDUALS AND FAMILIES

MOVING COSTS

If you qualify as a displaced person, you are entitled to reimbursement of your moving costs and certain related moving expenses. Displaced individuals and families may choose to be paid either on the basis of actual, reasonable moving costs and related expenses, **or** according to a fixed moving cost schedule. To assure your eligibility and prompt payment of moving expenses, you should contact the relocation counselor from the Agency before you move.

Actual, Reasonable Moving Costs

You may be paid for your actual, reasonable moving costs by a professional mover plus related expenses, **or** you may move yourself. Reimbursement will be limited to a 50-mile distance in most cases. Related expenses involved in the move may include:

- Packing and unpacking personal property.
- Disconnecting and reconnecting household appliances.
- Temporary storage of personal property.
- Insurance while property is in storage or transit.
- Transfer of telephone service and other similar utility reconnections.
- Other expenses considered eligible by the Agency.

All expenses must be considered necessary and reasonable by the Agency and supported by paid receipts or other evidence of expenses incurred.

Fixed Moving Cost Schedule

You may choose to be paid on the basis of a fixed moving cost schedule established for your State of residence. The amount of the payment is based on the number of rooms in your dwelling. Your relocation counselor will be able to tell you the exact amount you will be eligible to receive if you select this option. The schedule is designed to include all of the expenses incurred in moving, including those services that must be purchased from others.

If you are the owner of a displaced mobile home, you may be entitled to a payment for the cost of moving the mobile home to a replacement site on an actual cost basis. Displaced mobile home occupants (owners or tenants) may also be eligible for a payment for moving personal property from the mobile home such as furniture, appliances and clothing on an actual cost basis, or on the basis of a moving cost schedule. For a complete explanation of all moving cost options involving a mobile home, please discuss the matter with your relocation counselor.

REPLACEMENT HOUSING

There are three types of replacement housing payments: purchase supplement, rental assistance, and downpayment. To understand replacement housing payments you first need to become familiar with the terms **Comparable; Financial Means; Decent, Safe, and Sanitary (DSS); and Last Resort Housing.**

Comparable
A comparable replacement dwelling must be DSS and functionally equivalent to your present dwelling. While not necessarily identical to your present dwelling, a comparable replacement dwelling should provide for the same utility and function as the dwelling from which you are being displaced. In addition, a comparable replacement dwelling should be:

- Adequate in size to accommodate the occupants (e.g., you and your family).
- Located in an area that is not subject to unreasonable adverse environmental conditions.
- Located in an area that is not less desirable than your present location with respect to public utilities and commercial and public facilities.
- Reasonably accessible to your place of employment.
- Located on a site that is typical in size for residential development with normal site improvements.
- Currently available on the private market.
- Within your financial means.

Financial Means
For a homeowner, if a purchase supplement is needed and provided, in addition to the acquisition price for your dwelling, then the replacement dwelling is considered to be within your financial means.

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Your Rights and Benefits as a Displaced Person Under
the Federal Relocation Assistance Program

For a tenant, the monthly rent and estimated average monthly utility (electricity, gas, other heating and cooking fuels, water and sewer) cost for a comparable replacement dwelling is considered to be within financial means if, after receiving rental assistance, this amount does not exceed the base monthly rent (including average monthly utility cost) for the dwelling from which the tenant is displaced.

The Agency may need to calculate the base monthly rent using 30% of the displaced tenant's total monthly gross household income, if that income qualifies as low income in accordance with established low income amounts determined by the U.S. Department of Housing and Urban Development (HUD).

The Agency will also evaluate the amounts designated for shelter and utilities for a tenant that receives government assistance.

The rental assistance payment will be computed using the lesser of the three (rent and average monthly utility cost; 30% of the total monthly gross household income for a qualified low income tenant; or the total amount designated for shelter and utilities for a tenant receiving government assistance). To ensure the maximum benefit, it is important to provide the Agency appropriate evidence of total monthly household income when asked. There are some amounts that are not included as monthly household income, including income earned by dependents. The Agency will explain this procedure in greater detail.

Decent, Safe, and Sanitary

The DSS standard means the replacement dwelling meets the minimum requirements established by Federal regulations and conforms to applicable local housing and occupancy codes. The dwelling shall:

- Be structurally sound, weathertight, and in good repair.
- Contain a safe electrical wiring system adequate for lighting and other devices.
- Contain a heating system capable of sustaining a healthful temperature (approximately 70 degrees Fahrenheit) except in those areas where local climatic conditions do not require such a system.
- Be adequate in size with respect to the number of rooms and area of living space to accommodate the displaced person.
- Contain a well-lighted and ventilated bathroom providing privacy to the user and containing a sink, bathtub or shower stall, and a toilet, all in good working order and properly connected to appropriate sources of water and sewage drainage system.
- Contain a kitchen area with a fully usable sink, properly connected to potable hot and cold water and to a sewage drainage system, with adequate space and utility connections for a stove and refrigerator.
- Have unobstructed egress to safe, open space at ground level.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

- Be free of any barriers which prevent reasonable ingress, egress or, in the case of a handicapped displaced person, use of the dwelling.

IMPORTANT NOTICE

Please understand that the replacement dwelling inspection for decent, safe, and sanitary requirements is conducted by Agency personnel for the sole purpose of determining your eligibility for a relocation payment. Therefore, you must not interpret the Agency's approval of a dwelling to provide any assurance or guarantee that there are no deficiencies in the dwelling or in its fixtures and equipment that may be discovered at a later date. It is your responsibility to protect your best interest and investment in the purchase or rental of your replacement property and you must clearly understand that the Agency will assume no responsibility if structural, mechanical, legal, or other unforeseen problems are discovered after the inspection has been conducted.

Last Resort Housing

The term Last Resort Housing is an administrative procedure authorized by law to address those times when comparable replacement housing is not available under statutory limits specified in law. The law and regulation allow the Agency to provide a replacement housing payment in excess of the statutory maximums of $5,250 and $22,500. Because this provision is commonly used, the statutory maximums will not be restated throughout this brochure.

The Agency must provide comparable replacement housing, that is DSS and within your financial means, before you are required to move. The Agency may provide the necessary housing in a number of ways, such as:

- Making a replacement housing payment in excess of the maximum $5,250 or $22,500 statutory limits.
- Purchasing an existing comparable residential dwelling and making it available to you in exchange for your dwelling.
- Moving and rehabilitating a dwelling and making it available to you in exchange for your property.
- Purchasing, rehabilitating or reconstructing an existing dwelling to make it comparable to your property.
- Purchasing land and constructing a new replacement dwelling comparable to your dwelling when comparables are not otherwise available.
- Purchasing an existing dwelling, removing barriers or rehabilitating the structure to accommodate a handicapped displaced person when a suitable comparable replacement dwelling is not available.
- Providing a direct loan which will enable you to construct or contract for the construction of a decent, safe, and sanitary replacement dwelling.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Freedom of Choice
All eligible displaced persons have the freedom of choice in the selection of a replacement dwelling. The Agency will not require you, without your written consent, to accept a replacement dwelling provided by the Agency. If you decide not to accept the replacement housing offered by the Agency, you may secure a replacement dwelling of your choice but it must meet the DSS standard.

If you are eligible for Last Resort Housing, your relocation counselor will thoroughly explain the program to you.

Length of Occupancy – Basic Occupancy Requirements
The type of payment you are eligible for depends on whether you are an owner or a tenant, and how long you have lived in the property being acquired prior to the initiation of negotiations. "Length of occupancy" simply means counting the number of days that you occupied the dwelling before the date of initiation of negotiations by the Agency for the purchase of the property.

The term "initiation of negotiations" is usually the date the Agency makes the first personal contact with the owner of real property, or his/her representative, to provide a written offer to purchase the property being acquired.

Owners who were in occupancy 180 days or more prior to the initiation of negotiations may be eligible for a purchase supplement or a rental assistance payment.

Tenants who were in occupancy 90 days or more prior to the initiation of negotiations may be eligible for a rental assistance payment or a downpayment.

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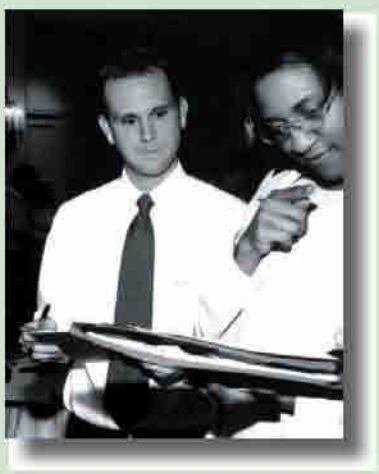
Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program



Owners who were in occupancy 90 days to 179 days prior to the initiation of negotiations, may be eligible for a rental assistance payment or a downpayment, however, the downpayment cannot exceed the amount you would have received if you had been a 180-day owner.

If you were in occupancy at the time of the initiation of negotiations, but less than 90 days prior to that date, you are considered a displaced person entitled to relocation assistance advisory services and moving payments. You may be entitled to a rental assistance payment if comparable replacement rental housing is not available within your financial means. The Agency will use the financial means test described earlier in this brochure. This involves checking to see if you qualify as low income using the HUD definition. If so, and you are required to pay rent and utilities in excess of 30% of your average monthly gross household income for a comparable replacement dwelling unit, you may be eligible for a rental assistance payment under Last Resort Housing because comparable replacement housing is not available within your financial means. You should meet with your relocation counselor for an explanation of the relocation benefits that you may be eligible to receive.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

REPLACEMENT HOUSING – PURCHASE SUPPLEMENT

For Owner Occupants of 180 Days or More

If you are an owner and occupied your home for 180 days or more immediately prior to the initiation of negotiations for your property, you may be eligible - in addition to the fair market value of your property - for a supplemental payment for costs necessary to purchase a comparable DSS replacement dwelling. The Agency will compute the maximum payment you are eligible to receive. You must purchase and occupy a DSS replacement dwelling within one year. A purchase supplement has three components: a price differential, an amount for increased mortgage interest and incidental expenses. The purchase supplement is in addition to the acquisition price paid for your property.

Price Differential

The price differential payment is the amount by which the cost of a replacement dwelling exceeds the acquisition cost of the displacement dwelling.

Increased Mortgage Interest

You may be reimbursed for increased mortgage interest costs if the interest rate on your new mortgage exceeds that of your present mortgage. To be eligible your acquired dwelling must have been encumbered by a bona fide mortgage which was a valid lien for at least 180 days prior to the initiation of negotiations.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Incidental Expenses

You may be reimbursed for other expenses such as reasonable costs incurred for title search, recording fees, and certain other closing costs, but not for prepaid expenses such as real estate taxes and property insurance.

Example of a Price Differential Computation

Example A: Assume the Agency purchases your property for $100,000. After a thorough study of available comparable residential properties on the open market, the Agency determines that a comparable replacement property will cost $116,500. If you purchase a DSS replacement property for $116,500, you will be eligible for a price differential payment of $16,500.

Example B: If you purchase a DSS replacement property costing more than $116,500, you pay the difference as shown in Example B.

Example C: If your purchase price is less than $116,500, the price differential payment will be based on your actual cost.

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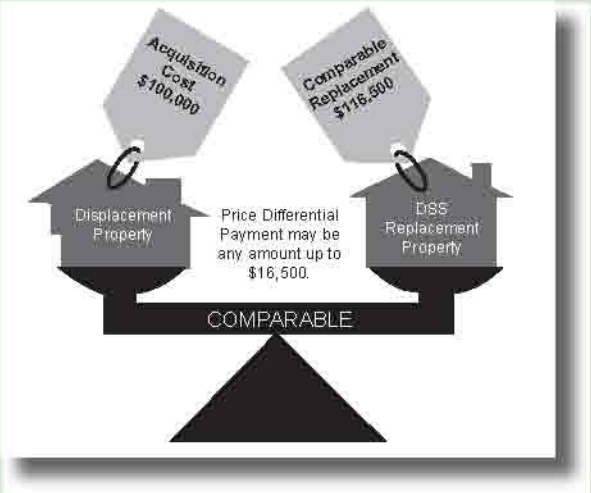
Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Agency Computation of Maximum Price Differential Payment	Cost of Comparable Replacement Acquisition Price of Your Property **Maximum Price Differential Payment**	$116,500 - 100,000 **$ 16,500**
Example A	Actual Cost of Replacement Property (Same Purchase Price as Comparable) Acquisition Price of Your Property **Price Differential Payment**	$116,500 - 100,000 **$ 16,500**
Example B	Actual Cost of Replacement Property Acquisition Price of Your Property Difference **Price Differential Payment** You Are Responsible for This Amount	$125,000 - 100,000 $ 25,000 **$16,500** $8,500
Example C	Actual Cost of Replacement Property Acquisition Price of Your Property **Price Differential Payment** Payment is Based on Actual Cost	$114,000 - 100,000 **$ 14,000**



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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

REPLACEMENT HOUSING – RENTAL ASSISTANCE

180-Day Owners Who Elect to Rent

A rental computation will be computed based on a determination of the fair market rent for the acquired dwelling compared to a comparable rental dwelling available on the market. The difference will be multiplied by 42. In no circumstances will the rental assistance payment exceed the amount the owner would have received as a price differential described previously.

For Owner Occupants and Tenants of 90 Days or More

Owner occupants and tenants of 90 days or more may be eligible for a rental assistance payment. To be eligible for a rental assistance payment, tenants and owners must have been in occupancy at least 90 days immediately preceding the initiation of negotiations for the acquisition of the property.

This payment is designed to enable you to rent a comparable decent, safe, and sanitary replacement dwelling for a 42-month period. If you choose to rent a replacement dwelling and the cost of rent and utilities are higher than you were paying, you may be eligible for a rental assistance payment. The Agency will determine the maximum payment you may be eligible to receive in accordance with established procedures.

The rental assistance payment will be paid in a lump sum unless the Agency determines that the payment should be paid in installments. You must rent and occupy a DSS replacement dwelling within one year to be eligible.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Example

Assume you have been paying $500 per month rent for the dwelling unit occupied by you and purchased by the Agency. You also pay $150 per month for utilities (electricity, gas, other heating and cooking fuels, water, and sewer). The rental assistance payment computation always includes the cost of basic utilities (electricity, gas, other heating and cooking fuels, water, and sewer), as well as the cost of rent. If rent includes utilities, a separate computation is not necessary.

After a study of the rental market, the Agency determines that replacement rental unit, that is DSS and comparable to your unit, is available for $600 per month. It is estimated that average monthly utility costs for the replacement unit will be $175 per month. The maximum rental assistance payment you can receive is $125 per month for a 42-month period, or a total of $5,250.

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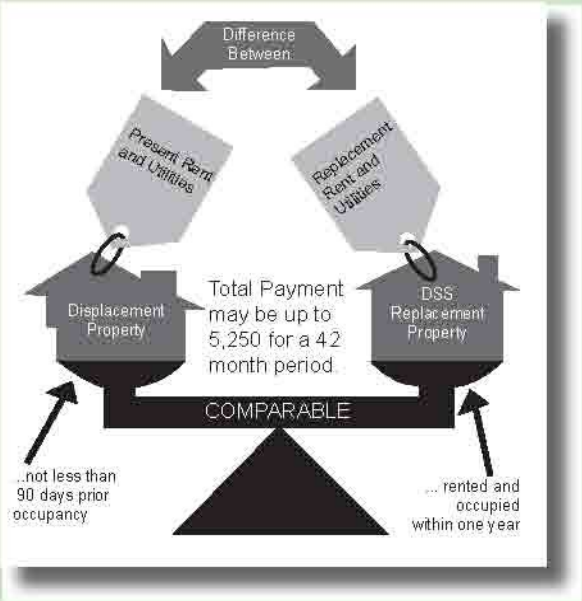
Your Rights and Benefits as a Displaced Person Under
the Federal Relocation Assistance Program

Example A: If you select a DSS replacement dwelling unit that rents for $650 per month plus $175 for utilities, despite the availability of comparable DSS replacement rental units that rent for $600 per month plus $175 for utilities, you will receive the maximum amount computed by the Agency, or $5,250. You will be required to pay the additional $50 per month yourself.



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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Example B: If you select a DSS replacement dwelling unit that rents for more than your present unit, but less than amount determined by the Agency as necessary to rent a comparable unit, your payment will be based on actual cost. For example, assume you select a replacement dwelling unit that rents for $575 per month plus $165 for utilities. On the basis of actual cost, you will be eligible for a payment of $90 per month for 42 months, or $3,780.

Agency Computation of Maximum Rental Assistance Payment	Rent You are Currently Paying Plus Cost for Utilities You are Paying Rent for a Comparable DSS Dwelling Estimated Cost for Utilities Difference ($775-650=$125) x 42 months **Maximum Rental Assistance Payment**	$500 +150 $650 $600 +175 $775 $5250 **$5250**
Example A	Actual Rent for DSS Replacement Property Plus Estimated Cost for Utilities Difference ($825-650=$175) x 42 months **Rental Assistance Payment**	$650 +175 $825 $7350 **$5250**
Example B	Actual Rent for DSS Replacement Property Plus Estimated Cost for Utilities Difference ($740-650=$90) x 42 months **Rental Assistance Payment**	$575 +165 $740 $3780 **$3780**

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

REPLACEMENT HOUSING – DOWNPAYMENT

Owner Occupants of 90 to 179 Days and Tenants of 90 Days or More

Owner occupants of 90 to 179 days and tenants of 90 days or more may be eligible for a downpayment and incidental expenses. The Agency will determine the maximum downpayment you may be eligible to receive based on its computation for a rental assistance payment. However, the payment for a displaced owner occupant shall not exceed the amount that would have been received by a 180-day owner for the same property.

To be eligible for the full amount of the downpayment assistance payment, the entire payment must be used to purchase a DSS replacement dwelling. The payment may be utilized for a downpayment toward the purchase price and/or eligible incidental expenses. Incidental expenses include the reasonable costs of title search, recording fees, and certain other closing costs but do not include prepaid expenses such as real estate taxes and property insurance. You may be eligible for the reimbursement of loan origination or loan assumption fees if such fees are normal to real estate transactions in your area and do not represent prepaid interest. The combined amount of the downpayment and incidental expenses cannot exceed the amount the Agency computed as your maximum rental assistance payment.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

The relocation counselor will explain how the Agency determines the maximum downpayment assistance payment.

DSS REMINDER

It is very important to remember that the replacement dwelling you select must meet the basic DSS standard. Do not execute a sales contract or a lease agreement until a representative from the Agency has inspected and certified in writing that the dwelling you propose to purchase or rent meets the DSS standard. Please do not jeopardize your right to receive a replacement housing payment by moving into a substandard dwelling.

FAIR HOUSING LAWS

Title VI of the Civil Rights Act of 1964 and Title VIII of the Civil Rights Act of 1968 set forth the policy of the United States to provide, within constitutional limitations, for fair housing throughout the United States. These Acts and Executive Order 11063 make discriminatory practices in the purchase and rental of residential units illegal if based on race, color, religion, sex, or national origin.

Whenever possible, a minority person shall be given reasonable opportunity to relocate to a DSS replacement dwelling which is not located in an area of minority concentration, that is within their financial means. This policy does not require an Agency to provide a displaced person with a larger payment than is necessary to enable the person to relocate to a comparable replacement dwelling.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

SECTION 3 – BUSINESS, FARM, AND NONPROFIT ORGANIZATIONS

MOVING COST REIMBURSEMENT

Owners or tenants may be paid on the basis of actual, reasonable moving costs and related expenses or, under certain circumstances, a fixed payment. Actual, reasonable moving expenses may be paid when the move is performed by a professional mover or if you move yourself. Related expenses, such as personal property losses, expenses in finding a replacement site, and reestablishment expenses may also be reimbursable.

You must provide the Agency with an inventory of the personal property to be moved and advance notice of the approximate date of the move, unless the Agency specifically tells you these notices are not necessary.

The Agency has the right to inspect the personal property at the displacement and replacement sites, and to monitor the move.

Actual Cost Move

You may be paid the actual, reasonable and necessary cost of your move when the move is performed by a professional mover or when you elect to move yourself, however, all your moving costs must be supported by paid receipts or other evidence of expenses incurred. In addition to the transportation costs of your personal property, certain other expenses may be reimbursable, such as packing, crating, unpacking and uncrating, and the disconnecting, dismantling, removing, reassembling, and reinstalling relocated machinery, equipment and other personal property.

Other expenses such as professional services necessary for planning and carrying out the move, temporary storage costs, and the cost of licenses, permits and certifications may also be reimbursable. This is not an inclusive list of moving related expenses. Your relocation counselor will provide you with a complete explanation of reimbursable expenses.

Estimated Cost Move

If you agree to take full responsibility for all or part of the move of your operation, the Agency may approve a payment not to exceed the lower of two acceptable bids or estimates obtained by the Agency from qualified moving firms, moving consultants, or a qualified Agency staff employee. A low cost or uncomplicated move may be based on a single bid or estimate at the Agency's discretion. The advantage of this moving option is that it relieves you from documenting all moving expenses because the payment is limited to the amount of the lowest acceptable bid or estimate. The Agency may make the payment without additional documentation.

Direct Loss of Tangible Personal Property

Displaced businesses, farms, and nonprofit organizations may be eligible for a payment for the actual direct loss of tangible personal property which is incurred as a result of the move or discontinuance of the operation. This payment is based on the lesser of the value of the item for continued use at the displacement site less the proceeds from its sale, or the estimated cost of moving the item. Your relocation counselor will explain this procedure in detail if this is a consideration for you.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Low Value High Bulk Property

If an Agency considers a personal property item to be of low value and high bulk, and moving costs are disproportionate to its value (such as minerals, metals, rock, or topsoil), the allowable moving cost payment shall not exceed the lesser of the amount which would be received if the property were sold at the site, or, the replacement cost of a comparable quantity delivered to the new business location.

Searching Expenses for Replacement Property

Displaced businesses, farms, and nonprofit organizations are entitled to reimbursement for actual, reasonable expenses incurred in searching for a replacement property, not to exceed $2,500. Expenses may include transportation, meals, and lodging when away from home; the reasonable value of the time spent during the search; and other expenses determined to be reasonable and necessary by the Agency.

Fees paid to real estate agents or brokers to locate a replacement site may be reimbursed, exclusive of any commissions or fees related to the purchase of the site. Commissions and fees related to the purchase of a replacement site are not eligible relocation expenses and will not be reimbursed.

RELATED ELIGIBLE EXPENSES

In addition to the moving expenses listed above, costs for these items may be reimbursed if the Agency determines they are actual, reasonable, and necessary:

- Connection to available nearby utilities from the right-of-way to improvements at the replacement site.
- Professional services to determine a sites' suitability for the displaced person's operation.
- Impact fees or one time assessments for heavy utility usage as determined necessary by the Agency.

Please discuss this with your relocation counselor before incurring these costs to assure that they are reimbursable.

REESTABLISHMENT EXPENSES

A small business, farm, or nonprofit organization may be eligible for a payment, not to exceed $10,000, for expenses actually incurred in relocating and reestablishing the enterprise at a replacement site. To qualify, the business, farm, or nonprofit organization must have not more than 500 employees working at the site who will be displaced by a program or project.

Reestablishment expenses may include, but are not limited to:

- Repairs or improvements to the replacement real property required by Federal, State, and local laws, codes or ordinances.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

- Modifications to the replacement real property to make the structure(s) suitable for the operation.
- Construction and installation costs of exterior advertising signs.
- Redecoration or replacement such as painting, wallpapering, paneling, and carpeting when required by the condition of the replacement site.
- Advertising the replacement location.
- Estimated increased costs of operation at the replacement site during the first two years for items such as: lease or rental charges; personal or real property taxes; insurance premiums; utility charges (excluding impact fees).
- Other items that the Agency considers essential for reestablishment.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

FIXED PAYMENT FOR ACTUAL MOVING EXPENSES (IN LIEU PAYMENT)

Displaced businesses, farms, and nonprofit organizations may be eligible for a fixed payment in lieu of (in place of) actual moving expenses, personal property losses, searching expense, and reestablishment expenses. The fixed payment may not be less than $1,000 nor more than $20,000.

For a business to be eligible for a fixed payment, the Agency must determine the following:

- Business owns or rents personal property that must be moved due to the displacement.
- Business cannot be relocated without a substantial loss of its existing patronage.
- Business is not part of a commercial enterprise having more than three other businesses engaged in the same or similar activity which are under the same ownership and are not being displaced by the Agency.
- Business contributed materially to the income of the displaced business operator during the two taxable years prior to displacement.

Any business operation that is engaged solely in the rental of space to others is not eligible for a fixed payment. This includes the rental of space for residential or business purposes. Eligibility requirements for farms and nonprofit organizations are slightly different than business requirements. The computation for nonprofit organizations differs in that the payment is

computed on the basis of average annual gross revenues less administrative expenses for the two year period specified. If you are interested in a fixed payment, please consult your relocation counselor for additional information.

Computation of Your Fixed Payment

The fixed payment for a displaced business or farm is based upon the average annual net earnings of the operation for the two taxable years immediately preceding the taxable year in which it was displaced, or a two-year period deemed more representative by the Agency. You must provide the Agency with proof of net earnings to support your claim. Proof of net earnings can be documented by income tax returns, certified financial statements, or other reasonable evidence acceptable to the Agency.

Fixed Payment Example

2003	2004	2005
Annual Net Earnings $16,500	Annual Net Earnings $18,500	Year Displaced
Average annual net earnings $16,500 + $18,500 = $35,000 / 2 = $17,500 Fixed Payment = $17,500		

PROJECT OFFICE

The Agency may establish a relocation office near the project. Project relocation offices are usually open during hours convenient to persons being displaced, including evening hours when necessary. If the Agency opens a project office, the staff will be happy to assist you, answer questions, and will maintain various types of information.

RELOCATION PAYMENTS ARE NOT CONSIDERED TO BE INCOME

No relocation payment received will be considered as income for the purpose of the Internal Revenue Code. No relocation payment received will be considered income for the purposes of determining eligibility or the extent of eligibility of any person for assistance under the Social Security Act or any other Federal law (except for any Federal law providing low-income housing assistance).

RIGHT TO APPEAL

Any aggrieved person may file a written appeal with the head of the Agency if the person believes the Agency has failed to properly determine his or her eligibility for relocation assistance advisory services, or the amount of a relocation payment.

If you have a grievance, you will be given a prompt and full opportunity to be heard. You will also have the right to be represented by legal counsel or other representative in connection with the appeal, but solely at your own expense.

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

The Agency will promptly review your appeal and consider all pertinent justification and information available to ensure a fair and full review. The Agency will provide you with a written determination as well as an explanation of the decision. If you are still dissatisfied with the relief granted, the Agency will advise you of your right to seek judicial review of the Agency decision.

An alien not lawfully present in the United States shall not be eligible to receive relocation payments or any other assistance provided under 49 CFR Part 24.

This brochure is provided to assist you in understanding your rights and benefits. If you have questions regarding your relocation please contact your sponsoring Agency representative.

Additional information on Federal relocation and acquisition requirements, the law, and the regulation can be found at www.fhwa.dot.gov/realestate

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Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program

Source: Federal Highway Administration, Office of Real Estate Services. 2005. Relocation: Your Rights and Benefits as a Displaced Person Under the Federal Relocation Assistance Program. U.S. Department of Transportation. June 2005.

APPENDIX G

Payment In Lieu of Taxes Program

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DOI Home Search

Payments in Lieu of Taxes (PILT)
Program Summary

Home | PILT Summary | County Payments | Payments by State | FAQ | Chapter 69 | Regulations

"Payments in Lieu of Taxes" (or PILT) are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries. The key law that implements the payments is Public Law 94-565, dated October 20, 1976. This law was rewritten and amended by Public Law 97-258 on September 13, 1982 and codified at Chapter 69, Title 31 of the United States Code. The Law recognizes that the inability of local governments to collect property taxes on Federally-owned land can create a financial impact.

PILT payments help local governments carry out such vital services as firefighting and police protection, construction of public schools and roads, and search-and-rescue operations. The payments are made annually for tax-exempt Federal lands administered by the BLM, the National Park Service, the U.S. Fish and Wildlife Service (all agencies of the Interior Department), the U.S. Forest service (part of the U.S. Department of Agriculture), and for Federal water projects and some military installations. PILT payments are one of the ways that the Federal government can fulfill its role of being a good neighbor to local communities.

The Department of the Interior's (DOI) Office of the Secretary has administrative authority over the PILT program. In addition to other responsibilities, DOI will calculate payments according to the formulas established by law and distribute the funds appropriated by Congress. Applicable DOI regulations pertaining to the PILT program were published as a final rule in the Federal Register on December 7, 2004.

The formula used to compute the payments is contained in the PILT Act and is based on population, receipt sharing payments, and the amount of Federal land within an affected county. PILT payments are in addition to other Federal revenues (such as oil and gas leasing, livestock grazing, and timber harvesting) that the Federal Government transfers to the States. The DOI has distributed more than $5.1 billion dollars in PILT payments (on average, $152 million annually) to each State (except Rhode Island) plus the District of Columbia, Puerto Rico, Guam, and the Virgin Islands since these payments began in 1977.

See the news release announcing the 2010 PILT payments, as well as a breakdown of PILT payments by State only or by State and County.

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Payments in Lieu of Taxes (PILT)
FAQ

"Payments in Lieu of Taxes" (or PILT) are Federal payments to local governments that help offset losses in property taxes due to nontaxable Federal lands within their boundaries.

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Eligibility
What entities are eligible for payments?

Eligibility for payment under the PILT program is reserved for local governments (usually counties) that provide services such as those related to public safety, environment, housing, social services, and transportation. Payment is made directly to the eligible local government unless the state government chooses to enact legislation (under guidelines prescribed in section 6907 of P.L. 97-258) to receive the payments and, in turn, pass the money on to other smaller governmental units located within the counties (Wisconsin is the only State currently employing this option).

Requirements
What can PILT payments be used for and must they be redistributed to other local government units?

Section 6902 of P.L. 97-258 states that PILT payments may be used by recipients for any governmental purpose and are not required to be further distributed by recipients (usually counties) to other local government units such as school districts or cities.

Payments made under sections 6904 and 6905 of the Act must be must be redistributed proportionally by recipients to units and school districts that lost real property taxes as a result of the Federal acquisition. Recipients may then use the payment for any governmental purpose.

CFDA#
Does PILT have a Code of Federal Domestic Assistance (CFDA) number?

The CFDA number for the Payments in Lieu of Taxes program is 15.226.

Appropriation
What is the current level of appropriation for the PILT program?

On October 3, 2008, Congress enacted the Emergency Economic Stabilization Act of 2008 (Public Law 110-343) which authorized counties to receive their full PILT entitlement from 2008 through 2012. The amount authorized for the program in FY 2010 was $358.5 million. This amount is partitioned into $358.1 million for payments to counties and other local governments and $400,000 for expenses to administer the program. Excluding administrative expenses and prior year adjustments, the 2010 payments of $358.1 will fund 99.9 percent of the authorized level of $358.5 million. The $358.1 million was distributed to approximately 1,850 local government units (mostly counties) in 49 States, the District of Columbia, Guam, Puerto Rico, and Virgin Islands.

Qualifying Acres
What lands does the DOI consider in calculating payments?

According to the formula established by the PILT law, there are three categories of entitlement lands:

- Federal lands in the National Forest System and the National Park System, lands administered by BLM, lands in Federal water resource projects, dredge areas maintained by the U.S. Corps of Engineers, inactive and semi-active Army installations, and some lands donated to the Federal government (section 6902 payments)
- Federal lands acquired after December 30, 1970, as additions to lands in the National Park System or National Forest Wilderness Areas (section 6904 payments)
- Federal lands in the Redwood National Park or lands acquired in the Lake Tahoe Basin near Lake Tahoe under the Act of December 23, 1980, (Section 6904 or 6905 payments).

Computations
How does DOI compute PILT payments?

DOI computes payments authorized under section 6902 of the Act using the greater of the following two alternatives:

(A) $2.40 (in fiscal year 2010) times the number of acres of qualified Federal land in the county (as defined above), reduced by the amount of funds received by the county in the prior fiscal year under certain other Federal land receipt sharing programs such as the twenty-five percent timber program or the mineral leasing program

-or-

(B) Thirty-three cents (in fiscal year 2010) times the number of acres of qualified Federal land in the county, with no deduction for prior-year payments.

Both alternatives explained above are subject to a population ceiling limitation computed by multiplying the county population times a corresponding dollar value (adjusted annually for inflation) contained in the Act.

Section 6904 and 6905 payments are computed by taking one percent of the fair market value of land acquired for addition to the National Forest or National Park systems and comparing the result to the amount of property taxes paid on the land in the year prior to Federal acquisition. The county payment is the lesser of the two.

Section 6904 payments are made annually for a period of five years. The first payment begins in the Federal fiscal year following the fiscal year in which the land was acquired by the Federal Government, unless mandated otherwise by law.

Section 6905 payments are also made annually but continue until five percent of the fair market value is fully paid. The first payment begins in the Federal fiscal year following the fiscal year in which the land was acquired by the Federal Government, unless mandated otherwise by law. However, the yearly payment may not exceed the lesser of one percent of the fair market value or the property taxes that were assessed prior to Federal acquisition.

Funding limitations are equitably applied to all payments under the program. Any PILT payment or portion of a payment that is not made as a result of funding limitations is not carried forward to future years.

Inflation
Are payments adjusted for inflation?

The law, as amended in 1994, uses the Consumer Price Index to adjust the population limitations and the per acre dollar amounts used to calculate alternatives "A" and "B" under section 6902.

Deductions
What are "prior-year payments"?

Prior-year payments are Federal payments to local government under programs other than PILT during the previous fiscal year. These payments include those made under the Refuge Revenue Sharing Fund, the National Forest Fund, the Taylor Grazing Act, the Mineral Leasing Act for acquired lands, and the Federal Power Act. The PILT Act requires the governor of each state to report these payments to DOI each year.

Payment Method and ACH Enrollment Form
How are payments made?

To make changes to a county's address or bank account number, you should contact Debbie SanRah at the National Business Center on (303) 969-7378. To enroll a county in our wire transfer program you should complete an ACH Vendor/Miscellaneous Payment Enrollment form and mail or fax it to the address indicated on the form.

New Laws Affecting Pilt
Have there been any new laws enacted within the last year that may affect PILT payments?

The Emergency Economic Stabilization Act of 2008 (Public Law 110-343) was enacted on October 3, 2008 and authorized full funding for the PILT program from 2008 through 2012.

PILT Acreage Contacts
Who do I contact if I have questions about the PILT acreage contained in my county?

A list of PILT "entitlement land" by state, county and Federal agency used in the calculation of the fiscal year 2010 is available by clicking on the following title:

Fiscal Year 2010 PILT Entitlement Land

Questions concerning a description (location, type, parcel size, etc.) of PILT entitlement land should be directed to the agency that owns or administers the land. The following is a list, by agency, of people to contact concerning PILT entitlement land:

Bureau of Land Management

State	Name/Office	Phone
Alaska	Ramona Chinn (960)	(907) 271-3806
Arizona	Debra Stevens (912)	(602) 417-9215
California	Richard Bubb (942)	(916) 978-4358
Colorado	Andi Senti (935)	(303) 239-3713
Idaho	Laura Summers (933)	(208) 373-3866
Montana/N.Dak./S.Dak.	Tammi Lorenz (954)	(406) 896-5053
Nevada	Doran Sanchez (912)	(775) 861-6586
N. Mex/KS/OK/TX	Cynthia Sandoval (943B)	(505) 438-7602
Oregon/Washington	Pam Chappel (958)	(503) 808-6170
Utah	Joy Wehking (920)	(801) 539-4114
Wyoming/Nebraska	Dave Mansell (957)	(307) 775-6131
All other States	Shirlee Gilmore (930)	(703) 440-1545
Army/Corps of Engineers	Rhonda Johnson (AL)	(251) 694-3674
Fish and Wildlife Service	James Eaglesome (D.C)	(703) 358-2363
Forest Service	Holly Martin (Oregon)	(503) 808-2431
National Park Service	Nadine Leisz (D.C.)	(202) 354-6961
Bureau of Reclamation	Theresa Pugh (Denver)	(303) 445-2277

Current Events
What upcoming events related to the PILT program should I be aware of?

The FY 2009 PILT payment was made on June 11, 2009.

The FY 2010 PILT payments will be made on June 29, 2010.

Additional Information
Where can I obtain additional information?

For FY 2010, additional information concerning the PILT program may be obtained by writing to DOI, Office of Budget, 1849 C Street, NW. (Room 4012, MIB.), Washington, D.C. 20240; or calling DOI at (202) 208-3157.

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TALKING POINTS - Payment in Lieu of Taxes 101

***Points are based upon discussions with the PILT Specialist from DOI/BLM's Budget Office and Congressional Research Service's Somewhat Simplified Report on PILT

What are "Payments in Lieu of Taxes"?
Recognizing the inability of local governments to collects property taxes on federally-owned land, Congress enacted the Payment in Lieu of Taxes Act (Public Law 94-565) in 1976. The Act provides for payments to local governments containing certain federally-owned lands. The payments serve to supplement other Federal land receipt sharing payments such as timber sale receipt payments and attempts to compensate the county for lost tax revenue.

PILT was passed at a time when US policy was shifting from one of disposal of federal lands to one of retention. With that shift, Congress agreed with recommendations of a federal commission that if these federal lands were never to become part of the local tax base, then some compensation should be offered to federal governments to make up for the presence of non-taxable lands within their jurisdictions.

Congress has amended the PILT Act to address issues such as reducing the erosion of payments due to inflation and refining the definition of local government.

What is the statutory authority for the payments?
The key law is Public Law 94-565, commonly known as the Payments in Lieu of Taxes Act. It is codified in Chapter 69 of Title 31 of the United State Code. Applicable regulations are in Subpart 1881, Title 43 of the Code of Federal Regulations.

Who administers the PILT program?
The program is administered by the Department of the Interior through the Bureau of Land Management which is responsible for calculating the payments according to the formulas established by the law and to distribute the funds appropriated by Congress. In response to intense lobbying from counties through the National Association of Counties, the program was moved from the BLM to the Department of the Interior to provide for higher priority and greater visibility of the program.

What entities are eligible for payments?
Local governments, usually counties, that provide services such as public safety, environment, housing, social services and transportation and have non-taxed federal land within their jurisdiction.

Payments are made directly to the counties unless the state government concerned chooses to receive the payments and, in turn, pass the money on to other smaller governmental units such as a township or city (Wisconsin is the only state currently employing this option).

What can PILT payments be used for?
PILT payments may be used for any governmental purpose.

What lands are considered in calculating the payments?
The Act defines three categories of entitlement lands:

1.Federal lands in the National Forest System and the National Park System, lands administered by the Bureau of Land Management, lands in federal water resource projects, dredge areas maintained by the Corps of Engineers, inactive and semi-active Army installations, and some lands donated to the federal government (Section 6902).

2.Federal lands acquired after December 30, 1970 as additions to lands in the National Park System or National Forest Wilderness Areas. (Section 6904)

3.Federal lands in the Redwood National Park or lands acquired in the Lake Tahoe Basin near Lake Tahoe under the Act of December 23, 1980 (Section 6905).

****While I mention Section 6904 & 6905 payments, our focus is on the familiar Section 6902 PILT payments. Sections 6904 & 6905 are for informational purposes only.*

CALCULATING A COUNTY'S PILT PAYMENT REQUIRES FIRST ANSWERING THESE QUESTIONS---

1. How many acres of eligible land are in the county?
2. What is the population of the county?
3. What are the previous year's payments for eligible land, if any under other payment programs of federal agencies?

4. Does the state have any laws requiring the payments from other federal agencies to be passed through to other local government entities such as school districts rather than staying with the county government
5. After Sept. 30, 1999, what was the increase in the CPI

How many acres of eligible lands?
- Lands in NPS
- Lands in National Forest System
- BLM administered lands
- Lands dedicated to the use of Federal water resources development projects
- Dredge disposal areas under the US Army Corps of Engineers jurisdiction
- National Wildlife Reserve Areas withdrawn from the public domain
- Land located in the vicinity of Purgatory River Canyon and Pinon Canyon, CO that was acquired after Dec. 31, 1981 to expand Ft. Carson military reservation
- Semi-active or inactive Army installations used for mobilization and for reserve component training
- Land acquired a private party to be donated to the US within 8 years
- Eligible Federal land acquired by a State through an exchange, and
- Lands in UT acquired by the US if they were eligible for payment in lieu of taxes from that State

Only these lands are eligible for PILT payments; other federal lands such as military bases, federal office buildings and such are not part of this program.

How are amounts computed?
Payments under each section of the Act are calculated as follows:

Section 6902 payments are computed using the higher of the following two alternatives:

1.$2.23 (in Fiscal Year 2007) times the number of acres of qualified federal land in the county, reduced by the amount of funds received by the county in the prior fiscal year under certain other federal programs.

($2.23 X [number of acres of qualified federal land]) - [prior year funds received]

OR

2.Thirty-one cents (in Fiscal Year 2007) times the number of acres of qualified federal land in the county, with no deduction for prior-year payments.

$.31 X [number of qualified acres]

***Payments under either alternative are subject to population payment limitations.

One question that may come to mind is why $2.23 and $.31?

► From 1995 - 1999, Congress provided in the Act specific values already adjusted for inflation. For 2000, they said take the 1999 per acre values and adjust them for inflation using the Consumer Price Index. So the formula takes the 2006 per acre values and multiplies them by the CPI inflation factor of 1.0222% to come up with the adjusted values used for 2007.

Also worth noting—only the amount of Federal land payments actually received by the local governments in the prior year are deducted. If a unit receives a Federal land payment, but it required by State law to pass all or part of that payment along to a financially and politically independent school district or other single or special purpose district, those redistributed payments are considered "not received" by the unit of local government and therefore, not deducted from section 6902 payments.

You may ask why are there population caps? I don't know. I would venture to guess Congress wanted to place some controls and limits on the amount of funds distributed under the PILT program and this was an easy way of doing it.

Population Caps---
The law restricts the payments a county may receive based on population. These payment ceilings are on a sliding scale ranging from $149.61 per capita for populations of 5000 or $59.85 per capita for counties with a population between 49,001 and 50,000.

The kicker is, with the population cap in place, no county will receive PILT payments greater than this amount ($2,883,000) for 2007.

Section 6904 and 6905 payments, that is payments on Federal lands acquired after December 30, 1970 as additions to lands in the National Park System or

National Forest Wilderness Areas. (Section 6904) and payments on Federal lands in the Redwood National Park or lands acquired in the Lake Tahoe Basin near Lake Tahoe under the Act of December 23, 1980 (Section 6905) are computed by taking one percent of the fair market value of the purchased land and comparing the results to the amount of property taxes paid on the land in the year prior to federal acquisition. The payment to the county is the lesser of the two.

Section 6904 Payments are made for a period of five years following each acquisition.

Section 6905 Payments are made each year from the date the land was purchased by the federal government until an amount equal to 5% of the fair market value at the time of acquisition is fully paid. However, the yearly payment may not exceed the lesser of one percent of the fair market value or the property taxes assessed prior to federal acquisition.

What are "prior-year payments"?
As all of you know Federal land varies greatly in revenue production ranging from large volumes of timber sales to recreation concessions such as ski resorts to some having no payment programs at all.

To prevent disparities and attempt to even out payments across the board, Congress provided that the previous year's on eligible federal lands from other agencies' programs would be subtracted from the PILT payment the following year. (Standard rate).

By the same token, Congress wanted to ensure each county got some PILT payment, however small, even if the eligible lands produced a substantial county payment from other agencies. So, if for example applying the standard rate formula produces a negative amount , in that case, the county can apply the flat $.30 rate on eligible federal lands.

Prior-year payments include those made under:

- the Refuge Revenue Sharing Fund,
- the National Forest Fund,
- the Taylor Grazing Act,
- the Mineral Leasing Act for acquired lands,

· the Federal Power Act.

· the Bankhead Jones Farm Act
· the Material Disposal Act
· the Secure Rural Schools Act (Title I)

The PILT Act requires each state to report these payments to BLM each year.

Do the payments take inflation into account?
The law, as amended in 1994, uses the consumer price index to adjust the population limitation and the per acre dollar amounts used to calculate alternative "A" and "B" under Section 6902. However, an individual county's payment from one year to the next may not necessarily increase since the total amount of money available under the PILT program is set by Congress each year in the Department of the Interior and Related Agencies Appropriations Bill. Payments also vary with changes in "prior-year" payments.

By now you may be thinking, after all that, I know my county's PILT payments should be much higher than we are receiving. The Feds are shortchanging us...again. Why?

REMEMBER: The actual payments are based on:
the formulas established in the Act, and
the total amount appropriated by Congress each year.

Under the current formula, the 2007 payments are funded at 64.7 percent of the authorized level of $358.3 million. PILT payments for 2007 total $232.1 million.

Things I know are still on your mind...
What is the soonest a county can know how much it will receive? Historically, counties haven't been able to know the amount of the check until they receive it. Why is that? Is there any way to know it sooner?

Payment computations are quite cumbersome and can take until June to accurately compute payments. Last minute data changes or adjustments can significantly alter the payments. Hence, it would not be to anyone's advantage for the BLM provide inaccurate payment information before the actual payment date only to have it increased or decreased at the time of disbursement.

PILT disbursement time also provides a press opportunity for the Secretary, local BLM offices, Congressmen, and the Governor of each State. Therefore, disbursement announcements are not made until the day PILT payments actually go out.

In 2003, the PILT payment schedule was adjusted to coincide with most local government fiscal years. Hence, payments are now made via electronic transfer by July 1 of each year. FY2007 payments were disbursed on June 15, 2007.

The BLM is acquiring land left and right in my county. And I know we're losing compensation. That land is no longer taxed and because it is acquired, we won't even receive PILT funds.
Remember PILT is based on the prior year's data. So if a federal land acquisition occurs in this fiscal year, you're correct, you will not see monies for that transaction reflected in this year's PILT payment. However, it should show up in the following year's disbursement.

Of course, one of the biggest problems with PILT is the discrepancy between the authorized and appropriated amounts. BLM shares your frustration and is looking for a viable fix that would disengage this yearly effort from BLM's budget process while providing counties with maximum allowable benefits under the program.

Putting It All Together—

PILT is a series of choices.

EX #1 --- Doggone County, USA has 92,000 acres of eligible Federal land within its boundaries. Prior year payments amount to $38,950. The county's population has reached 7,316.

Population Ceiling: 8,000 X $122.42 = $ 979,360

92,000 X $2.23 = $ 205,160
(Eligible Acreage)

Payment to County $ 205,160 - $38,950 = $166,210
(Alternative A)

OR

Alternative B 92,000 X $.31 = $ 28,520
(Remember there are no deductions under this alternative.)

**The County is authorized to receive whichever of the two calculations is greater.

EX #2 --- Dadblame County, USA has 83,000 acres of eligible Federal land within its boundaries. The county has substantial timber harvest and other federal revenue sharing programs so prior year payments amount to $190,000. The county's population is 11,000.

Population Ceiling: 11,000 X $102.03 = $1,122,330

83,000 X $2.23 = $ 185,090
(Eligible Acreage)

Payment to County $185,090 – $190,000 = $ 0 (-4,910)
(Alternative A)

OR

Alternative B 83,000 X $.31 = $ 25,730

**Once again, the County is authorized to receive whichever of the two calculations is greater.

EX #3 --- Allgone County, USA has 1,875,000 acres of eligible Federal land within its boundaries. The county also receives significant federal revenue sharing funds so prior year payments totaled $800,000. The population hovers around 3001.

Population Ceiling: 5000 X $ 149.61 = $ 748,050

1,875,000 X $2.23 = $ 4,181,250
(Eligible Acres)

Alternative A
Payment to County *$4,181,250 – $800,000 = $ 3,381,250*** ($748,050 Limited to this amount by population ceiling)

*REMEMBER: If the amount of payment based on acreage exceeds the population ceiling (in this case, $72,065) you must use the population ceiling calculation for your payment.

OR

Alternative B 1,875,000 X $.30 = $ 562,500

***Although Alternative A and Alternative B yield higher amounts, because of the population ceiling, Allgone County would be limited to receiving $72,065.

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Source: Colorado Counties Inc.
http://www.ccionline.org/repository//Documents/PILT/PILT101%20expanded%207-6-07.pdf

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