

Final Environmental Assessment and Finding of No Significant Impact for the Remagen Drop Zone Improvements at Fort Stewart, Georgia

Environmental Division,
U.S. Army Garrison, Fort Stewart, Georgia

and

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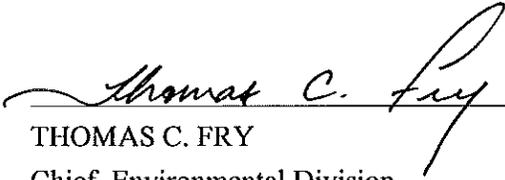
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In compliance with the National Environmental Policy Act of 1969

FINAL ENVIRONMENTAL ASSESSMENT &
FINDING OF NO SIGNIFICANT IMPACT FOR THE
REMAGEN DROP ZONE IMPROVEMENTS AT
FORT STEWART, GEORGIA

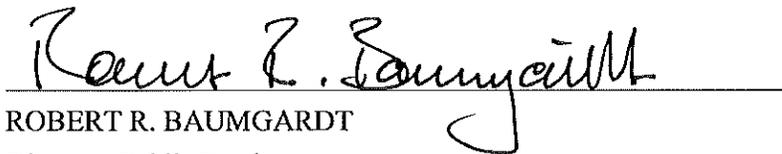
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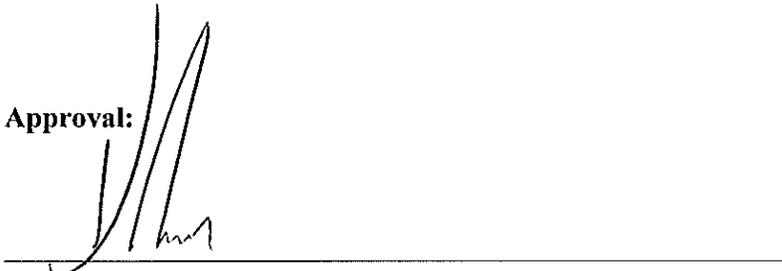
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FINDING OF NO SIGNIFICANT IMPACT FOR THE REMAGEN DROP ZONE IMPROVEMENTS AT FORT STEWART, GEORGIA

1.0 BACKGROUND

Fort Stewart is the largest Army Installation east of the Mississippi River, covering approximately 279,270 acres in parts of Liberty, Long, Bryan, Evans, and Tattnall counties. The Installation is approximately 39 miles across from east to west and approximately 19 miles from north to south. Fort Stewart was established in 1940 and has seen varied periods of heightened activity as well as periods of inactivity in its 70-year life. The Installation is now a permanent Post, training its Soldiers and assisting its neighbors in coastal Georgia. The primary mission of Fort Stewart is to provide support for mission readiness and execution. This effort is performed through extensive training of Soldiers on the Installation. Training ranges for tanks, field artillery, helicopter gunnery, and small arms exist at Fort Stewart. To support the Army's mission, Fort Stewart must provide training in compliance with safety criteria specified in Air Force Instruction (AFI) 13-217, *Drop Zone and Landing Zone Procedures*, Army Field Manual (FM) 3-21.38, *Pathfinder Operations*, and Army FM 3-21.220 (57-220), *Static Line Parachuting Techniques and Training*.

The Remagen Drop Zone (DZ) Improvements Environmental Assessment (EA) has been prepared to analyze potential environmental impacts associated with improving an existing DZ at Fort Stewart. This Finding of No Significant Impact (FNSI) summarizes the findings of the EA. This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code Section 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500 to 1508); and Army Regulation 200-2, *Environmental Effects of Army Actions*, as promulgated in 32 CFR 651. This EA identifies and evaluates whether the potential impacts of improving Remagen DZ would be significant. The use of the term "significant" (and derivations thereof) in this EA is consistent with the definition and guidelines provided in the CEQ regulations (40 CFR 1508.27), which require consideration of both the context and intensity of impacts.

2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to improve a DZ at Fort Stewart to support cargo and personnel drop training by the Army and Air Force. Improvements are needed to ensure the DZ has a minimum usable width of 600 yards as required by AFI 13-217 and Army FM 3-21.38, and any obstacles that could injure parachutists or damage equipment are removed in accordance with Army FM 3-21.220.

3.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

The U.S. Army proposes to improve a DZ at Fort Stewart to support cargo and personnel drop training. This improvement would be accomplished by increasing the minimum usable width of the DZ to 600 yards and by removing any obstacles that could injure parachutists or damage equipment.

No-Action Alternative: The no-action alternative for this proposed action would consist of maintaining baseline conditions. Although the implementation of the no-action alternative would not meet the purpose and need of the proposed action, which is to improve an existing drop zone at Fort Stewart to comply

with safety criteria specified in AFI 13-217, Army FM 3-21.38, and Army FM 3-21.220, the no-action alternative was carried forward in the analysis to provide a benchmark to evaluate the potential environmental effects of the preferred action alternatives.

Preferred Action Alternative: Under the preferred action alternative, Remagen DZ would be cleared of timber to provide a minimum usable width of 600 yards, 38 training hazards would be removed (classified into one of the following seven categories: closed borrow pit, concertina wire, drainage repair, earthen mound, structure, stump, or riprap), and an extensive berm network on Cartwright Airfield would be removed. This does not include clearing, maintenance, or any other actions within wetlands, which is not covered within the scope of this proposed action. Should such actions be deemed necessary, additional NEPA analysis and documentation will be required. If maintenance is needed in the adjacent wetlands, it will occur by mechanical means, in a manner that does not involve the introduction of fill into the wetlands. If herbicide is proposed, all applicable regulatory requirements, including National Pollutant Discharge Elimination System or any other necessary permitting, will be fulfilled before work begins.

4.0 SUMMARY OF ENVIRONMENTAL EFFECTS

Analysis of this proposed action resulted in a finding of potential impacts to water resources (surface water, stormwater, floodplains, and wetlands), biological resources (vegetation, wildlife, and special status species), land use, noise, safety, hazardous and toxic materials and waste, and cultural resources, as indicated in Table 1. Refer to Chapter 3.0, Affected Environment and Environmental Consequences, of the EA (incorporated by reference) for details on the impact analysis. No other environmental or socioeconomic resources were potentially affected. These resources are briefly discussed in Appendix A of the EA.

Table 1. Summary of Potential Impacts

Type and Intensity of Impact <i>(TLS = Threshold Level of Significance)</i>		
⊖ = no impact ○ = negligible ⊙ = minor adverse ⊗ = moderate adverse ● = meets TLS		
Type of Effect	No Action	Preferred Action Alternative
Water Resources		
Direct / Indirect	⊙	⊙
Cumulative ¹	⊖	⊖
Biological Resources		
Direct / Indirect	○	⊙
Cumulative ¹	○	⊙
Land Use		
Direct / Indirect	●	○
Cumulative ¹	⊖	⊖
Noise		
Direct / Indirect	○	○
Cumulative ¹	⊖	⊖
Health & Safety		
Direct / Indirect	●	○
Cumulative ¹	⊖	⊖
Hazardous and Toxic Materials and Waste		
Direct / Indirect	○	○

Table 1. Summary of Potential Impacts

Type and Intensity of Impact <i>(TLS = Threshold Level of Significance)</i>		
Θ = no impact ○ = negligible ⊙ = minor adverse ⊕ = moderate adverse ● = meets TLS		
Cumulative¹	Θ	Θ
Cultural Resources		
Direct / Indirect	Θ	Θ
Cumulative¹	Θ	Θ

1. Cumulative impacts reflect the incremental impact the proposed action may have when added to other past, present, and reasonably foreseeable actions. As such, the severity of potential direct/indirect impacts for an individual resource is not indicative of the severity of potential cumulative impact to that same resource.

Potential impacts to these resources may be direct, indirect, or cumulative and are defined as follows. Direct impacts are those caused specifically by the proposed action and that occur at the same time and place. Indirect impacts are also caused by the proposed action, but later in time or in distance. Cumulative impacts result from the incremental impact of the action when added to other past, present, or reasonably foreseeable future actions.

5.0 PUBLIC INVOLVEMENT

The Draft EA and Draft FNSI were available for public review April 9 through May 8, 2012, at the local public libraries in Hinesville and Savannah, as well as the Post Library on Fort Stewart. Fort Stewart published Notices of Availability of the Draft EA and Draft FNSI in the *Savannah Morning News*, *Coastal Courier*, and *The Frontline* (Appendix D). Electronic copies of the document were distributed to the regulatory community and joint land use partners with whom Fort Stewart consults. Correspondence and comments are available in appendices B, C, and E.

6.0 CONCLUSION

This FNSI summarizes the potential impacts documented in the Remagen DZ EA associated with improving a DZ at Fort Stewart. Implementation of the preferred action alternative will not have a significant environmental impact within the meaning of NEPA Section 102(2) (c), and preparation of an Environmental Impact Statement is not required. I have selected implementation of the preferred action alternative as the recommended course of action.


Date: 4 JUL 12

KEVIN W. MILTON
 Colonel, U.S. Army
 Commanding

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ACRONYMS AND ABBREVIATIONS

ADA	Americans with Disabilities Act	LID	Low Impact Development
AFI	Air Force Instruction	MWD	Military Working Dog
BA	Biological Assessment	NAAQS	National Ambient Air Quality Standards
BCTC	Battle Command Training Center	NEPA	National Environment Policy Act
BMP	Best Management Practices	NIOSH	National Institute for Occupational Safety and Health
CAA	Clean Air Act	NRHP	National Register of Historic Places
CEQ	Council on Environmental Quality	OCGA	Official Code of Georgia
CFR	Code of Federal Regulations	OSHA	Occupational Safety and Health Act
CWA	Clean Water Act	POLs	Petroleum, Oils, and Lubricants
dBA	A-Weighted Decibels	RCW	Red-cockaded Woodpecker
dBc	C-Weighted Decibels	ROI	Region of Influence
DNL	Day-Night Sound Level	SBV	Stream Buffer Variance
DoD	Department of Defense	TA	Training Area
DZ	Drop Zone	TLS	Threshold Levels of Significance
EA	Environmental Assessment	USACE	U.S. Army Corps of Engineers
EIS	Environmental Impact Statement	USC	U.S. Code
EO	Executive Order	USDOT	U.S. Department of Transportation
ESPCP	Erosion, Sedimentation, and Pollution Control Plan	USEPA	U.S. Environmental Protection Agency
FFS	Frosted flatwoods salamander	USFWS	U.S. Fish and Wildlife Service
FHA	Federal Highway Administration	UXO	Unexploded Ordnance
FM	Field Manual		
FNSI	Finding of No Significant Impact		
FS 47	Fort Stewart Tank Trail 47		
FY	Fiscal Year		
HMU	Habitat Management Unit		
GA HWY	Georgia Highway		
IBCT	Infantry Brigade Combat Team		
ICRMP	Integrated Cultural Resources Management Plan		

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1.0 INTRODUCTION AND BACKGROUND

Fort Stewart is the largest Army Installation east of the Mississippi River, covering approximately 279,270 acres in parts of Liberty, Long, Bryan, Evans, and Tattnall counties (Figure 1-1). The Installation is approximately 39 miles across from east to west and approximately 19 miles from north to south.

Fort Stewart was established in 1940 and has seen varied periods of heightened activity as well as periods of inactivity in its 70-year life. In 1996, the 3d Infantry Division was activated at Fort Stewart. The Installation is now a permanent Post, training its Soldiers and assisting its neighbors in coastal Georgia. The primary mission of Fort Stewart is to provide support for mission readiness and execution through extensive training of Soldiers on the Installation. Training ranges for tanks, field artillery, helicopter gunnery, and small arms exist at Fort Stewart. Fort Stewart has four active Drop Zones (DZs) (Galahad, Taylor Creek, Victory, and Remagen) and several historic DZs, including Canoochee, Jaeck, Kasserine, Ledo, Metz, St. Lo, Tac X, and Taro.

A DZ is a designated area where personnel and equipment may be delivered by means of parachute or free drop. Both rotary and fixed-wing aircraft are used in the DZ. Drop altitudes are usually 1,000 feet but may be higher. In accordance with Army Field Manual (FM) 3-21.220 (2003), *Static Line Parachuting Techniques and Training*, Paragraph 20-6c, procedures require that one parachutist needs 600 by 600 yards of ground space if they are jumping from a C-130 or larger aircraft. As the number of parachutists increases, the length of ground space required will increase by 76.6 yards for each additional parachutist. To ensure that the airdrop is safe, the drop zone must be free of obstacles, including high tension electrical lines or any conditions that may injure parachutists or damage equipment (FM 3-21.220).

This Environmental Assessment (EA) analyzes potential environmental impacts associated with improving an existing DZ at Fort Stewart. This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] Section 4321 *et seq.*); the Council on Environmental Quality (CEQ) regulations that implement NEPA (Title 40 Code of Federal Regulations [CFR], Parts 1500 to 1508); and Army Regulation 200-2, *Environmental Effects of Army Actions*, as promulgated in 32 CFR 651.

1.1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The purpose of this proposed action is to improve an existing DZ at Fort Stewart to support cargo and personnel drop training by the United States (U.S.) Army and U.S. Air Force. Improvements would include increasing the minimum usable width of the DZ to 600 yards by removing trees that have encroached upon the existing DZ and removing potential training hazards to meet specified Department of Defense (DoD) DZ standards.

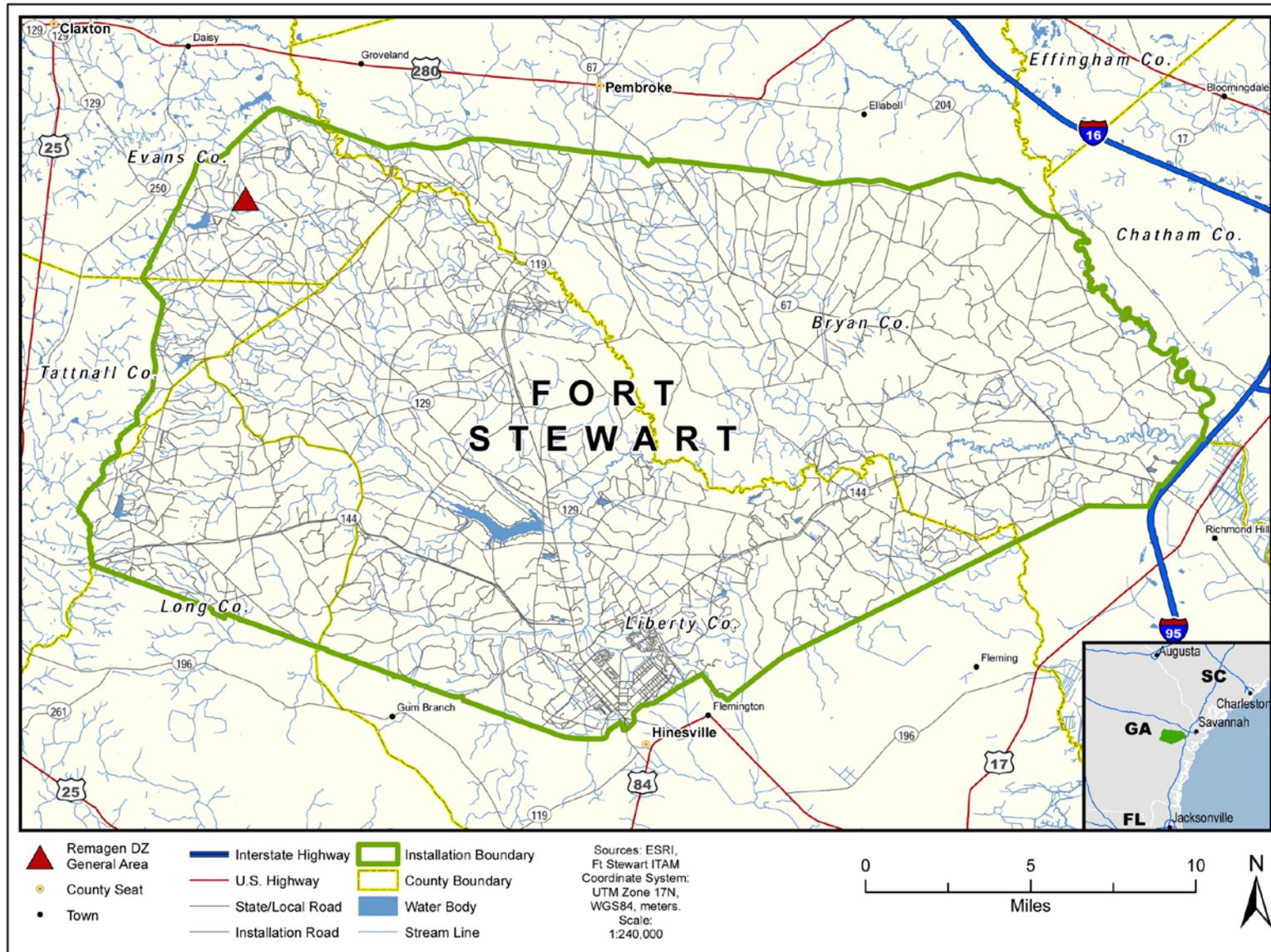


Figure 1-1. Regional Location of Fort Stewart, Georgia

The proposed action is needed to comply with 10 USC 3062, *Policy; Composition; Organized Peace Establishment*; Air Force Instruction (AFI) 13-217, *Drop Zone and Landing Zone Procedures*; Army FM 3-21.38, *Pathfinder Operations*; and Army FM 3-21.220 (57-220), *Static Line Parachuting Techniques and Training*. Title 10 USC Section 3062 requires the Army to be "...organized, trained, and equipped primarily for prompt and sustained combat incident to operations on land." The DZ would provide necessary training opportunities to fulfill these legal requirements. The safety criteria mandating a 600-yard width for existing DZs is specified in AFI 13-217 and Army FM 3-21.38. In addition, to ensure the DZ is safe and personnel can train properly, Army FM 3-21.222 requires that the DZ and adjacent areas be free of obstacles that could injure parachutists or damage equipment.

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

Fort Stewart used its master planning process to develop siting alternatives to identify which DZ could be improved to meet the purpose and need of the proposed action. This collaborative process involved an interdisciplinary team composed of the Installation's Master Planning Division, Range Control, and Environmental Division. The team collected and evaluated project-specific information, including mission requirements, to develop alternatives that met the purpose and need of the proposed action.

2.2 PROPOSED ACTION

The proposed action involves improving an existing DZ at Fort Stewart to support cargo and personnel drop training by the Army and Air Force in accordance with AFI 13-217, Army FM 3-21.38, and Army FM 3-21.220. Improvements would include increasing the minimum usable width of the DZ to 600 yards by removing trees that have encroached upon the existing DZ and removing potential training hazards that could injure parachutists or damage equipment.

2.3 SCREENING CRITERIA

Fort Stewart has four active DZs (Galahad, Taylor Creek, Victory, and Remagen DZs) and several historic DZs, including Canoochee, Jaeck, Kasserine, Ledo, Metz, St. Lo, Tac X, and Taro DZs. The following provides the specific criteria used to identify potential alternative DZ sites that could be used to meet the purpose and need. Following this description of the criteria, Section 2.4 identifies and describes the alternatives that best meet these screening criteria.

Size. The DZ needs to be capable of being improved to comply with the 600-yard width requirement contained in AFI 13-217 and Army FM 3-21.38.

Conflicts with Other Operations. The use of some adjacent facilities (ranges, maneuver areas, etc.) conflict with the safe use of the drop zone (parachuting). Aerial power lines bordering the DZ must be de-energized to maintain the utmost safety for the drop. The DZ would need to be in an area that would minimize scheduling conflicts and not require surrounding facilities or airspace to be shut down when the DZ is operational.

Safety Concerns. The DZ and adjacent areas would need to be free of obstacles that could injure parachutists or damage equipment in accordance with Army FM 3-21.220.

Environmental Concerns. The DZ with the fewest environmental constraints (amount of tree removal, unexploded ordnance [UXO], etc.) is more likely to decrease costs, avoid and minimize mitigation requirements, lessen improvement time, and minimize cumulative impacts. Existing Fort Stewart environmental documentation and range planners provided information used to screen areas for these constraints.

2.4 ALTERNATIVES CONSIDERED

Through collaboration among the Installation's Master Planning Division, Range Control, and Environmental Division and by applying the criteria discussed above, Fort Stewart considered DZs that could be improved to meet the purpose and need of the proposed action. Specifically, Fort Stewart considered improving the four active DZs (Galahad, Remagen, Taylor Creek, and Victory), as well as reestablishing/ expanding eight historic DZs that are no longer in use (Canoochee, Jaeck, Kasserine, Ledo, Metz, St. Lo, Tac X, and Taro).

2.4.1 NO ACTION ALTERNATIVE

The CEQ regulations that implement NEPA require a clear basis for choice among options by the decision maker and the public, and a no action alternative must be included and analyzed (40 CFR 1502.14[d]). The no action alternative for this proposed action would consist of not implementing the proposed action and maintaining the DZs at Fort Stewart in their current condition. Although the implementation of the no action alternative would not meet the purpose and need of the proposed action to provide the necessary facilities to safely train Soldiers, it is carried forward in this analysis to provide a benchmark to evaluate the potential environmental effects of the proposed action alternatives.

2.4.2 PREFERRED ACTION ALTERNATIVE

Remagen DZ is within Training Areas (TA) F-9, F-10, and F-11 in the northwest portion of Fort Stewart. Remagen DZ is an unpaved inactive airstrip used for the past 40 years as a designated equipment and personnel drop zone. The DZ is used by the Army, and also supports air delivery of both cargo and personnel dropped from Air Force heavy cargo aircraft. Remagen DZ is the second most frequently used DZ at Fort Stewart, having been used 353 days from Fiscal Year (FY) 2001 through FY 2011 (Fort Stewart 2011a). Cartwright Airstrip is the paved airstrip in the northern section of the Remagen DZ, which dates to the Vietnam Era. A berm network at the northern portion of Cartwright Airstrip was used for a simulated forward post environment. A simulated combat outpost was established and the berm was constructed to surround the outpost; however, no live-fire or munitions were used. Remagen DZ meets all screening criteria. In addition to being able to accommodate the 600-yard width requirement, Remagen DZ has few water hazards conflicts and no aerial power line conflicts. When Remagen DZ is in use, only TAs F-9 and F-10 would require closure. Although current safety concerns exist at Remagen, they are minor and easily corrected. In addition, the amount of timber removal required is less at Remagen than alternate sites.

As summarized in Table 2-1 and detailed below, the preferred alternative consists of improving Remagen Drop Zone by increasing the cleared width of the DZ to 600 yards, removing up to 38 potential training hazards, and removing 2,267 cubic yards of soil from the berm at Cartwright Airstrip. The berm to be removed represents a security perimeter simulation that would be present for an actual forward-positioned landing strip.

Table 2-1. Details of the Proposed Action

Total Project Area (acres)	Maximum Length (yards)	Required Width (yards)	Timber Harvest (acres)	Type I Site Preparation (acres)	Berm Removal (cubic yards)	Training Hazards
299.1	2,339	600	103.3	131.7	2,267	38

Increasing Usable Width of Drop Zone. To ensure safe operations, standard DZ sizes are required to be maintained. Air Force and Army regulations specify that a width of 600 yards is required for heavy equipment drops and static line parachuting (Air Force 2007; Army 2006). Under the preferred alternative, a minimum cleared width of 600 yards would be achieved (wetlands excluded), and the DZ impact point would be expanded north into the existing Cartwright airstrip. As part of clearing trees along the eastern and north sides of the DZ to widen its actual usable area, 103.3 acres of trees would be removed via timber sale. Following the timber sale, a total of 131.7 acres would undergo Type I site preparation. Type I site preparation consists of clearing, grubbing, removing, and disposing of all vegetation and debris within designated areas while preserving remaining vegetation and preventing injury or defacement. For the purposes of this EA, clearing consists of removing objectionable matter from the designated area and properly disposing of all exposed objectionable matter; it may be done by any method approved by Fort Stewart. (Objectionable matter can include trees, brush, stumps, logs, grass, weeds, roots, decayed vegetative matter, poles, stubs, rubbish, refuse, sawdust piles, and any other debris resting on or protruding through the ground surface.) Grubbing consists of removing and properly disposing of all objectionable matter that is embedded in the underlying soil. Following clearing and grubbing, all merchantable timber would be removed by sale contract. All combustible material except sawdust may be burned in the cleared area in accordance with Fort Stewart regulations and directives. All incombustible material shall either be hauled to an approved inert waste disposal facility or scattered on site as approved and directed by Fort Stewart. This includes the trees removed from the timber sale and additional trees in the southwest portion of the DZ (Figure 2-1). Following Type I site preparation, permanent grasses will be established immediately using native grass seed to supplement regrowth of existing grass, non-invasive weeds, and germination of seeds that were disturbed during the clearing operation.

Removing Training Hazards. To ensure the DZ is safe, and equipment and personnel can train properly, Army FM 3-21.220 requires that the DZ and adjacent areas be free of obstacles that could injure parachutists or damage equipment (Army 2003). The DZ was surveyed to identify potential training hazards. During the survey, 38 hazards were identified and classified into one of the following seven categories (Figure 2-1):

- Closed Borrow Pit. Under the preferred alternative, a closed borrow pit approximately midway from the initial approach at Remagen DZ would undergo tree removal and grading.
- Concertina Wire. A large collection of concertina wire would be removed from the southwest corner of Remagen DZ, approximately 820 feet north of Durrence Cemetery.

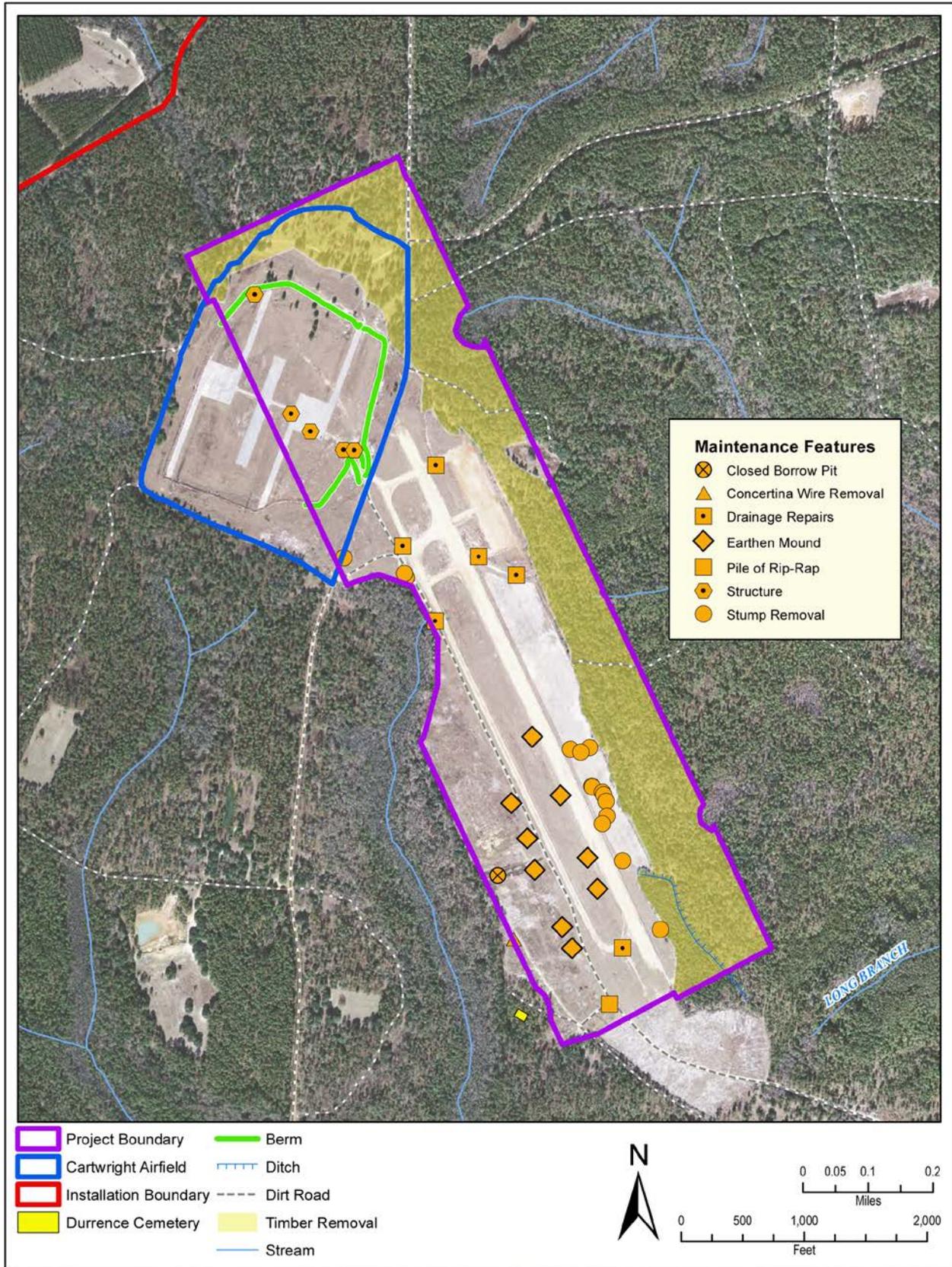


Figure 2-1. Proposed Action Location

- Drainage Repairs. Six drainage culverts and associated structures require repair. Under the preferred alternative, riprap stones on either side of these drainage structures would be replaced with geo-plastic material and seeded, and erosion issues would be remedied.
- Earthen Mound. Nine earthen mounds of different sizes and stature need to be removed on the west side of the main airstrip and taxiway. Each mound would be graded flat and the excess soil distributed to DZ depression areas.
- Structure. Three observation towers, one white storage shed, and one communication point are proposed for removal to maximize the utility of the DZ. If structurally sound, the structures would be reused; if not, they would be demolished.
- Stump. During the survey, 15 stumps were identified for either removal or grinding.
- Riprap. During the survey, one pile of riprap was identified for removal.

Remove Berm. Under the preferred alternative, portions of the berm would be removed to enhance training operations. Approximately 2,270 cubic yards of soil would be removed from the berm and distributed to DZ depression areas for a more even grade.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

In order for a DZ location to be carried forward as an alternative site for further consideration, it must meet all four selection criteria (ability to be widened to 600 yards, minimize conflicts with other operations and facility closures, meet safety criteria, and minimize environmental impacts to the extent possible). The alternatives listed in Table 2-2 and discussed below were developed during the master planning process, but they were dismissed from further, detailed review because they failed to meet all four required screening criteria and, therefore, the purpose and need for the proposed action. They are presented here, however, to inform the reader of the full spectrum of alternatives analyzed by the Installation’s interdisciplinary team during the course of this project’s development.

Table 2-2. Summary for Evaluation of Drop Zone Site Alternatives

Drop Zone	Can Meet Size Requirement?	Minimal Conflicts with Other Operations?	Minimal Safety Concerns?	Minimal Environmental Concerns
Canoochee	No	No	Yes	No
Galahad	Yes	No	Yes	Yes
Jaeck	No	No	Yes	No
Kasserine	No	No	No	No
Ledo	No	No	Yes	No
Metz	No	No	No	No
Remagen	Yes	Yes	Yes	Yes
St. Lo	No	No	No	No
Tac X	No	No	Yes	No
Taro	No	No	Yes	No
Taylor Creek	Yes	No	Yes	Yes
Victory	Yes	Yes	Yes	No

Size. Canoochee, Kasserine, Jaeck, Ledo, Metz, St. Lo, Tac X, and Taro DZs cannot accommodate a DZ width of 600 yards and would require an extensive amount of clear cutting to reestablish the DZ. Galahad, Taylor Creek, and Victory DZs meet the width requirement.

Conflicts with Other Operations. Canoochee, Kasserine, Jaeck, Ledo, Metz, St. Lo, Tac X, and Taro DZs would require surrounding facilities to be closed when the DZ was scheduled. Galahad DZ has two primary conflicts. First, the overhead power lines on Galahad DZ must be turned off when the DZ is in use; second, when the five firing points within the footprint of Galahad DZ are used, then Galahad cannot be used as a DZ. Eighteen conflicts are associated with the use of Galahad DZ, and eight conflicts are associated with using Taylor Creek DZ. No conflicts are associated with Victory DZ, but all military and commercial air traffic into Wright Army Airfield would need to be stopped when Victory DZ was in use. In addition, the overhead power lines must be turned off on Wright Army Airfield when Victory DZ is in use. A listing of DZ scheduling conflicts for the Galahad, Remagen, Taylor Creek, and Victory DZs is shown in Table 2-3.

Table 2-3. List of Drop Zone Scheduling Conflicts

Drop Zone	Facility/Airspace Conflict	Effect
Galahad	AGR1	Checkfired during drops.
	B13 LFX	Checkfired during drops.
	B18 LFX	Checkfired during drops.
	BR-CQB	Checkfired during drops.
	C3 Shoothouse	Checkfired during drops.
	Convoy LFA	Checkfired during drops.
	FP-10 (B18)	Not scheduled for live fire during drops.
	FP-141 (C3)	Not scheduled for live fire during drops.
	FP-306 (C3)	Not scheduled for live fire during drops.
	FP-74 (B22)	Not scheduled for live fire during drops.
	FP-78 (C4)	Not scheduled for live fire during drops.
	FP-8 (B17)	Not scheduled for live fire during drops.
	FP-9 (B17)	Not scheduled for live fire during drops.
	FR-CQB	Checkfired during drops.
	PAA-311 (C7)	Checkfired during drops.
	SH-CQB	Checkfired during drops.
	TA B17	Not released for recreation.
	TA B18	Not released for recreation.
Remagen	TA F10	Not released for recreation.
	TA F9	Not released for recreation.
Taylor Creek	FP-106 (Taylor Creek Drop Zone)	Not scheduled for live fire during drops.
	FP-107 (Taylor Creek Drop Zone)	Not scheduled for live fire during drops.
	FP-108 (Taylor Creek Drop Zone)	Not scheduled for live fire during drops.
	FP-109 (Taylor Creek Drop Zone)	Not scheduled for live fire during drops.
	PAA-104 (E3)	Not scheduled for live fire during drops.
	PAA-110 (Taylor Creek Drop Zone)	Not scheduled for live fire during drops.
	TA E3	Not released for recreation.
TA E6	Not released for recreation.	
Victory	No facility conflicts.	

Safety Concerns. Kasserine, Metz, and St. Lo DZs are maneuver corridors for mechanized training. As a result, the terrain has become rutted and uneven, and an extensive amount of repairs would be required to comply with Army FM 3-21.220. In addition, UXO has been discovered on Kasserine DZ, which has resulted in the closure of parts of TA F. No safety concerns are associated with the other DZs.

Environmental Concerns. Canoochee, Kasserine, Jaeck, Ledo, Metz, St. Lo, Tac X, and Taro DZs would require extensive clear cutting to reestablish the respective historic footprints.

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3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 INTRODUCTION

This chapter describes the environment that would be affected by improving a DZ at Fort Stewart. This chapter also analyzes the potential direct and indirect effects that the preferred alternative would have on the affected environment and compares those impacts to the no action alternative. This analysis enables decision-makers to compare the magnitude of environmental impacts with the baseline. Cumulative effects are analyzed in Chapter 4, and other NEPA considerations are discussed in Chapter 5.

The affected environment focuses on those features of the environment that could potentially be impacted from the proposed action at Fort Stewart. The region of influence (ROI) delimits the geographic extent of the environmental effects analysis. The proposed action area is Remagen DZ, which is within TAs F-9, F-10, and F-11 in the northwest portion of Fort Stewart (Figure 1-1). Because Remagen DZ consists of a relatively small geographic area (approximately 300 acres), the ROI encompasses the immediate vicinity of the proposed action alternative site location.

3.2 MEASURING ENVIRONMENTAL IMPACTS

As a result of NEPA, Federal agencies must integrate environmental values into their decision-making processes and analyze the environmental impacts of any proposed action and reasonable alternatives before the action is taken. This analysis must be documented in an EA or Environmental Impact Statement (EIS). The primary purpose of preparing an EA is to provide evidence and analysis for determining whether to prepare an EIS. An EIS is required if significant or potential significant direct, indirect, or cumulative environmental impact(s) are anticipated from a proposed action. Direct impacts are those caused specifically by the proposed action and that occur at the same time and place. Indirect impacts are also caused by the proposed action but later in time or farther in distance. Cumulative impacts “result from the incremental impact of the action” when added to “other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or what person undertakes such other actions” (Canter et al, 2007). This chapter focuses on the direct and indirect potential impacts to these environmental resources; potential cumulative impacts are discussed in Chapter 4.0.

In order for the Army to determine whether to prepare an EIS for this proposed action, Fort Stewart has established Threshold Levels of Significance (TLS) for each resource that, if potentially met, will require the preparation of an EIS. TLS is based on the professional judgment of the resource specialist. An analysis of each alternative is conducted so a measure of the intensity of anticipated environmental impacts can be fully disclosed, which allows the decision-maker to weigh each alternative prior to reaching a decision. Each of the TLSs in the EA are measures designed to explain how close the alternative is to potentially meeting a resource TLS. Each measure category is described as follows:

- *Negligible*. This term indicates that the environmental impact is barely perceptible or measurable, remains confined to a single location, and will not result in a sustained recovery time for the resource impacted (days to months).

- *Minor*. This term indicates that the environmental impact is readily perceptible and measurable; however, the impact will be temporary and the resource should recover in a relatively short period of time.
- *Moderate*. This term indicates that the environmental impact is perceptible and measurable, and may not remain localized, impacting areas adjacent to the proposed action. Under the impact, recovery of the resource may require several years or decades.
- *Meets TLS*. This term indicates the environmental impact meets the TLS and significant impact will occur.

3.3 RESOURCES ANALYZED

Following a review of the proposed action and the development of alternatives, it was determined that potential impacts may occur to water resources, biological resources, land use, noise, health and safety, hazardous and toxic materials and waste, and cultural resources. Table 3-1 presents a summarized representation of the direct and indirect impacts to these resources, which are discussed in detail in the remainder of this chapter.

Table 3-1. Level of Anticipated Environmental Effects

Type and Intensity of Impact		
⊖ = no impact ○ = negligible ⊕ = minor adverse ⊗ = moderate adverse ● = meets TLS		
Type of Effect	No Action	Preferred Action Alternative
Water Resources		
Direct / Indirect	⊕	⊕
Cumulative ¹	⊖	⊖
Biological Resources		
Direct / Indirect	○	⊕
Cumulative ¹	○	⊕
Land Use		
Direct / Indirect	●	○
Cumulative ¹	⊖	⊖
Noise		
Direct / Indirect	○	○
Cumulative ¹	⊖	⊖
Health and Safety		
Direct / Indirect	●	○
Cumulative ¹	⊖	⊖
Hazardous and Toxic Materials and Waste		
Direct / Indirect	○	○
Cumulative ¹	⊖	⊖
Cultural Resources		
Direct / Indirect	⊖	⊖
Cumulative ¹	⊖	⊖

TLS = Threshold Levels of Significance

¹ Cumulative impacts reflect the incremental impact the proposed action may have when added to other past, present, and reasonably foreseeable actions. As such, the severity of potential direct/indirect impacts for an individual resource is not indicative of the severity of potential cumulative impact to that same resource.

As mentioned earlier, potential cumulative impacts to these resources are discussed in Chapter 4.0. The environmental resources on Fort Stewart to which no potential effects were predicted (direct, indirect, or cumulative) include air quality, transportation, public health, recreation and visual resources, socioeconomic/environmental justice/protection of children, utilities, provision for the handicapped, soils, and airspace management. The basis for excluding these nine resources is presented in Appendix A.

3.4 RESOURCE ANALYSIS

3.4.1 WATER RESOURCES

Affected Environment

Introduction. The affected environment for water resources includes surface water resources, wetlands, and floodplains at and near Remagen DZ that may be directly or indirectly affected by implementation of the proposed action. Note that groundwater is not expected to be affected by the proposed action for any alternative because pollutant loads potentially found in infiltrating water would be limited primarily during grading and would be controlled through construction management measures and pose little threat to the aquifer water quality. As such, this resource has been excluded from further discussion.

Surface Water. Two creeks, two ponds, and one ditch are near Remagen DZ (Figure 3-1). Long Branch Creek ultimately discharges into Canoochee Creek and then into the Canoochee River. Long Branch Creek is approximately 740 feet from Remagen DZ. Canoochee Creek ultimately discharges into the Canoochee River and is approximately 1,500 feet from Remagen DZ. Canoochee Creek is listed on the 2010 303(d) listed streams. The 303(d) list includes all surface waters in the State for which beneficial uses of the water -- such as drinking, recreation, aquatic habitat, and industrial use -- are impaired by pollutants. Canoochee Creek is considered impaired because of low dissolved oxygen concentrations (GA EPD 2010).

Daisy Pond is approximately 5,775 feet northeast of Remagen DZ. This 14.5-acre pond is off Fort Stewart Tank Trail (FS) 17 and Georgia Highway (GA HWY) 19 in TA F-11 (Fort Stewart 2011b). Glisson's Mill Pond is approximately 6,415 feet southwest of Remagen DZ. This 67-acre pond is off FS 129 in TA E18 (Fort Stewart 2011c). Both of these ponds are stocked with largemouth bass, bluegill sunfish, redear sunfish, and channel catfish for recreational fishing (Fort Stewart 2011b; 2011c). A large blackwater creek swamp is downstream of Glisson's Mill Pond at the headwaters of Canoochee Creek.

In addition, there is a man-made ditch through uplands near the middle and southeastern portion of the Remagen DZ. This ditch appears to drain runoff from the DZ. The runoff discharges into a tributary of Long Branch Creek as shown in Figure 3-1 (Moncrief 2011).

Floodplains. Much of the eastern and southeastern portions of the Installation would become inundated by floodwaters from the Ogeechee and Canoochee rivers during a 100-year storm event. A 100-year floodplain is 1,100 feet south-southwest of Remagen DZ near Canoochee Creek (Figure 3-1).

Wetlands. Wetlands in the area of the proposed action were delineated by Fort Stewart personnel in accordance with U.S. Army Corps of Engineers (USACE) standards. The location of the wetlands relative to the project area is presented in Figure 3-1.

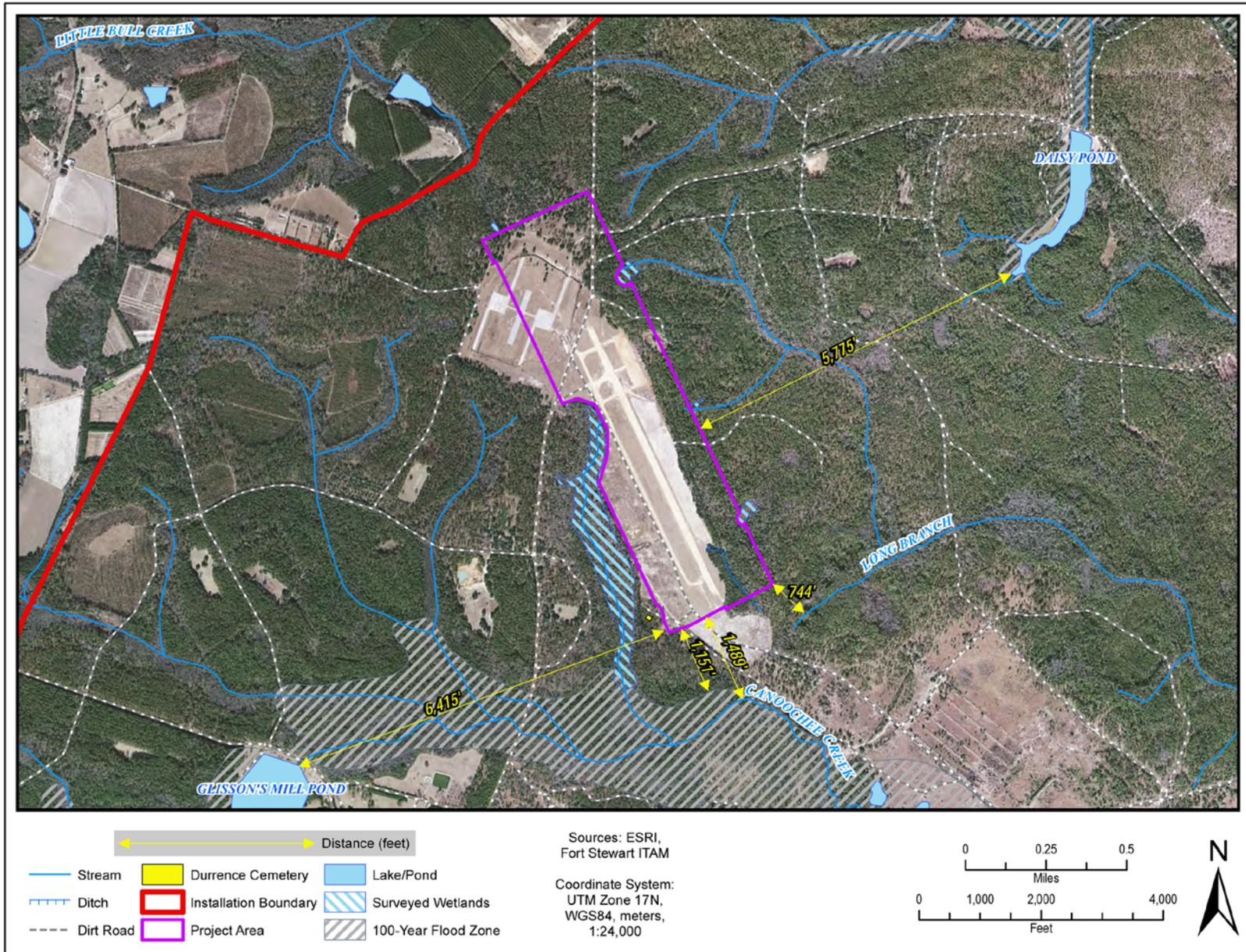


Figure 3-1. Water Resources near Project Area

TLS. The TLS for water resources will be met if there is a direct discharge to a 303(d)-listed surface water; if erosion and sedimentation runoff adversely impacts existing streams (upstream or downstream of the proposed site) because of a violation of the construction activity's Erosion, Sedimentation, and Pollution Control Plan (ESPCP); or if there is a direct discharge into a wetland that results in cumulative degradation of the area's ecosystem.

3.4.1.1 Environmental Consequences of the No Action Alternative

Surface Water. Under the no action alternative, existing erosion issues associated with six culverts and associated structures would continue and adverse impacts would continue to occur.

Floodplains. Under the no action alternative, there would be no impacts to floodplains.

Wetlands. Under the no action alternative, there would be no impacts to wetlands.

3.4.1.2 Environmental Consequences of the Preferred Action Alternative

Surface Water. As stated previously, there is a man-made ditch near the middle and southeastern portion of the Remagen DZ, which appears to drain sheet flow runoff from the DZ and discharge it into a nearby wetland system beyond the western boundary of the Remagen DZ and then into a tributary of Long Branch Creek (Moncrief). Under the proposed action, this ditch would be reshaped or filled in to remedy past erosion and prevent future erosion. A Georgia Stream Buffer Variance (SBV) is required in cases where new construction, including infrastructure improvements, requires crossing or encroaching upon "state water" by removing trees and/or vegetation within a 25-foot buffer of "state waters." The current design of the proposed action avoids wetlands, and no direct impacts to wetlands would occur from implementation of the preferred alternative. Therefore, no 25-foot buffer variance is required.

Aside from the man-made ditch, the closest named surface water is Long Branch Creek, which is approximately 740 feet south of Remagen DZ as shown on Figure 3-1. Other small tributaries to Long Branch Creek occur east of Remagen DZ and are also shown on Figure 3-1.

The Clean Water Act (CWA) (33 USC § 1251 et seq.), Georgia Water Quality Act (Official Code of Georgia [OCGA] § 12-5-20), Georgia Erosion and Sedimentation Control Act (OCGA § 12-7-1), and Municipal Separate Storm Sewer System permitting require erosion and sediment controls during projects that disturb 1.0 acre or more of land although Fort Stewart implements these requirements whenever a minimum of 0.75 acres is disturbed. Fort Stewart requires all contractors chosen to work on Installation projects adhere to Federal, state of Georgia, and local laws and regulations. In addition, contractors must use the Georgia Stormwater Management Manual/Coastal Stormwater Supplement, all applicable Executive Orders (EO), Section 438 of the Energy Independence and Security Act, the United Facilities Criteria *Design: Low Impact Development (LID) Manual*, and the USACE Public Works Technical Bulletin *LID for Sustainable Installations: Stormwater Design Planning Guidance for Development within Army Training Areas* during the design, implementation, construction, and other applicable phases of all work performed on the Installation.

EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, requires that all new construction comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*. This includes employing design and construction strategies that reduce stormwater runoff. Furthermore, Section 438 of the Energy Independence and Security Act of 2007 requires that any development or redevelopment project involving a Federal facility with a footprint exceeding 5,000 square feet shall use site planning, design, construction, and maintenance strategies to maintain or restore the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow. Compliance with this requirement can be met through the implementation of LID technologies. LID techniques would maintain or restore natural hydrologic functions of a site and achieve natural resource protection. Examples include, but are not limited to, minimizing total site impervious areas, directing building drainage to vegetative buffers, using permeable pavements where practical, and breaking up flow directions from large paved surfaces.

Adherence to the ESPCP and National Pollutant Discharge Elimination System permit, along with implementation of project-specific best management practices (BMPs) and LID practices would minimize impacts to water quality. Both LID practices and BMPs for erosion and sedimentation control would be implemented in accordance with the guidelines in the *Georgia Stormwater Management Manual/Coastal Stormwater Supplement* and the U.S. Environmental Protection Agency's (USEPA) *Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act* and the *Manual for Erosion and Sediment Control in Georgia*. BMPs specified in the ESPCP could include erosion control matting, silt fencing, brush barriers, construction exits, temporary and permanent seeding, the application of mulch, buffer zones, and dust control. The application of any or all of these BMPs would depend upon precise, specific ground conditions in the areas disturbed by construction. The selected contractor(s) would be responsible for continually maintaining all erosion and sediment control measures during the project. These measures would prevent and/or minimize soil contamination into Canoochee and Long Branch creeks. It is anticipated that only minor adverse impacts to surface waters from implementation of the preferred alternative would occur.

Training operations would occur within the DZ footprint and would not adversely affect surface water quality. Moreover, no maintenance facilities; loading/unloading operations areas; hazardous material; petroleum, oils, and lubricants (POL) storage areas (above/underground facilities); or generators would be on site following construction activities. As such, impacts to surface water from training and operations under the preferred alternative would be negligible.

As part of the project, significant erosion issues associated with six culverts and associated structure would be corrected, including repairing or replacing riprap stones on either side of the drainage structures. Correcting these erosion issues would result in a beneficial impact to stormwater.

In addition, there would be a loss of 131.7 acres of vegetation associated with Type I site preparation; however, the DZ would remain a pervious surface (no concrete or asphalt would be used). Following Type I site preparation, permanent grass vegetation will be established immediately using native grass

seed to supplement regrowth of existing grass, non-invasive weeds, and germination of seeds that were disturbed during the clearing operation. Establishing vegetative covering immediately following Type I site preparation activities, as well as implementing project-specific erosion and sedimentation control BMPs would minimize impacts to stormwater quality during DZ improvements. Following improvements, LID practices and BMPs in conjunction with traditional stormwater engineering controls would decrease impacts to water quality following construction. The perimeter of the project area would include stormwater control measures -- such as vegetated buffers, silt fencing, and siltation booms -- that would minimize the risk of increased sedimentation in stormwater. Preparation of spill contingency plans and a Storm Water Pollution Prevention Plan would minimize impacts to stormwater quality. Such measures would reduce the potential for adverse impacts from the stormwater system. Only minor, short-term adverse impacts are expected to water quality with implementation of the preferred alternative.

Training operations would not adversely affect stormwater runoff. The DZ would continue to be maintained to prevent serious erosion that could result in adverse impacts to stormwater runoff. Moreover, no maintenance facilities, loading/unloading operations areas, paved parking lots, or hazardous material and POL storage areas (above/underground facilities) would be on site following construction activities. As such, only minor impacts would occur to stormwater quality from training and operations under the preferred alternative.

Floodplains. The preferred alternative site location is not within a floodplain; the nearest 100-year floodplain is 1,100 feet south-southwest from the project boundary (Figure 3-1). Therefore, implementation of the preferred alternative would have no impact on floodplains.

Wetlands. The current design of the proposed action avoids wetlands, and no direct impacts to wetlands would occur from implementation of the preferred alternative. BMPs would be employed to ensure no indirect impact to adjacent wetlands occurs during DZ improvements. As such, no adverse impacts to wetlands are expected under the preferred alternative.

3.4.2 BIOLOGICAL RESOURCES

Introduction. Biological resources include native and naturalized plants and animals and the habitats in which they occur. The dominant plant species make up plant communities, which in turn define the vegetation of an area. Habitat is defined as the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there. Biological resources addressed in this EA include vegetation, wildlife, and special status species.

Vegetation and Wildlife, Including Migratory Birds. The proposed action area consists of forested uplands, lowland hardwoods, and an open area. Specifically, an evergreen forested area is adjacent to and east of Remagen DZ; adjacent to and west of Remagen DZ are forested wetlands. Evergreen trees include loblolly (*Pinus taeda*) and slash pines (*P. ellottii*). Hardwoods include water oak (*Quercus nigra*) and live oak (*Q. virginiana*). Understory vegetation includes broom sedge (*Andropogon virginicus*), dog fennel (*Eupatorium capillifolium*), gallberry (*Ilex glabra*), bahia grass (*Paspalum notatum*), and meadow beauty (*Rhexia virginica*).

Common wildlife that would be expected to occur at the undeveloped alternative site locations includes white-tailed deer (*Odocoileus virginianus*), wild boar (*Sus scrofa*), fox (*Vulpes* and *Urocyon* spp.), bobcat (*Lynx rufus*), rabbit (*Sylvilagus* spp.), squirrel (*Sciurus* spp.), and smaller mammals. In addition to a diverse assemblage of forest songbirds, game birds such as wild turkey (*Meleagris gallopavo*) and northern bobwhite (*Colinus virginianus*) occur on the Installation (Fort Stewart 2005a).

Approximately 170 species of birds protected under the Migratory Bird Treaty Act could occur on Fort Stewart, either seasonally or year-round.

Special Status Species. Of the five Federally listed species known to occur on Fort Stewart, the following four species occur, or may occur, in the proposed action area: habitat for the endangered red-cockaded woodpecker (RCW) (*Picoides borealis*), threatened eastern indigo snake (*Drymarchon corais couperi*), threatened frosted flatwoods salamander (FFS) (*Ambystoma cingulatum*), and endangered wood stork (*Mycteria americana*). The proposed project area is more than 25 miles west of the nearest shortnose sturgeon occurrence on the Canoochee River, and no effect to this species would occur.

The RCW is listed by the U.S. Fish and Wildlife Service (USFWS) and the State of Georgia as endangered. The RCW excavates nesting and roosting cavities in living pine trees, preferably older trees with heart rot. Groups of RCWs roost and nest in an aggregation of cavity trees called a cluster, which is surrounded by contiguous foraging habitat. Cluster sites generally occur where pine trees are more than 60 years old. Foraging habitat is more variable and may be as young as 30 years old. Both nesting and foraging habitat can be characterized as open stands of pine with a scarce to moderate midstory. As the midstory becomes dense or reaches the height of cavities, cluster abandonment and decreased foraging value results. The main threat to the RCW is habitat loss and degradation from development, fire suppression, and silvicultural practices that do not allow for development of mature, open pine stands.

Fort Stewart supports 338 active RCW clusters, and the success of the intensive management efforts is reflected in the high growth rate documented for the Installation. According to USFWS (2010), RCW growth rates documented during the 1990s on Fort Stewart and Camp Lejeune Marine Corps Base were among the highest yet documented in the absence of translocation. Projected population trends based on a recommended growth rate of at least 5 percent per year are outlined at five-year intervals in the RCW Recovery Plan (USFWS 2003). No active RCW clusters exist near Remagen DZ.

The eastern indigo snake is listed by the USFWS and the State of Georgia as threatened. Eastern indigos are glossy black with smooth conspicuous scales and typically range from 5 to 7 feet long, but can reach lengths greater than 8 feet. Eastern indigo snakes are nonvenomous, and their prey includes fish, frogs, toads, other snakes, turtles, birds, and small mammals (USFWS et al. undated). These snakes occupy a large range. For example, males occupy 350 to 3,825 acres, and females occupy approximately 88 to 885 acres. Summer ranges tend to be larger than winter ranges (USFWS 2008). Eastern indigo snakes have been known to use gopher tortoise burrows, root mounds, piles of sticks and/or dirt, and manmade debris piles as dens (USFWS et al. undated). Eastern indigo snake sightings near Remagen DZ are shown on

Figure 3-2. The last known sighting in the proposed project area was in 1991. No critical habitat for this species has been identified.

The FFS is listed as threatened by the USFWS and the State of Georgia. Optimum habitat for adult FFS consists of open, mesic longleaf pine flatwoods that are fire-maintained. The adult FFS inhabit low areas within the flatwoods, where they live in burrows or crayfish tunnels. Breeding and larval development sites consist of isolated, ephemeral pools within the pine flatwoods habitat. These breeding pools typically consist of cypress ponds and herb-dominated depressions that fill with water during the fall and winter and dry out by May or June. The primary threats to this species include loss and degradation of habitat from land use conversions, forest management strategies, and fire suppression. Habitat for the FFS near the proposed action alternative locations is shown in Figure 3-2. Isolated pools have been ranked according to their suitability as FFS breeding sites, and protective buffers (450 and 100 ft.) have been assigned to minimize impacts to the potential breeding sites.

The wood stork is listed as endangered by the USFWS and the State of Georgia. Wood storks are large, long-legged wading birds, and are approximately 45 inches tall with a wingspan of 60 to 65 inches (USFWS 2005). Wood storks feed on small (1 to 6 inches in length) fish in freshwater and estuarine wetlands waters that are 6 to 10 inches deep (USFWS 2005).

TLS. The TLS for biological resources occurs if an alternative disrupts normal behavioral patterns or disturbs habitat at a level that substantially impedes Fort Stewart's ability to either avoid jeopardy to the species or conserve and recover the species.

3.4.2.1 Environmental Consequences of the No Action Alternative

Vegetation and Wildlife, Including Migratory Birds. Under the no action alternative, the DZ would not be improved and the berm at Cartwright Airfield would not be removed so baseline conditions would persist. As such, there would be negligible impacts to vegetation and wildlife, including migratory birds.

Special Status Species. Under the no action alternative, the DZ would not be improved and the berm at Cartwright Airfield would not be removed so baseline conditions would persist. As such, there would be negligible impacts to special status species.

3.4.2.2 Environmental Consequences of the Preferred Action Alternative

Project impacts would primarily result from tree clearing required to widen Remagen DZ. Standard management practices would control erosion and sedimentation, limiting the potential for indirect effects and degradation of surrounding habitat. Noise and construction-related activity would result in a temporary disturbance to wildlife primarily within the construction footprint. However, this short-term increase in noise from improvement-related activities would only represent a negligible to minor impact to biological resources, and they are expected to repopulate the area once improvements are completed. As such, no increase in type or duration of training operations would occur under the proposed action. Therefore, no change to biological resources would be experienced.

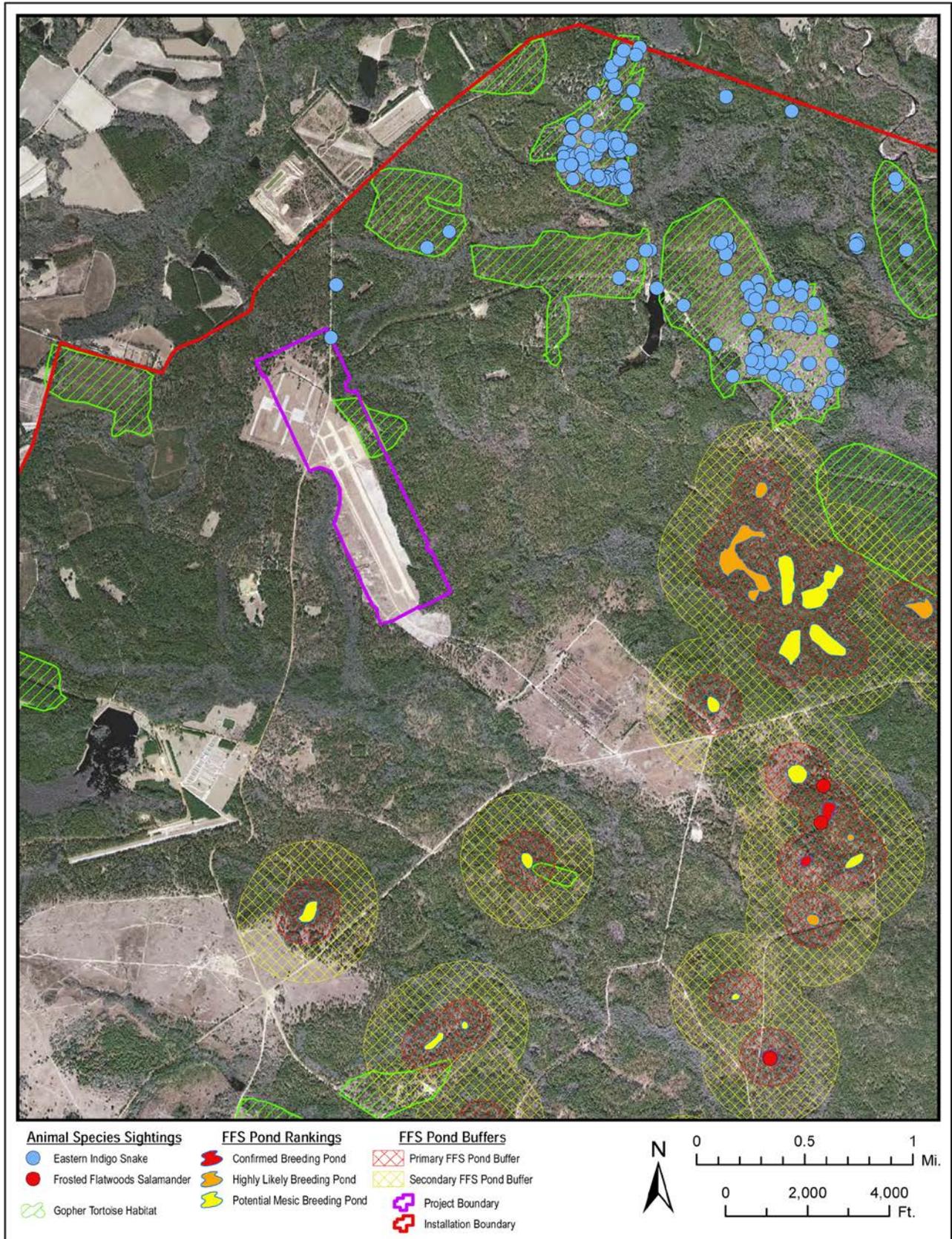


Figure 3-2. Protected Species Near Project Area

Vegetation and Wildlife, Including Migratory Birds. Implementation of the preferred alternative would require removing 103.3 acres of mixed pine/hardwoods. The loss of this habitat would be minor given the abundance of similar habitat in surrounding areas, and common wildlife species would likely relocate to comparable adjacent habitat. Potential impacts to critical habitat to RCWs are discussed in the next subsection. After construction is completed, training operations would continue as currently conducted, and impacts to vegetation would not occur. As such, impacts to vegetation from training operations under the preferred alternative would be negligible.

Special Status Species. Fort Stewart Fish and Wildlife Branch personnel surveyed the project area for RCW and RCW cavity trees. No RCW cavity or start trees were detected in the area and the proposed action would not affect the foraging partition of any RCW cluster. The increase in usable land for the Remagen DZ and associated timber removal would require informal USFWS consultation for the adverse effect to 80.9 acres of existing Habitat Management Unit (HMU). (HMUs are designated areas managed for RCW nesting and foraging.) The Fort Stewart Fish and Wildlife Branch prepared a Biological Assessment (BA) (Appendix B) for the preferred alternative in accordance with the requirements of the Endangered Species Act. The BA was submitted to the USFWS for its review and concurrence. The BA resulted in a finding of “may affect but not likely to adversely affect” for RCWs (Appendix B). Fort Stewart received USFWS concurrence for the BA on November 7, 2011. As such, implementation of the preferred alternative would have a minor impact to RCWs.

Training operations would occur within the project area boundary, and no additional impacts other than those previously discussed would occur. Furthermore, land use planning would ensure the preservation of natural land and control growth.

One of the major threats to the continued existence of eastern indigo snakes is loss of habitat or habitat fragmentation. Although no critical habitat has been identified for the eastern indigo snake, it has been estimated that habitat of at least 2,500 acres is needed to provide conservation benefits (USFWS 2008). Because of the abundance of similar habitats adjacent to the project area, habitat fragmentation is not expected and no significant impact to eastern indigo snakes is expected from loss of habitat. In addition, implementation of the preferred alternative would require removal of 17.5 acres of potential gopher tortoise habitat (Figure 3-2) but would not impact any existing gopher tortoise burrows. Fort Stewart Fish and Wildlife Branch personnel will survey the project area prior to construction to ensure gopher tortoises have not populated the area. As noted above, the Fort Stewart Fish and Wildlife Branch prepared a BA (Appendix B) for the preferred alternative in accordance with the requirements of the Endangered Species Act. Fort Stewart received USFWS concurrence for the BA on November 7, 2011. Therefore, implementation of the preferred alternative would have a minor impact to eastern indigo snakes.

The proposed project area does not lie within the FFS HMU and would not impact any of these species' ponds or associated buffers. Moreover, no FFS have ever been detected in the project area. The most recent FFS sighting was approximately 1.9 miles southeast of the proposed action area in TA F-7. Fort Stewart received USFWS concurrence regarding the potential for FFS impact noted in the BA on November 7, 2011. Because there is a lack of suitable habitat and the most recent sighting was outside the

proposed project area, implementation of the preferred alternative would have a negligible impact to the FFS.

The most recent sighting of a wood stork was approximately 8.2 miles east-southeast of the proposed project area in TA F-17. Fort Stewart received USFWS concurrence regarding the potential for wood stork impact noted in the BA on November 7, 2011. Because there is a lack of suitable foraging areas and the most recent sighting was outside the proposed project area, implementation of the preferred alternative would have a negligible impact to wood storks.

3.4.3 LAND USE

Introduction. As shown in Figure 3-3, Remagen DZ and Cartwright Airfield are classified for military operations.

TLS. The TLS for land use is the potential for the proposed action alternatives to be incompatible with surrounding land uses; result in a change of land use that would degrade mission-essential training; or be inconsistent or in conflict with the environmental goals, objectives, or guidelines of a community or county comprehensive plan for the affected area.

3.4.3.1 Environmental Consequences of the No Action Alternative

The no action alternative, which represents current conditions, does not meet current safety regulations. Current safety regulations require the DZ to have a minimum useable width of 600 yards. As a result, the TLS would be met for this resource area.

3.4.3.2 Environmental Consequences of the Preferred Action Alternative

Remagen DZ is within TAs F-9, F-10, and F-11 and within the land use category for military operations. As part of the proposed action, 103.3 acres of unspecified/forested lands would be clear cut to accommodate widening Remagen DZ to 600 yards. In addition, a food plot would be removed and/or relocated. The conversion of land use to military operations would improve the functional relationships of military activities that occur at Remagen DZ. In addition, the proposed action would occur within the Installation boundaries; would be consistent with existing land uses, management, and ownership; conform to plans and regulations; and would not introduce incompatibilities with adjacent land use areas. Therefore, minor beneficial impact to land use would occur from implementation of the preferred alternative.

3.4.4 NOISE

Introduction. The existing noise environment at Remagen DZ is associated with airplanes used during DZ operations. To assist communities with land use planning and zoning, the Army has identified three planning categories or zones associated with noise level contours in the Installation Environmental Noise Management Plan (Fort Stewart, 2003) and the Joint Land Use Study (Fort Stewart, 2005b). The paragraphs below discuss these zones and the compatibility level associated with them (Fort Stewart 2005b).

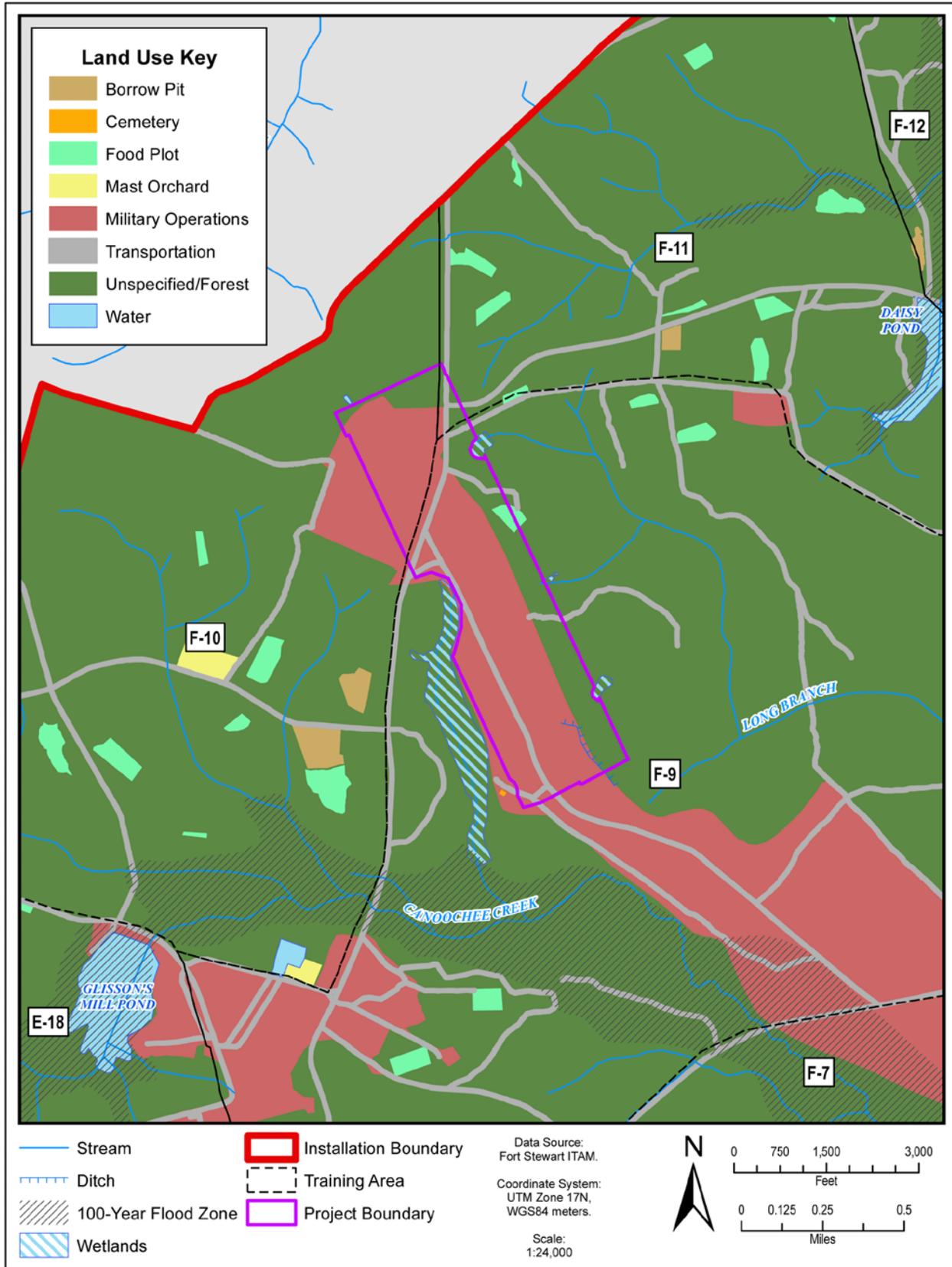


Figure 3-3. Land Use Near Project Area

- **Zone I** includes all areas around a noise source in which day-night sound level (DNL) is less than 65 decibels, A-weighted (dBA); or 62 decibels, C-weighted (dBC). This area is usually suitable for all types of land use activities (homes, schools, and hospitals).
- **Zone II** consists of an area where the DNL is between 65 and 75 dBA or 62 and 70 dBC. Exposure to noise within this area is normally incompatible with noise-sensitive land uses (residences, hospitals, churches, educational facilities), and use of the land within the zone should normally be limited to activities such as industrial, manufacturing, transportation, and resource production (industrial parks, factories, and highways). In situations where noise-sensitive land uses occur within Zone II, guidance recommends noise level reduction features be incorporated in design and construction.
- **Zone III** is an area around the source of noise in which the DNL is greater than 75 dBA or 70 dBC. The noise level within this zone is considered incompatible with noise-sensitive land uses, such as churches, schools, parks, playgrounds, residences, and hospitals.

Remagen DZ is within TAs F-9, F-10, and F-11. These areas are within the Zone I noise level contour.

TLS. The TLS under noise analysis is the determination of whether noise (either during improvement-related activities or operation of Remagen DZ) would rise to such a level to be incompatible with adjacent noise receptors or increase the number of people annoyed by the heightened noise levels both on- and off-Post. The USEPA categorizes construction noise as an intermittent noise source (USEPA 1973).

3.4.4.1 Environmental Consequences of the No Action Alternative

Under the no action alternative, the DZ would not be improved and the berm at Cartwright Airfield would not be removed. As such, baseline conditions would remain unchanged and Remagen DZ would continue to be within a Zone I noise level contour, resulting in negligible adverse impacts.

3.4.4.2 Environmental Consequences of the Preferred Action Alternative

Noise from construction activities varies with the types of equipment used and the duration of use. The U.S. Department of Transportation (USDOT) Federal Highway Administration (FHA) compiled noise levels generated by individual pieces of construction equipment and specific construction operations from both stationary and mobile sources and for steady, intermittent, and impulse-type generators of noise. Stationary sources include pumps, generators, and compressors; these sources are considered nonimpact-type noises. Stationary sources considered impact-type noises include pile drivers, jackhammers, pavement breakers, and blasting operations. Mobile sources include dozers, scrapers, graders, etc. (USDOT FHA 2006). Table 3-2 lists construction-related noise emission values for various pieces of equipment. As shown in the table, construction-related noise emissions can range from 73 to 101 dBA when measured 50 feet from the respective piece of equipment.

Table 3-2. Construction-Related Noise Emissions

Equipment Description	Actual Measured L _{max} at 50 feet (dBA)	Equipment Description	Actual Measured L _{max} at 50 feet (dBA)
Generator (<25KVA, VMS Signs)	73	Rock Drill	81
Refrigerator Unit	73	Dozer	82
Flat Bed Truck	74	Horizontal Boring Hydraulic Jack	82
Welder/Torch	74	Vacuum Street Sweeper	82
Man Lift	75	Boring Jack Power Unit	83
Pickup Truck	75	Compactor (ground)	83
Dump Truck	76	Gradall	83
Paver	77	Warning Horn	83
Backhoe	78	Auger Drill Rig	84
Compressor (air)	78	Chain Saw	84
Slurry Plant	78	Scraper	84
Concrete Mixer Truck	79	Pneumatic Tools	85
Drill Rig Truck	79	Vacuum Excavator	85
Front End Loader	79	Clam Shovel (dropping)	87
Rivit Buster/Chipping Gun	79	Grapple (on backhoe)	87
Ventilation Fan	79	Vibrating Hopper	87
Drum Mixer	80	Jackhammer	89
Roller	80	Concrete Saw	90
Slurry Trenching Machine	80	Mounted Impact Hammer (hoe ram)	90
Vibratory Concrete Mixer	80	Pavement Scarifier	90
Concrete Pump Truck	81	Sand Blasting (single nozzle)	96
Crane	81	Sheers (on backhoe)	96
Excavator	81	Impact Pile Driver	101
Generator	81	Vibratory Pile Driver	101
Pumps	81		

Source: USDOT FHA 2006.

Commonly, use of heavy equipment occurs sporadically throughout the daytime hours. Under any of the action alternatives, noise levels that would be generated during the earth moving phase (site clearing activities involving pieces of equipment, such as compactors, front loaders, backhoes, tractors, scrapers/graders, pavers, and trucks) could range from 77 to 84 dBA or more at 50 feet from the equipment. However, noise impacts from DZ improvement-related activities are expected to be negligible because construction would occur during normal business hours, receptors would not be near the area, and the equipment would be used for a short period of time. As such, no impact to off-Post personnel from noise are expected during improvement activities under the preferred alternative.

With regards to worker exposure to noise during construction activities, the National Institute for Occupational Safety and Health (NIOSH) published a criteria document in 1972 with a recommended exposure limit of 85 dBA as an eight-hour time-weighted average. This exposure limit was reevaluated in 1998 when NIOSH made recommendations that went beyond conserving hearing by focusing on the prevention of occupational hearing loss. Following the reevaluation using a new risk assessment technique, NIOSH published another criteria document in 1998 that reaffirmed the 85 dBA recommended

exposure limit (NIOSH 1998). For non-government construction personnel, compliance with Occupational Safety and Health Act (OSHA) regulations would minimize the potential for hearing loss. For government personnel, compliance with OSHA regulations; DoD Instruction 6055.12, *Hearing Conservation Program*; and U.S. Department of the Army Pamphlet 40-501, *Hearing Conservation Program*, would minimize the potential for hearing loss. Because compliance with regulations and policies would minimize the potential for hearing loss, negligible impacts to on-Post personnel from noise are expected during improvement-related activities at Remagen DZ under the preferred alternative.

Remagen DZ is the second most frequently used DZ at Fort Stewart, having been used 353 days during FY 2001 through FY 2011 for an average of 32 days per year (Fort Stewart 2011a). No change in the type or duration of operations would occur under the proposed action. As such, no changes to the existing noise environment would occur, and Remagen would remain within the Zone I noise contour. Soldiers participating in training operations would comply with DoD Instruction 6055.12, *Hearing Conservation Program*; and U.S. Department of the Army Pamphlet 40-501, *Hearing Conservation Program*. Any impacts to on- or off-Post receptors from operation of the Remagen DZ would be negligible.

3.4.5 HEALTH AND SAFETY

Introduction. Occupational health and safety applies to on-the-job safety and implements the requirements of 29 CFR 1926 *et seq.* All construction and demolition is performed in accordance with applicable OSHA regulations to protect human health and minimize safety risks. Before starting, all activity is coordinated between contractors and the Safety Office.

TLS. The TLS for safety is met when construction or operation would not comply with the UXO Avoidance Plan specifically prepared for this project; the safety criteria mandating a 600-yard useable width for existing DZs specified in AFI 13-217 and Army FM 3-21.38; or the safety criteria mandating the DZ is safe, and equipment and personnel can train properly as specified in Army FM 3-21.220.

3.4.5.1 Environmental Consequences of the No Action Alternative

The DZ and adjacent areas are required to be a minimum useable width of 600 yards and free of obstacles that could injure parachutists or damage equipment in accordance with AFI 13-217, Army FM 3-21.38, and Army FM 3-21.220. The no action alternative, which reflects current conditions, does not meet these requirements. As a result, the TLS would be met for this resource area with the no action alternative.

3.4.5.2 Environmental Consequences of the Preferred Action Alternative

Construction activities may expose workers to construction-related risks. However, the proposed activities would not introduce any unique or unusual risks. Specific practices and policies to protect human health and minimize safety risks would be coordinated prior to initiation of construction activities. Furthermore, activities would follow all applicable OSHA requirements and the project-specific accident prevention plan. Negligible adverse impacts to public health and safety are anticipated from construction and demolition activities.

There is a low risk of finding UXO within the expansion area because the firing line of the former tank range was actually on the existing Remagen runway. However, UXO avoidance is emphasized in the health and safety plan for proposed construction activities.

During training operations, no unusual safety risks would be presented. Therefore, if the preferred alternative were implemented, negligible impacts to health and safety are anticipated.

3.4.6 HAZARDOUS AND TOXIC MATERIALS AND WASTE

Introduction. The Fort Stewart Environmental Division oversees the management of hazardous waste on behalf of the military units and activities that generate the waste. Centralized Accumulation Points and Satellite Accumulation Points are maintained in various locations across the Installation to facilitate the collection of hazardous wastes and to ensure that the wastes are transported off Post in accordance with applicable Federal, State, and DoD regulations.

As a designated Large Quantity Generator of hazardous waste, such wastes generated by Fort Stewart are collected and transferred to a central storage area, where they may be stored for no longer than 90 days before being transported off site for treatment or disposal. Fort Stewart arranges for the transport and disposal of its hazardous waste by appropriately licensed waste management and transportation companies through a Defense Reutilization and Marketing Office contract.

TLS. The magnitude of potential impacts associated with hazardous materials and wastes depends on the toxicity, transportation, storage, and disposal of these substances. The TLS would be met if hazardous materials and hazardous waste substantially increase the human health risk or environmental exposure through storage, use, transportation, or disposal of these substances. An increase in the quantity or toxicity of hazardous materials and/or hazardous waste handled by a facility may also signify a potentially adverse effect, especially if a facility were not equipped to handle the new waste stream.

3.4.6.1 Environmental Consequences of the No Action Alternative

Under the no action alternative, the DZ would not be improved and the berm at Cartwright Airfield would not be removed. As such, baseline conditions would remain unchanged, and there would be no adverse impacts to hazardous and toxic materials and waste.

3.4.6.2 Environmental Consequences of the Preferred Action Alternative

Construction activities may require use of hazardous materials such as POLs. Contractual obligations in the construction documents would require contractors to adhere to all applicable state and Federal regulations pertaining to toxic substances and hazardous materials. Because of the limited amount of construction required, negligible amounts of chemicals -- such as paints, cleaners, POLs, and waste products -- would be used and/or generated.

During training operations, no toxic or hazardous materials would be used, and no hazardous waste would be generated. Therefore, if the preferred alternative were implemented, there would be no impact to hazardous and toxic materials and waste from training activities.

3.4.7 CULTURAL RESOURCES

Archaeological Resources. These sites include prehistoric archaeological sites through recent 20th century historical components. All unevaluated resources are treated as eligible for the National Register of Historic Places (NRHP) until determined otherwise.

A geophysical and archaeological investigation was conducted in November to December 1992 for the existence of subsurface anomalous features that would indicate the presence of a cemetery. As part of the investigation, interviews were conducted with relatives of the late Mr. and Mrs. Hartridge Jerome Durrence, the last property owners prior to the Army's acquisition of the property. The interviews indicate 10 to 12 graves may exist dating from approximately 1808 to 1880. Results of the geophysical investigation indicate the existence of 10 geophysical anomalies; these findings are consistent with the reported number of graves in the cemetery. It was recommended that the site be recognized as the "Durrence Cemetery" (Butler et al., 1993), and the Georgia State Historic Preservation Officer recommended this site should be considered eligible for the NRHP (Appendix C). Durrence Cemetery is approximately 262 feet south-southwest of Remagen DZ (Figure 2-1).

Additional archaeological surveys were conducted within the proposed area of potential effect between 2002 and 2011 (Ambrosino et al. 2000; Kennedy et al. 2004; and Espenshade et al. 2011). The surveys identified 34 archaeological resources in the area; all except the cemetery were recommended ineligible for the National Register of Historic Places. The cemetery was previously determined ineligible (Ambrosino, 2000). However, the SHPO has currently recommended that it should be considered eligible. For a list of cultural resources impacted by the proposed action, see Appendix C.

Architectural Resources. Since 1986 architectural resources at Fort Stewart have been inventoried, including those at the proposed alternative sites. No NRHP-eligible or listed buildings or structures are within the area of potential effect for the proposed action alternatives (Fort Stewart, 2002).

Tribal Resources. Specific American Indian Tribal resources or sacred sites or areas on Fort Stewart where such sites may be situated have not all been identified to date. Fort Stewart, however, routinely consults with American Indian Tribes (Tribes) having an ancestral affiliation with the Fort Stewart area on a case-by-case basis, specifically when projects arise with the potential to affect Tribal resources.

TLS. Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may be the result of physically altering, damaging, or destroying all or part of a resource, altering characteristics of the surrounding environment by introducing visual or audible elements that are out of character for the period the resource represents, or neglecting the resource to the extent that it deteriorates or is destroyed. Direct impacts can be assessed by identifying the type and location of the proposed action and by determining the exact locations of cultural resources that could be affected. Indirect impacts may occur as a result of the completed project, such as increased vehicular or pedestrian traffic near the resource.

For these resources, the TLS includes adverse effects to cultural resources that are eligible for listing on the NRHP as defined by the National Historic Preservation Act; adverse impacts to cultural items

protected under the Native American Grave Protection and Repatriation Act; limiting access to sacred sites, traditional cultural properties, or restricting free exercise of Native American religious practices; and/or loss or destruction of significant scientific, cultural, or historical resources.

3.4.7.1 Environmental Consequences of the No Action Alternative

Under the no action alternative, the DZ would not be improved and the berm at Cartwright Airfield would not be removed. As such, there would be no potential for impacts to cultural resources.

3.4.7.2 Environmental Consequences of the Preferred Action Alternative

No architectural or tribal resources have been documented as occurring near the Remagen DZ.

The boundaries of the Durrence Cemetery have been delineated, and the cemetery is approximately 262 feet from the project boundary. The east side of Remagen DZ has been surveyed for cultural resources, and no historic properties would be affected. As part of implementing the proposed action, Type I site preparation (clearing, grubbing, removing and disposing of all vegetation and debris within designated areas while preserving remaining vegetation) would occur but would not involve excavation. Following Type I site preparation, permanent grass vegetation would be established immediately using native grass seed to supplement regrowth of existing grass, weeds, and germination of seeds that were disturbed during the clearing operation. Neither of these activities would occur within the 200-foot marked buffer surrounding the cemetery. Because no disturbance of subsurface soils would occur and the boundaries of Durrence Cemetery have been delineated, no effect to the cemetery would occur. If human burials or archaeological sites are inadvertently discovered by construction contractors, activities would cease and the discovery would be immediately reported to Fort Stewart's cultural resource manager in accordance with Integrated Cultural Resource Management Plan (ICRMP) guidance and procedures. Impacts would be minimized by complying with the existing consultation procedures called for under the ICRMP, and following the Programmatic Agreement. Fort Stewart has received concurrence from the Georgia State Historic Preservation Officer that the proposed action would have no adverse impact on NRHP-eligible cultural resources (Appendix C). Because access to Durrence Cemetery would continue to be permitted via request in coordination with training schedules or through the Installation's Bi-Annual Cemetery Council tours, no impact to cemetery access is anticipated from implementation of the preferred action alternative.

Because training operations for any alternative would not involve the disturbance of historic properties (cultural resources eligible for listing on the NRHP), no significant impacts to cultural resources from training operations are anticipated under the preferred alternative.

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4.0 CUMULATIVE EFFECTS

4.1 INTRODUCTION

This chapter defines cumulative effects; describes past, present, and reasonably foreseeable actions relevant to cumulative effects; analyzes the incremental interaction the proposed action may have with other actions; and evaluates cumulative effects potentially resulting from these interactions. The intensity measurement of environmental impacts and the TLS of each resource potentially affected by this action are the same as presented in Chapter 3.

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). CEQ guidance in *Considering Cumulative Effects* affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects the analysis needs to address three fundamental questions:

1. Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time frame in which the effects could be expected to occur. For this EA, the ROI delimits the geographic extent of the cumulative effects analysis. Because the proposed action area is in TAs F-9, F-10, and F-11 and consists of a relatively small geographic area (approximately 300 acres), actions outside the immediate proposed action vicinity were generally not considered because it is unlikely that there would be an incremental impact with the proposed action. Excluded past, present, and reasonably foreseeable projects include those projects in an area at a sufficient distance that would not cause an incremental impact to water resources, biological resources except vegetation and special status species, land use,

noise, health and safety, hazardous and toxic materials and waste, and cultural resources. Because of the distance from Remagen DZ, there is no potential for an incremental impact to these resources and they have been excluded from further analysis.

Past, present, and reasonably foreseeable projects included those projects that have the potential to impact vegetation or a Federally listed threatened or endangered species because habitat fragmentation or loss could result in a significant adverse impact. The time frame for cumulative effects centers on the timing of the proposed action. For this proposed action, the time frame starts in summer 2012 and would continue into the foreseeable future.

Another factor influencing the scope of cumulative effects analysis involves identifying other actions to consider. Beyond determining that the geographic scope and time frame for the actions interrelate to the proposed action, the analysis employs the measure of “reasonably foreseeable” to include or exclude other actions. For the purposes of this analysis, public documents prepared by Federal, State, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions included notices of intent for EISs and EAs, management plans, land use plans, and other NEPA studies.

4.2 RESOURCE ANALYSIS

4.2.1 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS IN THE ROI

Numerous other activities exist in the ROI. The activities described here are by no means all-inclusive, but they serve to highlight some major influences in the region and to provide perspective on the contribution to any impacts generated by the proposed action. A review of recent, ongoing, and foreseeable actions at Fort Stewart that required NEPA documentation determined that several actions must be considered when analyzing the potential cumulative impacts of the proposed action. These projects are listed in Table 4-1, along with the status of the NEPA analysis. A description of these projects follows Table 4-1.

Table 4-1 Fort Stewart Cumulative Action Evaluation

Action	Level of NEPA Analysis Completed
Recent Past Actions	
Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart, Georgia	EIS Completed
Implement the Army Campaign Plan Decision at Fort Stewart	EA Completed
New Battle Command Training Center at Evans Army Airfield	NEPA Addendum Completed
Present and Reasonably Foreseeable Future Actions	
Construction, Operation, and Maintenance of a Military Working Dog Complex at Fort Stewart, Georgia	In Progress
Draft EA for Footprint Alterations at Wright Army Airfield Gray Eagle Unmanned Aerial System Project Site, Fort Stewart, Georgia	In Progress
Draft Supplemental Environmental Assessment for Mid-Coast Regional Airport Runway Extension, Fort Stewart, Georgia	In Progress

Fort Stewart undergoes continuous changes in mission and training requirements. This process of change is consistent with the U.S. defense policy that the Army must be ready to respond to threats to American interests throughout the world. As discussed further in this section, recent mission and training requirements have resulted in facility construction and upgrades on the Installation.

Environmental Impact Statement for Training Range and Garrison Support Facilities Construction and Operation at Fort Stewart. An EIS was prepared and Record of Decision was signed on September 17, 2010, for the proposed construction of 12 training ranges and two Garrison support facilities on Fort Stewart lands (Fort Stewart 2010a). The Army's preferred alternative was Alternative B.

Under Alternative B, there would be moderate adverse effects to soils and noise, and minor impacts to air quality, wetlands, timber resource management, wildland fire management, cultural resources, land use, infrastructure, and safety. There would be negligible impacts to transportation and hazardous and toxic materials and/or waste, and beneficial impacts to socioeconomic resources. Unavoidable impacts to floodplains would occur as well as the impact of 1,669.6 acres of RCW HMU, 44 RCW trees, 30 RCW partitions, 160.1 acres of primary FFS pond buffers, 505.5 acres of secondary FFS pond buffers, 12.8 acres of potential FFS breeding ponds, 308.8 acres of gopher tortoise habitat, and 452.9 acres of eastern indigo snake HMU (Fort Stewart 2010a).

The USFWS concurred with the Army's BA that the proposed action was not likely to adversely affect the Federally endangered wood stork, threatened eastern indigo snake, and threatened FFS. In addition, the proposed action was not likely to jeopardize the continued existence of the RCW (Fort Stewart 2010b).

Environmental Assessment to Implement the Army Campaign Plan Decision at Fort Stewart. An EA was completed and a Finding of No Significant Impact (FNSI) was signed on October 16, 2008, for the implementation of the Army Campaign Plan Decision at Fort Stewart. This EA analyzed potential impacts to the natural and human environment that would result from implementing the Army Campaign Plan Decision and the subsequent ROD for Army Growth and Realignment. Specifically, the EA focused on establishing a new Infantry Brigade Combat Team (IBCT) permanently and supporting conversion of an existing Heavy BCT to an IBCT (Fort Stewart 2008).

The site selected as the Army's preferred alternative consists of 400 acres on the northwest corner of the intersection of GA HWY 144 and Fort Stewart Tank Trail (FS) 47. The analysis in the EA determined that there would be no significant impacts to soils; water resources (surface water quality, stormwater, floodplains, or wetlands); biological resources; training and airspace operations; land use; transportation; utilities; noise; health and safety; hazardous and toxic materials and waste; recreation; cultural resources; and socioeconomics. Specific to this cumulative impacts analysis, the EA documented the removal of forest habitat resulting in a "take" of two RCW clusters. Formal consultation with the USFWS resulted in the concurrences with Fort Stewart's BA that implementing the IBCT preferred alternative was not likely to adversely affect the recovery of this species. In addition, it was determined that the proposed action is

not likely to adversely affect other Federally listed species (including the flatwoods salamander, wood stork, or eastern indigo snake) and would not affect the shortnose sturgeon.

NEPA Addendum to the Supplemental EA and FNSI for a New Battle Command Training Center at Evans Army Airfield, Fort Stewart, Georgia. The December 2010 NEPA Addendum analyzed alterations to the design of the proposed action for the construction of a new battle command training center (BCTC) at Fort Stewart, which was previously analyzed in the March 2009 EA and subsequent Supplemental EA prepared in November 2009 (Fort Stewart 2009b; 2009c). The proposed action would be within TA A-12 on Fort Stewart, southeast of GA HWY 144 on the south side of Trinity Road and adjacent to Evans Field. The Supplemental EA found that there would be no effects to air quality, cultural resources, utilities, socioeconomics, recreation, land use, environmental justice, public health and safety, noise, transportation, provision for the handicapped, or protection of children. Among minor adverse impacts to soils and moderate adverse impacts to water quality and resources, the Supplemental EA documented minor adverse effects to biological resources.

Specific to the scope of the NEPA Addendum signed April 4, 2011, the 2010 BCTC final designs for Fort Stewart require a total site disturbance area of approximately 2,322 acres, which is 11 acres more than the area analyzed in the 2009 Final EA, but 30 acres less than the area proposed in the November 2009 Supplemental EA. The November 2009 Supplemental EA also analyzed impacts to threatened and endangered species, particularly the RCW and the FFS. Under the new design, the project would result in the clear cutting of approximately 2,322 acres of the HMU, a decrease of approximately 16 acres initially provided to the USFWS. Fort Stewart concluded the impacts to the RCW would remain the same (the proposed action may affect but is unlikely to adversely affect RCWs). Furthermore, this alteration would not prevent Fort Stewart from meeting its RCW recovery goals. FFS are not documented within the BCTC project boundaries, and no adverse impacts to these species were anticipated. No other Federally listed species would be impacted by the altered BCTC design.

Draft Environmental Assessment for the Construction, Operation, and Maintenance of a Military Working Dog Complex at Fort Stewart, Georgia. The proposed action in this EA consists of replacing an existing Military Working Dog (MWD) Complex. The new 10- to 14-acre MWD Complex would consist of an administration area with offices, break area, veterinary treatment room, tack room, food storage room, and a locker room. Training-specific facilities for the dogs include indoor/outdoor kennel area for up to 24 military working dogs, dog runs with guillotine doors and floor drains, as well as exterior doghouses, exercise areas, obedience course, explosive pads, storage sheds, and site preparation (lay-down areas and landscaping). The EA analyzed two action alternatives and the no action alternative. The preferred alternative site location is along GA HWY 144 East, approximately 1.5 miles west of FS 47, behind the existing Explosive Ordnance Disposal Complex. As part of the preferred alternative, buildings 7736 and 7737 (existing MWD Complex facilities) at Wright Army Airfield and an access road would be developed (Fort Stewart 2011d).

No impacts would occur to the following resources: threatened and endangered species, wildlife, wetlands, groundwater, cultural resources, utilities, noise, solid waste, environmental justice, provisions

for the handicapped, protection of children, and sustainability management. Resources analyzed in the EA included surface water resources, floodplains, stormwater conveyance systems, health and safety, and land use. The EA concluded that there would be negligible impacts to floodplains and stormwater conveyance systems, and minor impacts to surface water resources, land use, and health and safety from implementation of the preferred alternative (Alternative II) (Fort Stewart 2011d).

Draft Environmental Assessment for Footprint Alterations at the Wright Army Airfield Gray Eagle Unmanned Aerial System Project Site, Fort Stewart, Georgia. This EA tiers off the July 2010 *Final Environmental Impact Statement for Training Range and Garrison Support Facilities Construction and Operation, Fort Stewart, Georgia*. This EA analyzes the potential environmental impacts associated with the Wright Army Airfield Gray Eagle Unmanned Aerial System project including construction of the 130,000-square foot aircraft hangar, access road, potable water and sanitary sewage systems, and relocation of the existing tank trail. Wright Army Airfield is located on the east side of Fort Stewart's main cantonment area, south of GA HWY 144, and immediately east of FS 47.

Resources analyzed in the EA included wetlands, water quality, wildlife, species of concern, and cultural resources. The EA concluded that, with the exception of floodplains, there would be negligible impacts to these resources. No practicable alternative existed to reduce or eliminate impacts to floodplains. An additional 28.9 acres of forested lands (above what was described in the 2010 EIS) would be impacted, consisting of 2.1 acres of lowland hardwood and 26.8 acres of RCW HMU. However, it was determined Fort Stewart would achieve 350 potential breeding groups (the recovery benchmark) in the breeding season of 2013. (Fort Stewart 2012a).

Draft Supplemental Environmental Assessment for the Wright Army Airfield Joint Use General Aviation Area and Runway Extension Project, Wright Army Airfield, Georgia; Fort Stewart, Georgia. This Supplemental EA tiers off the June 2004 *Environmental Assessment of Wright Army Airfield Joint Use Development Project*. This Supplemental EA addresses two proposed actions: (1) reevaluation of the 1,500-foot Runway 6 extension, and (2) installation of a Medium Intensity Approach Lighting System with Runway Alignment. As part of the proposed action, forested wetlands would require clearing and grubbing for the line-of-sight/approach clearing for the Runway 6 extension and associated installation of the Medium Intensity Approach Lighting System with Runway Alignment. Under the proposed action, there would be no change in the number of aircraft operations (Fort Stewart 2012b).

Resources analyzed in the Supplemental EA included water resources (surface water, hydrogeology/groundwater, floodplains, and wetlands), land use, noise, air quality, ecological resources, cultural resources, soil conservation, solid waste, and socioeconomics. No protected species would be impacted, but approximately 28.6 acres of forested wetlands would be cleared resulting in minor adverse impacts to biological resources, wetlands, and soil conservation. Specifically, the runway extension would impact 25.0 acres of wetlands by clearing and grubbing and 3.1 acres of wetlands by filling; the installation of the Medium Intensity Approach Lighting System with Runway Alignment would impact 1.0 acre of wetlands by clearing and grubbing and 0.001 acres of wetlands by filling (Fort Stewart 2012b).

4.3 CUMULATIVE EFFECTS SUMMARY

As stated in Chapter 3 and explained in Appendix A, implementation of the proposed action would have no effect on air quality, transportation, recreation and visual resources, socioeconomics/ environmental justice/ protection of children, utilities, provision for the handicapped, soils, or airspace management. As such, these resources were not subsequently carried forward into the cumulative impacts analysis.

In addition, because the proposed action area is in TAs F-9, F-10, and F-11 and consists of a relatively small geographic area (approximately 300 acres), actions outside the immediate proposed action vicinity were generally not considered because it is unlikely that there would be an incremental impact with the proposed action to water resources, biological resources with exception of vegetation and special status species, land use, noise, health and safety, hazardous and toxic materials and waste, and cultural resources. As such, these resources have been excluded from further analysis and the only resources carried forward for cumulative impact analysis are vegetation and special status species.

4.3.1 VEGETATION

Under the preferred alternative, a total of 131.7 acres would undergo removal of timber, clearing, grubbing, and/or grading. Construction of the training range and garrison support facilities would impact approximately 1,700 acres of forest, the IBCT would impact approximately 400 acres of longleaf and/or loblolly pine forest, construction of the BCTC would clear cut approximately 23 acres of upland pine forest, construction of the MWD Complex would remove 10 to 14 acres of merchantable timber, the Unmanned Aerial System project would impact 28.9 acres of forested land, and the joint use general aviation area and runway extension project would impact 28.6 acres of forested wetlands (Fort Stewart 2008; 2011d; 2012a; 2012b).

Removing natural vegetation on Fort Stewart would have corresponding impacts to resident wildlife because developing open land permanently removes habitat and displaces resident wildlife. The proposed removal of 80.9 acres of RCW HMU under the preferred alternative requires informal USFWS consultation. Impacts to vegetation would result in a cumulative impact, but consultation with USFWS would ensure the continued existence of special status species. Furthermore, land use planning would ensure the preservation of natural land and control growth. As such, when incrementally considering impacts of past, present, and future actions, it was determined there would be no significant cumulative impacts to vegetation from the implementation of the preferred alternative.

4.3.2 SPECIAL STATUS SPECIES

4.3.2.1 Red-cockaded Woodpecker

Implementation of the preferred alternative would impact 80.9 acres of existing RCW HMU. However, the project would not affect the foraging partition of any RCW cluster. Construction of the training range and garrison support facilities would impact 1,669.6 acres of RCW HMU, 44 RCW trees, and 30 RCW partitions. In addition, the IBCT would result in the impact of one active RCW cluster and approximately 23 acres of HMU; construction of the IBCT resulted in the direct take of two RCW groups and potentially

three additional groups through habitat loss; construction of the BCTC would result in the clear cutting of approximately 23 acres of HMU; and construction of the unmanned aerial system facilities would impact 26.9 acres of RCW HMU (in addition to what was described in the July 2010 EIS). The implementation of these projects would not prevent Fort Stewart from meeting its RCW recovery goals. When considered cumulatively with the proposed action, there is enough suitable habitat at Fort Stewart to allow the Installation to meet its RCW recovery goals. The Fort Stewart Fish and Wildlife Branch conducted a BA for the preferred alternative in accordance with requirements of the Endangered Species Act. The BA was submitted to the USFWS for review and concurrence, resulting in a finding of “may affect but not adversely affect” Federally endangered species on the Installation (Appendix B). As discussed in the BA, the individuals associated with this group would have adequate foraging resources available for RCW to persist in the long-term. Furthermore, the BA concluded that impacts sustained from this alternative would not prevent Fort Stewart from achieving its recovery goal of 350 potential breeding groups. As such, no significant cumulative impacts to RCWs from implementation of the preferred alternative are anticipated.

4.3.2.2 Eastern Indigo Snake

None of the past or present projects would adversely affect eastern indigo snakes. As such, no significant cumulative impacts to eastern indigo snakes would occur from implementation of the preferred alternative.

4.3.2.3 Frosted Flatwoods Salamander

None of the past or present projects would adversely affect FFS. As such, no significant cumulative impacts to FFS would occur from implementation of the preferred alternative.

4.3.2.4 Wood Stork

None of the past or present projects would adversely affect wood storks. As such, no significant cumulative impacts to wood storks would occur from implementation of the preferred alternative.

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5.0 OTHER NEPA CONSIDERATIONS

5.1 UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

Implementation of the preferred alternative would require removal of standing timber, clearing, grubbing, grading, improving drainage, and establishing vegetative ground cover on 131.7 acres; result in the loss of approximately 80.9 acres of existing RCW habitat; and subsequent displacement of wildlife. Although vegetation would be lost, no significant adverse effects are anticipated because of the abundance of suitable vegetation immediately adjacent to the project area.

5.2 RELATIONSHIP BETWEEN SHORT-TERM USE OF THE HUMAN ENVIRONMENT AND MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

NEPA requires analyzing the relationship between a project's short-term impacts on the environment and the effects those impacts may have on the maintenance and enhancement of the long-term productivity of the affected environment. Impacts that narrow the range of beneficial uses of the environment are of particular concern. Choosing one option may reduce future flexibility in pursuing other options, or committing a resource to a certain use may eliminate the possibility for other uses of that resource.

Implementation of the preferred alternative would result in both short- and long-term environmental effects. However, the proposed action is not expected to result in impacts that would reduce environmental productivity, permanently narrow the range of beneficial uses of the environment, or pose long-term risks to human safety, or the general welfare of the public.

5.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Primary irreversible effects result from permanent use of a nonrenewable resource (minerals or energy). Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the proposed action or consumption of renewable resources that are not permanently lost. Secondary impacts could result from environmental accidents. Natural resources include minerals, energy, land, water, forestry, and biota. Nonrenewable resources are those resources that cannot be replenished by natural means, including oil, natural gas, and iron ore. Renewable natural resources are those resources that can be replenished by natural means, including water, lumber, and soil.

The preferred alternative would involve irretrievable commitments of nonrenewable and renewable resources and could involve 1) general industrial resources, such as capital, labor, and fuels and 2) project-specific resources such as forests and other land uses within the project footprint. The resources necessary would not be retrievable if any of the proposed action were implemented. However, the total amount of resources required for this action is relatively small when compared to the resources available in the region.

EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*, set goals for Federal agencies in energy efficiency, renewable energy, toxic chemical reduction, recycling, sustainable buildings, electronics stewardship, and water conservation. EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, expands on the requirements set forth in EO 13423

and requires that all new construction comply with the *Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings*. This includes employing design and construction strategies that increase energy efficiency, eliminate solid waste, and reduce stormwater runoff. One strategy for reducing stormwater runoff is implementing LID technologies. The goal of LID technologies is to maintain or restore the natural hydrologic functions of a site and reduce the runoff rate, filter out pollutants, and facilitate the infiltration of water into the ground. Following improvement-related activities at the project area, military training operations would continue to use nonrenewable resources such as fuel at similar present levels. The energy required for these improvements is not in short supply. This energy use would not have an adverse impact on the continued availability of these resources and is not anticipated to be excessive in terms of region-wide usage. Furthermore, compliance with the requirements set forth in EOs 13423 and 13514 would minimize any irreversible or irretrievable effects to multiple non-renewable and renewable resources.

In terms of greenhouse gases and global climate change, EO 13423 sets as a goal for all Federal agencies the improvement of energy efficiency and the "reduction of greenhouse gas emissions of the agency, through reduction of energy intensity by (i) 3 percent annually through the end of fiscal year 2015, or (ii) 30 percent by the end of fiscal year 2015, relative to the baseline to the agency's energy use in fiscal year 2003." The U.S. Army Energy Strategy for Installations (U.S. Army Energy Strategy for Installations, 2005) contains strategies to reduce energy waste and improve efficiency. The proposed action does not represent a net incremental addition to the global climate change problem. Although the proposed action may contribute to more greenhouse gases being released into the earth's atmosphere by removing trees (because trees absorb carbon dioxide), the number and type of DZ operations would not change over baseline conditions. Furthermore, the Army's continued compliance with EO 13423 would minimize any irreversible effects from greenhouse gas emissions.

6.0 CONCLUSIONS

This EA analyzed the potential impacts of the Army improving a DZ at Fort Stewart, Georgia. Following an analysis of the no action and the preferred action alternative, it was determined that none of the alternatives will result in significant impacts, and that the preparation of a FNSI is appropriate (Table 6-1). The Army will, therefore, proceed with the preparation of a FNSI for this action.

Table 6-1. Summary of Environmental Effects

Type and Intensity of Impact		
Θ = no impact ○ = negligible ⊖ = minor adverse ⊗ = moderate adverse ● = meets TLS		
Type of Effect	No Action	Preferred Action Alternative
Water Resources		
Direct / Indirect	⊖	⊖
Cumulative ¹	Θ	Θ
Biological Resources		
Direct / Indirect	○	⊖
Cumulative ¹	○	⊖
Land Use		
Direct / Indirect	●	○
Cumulative ¹	Θ	Θ
Noise		
Direct / Indirect	○	○
Cumulative ¹	Θ	Θ
Health & Safety		
Direct / Indirect	●	○
Cumulative ¹	Θ	Θ
Hazardous and Toxic Materials and Waste		
Direct / Indirect	○	○
Cumulative ¹	Θ	Θ
Cultural Resources		
Direct / Indirect	Θ	Θ
Cumulative ¹	Θ	Θ

TLS – Threshold Levels of Significance

- Cumulative impacts reflect the incremental impact the proposed action may have when added to other past, present, and reasonably foreseeable actions. As such, the severity of potential direct/indirect impacts for an individual resource is not indicative of the severity of potential cumulative impact to that same resource.

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APPENDIX A
RESOURCES CONSIDERED BUT NOT ANALYZED

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As discussed in Section 3.0, the nine resources that were considered but not analyzed are as follows:

Air Quality. Air quality in a given location is described by the concentration of various pollutants in the atmosphere. The significance of the pollutant concentration is determined by comparing it to the Federal and State ambient air quality standards. The Clean Air Act (CAA) and its subsequent amendments established the National Ambient Air Quality Standards (NAAQS) for six “criteria” pollutants: 1) ozone, 2) carbon monoxide, 3) nitrogen dioxide, 4) sulfur dioxide, 5) particulate matter less than 10 and 2.5 microns, and 6) lead. These standards represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare with a reasonable margin of safety. Fort Stewart is in a regional air quality district that is in attainment for all criteria pollutants. Even though there would continue to be minor short- and long-term fugitive dust impacts from construction and training, conformity with these NAAQS standards would be maintained and would not be adversely impacted by the proposed action or alternatives.

The CAA designated the Prevention of Significant Deterioration program whereby Congress established land classification schemes for those areas of the country (like Fort Stewart) with air quality better than the NAAQS. Class I allows very little deterioration of air quality; Class II allows moderate deterioration; and Class III allows more deterioration. In all cases, though, the pollution concentrations shall not violate any of the NAAQS. Mandatory Class I areas include: 1) international parks and 2) national wilderness areas and national memorial parks in excess of 5,000 acres, and national parks in excess of 6,000 acres existing as of August 7, 1977 (Fort Stewart 2008). On November 30, 1979, the *Federal Register* announced that 48 mandatory Class I national park areas (the Great Smoky Mountains National Park in Tennessee is the nearest Class I area to Fort Stewart) were designated for management by the National Park System. The USFWS was identified as managing 21 mandatory Class I wilderness areas (Wolf Island National Wildlife Refuge and Okefenokee National Wildlife Refuge are 30 and 80 miles from Fort Stewart, respectively). In Class I areas, visibility impairment is defined as a reduction in visual range and atmospheric discoloration. Because aircraft operations would not change under the proposed action, no changes to long-term pollutant emission rates would occur, and this resource is not carried forward for further analysis.

Transportation. Transportation resources refer to the infrastructure and equipment required for the movement of people, manufactured goods, and raw materials in geographic space. For this EA, the region of influence for transportation was limited to gates, access points, and on-Post roads because these elements could be potentially impacted by increased traffic from DZ improvement-related activities. Traffic at access control points for outside construction crews may be slowed as construction equipment and materials are brought into the Installation. Because of the limited amount of activities proposed under the preferred alternative, any potential impacts to transportation would be both minor and temporary. No impacts to on-Post traffic patterns would occur after improvement activities have been completed. In addition, no changes to air traffic patterns are expected because no changes to the amount or type of aircraft operations at Remagen DZ would occur under the proposed action. Therefore, transportation

would not be affected by improvements at or operation of Remagen DZ and no further analysis of transportation is carried forward in this EA.

Public Health. Public health includes fire and police protection, health services, traffic hazards, and surface danger zones associated with on-Post training ranges. On Post, the Directorate of Public Safety commands the Military Police Units, the Fort Stewart Fire Prevention and Protection Division, and the Post Safety Office. This directorate ensures unity of effort among Fort Stewart emergency services for a safe and secure environment to work, train, live, and play. Winn Army Community Hospital and the Lloyd C. Hawks Medical Clinic provide health services for active and retired military personnel and their Families. Off-Post, police and fire protection are provided by the city of Hinesville; Liberty Regional Medical Center in Hinesville provides the nearest health care facility. Because no changes in the level of operation of Remagen DZ would occur under the proposed action, no changes to public health would occur and this resource is not analyzed in detail in this EA.

Recreation & Visual Resources. Visual resources include the natural and manmade physical features that give a particular landscape its aesthetic character and value. Viewer perceptions are formed through the impression of scenic quality in elements such as landform, vegetation, water, color, adjacent scenery, and man-made (cultural) modifications. Visibility and visual sensitivity evaluations are based on public viewing opportunities and concern for the potential for changes to the landscape. Remagen DZ is an active DZ; although the loss of 103.3 acres of forested lands would occur under the proposed action, these changes would be minor because the tree removal would be consistent with adjacent developed viewsheds. In addition, Installation viewshed visibility is limited to military personnel, contractors, civilians working on or visiting the Installation, and hunters. These viewers are cognizant of the military mission and activities that occur at Fort Stewart. Therefore, impacts would be negligible because viewsheds would remain consistent with the existing environment.

Recreation on Fort Stewart primarily includes hunting and fishing activities. Fort Stewart has been open to public hunting and fishing since 1959 and is the second largest single public hunting and fishing entity in the state. All hunters on the Installation must possess a hunter safety course certificate, a valid Georgia hunting license, and the appropriate Fort Stewart hunting permit. White-tailed deer, feral hog, and wild turkey are prominent game species on Fort Stewart, and largemouth bass and redbreast sunfish are popular species targeted by anglers. Additional outdoor recreation activities include wildlife observation, hiking, camping, shooting sports (including archery, skeet, and paintball), volleyball, horseshoes, and playgrounds, which are in the Holbrook Pond Recreational Area. Existing fishing facilities include Installation ponds and waterways. Access to the Canoochee and Ogeechee rivers is provided by a limited number of landing sites. The recreational resources at Fort Stewart would not be impacted because the level of operations at Remagen DZ would not change under the proposed action.

Socioeconomics/Environmental Justice/Protection of Children. Socioeconomics focuses on the general features of the local economy that could be affected by the proposed action alternatives. The proposed action construction requirements are limited. Economically, the small scale of the proposed construction expenditures would not result in noticeable regional direct or indirect effects. Few to no new jobs would

be created in association with this project, no new housing would be required, and there would be no additional school-aged children. Any required materials would likely be purchased locally, resulting in a temporary, but minor increase within the local economy. Therefore, it is anticipated no communities would be exposed to adverse socioeconomic impacts, and this resource has been eliminated from further analysis.

Implementation of the proposed action would comply fully with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, and Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. The existence of disproportionately high and adverse impacts depends on the nature and magnitude of the effects identified for each of the individual resources. The proposed action is entirely within Post boundaries, and no low-income or minority populations, schools, or children are adjacent to or in the vicinity of Remagen DZ. The proposed action would not disproportionately impact low-income or minority populations, or result in disproportionate risks to children from environmental health or safety risks. As such, this resource is not carried forward for more detailed analysis.

Utilities. Improvements and operation of Remagen DZ would not affect utility (power, communication, sewage, and solid waste) availability or service. No additional utility use or expansion of utility service would be required under the proposed action. In general, utility services, including resource consumption and disposal, would not be affected by the proposed action, and no further analysis of utility resources is carried forward in this EA.

Limited amounts of solid waste would be generated during improvement activities. All demolition waste must be disposed off-Installation at an approved disposal facility in accordance with all Federal, State, and Local regulations. Achievement of 50 percent diversion, by weight, of all non-hazardous construction and demolition waste debris is required. The Contractor must track and report all materials to include reuse of excess soils, recycling of vegetation, alternative daily cover, and wood to energy for potential diversion consideration. The contractor must provide a copy of landfill scale tickets or engineering estimate to their Contracting Officer's Representative for all waste disposed at a location outside the Installation boundaries for delivery to the Directorate of Public Works Environmental Division. It is required that the contractor performing the demolition salvage or recycle as much of the materials as possible. Fort Stewart's and Hunter Army Airfield's Command Recycling Policy requires all recyclables generated through construction projects be kept separate from other waste and may be delivered to the Processing Station / Recycling Center. This recycling construction debris includes cardboard, concrete, asphalt, and scrap metal.

Provision for the Handicapped. The Americans with Disabilities Act (ADA) guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications. The proposed action does not come under the purview of the ADA; therefore, this provision has been eliminated from further analysis in this EA.

Soils. Soils are the unconsolidated earthen materials overlying bedrock or other parent material. The

affected environment for soils includes those areas that would be impacted both directly and indirectly by construction, training operations, or maintenance activities of the proposed action and alternatives and the land immediately adjacent to the sites, which could experience erosion impacts, and streams and/or water bodies, which could be indirectly impacted by sedimentation and/or erosion. The affected environment for soils is contained within the bounds of the Installation. At Fort Stewart, the parent material for all soils is water-lain sediments deposited during and prior to the Pleistocene era. Generally, the soil types most common at Fort Stewart are classified as sandy and infertile.

The land surface on Fort Stewart consists of gently rolling terraces separated by broad, low lying areas with poor drainage (Fort Stewart 2008). Because of Fort Stewart’s mild climate, the cycles of freezing and thawing during season change have little impact on soil weathering. However, rainfall infiltrates through the soil and moves dissolved and suspended materials downward. This effect is more pronounced on slopes and hills than it is on level ground. As shown in Table A-1, soils within the project area consist of Fuquay loamy sand, Irvington loamy sand, Leefield sand, Osier sand, Pelham loamy sand, Stilson loamy sand, and Tifton loamy sand (USDA 2011).

Table A-1. Soil Types Expected to Occur in the Project Area

Map Unit Name	Drainage Class	Depth to Water Table	Frequency of Flooding
Fuquay Loamy Sand	Well drained	Very Deep	None
Irvington Loamy Sand	Moderately well drained	18 to 36 inches	None
Leefield Sand	Somewhat poorly drained	Very Deep	None
Osier Sand	Poorly drained	0 to 12 inches	Frequent
Pelham Loamy Sand	Poorly drained	0 to 12 inches	Frequent
Stilson Loamy Sand	Moderately well drained	30 to 36 inches	None
Tifton Loamy Sand	Well drained	Very Deep	None

Source: USDA 2011

Airspace Management. This resource relates to the structure and use of the airspace in which aircraft training is conducted. Under the proposed action, the number and type of aircraft operations would not change, so changes to noise levels or scheduling conflicts are not expected. As such, no impacts are anticipated to airspace operations or management from the implementation of the preferred alternative.

APPENDIX B
BIOLOGICAL ASSESSMENT AND CONCURRENCE LETTER

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United States Department of the Interior

Fish and Wildlife Service

105 West Park Drive, Suite D
Athens, Georgia 30606
Phone: (706) 613-9493
Fax: (706) 613-6059

West Georgia Sub-Office
Post Office Box 52560
Fort Benning, Georgia 31995-2560
Phone: (706) 544-6428
Fax: (706) 544-6419

Coastal Sub-Office
4980 Wildlife Drive
Townsend, Georgia 31331
Phone: (912) 832-8739
Fax: (912) 832-8744

November 7, 2011

Mr. Robert R. Baumgardt
U. S. Army Installation Management Command
Directorate of Public Works
1587 Frank Cochran Drive
Fort Stewart, Georgia 31314-5048
Attention: Mr. Tim Beaty

Re: USFWS File Number 2012-0036

Dear Mr. Baumgardt:

Thank you for your recent letter and attached Biological Assessment concerning the proposed modification, repair, and maintenance of the Remagen Drop Zone on Fort Stewart, Georgia. This project will result in the clear-cutting of about 119.1 acres in Training Areas F9, F10, and F11 in Evans County, Georgia. We have reviewed the information you provided and submit the following comments under provisions of the Endangered Species Act (ESA) of 1973, as amended; (16 U.S.C. 1531 et seq.).

According to the information you provided, the project will impact only a total of about 80.9 acres of existing red-cockaded woodpecker Habitat Management Unit. The last known sighting of an Eastern indigo snake in the project area was in 1991 and the proposal will not impact any existing gopher tortoise burrows. The nearest historical sighting of a flatwoods salamander is 1.9 miles southeast of the proposed project. The nearest known sighting of foraging wood storks is at least 8.2 miles from the project site. Therefore, due to the small amount of habitat that will be impacted by the proposed project, we agree with your determination that this proposed project is not likely to adversely affect any federally listed endangered or threatened species. Also, we believe that the requirements of section 7 of the ESA have been satisfied and no further consultation is required. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner which was not considered in

this assessment; or (3) a new species is listed or critical habitat determined that may be affected by the identified action.

We appreciate the opportunity to comment during the planning stages of your project. If you have any questions, please contact our Coastal Georgia Sub Office staff biologist, Robert Brooks, at 912-832-8739 extension107.

Sincerely,



Sandra S. Tucker
Field Supervisor

for



DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, US ARMY GARRISON, FORT STEWART / HUNTER ARMY AIRFIELD
DIRECTORATE OF PUBLIC WORKS
1587 FRANK COCHRAN DRIVE
FORT STEWART, GEORGIA 31314

REPLY TO
ATTENTION OF

Directorate of Public Works

OCT 12 2011

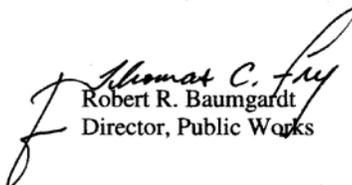
U.S. Department of the Interior
Fish and Wildlife Service
ATTN: Sandra Tucker
4980 Wildlife Drive, NE
Townsend, GA, 31331

Dear Ms. Tucker:

Fort Stewart proposes to modify, repair, and maintain the Remagen Drop Zone in Training Areas Foxtrot 9, 10, and 11. A Biological Assessment (BA) has been prepared in accordance with the requirements of the Endangered Species Act. The conclusion reached in this BA is that the proposed action may affect, but is not likely to adversely affect the red-cockaded woodpecker (RCW), eastern indigo snake, frosted flatwoods salamander, or wood stork. The proposed action will not affect the shortnose sturgeon. The proposed action will not prevent Fort Stewart from achieving its RCW recovery goal of 350 potential breeding groups because Fort Stewart will have suitable or potentially suitable RCW habitat to support 665 clusters post modification of the Remagen Drop Zone.

If additional information is needed, please contact Mr. Tim Beaty, DPW, Fish and Wildlife Branch at telephone (912) 767-7261. Your continued cooperation and assistance are appreciated.

Sincerely,


Robert R. Baumgardt
Director, Public Works

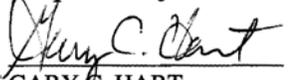
Enclosures

BIOLOGICAL ASSESSMENT

Maintenance, Repairs, and Modifications to the Existing Remagen Drop Zone

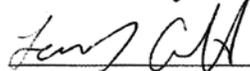
Fort Stewart, Georgia

Prepared By:



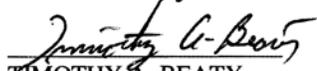
GARY C. HART
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Directorate of Public Works
Fort Stewart, GA

Reviewed By:



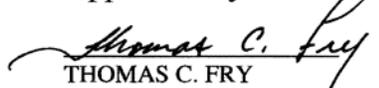
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Fort Stewart, GA

PROJECT DESCRIPTION

Fort Stewart (FS) proposes to repair, maintain, and modify the existing Remagen Drop Zone (RDZ) in Training Areas (TA) Foxtrot 9, 10, and 11 in Evans County, Georgia. The RDZ supports air delivery of both cargo and personnel dropped from U.S. Air Force heavy cargo aircraft. Recently, the safety criteria contained in U.S. Air Force Instruction 13-217 as well as the U.S. Army Field Manual FM3-211.38 was changed to require greater width for existing drop zones. The minimum width requirement was increased to 600 yards over the length of the RDZ. These changes will require removal of standing timber, clearing, grubbing, grading, improving drainage, and establishing vegetative ground cover on 119.1 acres (Figure 1).

SITE DESCRIPTIONS

The proposed action area consists of forested upland, lowland hardwood, and open area. Habitats within the project area are predominately old-fields consisting of loblolly pine (*Pinus taeda*), slash pine (*P. elliottii*), water oak (*Quercus nigra*), and live oak (*Q. virginiana*) with an understory comprising broom sedge (*Andropogon virginicus*), dog fennel (*Eupatorium capillifolium*), gallberry (*Ilex glabra*), bahia grass (*Paspalum notatum*), and meadow beauty (*Rhexia virginica*). Soil types in and adjacent to the action area include Tifton Loamy sand, Fuquay Loamy sand, Irvington Loamy sand, Stilson Loamy sand, Pelham Loamy sand, Lee field Loamy sand, and Osier soils.

SPECIES CONSIDERED

The following species occur, or may occur, in the proposed action area and were considered in this assessment:

Red-cockaded woodpecker (*Picoides borealis*) - Endangered
Eastern indigo snake (*Drymarchon corais couperi*) - Threatened
Frosted flatwoods salamander (*Ambystoma cingulatum*) - Threatened
Shortnose sturgeon (*Acipenser brevirostrum*) - Endangered
Wood stork (*Mycteria americana*) - Endangered

DISCUSSION

Red-cockaded Woodpecker

Fort Stewart Fish and Wildlife Branch personnel surveyed the project area for red-cockaded woodpeckers (RCW) and RCW cavity trees. There were no RCW cavity or start trees detected in the action area. The project will not affect the foraging partition of any RCW cluster. The nearest RCW foraging partition (Clusters 167) to the proposed project is 0.8 miles southeast of the action area in FS TA F7.2 (Figure 2). The RDZ project will impact 80.9 acres of existing RCW Habitat Management Unit (HMU) as identified in FS's Integrated Natural Resources Management Plan (INRMP; Directorate of Public Works 2001; Figure 2). Because of its location adjacent to an established military facility and the poor quality of the existing old field habitat, the proposed project may affect, but is not likely to adversely affect the RCW. The

proposed project will not prevent the Installation from achieving its RCW population recovery goal of 350 potential breeding groups.

Eastern Indigo Snake

The proposed project area lies within FS eastern indigo snake HMU. One eastern indigo snake was observed in the action area in FSTA F11.1 in 1991, but was not captured (Figure 3). The proposed action will remove 17.5 acres of potential gopher tortoise (*Gopherus polyphemus*) habitat but will not impact any existing gopher tortoise burrows (Figure 3). Fort Stewart Fish and Wildlife personal will resurvey the project area prior to construction to ensure that gopher tortoises have not populated the area. Foraging snakes may enter connected wetlands near the action area in the summer, but because of this project's location adjacent to the existing RDZ and the poor quality of the habitat, the proposed project may affect, but is not likely to adversely affect the eastern indigo snake.

Frosted Flatwoods Salamander

The project area does not lie within the frosted flatwoods salamander (FFS) HMU and will not impact any FFS ponds or associated buffers. No FFS have ever been detected in the action area. The nearest recent sighting of a FFS is approximately 1.9 miles southeast of the action area in FSTA F7.2 (Figure 3). Because of the lack of suitable isolated wetlands and its distance from confirmed FFS sightings, the proposed action may affect, but is not likely to adversely affect the FFS.

Wood Stork

No wood storks were observed in the proposed project area, nor have they been observed foraging in the action area. The nearest area where foraging wood storks have been observed is approximately 8.2 miles east-southeast of the action area in FSTA F17.2. Due to the lack of suitable foraging areas within the action area, the proposed project may affect, but is not likely to adversely affect the wood stork.

Shortnose Sturgeon

Telemetry and capture data, which was collected as part of a shortnose sturgeon monitoring program, indicate these fish do not travel >2 miles up the Canoochee River or 20 miles up the Ogeechee River from the Canoochee/Ogeechee River confluence. The Canoochee River flows diagonally through the Installation while the Ogeechee River forms much of the Installation's eastern boundary. The proposed project lies >25 miles west of the nearest shortnose sturgeon occurrence on the Canoochee River. Due to the distance between the proposed project area and documented sturgeon sightings, this project will not affect the shortnose sturgeon.

CUMULATIVE EFFECTS

There are no foreseeable state, local, tribal, or private actions that would have a cumulative adverse effect when combined with impacts associated with the proposed action.

CONCLUSION

The proposed action may affect, but is not to adversely affect, the RCW, FFS, eastern indigo snake, or wood stork. The proposed action will not affect the shortnose sturgeon because habitat in the action area is not suitable for this species. Critical habitat has been proposed for the FFS, but no FFS critical habitat was proposed for designation on FS. Other listed species that occur on FS have no critical habitat designated, so no critical habitat will be destroyed or modified adversely. The Army did not draw on the regulatory definition of destruction or adverse modification of critical habitat at 50 CFR 402.02 with respect to the conclusions and analysis made in this BA. Instead, the Army has incorporated into the critical habitat effects analysis the conservation of species principals found in the statutory provisions of the Endangered Species Act.

Figure 1. Location of the RDZ, Fort Stewart, GA.

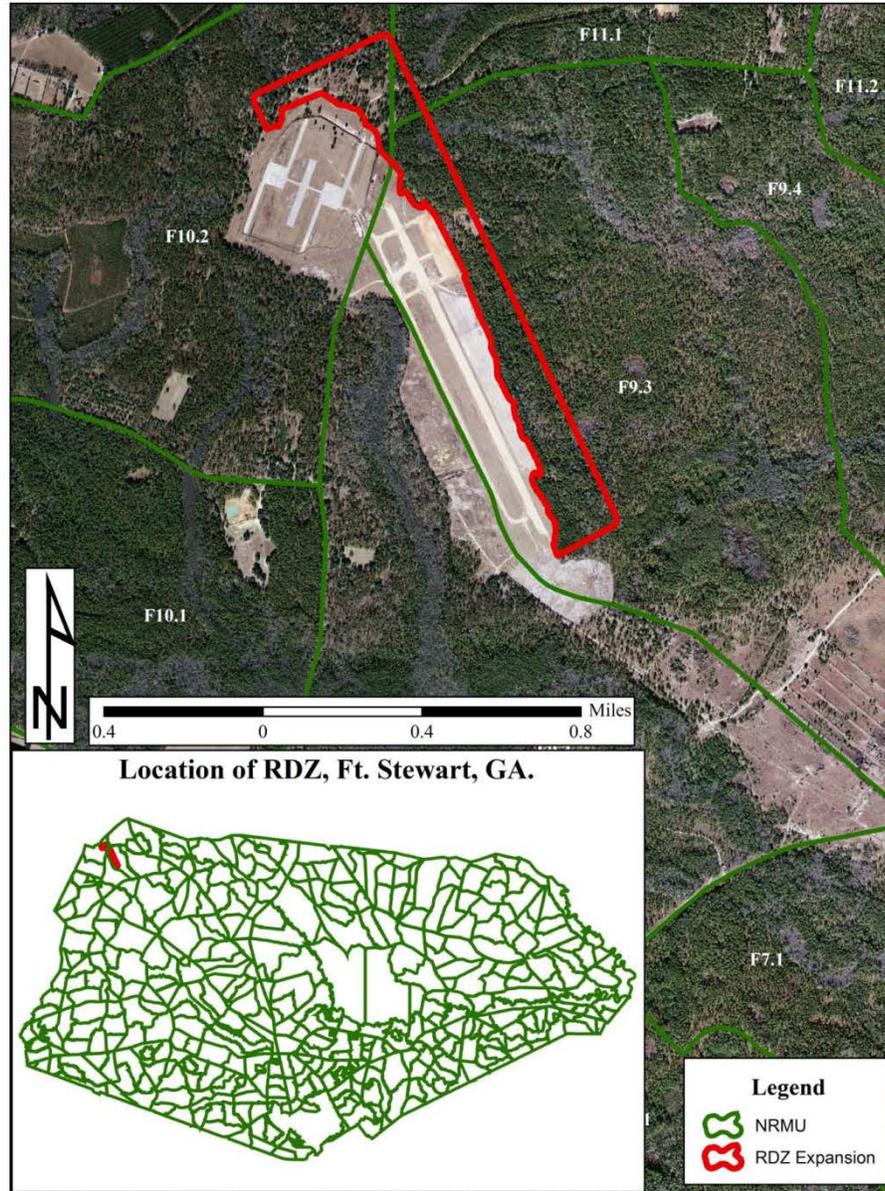


Figure 2. RCW HMU and foraging partitions affected by the proposed project, Fort Stewart, GA.

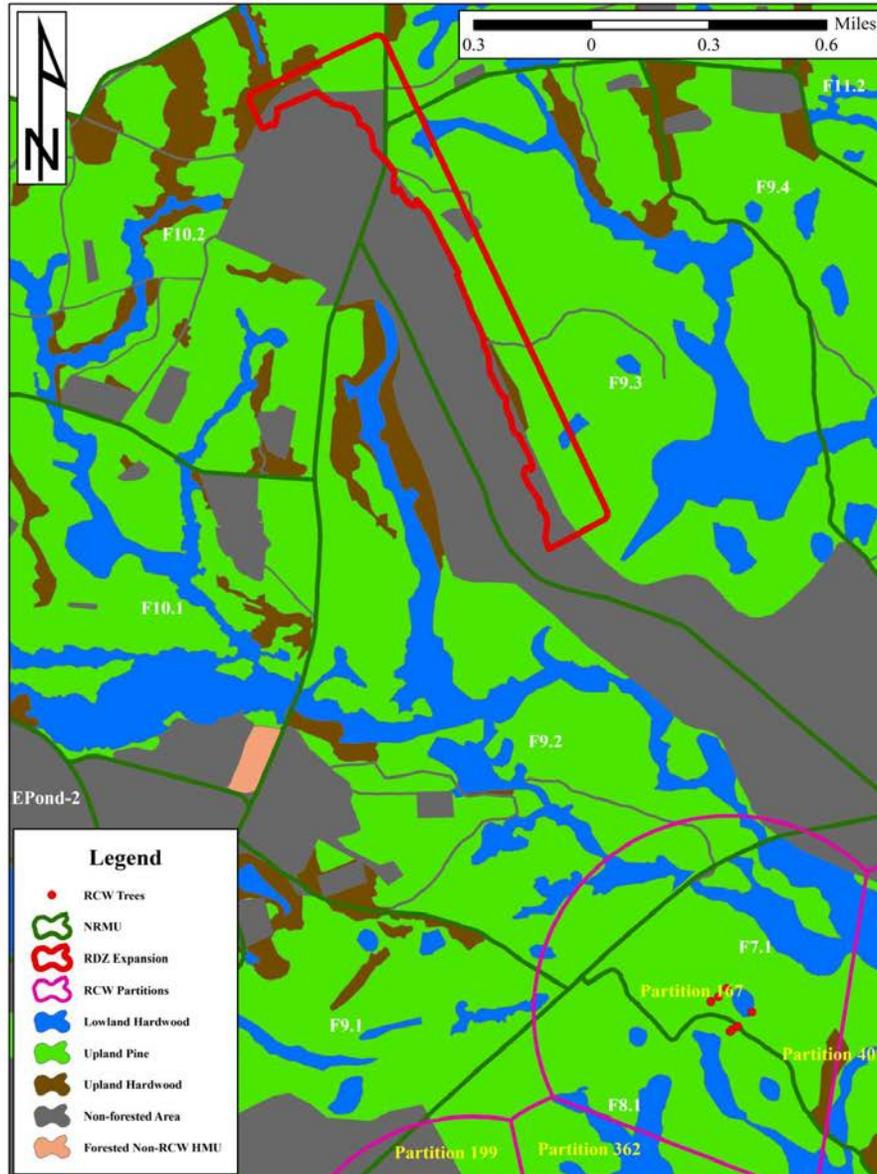
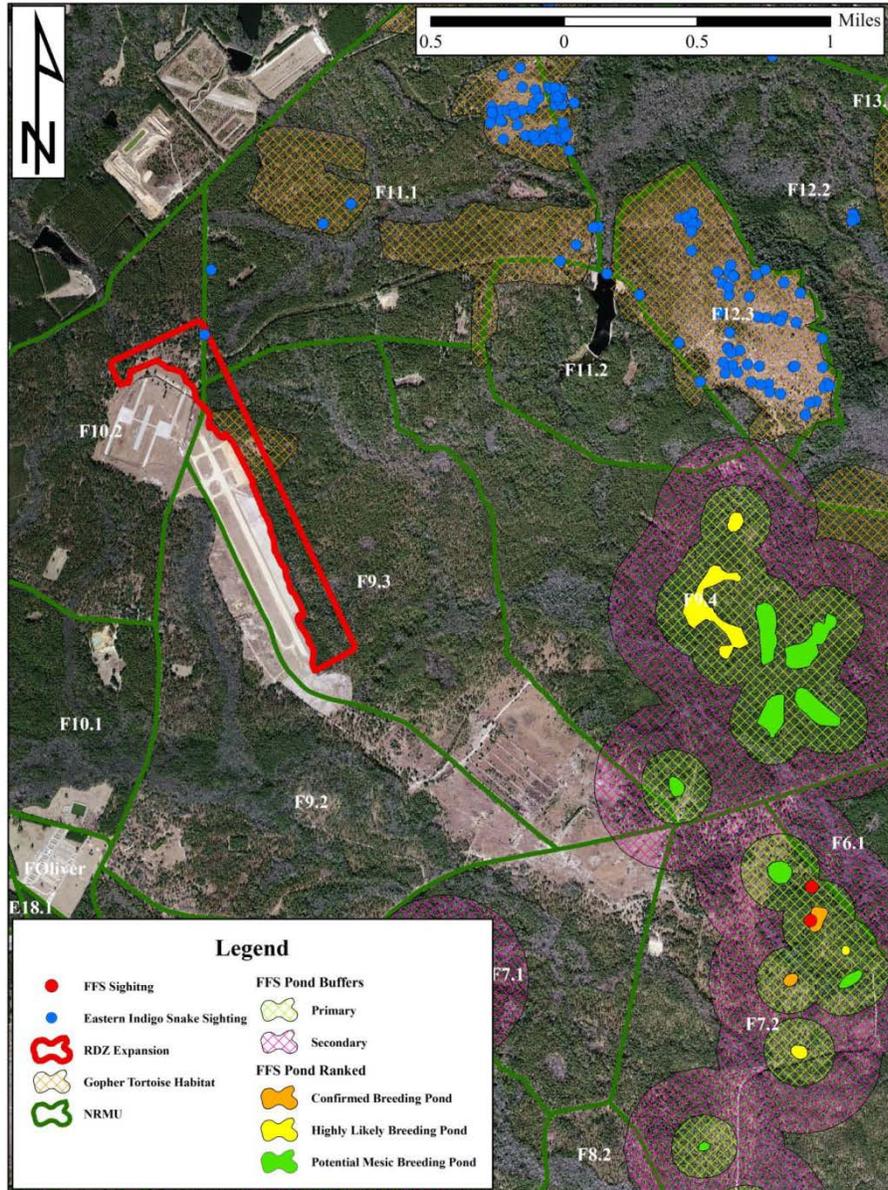


Figure 3. TES occurring near the proposed RDZ, Fort Stewart, GA.



LITERATURE CITED

Directorate of Public Works. 2001. Integrated Natural Resources Management Plan, 2001-2005. 172 pp. plus appendices.

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APPENDIX C
STATE HISTORIC PRESERVATION OFFICER
CORRESPONDENCE

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MARK WILLIAMS
COMMISSIONER

DR. DAVID CRASS
DIVISION DIRECTOR

March 14, 2012

Robert Baumgardt
Department of the Army
US Army Installation Management Command
Headquarters, US Army Garrison, Fort Stewart/Hunter Army Airfield
Directorate of Public Works
1587 Frank Cochran Drive
Fort Stewart, Georgia 31314
Attn: Brian Greer (brian.greer@us.army.mil)

**RE: Fort Stewart: Improvements to Existing Drop Zone, Clear Encroaching Trees
Liberty County, Georgia
HP-120223-001**

Dear Mr. Baumgardt:

The Historic Preservation Division (HPD) has reviewed the information submitted concerning the above referenced project. Our comments are offered to assist the U.S. Department of the Army and Fort Stewart/Hunter Army Airfield in complying with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

The subject project consists of improvements of an existing drop zone at Fort Stewart including the clearing of encroaching trees. Based on the information provided, HPD finds that no archaeological resources that are eligible for or listed in the National Register of Historic Places (NRHP) will be affected by the proposed undertaking due to previous disturbance, as defined in 36 CFR Part 800.4(d)(1). Additionally, it is HPD's opinion that the H.J. Durrence Cemetery (9EV140) should be considered eligible for the NRHP and that, as proposed, the subject project will have **no adverse effect** to historic properties within its area of potential effects (APE), as defined in 36 CFR Part 800.5(b).

This letter evidences consultation with our office for compliance with Section 106 of the NHPA. It is important to remember that any future changes to this project as it is currently proposed may require additional consultation. HPD encourages federal agencies and project applicants to discuss such changes with our office to ensure that potential effects to historic resources are adequately considered in project planning.

Please refer to project number **HP-120223-001** in any future correspondence on this project. If we may be of further assistance, please do not hesitate to contact Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624.

Sincerely,

A handwritten signature in black ink that reads "Karen Anderson-Cordova". The signature is written in a cursive style.

Karen Anderson-Cordova
Program Manager
Environmental Review and Preservation Planning

KAC:ebp

cc: Lupita McClenning, Coastal Georgia Regional Commission

254 WASHINGTON STREET, SW | GROUND LEVEL | ATLANTA, GEORGIA 30334
404.656.2840 | FAX 404.657.1368 | WWW.GEORGIAHPO.ORG



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
US ARMY INSTALLATION MANAGEMENT COMMAND
HEADQUARTERS, US ARMY GARRISON, FORT STEWART / HUNTER ARMY AIRFIELD
DIRECTORATE OF PUBLIC WORKS
1587 FRANK COCHRAN DRIVE
FORT STEWART, GEORGIA 31314

FEB 15 2012

Office of the Directorate

Dr. David Crass
Deputy State Historic Preservation Officer
Historic Preservation Division
Georgia Department of Natural Resources
254 Washington Street SW
Ground Level
Atlanta, Georgia 30334

Dear Dr. Crass:

The purpose of this letter is to consult with your office regarding the improvement of an existing drop zone (DZ) at Fort Stewart to support cargo and personnel drop training by the United States (U.S.) Army and U.S. Air Force. Improvements will include increasing the minimum usable width of the DZ to 600 yards by removing trees that have encroached upon the existing DZ and removing potential training hazards. The proposed action includes a timber sale of 92 acres to increase the width of the DZ to 600 yards and conducting a Type I site prep (clearing and grubbing previously harvested areas) over the project area where required. Additional work includes grading and removing trees from a closed borrow pit; removing concertina wire; repairing five culverts; removing nine large pushpiles; removing six observation towers, one storage shed, and one communication point; removing or grinding fourteen stumps; and removing portions of the berm (see Enclosure 1).

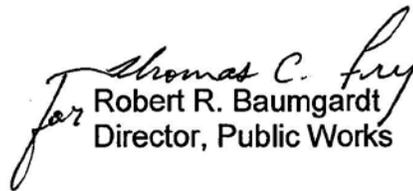
A total of fifteen archaeological sites, eighteen isolated finds, and one historic cemetery are located within 200 meters of the project area (see Enclosures 2 & 3). The sites and isolated finds have been determined ineligible for inclusion in the National Register of Historic Places (NRHP). Durrence Cemetery (9EV140) is located within the 200m buffer of the project area. A 60 meter buffer has been painted around the fencing. No ground disturbing activities are planned within the 60m buffer and therefore will not be affected. No structures that are eligible for listing on the NRHP are located within the project's area of potential effect.

Fort Stewart has determined that the proposed project would not impact any cultural resources listed or eligible for listing on the NRHP. Per the terms of the Programmatic Agreement, this finding was documented for record and will be incorporated into the Installation's Fiscal Year 2012 Cultural Resource Management Yearly Report to the State Historic Preservation Office. A copy of the *Draft Environmental Assessment and Draft Finding of No Significant Impact for the Remagen Drop Zone Improvements at Fort Stewart, Georgia*, which also documents this finding, will be provided to your office in the near future.

- 2 -

Per 36 CFR 800, the Army requests your comments within 30 days of receiving this letter. If you have any questions or require further information, please contact Mr. Brian Greer, DPW, Environmental Prevention & Compliance Branch, Cultural Resource Program Manager, at (912) 767-0992. Email correspondence may be directed to brian.greer@us.army.mil.

Sincerely,


for Robert R. Baumgardt
Director, Public Works

Enclosures

ENCLOSURE 3: Cultural Resources within 200m of the APE

Site #	NRHP Status	Site Description
9EV45	Ineligible	9EV45 is a late 19 th to early 20 th century historic artifact scatter discovered by David McKivergan in 1995 and consists of whiteware, glass (clear and milk), a patent medicine/perfume bottle, strap iron, and a brick fragment.
9EV124	Ineligible	9EV124 is a late 19 th to early 20 th century historic scatter first discovered by David McKivergan in 1995 and later resurveyed by Panamerican Consultants, Inc. (PCI) Delivery Order 2. This site is represented by whiteware, stoneware, glass, a machine-cut nail, and brick fragments (Ambrosino et al. 2000).
9EV140	Cemetery	9EV140 (H.J. Durrence Cemetery) is a 19 th century cemetery. No headstones exist within the cemetery but ground penetrating radar identified ten anomalies which are consistent with the number of burials reported through personal interviews (Butler et al. 1993). A fence has been erected around the burials with a 60m buffer painted around the cemetery to protect it from adverse effects.
9EV151	Ineligible	9EV151 is a late 19 th to early 20 th century historic artifact scatter discovered by PCI during DO#2 and consists of whiteware, and glass (clear, amethyst, aqua, and light green) (Ambrosino et al. 2000).
9EV153	Ineligible	9EV153 is an undifferentiated prehistoric isolated find discovered by PCI during DO#2 and consists of a piece of chert debitage (Ambrosino et al. 2000).
9EV155	Ineligible	9EV155 is an undifferentiated prehistoric isolated find and a 19 th century historic artifact scatter discovered by PCI during DO#2 and consists of a nondiagnostic chert chipped stone implement, whiteware, pearlware, and stoneware (Ambrosino et al. 2000).
9EV156	Ineligible	9EV156 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of whiteware and stoneware (Ambrosino et al. 2000).
9EV157	Ineligible	9EV157 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of whiteware (Ambrosino et al. 2000).
9EV161	Ineligible	9EV161 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of whiteware and glass (Ambrosino et al. 2000).
9EV162	Ineligible	9EV162 is an undifferentiated brick scatter discovered by PCI during DO#2. No other cultural material was encountered (Ambrosino et al. 2000).
9EV163	Ineligible	9EV163 is a 19 th century historic artifact scatter discovered

		by PCI during DO#2 and consists of whiteware, pearlware, and glass (aqua and dark olive green) (Ambrosino et al. 2000).
9EV164	Ineligible	9EV164 is an undifferentiated historic isolated find discovered by PCI during DO#2 and consists of a brick fragment (Ambrosino et al. 2000).
9EV165	Ineligible	9EV165 is an early 20 th century historic artifact scatter discovered by PCI during DO#2 and consists of whiteware, glass (clear, brown, aqua, pink, and milk), and a brick fragment (Ambrosino et al. 2000).
9EV189	Ineligible	9EV189 is a 19 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of blue shell edge whiteware (Ambrosino et al. 2000).
9EV190	Ineligible	9EV190 is an undifferentiated prehistoric isolated find discovered by PCI during DO#2 and consists of a piece of chert debitage (Ambrosino et al. 2000).
9EV191	Ineligible	9EV191 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of molded whiteware (Ambrosino et al. 2000).
9EV192	Ineligible	9EV192 is a prehistoric lithic scatter discovered by PCI during DO#2 and consists of chert debitage (Ambrosino et al. 2000).
9EV193	Ineligible	9EV193 is an Early Archaic isolated find discovered by PCI during DO#2 and consists of a chert Kirk Corner Notched projectile point (Ambrosino et al. 2000).
9EV194	Ineligible	9EV194 is a late 19 th to early 20 th century historic artifact scatter discovered by PCI during DO#2 and consists of whiteware, pearlware, and glass (clear, amethyst, dark olive green, and green) (Ambrosino et al. 2000).
9EV195	Ineligible	9EV195 is an undifferentiated historic isolated find discovered by PCI during DO#2 and consists of a brick fragment (Ambrosino et al. 2000).
9EV196	Ineligible	9EV196 is an Early Woodland isolated find discovered by PCI during DO#2 and consists of a chert Wade projectile point (Ambrosino et al. 2000).
9EV197	Ineligible	9EV197 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of whiteware (Ambrosino et al. 2000).
9EV199	Ineligible	9EV198 is a 20 th century historic isolated find discovered by PCI during DO#2 and consists of a brick fragment and a metal pail (Ambrosino et al. 2000).
9EV202	Ineligible	9EV202 is a 19 th century historic isolated find discovered by PCI during DO#2 and consists of two pieces of pearlware (Ambrosino et al. 2000).
9EV203	Ineligible	9EV203 is a 19 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of blue shell edge

		whiteware (Ambrosino et al. 2000).
9EV204	Ineligible	9EV204 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of cobalt glass (Ambrosino et al. 2000).
9EV206	Ineligible	9EV206 is a late 19 th to early 20 th century historic isolated find discovered by PCI during DO#2 and consists of a piece of whiteware (Ambrosino et al. 2000).
9EV282	Ineligible	9EV282 is a late 19 th to early 20 th century historic artifact scatter discovered by PCI during DO #5 and is represented by whiteware, glass (aqua, clear, and milk) and a pressed brick fragment (Kennedy et al. 2004).
9EV283	Ineligible	9EV283 is a late 18 th to early 20 th century historic artifact scatter and a prehistoric isolate discovered by PCI during DO #5. This site is represented by two pieces of chert debitage, pearlware, porcelain, whiteware, stoneware, kaolin pipe bowl, and glass (dark olive green, brown, light olive green, clear, and aqua) (Kennedy et al. 2004).
9EV285	Ineligible	9EV285 is a late 18 th to early 20 th century historic artifact scatter discovered by PCI during DO #5 and is represented by whiteware, porcelain, pearlware, glass (amethyst, aqua, clear, cobalt, light green, light olive green, and milk), a wire nail, and brick fragments (Kennedy et al. 2004).
9EV286	Ineligible	9EV286 is an undifferentiated historic site discovered by PCI during DO #5 and is represented by a brick-lined well. No other cultural material was encountered (Kennedy et al. 2004).
9EV287	Ineligible	9EV287 is a late 19 th to early 20 th century historic artifact scatter and a prehistoric isolate discovered by PCI during DO #5. This site is represented by a piece of chert debitage, whiteware, glass (aqua, light green, colbalt, clear, brown, and amethyst), a wire nail, a mirror fragment, and brick fragments (Kennedy et al. 2004).
9EV475	Ineligible	9EV475 is a historic isolated find discovered by New South Associates and is represented by a single piece of amethyst glass (Espenshade et al. 2011).
9EV481	Ineligible	9EV481 is a late 19 th to early 20 th century historic artifact scatter discovered by New South Associates. This site is represented by whiteware, Albany/Bristol stoneware, glass (clear, amber, aqua, green, light blue), a musket ball, wire nails, a cut nail, mortar, and a brick fragment (Espenshade et al. 2011).

REFERENCES CITED

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2000 *Archaeological Investigations at Fort Stewart: An Intensive Archaeological Survey of 9,860 Acres (NRMUs E9.3, E21.3, F2.1, F3.1, F4.1, F6.6, F6.7, F7.1, F9.2, F9.3, F9.4, F9.5, F16.2, F16.3, F17.1, and Camp Oliver in Evans, Liberty, and Long Counties) at Fort Stewart, Georgia*. Panamerican Consultants, Tuscaloosa. Submitted to the National Park Service, Southeast Regional Office, Atlanta, and funded by the Directorate of Public Works, Environmental Branch, Fort Stewart under Contract #1443CX509098044.
- Butler, Dwain K., Jose Llopis, and Frederick L. Briuer
1993 *Geophysical and Archaeological Investigations for Location of a Historic Cemetery, Fort Stewart, Georgia*. Prepared by the U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS for the U.S. Army Engineer District, Savannah. Miscellaneous Paper GL-93-6.
- Espenshade, Christopher; Tracy Martin; David Price; Leslie Raymer, Diana Valk, & Stacey Young
2011 *Phase I Archaeological Survey of 9,820 Acres and Phase II Evaluation of Nine Sites, Fort Stewart, Georgia [Draft]*. Prepared by SpecPro Environmental Services, Oak Ridge, TN and New South Associates, Stone Mountain, GA under Contract No. W912HN-10-D-0001, Delivery Order No. 0014 for the Directorate of Public Works, Environmental Division, Fort Stewart, GA and the U.S. Army Corps of Engineers, Savannah District.
- Kennedy, Michael D, Hunter B. Johnson, and Rebecca K. Turley
2004 *Archaeological Investigations at Fort Stewart: An Intensive Archaeological Survey of 12,202 Acres (Vols. 1-2) (NRMUs A1.3, A5.3, A12.3, A17.0, B8.3, C1.2, C7.3, C7.4, C14.1, D1.2, D1.3, D3.0, D3.5, D4.1, D6.1, D7.4, E2.1, E3.4, E6.4, F10.2, F10.3, F12.3, and F15.2 in Bryan, Evans, and Liberty Counties) at Fort Stewart, Georgia*. Panamerican Consultants, Inc., Tuscaloosa. Submitted to the National Park Service, Southeast Regional Office, Atlanta, and funded by the Directorate of Public Works, Environmental Branch, Fort Stewart under Contract #1443CX509098044.

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APPENDIX D
AFFIDAVIT OF PUBLICATION AND NOTICE OF AVAILABILITY

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AFFIDAVIT OF PUBLICATION

STATE OF GEORGIA

COUNTIES OF LIBERTY AND LONG

Personally appeared before me, the undersigned Notary Public, *S. Marshall Griffin*, who after being duly sworn stated under oath that he is the Publisher of the COASTAL COURIER, the official Legal Organ of Liberty and Long Counties, a newspaper published in the city of Hinesville, and who further states under oath that the advertisement attached hereto and made a part of this affidavit appeared in the COASTAL COURIER on the following date(s):

April 11, 2012



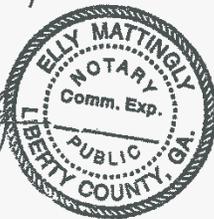
S. Marshall Griffin
PUBLISHER

Sworn to and subscribed before me,

This 8 day of May 2012



Notary Public



December 01, 2015
Commission expires

Errors - The liability of the publisher on account of errors in or omissions from any advertisement will in no way exceed the amount of the charge for the space occupied by the item in error, and then only for the first incorrect insertion.

gpn14

**NOTICE OF AVAILABILITY
ENVIRONMENTAL ASSESSMENT
AND Draft FINDING OF
NO SIGNIFICANT IMPACT
For the Remagen Drop Zone
Improvements at Fort Stewart,
Georgia.**

The primary mission of Fort Stewart is to provide support for mission readiness and execution through extensive training of Soldiers on the Installation. In support of this mission, the U.S. Army proposes to improve the Remagen Drop Zone (DZ) at Fort Stewart to support cargo and personnel drop training by Army and Air Force personnel.

Although currently utilized as an active DZ, improvements are required to bring the Remagen DZ up to current Department of Defense standards, as defined in 10 USC 3062, Policy; Composition; Organized Peace Establishment; AFI 13-217, Drop Zone and Landing Zone Procedures; Army FM 3-21.38, Pathfinder Operations; and Army FM 3-21.220 (57-220), Static Line Parachuting Techniques and Training. These improvements include increasing the minimum usable width of the DZ to 600 yards by removing trees encroaching upon the DZ, as well as removing potential training hazards that could injure parachutists or damage equipment. The Draft EA analyzes the potential environmental impacts of the proposed action and its alternatives, which analysis determined will not result in significant environmental impacts. The Draft FNSI is also available for review and comment.

The Draft EA addresses the potential impacts to environmental and socioeconomic resources and resulted in a Draft FNSI, indicating

no significant adverse impacts from the proposed action. It will be available for public review on/around April 9, 2012-May 8, 2012 at the public and Post library listed below; comments must be received no later than May 8, 2012.

*1LT George P. Hays Library, Building 411, 316 Lindquist Rd., Fort Stewart, GA.

Mon. - Thurs. 9:00 a.m. to 7:00 p.m.

Fri. - Sat. 9:00 a.m. to 4:00 p.m.

Sun. - closed

*Liberty County Public Library, 236 Memorial Drive, Hinesville, GA

Mon. - Thurs. 9:00 a.m. to 8:00 p.m.

Fri. - Sat. 9:00 a.m. to 6:00 p.m.

Sun. - closed

*Mall Branch Library, 7 Mall Annex, Savannah, GA

Mon. and Wed. 9:00 am to 8:00 pm

Tues., Thurs., and Sat. 9:00 am to 6:00 pm

Fri. and Sun. - closed

*Southwest Chatham Branch Library, 14097 Abercorn Street, Savannah, GA

Mon. - closed

Tues. and Thurs. 9:00 am to 8:00 pm

Wed., Fri. -Sat. 9:00 am to 6:00 pm

Sun. - 2:00 p.m. to 6:00 p.m.

Request all comments be mailed to the following address:

Chief, Environmental Division

(Mr. Thomas C. Fry)

Directorate of Public Works

1550 Frank Cochran Drive, Bldg.

AFFIDAVIT OF PUBLICATION
SAVANNAH MORNING NEWS

STATE OF GEORGIA
COUNTY OF CHATHAM

Personally appeared before me, Alaina Fincher, to me known, who being sworn, deposes and says:

That she is the Obituary/Legal Clerk for Southeastern Newspaper Corporation, a Georgia corporation, doing business in Chatham County, GA, under the trade name of Savannah Morning News, a daily newspaper published in said county;

That he is authorized to make affidavits of publication on behalf of said published corporation;

That said newspaper is of general circulation in said county and in the area adjacent thereto;

That he has reviewed the regular editions of the Savannah Morning News, published on:

April 9, 2012, _____, 2012,

_____, 2012, _____, 2012,

and finds that the following advertisement, to-wit:

Appeared in each of said editions.
Sworn to and subscribed before me

This 9 day of April, 2012

Alaina Fincher
(Deponent)

Eugene J. Cronk
Notary Public, Chatham County, Ga.

EUGENE J. CRONK
Notary Public, Chatham County, GA
My Commission Expires January 25, 2014

Proper handling of hazardous materials is both a safety, environmental matter

Amanda Price
DPW, Environmental Division

Earth Day 2012 is just a couple of weeks away and will mark the 42nd anniversary of this international day of environmental awareness. Since its inception, Earth Day has served as a springboard for environmental activism. It is a day to promote not only the importance of protecting our environment, but the many ways in which we as individuals can make a difference.

One way that each of us can help in this global effort is by properly handling and disposing of hazardous materials. Certain materials are designated as "hazardous" because they pose a significant threat to our health and the environment. Whether we are at home or at work, each of us comes in contact with hazardous materials on an almost daily basis. For this reason, it is of the utmost importance that we educate ourselves on the proper ways to handle and dispose of hazardous materials and the containers in which they are stored.

On the installation, handling of hazardous materials is an integral part of many day-to-day operations. In order to ensure everyone's safety, all leaders in the workplace are required to have Material Safety Data Sheets readily available for all personnel involved in handling, storing and generating hazardous chemicals. The MSDS forms contain data regarding the chemical properties of a particular substance, information pertaining to proper disposal, necessary protective equipment, procedures for handling spills, as well as the safety and environmental risks

associated with the substance. If hazardous materials spill, they can take a heavy toll on all parties involved. For this reason, further instruction in hazardous waste/hazardous material management, spill response, and pollution prevention is provided during the Environmental Compliance Officer course offered quarterly by Directorate of Public Works Environmental Division.

Proper handling and disposal of hazardous materials is not an issue that should only be addressed in the workplace. In fact, many common household products contain chemicals that can pollute our air, our property, and our drinking water. They can also harm our children, pets and local wildlife. Some examples of these products include pesticides, batteries, pool chemicals, paint, and household cleaning items. If unsure whether or not a product contains hazardous material, look on the label for words such as poison, danger, warning, caution, flammable or toxic. Some hazardous materials/products indicate proper disposal techniques on their labels. However, many products do not provide this information and even some that do, fail to explain all of the steps that should be taken in order to ensure proper disposal. If you are unsure or have any questions about how to properly dispose of a product, contact DPW HAZMAT at 312-767-1238.

Remember, even containers that appear to be empty can still have traces of residual chemicals. Careful attention to disposal of these items is imperative. Even though small amounts of chemicals may seem harm-



Courtesy Photo

less, they can have a profound impact on both our health and our environment. When products containing hazardous materials are carelessly thrown away with the rest of the garbage, they end up in the landfill. As these products are dumped into the landfill, hazardous materials are released into the environment, contaminating our land, air and water.

Whether large or small, incidences in which hazardous wastes are released/spilled into the environment should not be taken lightly. By understanding our responsibilities and knowing how to react when an incident occurs, we can minimize the required effort and subsequent cost associated with the incident.

So as we go about our daily activities, we must remember to be conscious of the materials we're handling and cautious when choosing a method for disposal. Take all precautions to eliminate the risks to our health and to the environment.

Remember, Earth Day is April 22. It will be the perfect time to make a commitment to protect the environment for future generations to enjoy.

NOTICE OF AVAILABILITY

ENVIRONMENTAL ASSESSMENT AND
DRAFT FINDING OF NO SIGNIFICANT
IMPACT

For the Remagen Drop Zone Improvements at
Fort Stewart, Georgia

The primary mission of Fort Stewart is to provide support for mission readiness and execution through extensive training of Soldiers on the Installation. In support of this mission, the U.S. Army proposes to improve the Remagen Drop Zone at Fort Stewart to support cargo and personnel drop training by Army and Air Force personnel.

Although currently utilized as an active DZ, improvements are required to bring the Remagen DZ up to current Department of Defense standards, as defined in 10 USC 3062, Policy; Composition; Organized Peace Establishment; AFJ 13-217, Drop Zones and Landing Zone Procedures; Army FM 3-21.58, Pathfinder Operations; and Army FM 3-21.220 (57-220), Static Line Parachuting Techniques and Training. These improvements include increasing the minimum usable width of the DZ to 600 yards by removing trees encroaching upon the DZ, as well as removing potential training hazards that could injure parachutists or damage equipment. The Draft EA analyzes the potential environmental impacts of the proposed action and its alternatives, which analysis determined will not result in significant environmental impacts. The Draft FNEI is also available for review and comment.

The Draft EA addresses the potential impacts to environmental and socioeconomic resources and resulted in a Draft FNEI, indicating no significant adverse impacts from the proposed action. It will be available for public review on/around April 9-May 8 at the public and Post library listed below; comments must be received no later than May 8.

1st Lt. George P. Hays Library, Building 411, 316
Lindquist Road, Fort Stewart, Ga.
Mon. - Thurs. 9 a.m. to 7 p.m.
Fri. - Sat. 9 a.m. to 4 p.m.
Sun. - closed

Liberty County Public Library, 236 Memorial Drive,
Hinesville, Ga.
Mon. - Thurs. 9 a.m. to 8 p.m.
Fri. - Sat. 9 a.m. to 6 p.m.
Sun. - closed

Mall Branch Library, 7 Mall Annex, Savannah, Ga.
Mon. and Wed. 9 am to 8 pm
Tues., Thurs., and Sat. 9 am to 6 pm
Fri. and Sun. - closed

Southeast Chatham Branch Library, 14097 Aberdeen
Street, Savannah, Ga.
Mon. - closed
Tues. and Thurs. 9 am to 8 pm
Wed., Fri. - Sat. 9 am to 6 pm
Sun. - 2 to 6 p.m.

Request all comments be mailed to the following
address:

Chief, Environmental Division (Mr. Thomas C. Fry)
Directorate of Public Works
1550 Frank Cochran Drive, building 1137
Fort Stewart, Ga. 31314-4327

PUBLIC NOTICE

In accordance with Georgia's Water Quality Control Regulation, and the Fort Stewart Sewage Spill Contingency Plan, notification is hereby made to the public of a gray water release, which was reported on April 2, 2012, from a lift station located at Evans Army Airfield on Fort Stewart. This spill was caused by a backed-up lift station and involved the discharge of approximately 7,350 gallons of water from showers and hand basins to a tributary of Jericho River. Fort Stewart repaired the malfunctioned lift station pump and restored flow to the permitted wastewater treatment plant. Additional corrective action taken consisted of covering the involved land surface with agricultural lime for distribution and sampling to monitor the tributary. Any questions can be directed to the Directorate of Public Works Environmental Branch at 312-767-2010.

APPENDIX E
COMMENTS RECEIVED ON THE DRAFT EA
AND RESPONSE TO COMMENTS

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OFFICE OF PLANNING AND BUDGET

Nathan Deal
Governor

Debbie Dlugolenski Alford
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Katrina Epps
DPW-Environmental Div.
Dept. of the Army

FROM: Barbara Jackson *BJ*
Georgia State Clearinghouse

DATE: 5/4/2012

APPLICANT: Dept. of the Army

PROJECT: Draft EA/Draft FONSI: Remagen Drop Zone Improvements at Fort Stewart, Georgia

STATE ID: GA120405003

The applicant/sponsor coordinated directly with DNR's Environmental Protection Division and DNR's Historic Preservation Division, two of our state reviewers for this type project.

The applicant/sponsor is advised that DNR's Wildlife Resources Division was included in this review but did not comment within the review period. Should they submit comments within the next two weeks, we will forward to you.

/bj
Enc.: Georgia Forestry Cmsn, Apr. 18, 2012
cc: Amber Franks

Form NCC
Oct. 2008

Office: 404-656-3855

AN EQUAL OPPORTUNITY EMPLOYER
270 Washington Street, S.W., Atlanta, Georgia 30334

Fax: 770-344-3568

GA Voicemail Fax

D 00 Remote ID: R page 01 of

**GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS**

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, 8th Floor
Atlanta, Georgia 30334

FROM: MR. DAN GARY
GEORGIA FORESTRY COMMISSION

APPLICANT: Dept. of the Army - Fort Stewart, GA

PROJECT: Draft EA/Draft FONSI: Remagen Drop Zone Improvements at Fort Stewart,
Georgia

STATE ID: GA120405003

FEDERAL ID:

DATE: 4/18/2012

- This project is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This project is not consistent with:

- The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word(s) and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID no. and any Federal ID no. on all pages.)
- The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID no. and any Federal ID no. on all pages.)

- This project does not impact upon the activities of the organization.

**NOTE: Should you decide to FAX
this form (and any attached pages),
it is not necessary to mail the
originals to us. [770-344-3568]**

RECEIVED

APR 18 2012

**GEORGIA
STATE CLEARINGHOUSE**

Form SC-3
Mar. 2012

TOTAL P.01



MARK WILLIAMS
COMMISSIONER

A.G. 'SPUD' WOODWARD
DIRECTOR

May 22, 2012

Mrs. Katrina S. Epps
Fort Stewart Directorate of Public Works
Environmental Division
1587 Frank Cochran Drive
Fort Stewart, Georgia 31314

RE: Consistency Determination DEA/DFONSI for Remagen Drop Zone Improvements, Fort Stewart, Liberty County, Georgia

Dear Mrs. Epps:

Staff of the Coastal Management Program has reviewed your undated letter, received April 5, 2012, along with the attached Draft Environmental Assessment (DEA) and Draft Findings of No Significant Impact (DFONSI) for the Remagen Drop Zone (DZ) improvements. The proposed action includes increasing the minimum usable width of the DZ to 600 yards by removing trees and clearing 131.7 acres of uplands, by removing 38 potential training hazards that could injure parachutists or damage equipment (including closed borrow pits, concertina wire, drainage repair, earthen mounds, structures, stumps or riprap) and removing an 2.267 cubic yards of berm material. No impacts are proposed to jurisdictional freshwater or saltwater wetlands.

The Program concurs with your consistency determination. This determination ensures that the proposed project has been designed to comply to the maximum extent practicable with the applicable enforceable policies of the Georgia Coastal Management Program.

Please feel free to contact Kelie Moore or me if we can be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "A.G. Woodward".

A.G. "Spud" Woodward
Director

SW/km

ONE CONSERVATION WAY | BRUNSWICK, GEORGIA 31520-8686
912.264.7218 | FAX 912.262.3143 | WWW.COASTALGADNR.ORG

From: [Epps, Katrina S CTR \(US\)](mailto:Epps_Katrina_S_CTR@US)
To: dstair@specproenv.com; [Berry, Stephen A.](mailto:Berry.Stephen.A.); [Everson, Chrystal L.](mailto:Everson.Chrystal.L.); [Paulson, Amy E.](mailto:Paulson.Amy.E.); [Antolik, Frances G.](mailto:Antolik.Frances.G.)
Subject: FW: Remagen Drop Zone Improvements Project, Ft. Stewart (UNCLASSIFIED)
Date: Monday, May 14, 2012 12:15:57 PM

Classification: UNCLASSIFIED
Caveats: NONE

Please see our response to him.

-----Original Message-----

From: Epps, Katrina S CTR (US)
Sent: Monday, May 14, 2012 12:13 PM
To: 'Dale Caldwell'
Cc: Franks, Amber E CIV (US)
Subject: RE: Remagen Drop Zone Improvements Project, Ft. Stewart (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Mr. Caldwell,

Please see the stream and wetland impacts summary below regarding the Remagen Drop Zone (DZ) Improvements Environmental Assessment.

Wetlands: The current design of the proposed action avoids wetlands, and no direct impacts to wetlands would occur from implementation of the preferred alternative. Best Management Practices (BMPs) would be employed to ensure no indirect impact to adjacent wetlands occurs during DZ improvements. As such, no adverse impacts to wetlands are expected under the preferred alternative.

Streams: There is a man-made vegetated ditch near the middle and southeastern portion of the Remagen DZ. This ditch is not state waters; therefore, a 25-foot buffer variance is not required. This ditch drains sheet flow runoff from the DZ and discharges into a nearby wetland system beyond the western boundary of the Remagen DZ and then into a tributary of Long Branch Creek. Under the proposed action, this ditch would be reshaped or filled in to remedy past erosion and/or prevent future erosion. BMPs would be employed during any work done on the ditch, and any exposed soil stabilized to prevent sedimentation into the wetland downstream. In addition, DPW Environmental staff will periodically monitor the work to ensure compliance. However, the current design of the proposed action avoids waters of the state and no direct impacts to waters of the state would occur from implementation of the preferred alternative.

Please let me know if you have any further concerns or questions.

Thank you,

Katie Epps

-----Original Message-----

From: Dale Caldwell [<mailto:Dale.Caldwell@dnr.state.ga.us>]
Sent: Tuesday, May 08, 2012 1:49 PM
To: Epps, Katrina CTR US USA
Subject: Remagen Drop Zone Improvements Project, Ft. Stewart

Katrina,

Are there any stream or wetland impacts associated with the above referenced project?

Dale Caldwell
Environmental Compliance Specialist
GA DNR Environmental Protection Division
400 Commerce Center Dr.
Brunswick, GA 31523-8251
912-261-3924
912-506-9374 cell

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

-----Original Message-----

From: Larry Gissentanna [<mailto:Gissentanna.Larry@epamail.epa.gov>]
Sent: Thursday, May 31, 2012 2:54 PM
To: Epps, Katrina S CTR (US)
Cc: Franks, Amber E CIV (US); Heinz Mueller; Traci Buskey
Subject: Comments on Draft EA for the Remagen DZ Improvements at Fort Stewart, Georgia

Mrs Katrina S. Epps,

Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) appreciates the opportunity to review the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FNSI) for the Remagen Drop Zone (DZ) Improvements at Fort Stewart, Georgia.

EPA understands that the purpose of this proposed action is to improve an existing DZ at Fort Stewart to support cargo and personnel drop training by the United States (U.S.) Army and U.S. Air Force. Improvements would include increasing the minimum usable width of the DZ to 600 yards by removing trees that have encroached upon the existing DZ and removing potential training hazards to meet specified Department of Defense (DoD) DZ standards .

From EPA's perspective it appears that the major issues, e.g., noise, wetlands, and water/air quality, energy and environmental justice are adequately addressed in this Draft EA.

EPA concurs with the Fort Stewart's Preferred Alternative. Upon completion of your Final Environmental Assessment, please forward an electronic copy to this office: If you have any question, you may contact me via the information below.

Again, Thank you for the opportunity to provide comments to your Draft EA.

Larry O. Gissentanna
DoD and Federal Agency, Project Manager
NEPA Program Office
U.S. Environmental Protection Agency/ Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-8960
Office: 404-562-8248
gissentanna.larry@epa.gov

Classification: UNCLASSIFIED
Caveats: NONE

2	Page 3-5, Section 3.4.1.2, 1 st Paragraph	This section states that there is an upland cut ditch that drains sheet flow runoff from the DZ. One recommendation is to fill in this ditch. If the ditch is filled in how will the DZ drain surface water?	There is a man-made vegetated ditch near the middle and southeastern portion of the Remagen DZ. This ditch drains sheet flow runoff from the DZ and discharges into a nearby wetland system beyond the western boundary of the Remagen DZ and then into a tributary of Long Branch Creek. Under the proposed action, this ditch would be reshaped or filled in to remedy past erosion and/or prevent future erosion. BMPs would be employed during any work done on the ditch, and any exposed soil stabilized to prevent sedimentation into the wetland downstream. The water will continue to drain via sheet flow into the same wetland system. Fort Stewart DPW Environmental would ensure adherence with construction NPDES permitting/E&SPCP for 0.75 acres or greater, and EISA Section 438 & CSS requirements for runoff reduction, water quality, and flood protection.
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SAD Form 3058-R
1 Mar 81

PREVIOUS EDITION MAY BE USED UNTIL SUPPLY EXHAUSTED