DEPARTMENT OF THE ARMY DIRECTORATE OF PUBLIC WORKS FORT BRAGG GARRISON COMMAND (AIRBORNE) INSTALLATION MANAGEMENT AGENCY FORT BRAGG, NORTH CAROLINA

ENVIRONMENTAL ASSESSMENT and DRAFT FINDING OF NO SIGNIFICANT IMPACT for the

CONSTRUCTION OF AN URBAN ASSAULT COURSE (PN 57314)

at FORT BRAGG MILITARY RESERVATION, NORTH CAROLINA



3 April 2006

Prepared by:



In compliance with the National Environmental Policy Act of 1969

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Directorate of Public Works Fort Bragg Garrison Command (Airborne) Installation Management Agency ATTN: IMSE BRG PW Fort Bragg, North Carolina 28310

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) provides an analysis of the environmental and socioeconomic effects of the following proposed action.

1. Proposed Action. Fort Bragg Military Reservation (the "Installation") proposes to construct a new urban assault course in the Range and Training Lands on the Installation. The proposed action includes the construction an urban assault training complex that would include five sequenced training stations (three of which would be live fire), an operations/storage building, an after action shelter, and associated utilities infrastructure and gravel parking. No generator would be installed as part of this project. These projects would be constructed between Fiscal Year (FY) 2006 to FY 2008. More complete details about these projects are provided in Section 2.0 of the Environmental Assessment (EA). These projects are assessed in this EA based on the best information and data currently available for each at the time of its publication.

These projects would address the insufficient quantity of urban assault training facilities currently available at Fort Bragg. In general, there is only one other range at Fort Bragg that offers similar, though incomplete, facilities for this type of training. There are two primary needs that this project would address. First, the Installation anticipates an increase in troop populations due to Army force structure changes (see the Brigade Combat Team EA, June 2005, for more information; DPW, 2005) and the upcoming Base Realignment and Closure (BRAC) process (assessment of this action is pending; to be completed late 2006). To support the current and expected troop populations, it is necessary for Fort Bragg to construct additional urban assault training facilities.

Second, in the Global War On Terrorism (GWOT), these types of combat situations are increasingly common. The XVIII Airborne Corps at Fort Bragg is the first response team for the United States; therefore, it is imperative that troops here are well-trained in these tactics. Providing this training complex would address both needs and provide flexibility to train for different urban combat scenarios.

2. Description of Alternatives. The EA describes four alternatives total. Alternative 1 is the No Action Alternative. This alternative assessed the impacts of continuing to use the current urban assault training facilities at Fort Bragg. The remaining three alternatives assessed different locations across the Installation where the new facilities might be constructed. Generally, these three alternative locations are: Alternative 2, reconfiguring the facilities and layout of Range 60; Alternative 3, reconfiguring Range 62; and Alternative 4, reconfiguring Range 34. All alternatives were fully assessed by Installation resource managers and documented in the EA.

3. Anticipated Environmental Impacts. The EA assessed the proposed actions and the various alternatives for all relevant social and environmental resources. Implementation of the No Action alternative or any of the other alternatives would not have any significant impacts on any environmental or socioeconomic resources on the Installation or in neighboring communities. There would be no

measurable changes in socioeconomic conditions from implementation of any of the alternatives, resulting also in no impacts regarding environmental justice issues (EO 12898) or protection of children (EO 13045). Lastly, no development constraints were found at any of the assessed alternative locations that would prohibit their use for implementation of the proposed actions.

The EA concludes that the Proposed Actions could be implemented at any of the alternative locations with no significant impacts. Given this, the EA selected Alternative 2 (Reconfigure Range 60) to implement the proposed actions.

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ACRONYMS AND ABBREVIATIONS

ACM	Asbestos Containing Materials
AFB	Air Force Base
AR	Army Regulation
ATFP	Anti-Terrorism Force Protection
BA	Biological Assessment
BMP	Best Management Practice
BO	Biological Opinion
C&D	Construction and Demolition
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CRMP	Cultural Resource Management Program
CWA	Clean Water Act
СХ	Categorical Exclusion
DOD	Department of Defense
DPW	Directorate of Public Works
EA	Environmental Assessment
ECB	Environmental Compliance Branch
EMB	Environmental Management Branch
EO	Executive Order
FSA	Endangered Species Act
ESMP	Endangered Species Management Plan
FNSI	Finding of No Significant Impact
FORSCOM	Forces Command
FRP	Facility Reduction Program
GC	Garrison Commander
ICRMP	Integrated Cultural Resource Management Plan
	Integrated Natural Resource Management Plan
IRP	Installation Restoration Program
IRP	Lead-Based Paint
	Land Clearing and Inert Debris
	Low Impact Development
	Military Assault Course
mad	Million gallons per day
	North Carolina Department of Environment and Natural Resources
NCDOT	North Carolina Department of Transportation
	National Environmental Policy Act
	National Environmental Folicy Act
	National Pollutant Discharge Elimination System
	National Foliutant Discharge Limination System
	National Pagistar of Historia Diacos
NINTE NIM/I	National Wetland Inventory
	Project Number
	Project Number Red cockaded Woodpocker
	Region of Influence
	Surface Denger Zene
SUZ	Suilace Daliger Zone
SECF	Soli Elosion Control Plan
	Square reel
SHPU	State Fistoric Preservation Officer
	Subject Waller Experi Standarda and Training Commission
	Stanuarus anu Training Commission Salid Maata Managamant Unit
	Juliu Waste Management Unit
	Treining Circuler

TNC	The Nature Conservancy
UAC	Urban Assault Course
UFC	Unified Facility Criteria
USACE	United States Army Corps of Engineers
USASOC	United States Army Special Operations Command
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

ENVIRONMENTAL ASSESSMENT for the

CONSTRUCTION OF AN URBAN ASSAULT COURSE (PN 57314) at

FORT BRAGG MILITARY RESERVATION, NORTH CAROLINA

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The Fort Bragg Military Reservation (hereafter, the "Installation") proposes to construct an Urban Assault Course (UAC; Project number [PN] 57314) within existing range lands on the Installation. This new facility would provide squad and platoon-size units with a facility to train and evaluate urban operations tasks. The XVIII Airborne Corps, the United States Army Special Operations Command (USASOC), and other active Army, Reserves, and National Guard units would use this training course. Section 2.0 of this environmental assessment (EA) provides a full description of the UAC components.

1.2 Purpose and Need for the Proposed Action

Several units stationed or training at the Installation require a specialized training facility that simulates urban conflict. Requirements for this type of training facility are found in Training Circular (TC) 90-1 ("Training for Urban Operations"). Urban conflicts are becoming increasingly more common. As a result, units at Fort Bragg need facilities that provide the ability to train for and engage in live-fire exercises in a number of urban scenarios.

Presently, the Installation has no standard or adequate UAC. Troops train on ranges that do not meet the current standard described in TC-25-8 (Training Circular for Training Ranges). Current ranges do not allow for training of advanced live fire techniques in urban terrain. Also, there are no adequate facilities available at the Installation or any other facility within a 50-mile radius that provide urban assault training.

Construction of this facility would provide a permanent, standard UAC designed and constructed in accordance with the Standards in Training Commission (STRAC) requirements and the unit training requirements identified in TC 90-1. Existing training land at the Installation is available to construct this facility.

1.3 Decision to be Made

The Proponent for this project is the Garrison Commander (GC) of the Installation. It is the responsibility of the GC to review the information and analyses in this EA and decide at which alternative location this project will be constructed based on that information.

1.4 Alternative Selection Criteria

Based on the goals and objectives for this action described in the Purpose and Need above, the following screening criteria will be used to assess the reasonable alternatives to be considered in this EA:

1. Non-conflict with existing mission activities and assignments. Alternatives considered in this EA may not conflict with existing mission assignments and training activities. Alternatives that disrupt, displace, or eliminate necessary mission activities will be eliminated from full consideration.

2. Compliance with current installation security requirements. Alternatives considered must provide sufficient security and protection for the assigned units and their daily mission activities as per anti-terrorism/force protection (AT/FP) requirements (Forces Command [FORSCOM] Operations

Order 01-98 *Force Protection*, mission safety requirements, and Unified Facility Criteria (UFC) 4-010-01 (8 Oct 2003) *Department of Defense (DOD) Minimum Antiterrorism Standards for Buildings*. Alternatives unable to meet these requirements will be eliminated from full consideration.

3. Compliance with current range safety requirements. Alternatives considered must provide sufficient surface danger zones (SDZs) for live fire activities per Army Regulation (AR) 385-63 "Range Safety" and TC 25-8 "Training Ranges." Alternatives unable to meet these requirements will be eliminated from full consideration.

4. No conflict with sites eligible or potentially eligible for listing on the National Register of Historic Places (NRHP). Potential alternatives will be reviewed to determine if the sites contain cultural resources that are eligible or potentially eligible for listing on the NRHP or are located in an historic district. Sites that do not contain such sites, or contain such sites that may be avoided, are considered feasible with respect to this criterion. Alternatives that contain such sites that cannot be avoided during development are not considered feasible and will be eliminated from full consideration.

5. No conflicts with Installation Restoration Program (IRP). Alternatives considered must not conflict with current Solid Waste Management Units (SWMUs) as determined by the Fort Bragg Directorate of Public Works (DPW) Environmental Compliance Branch (ECB) or with the setbacks established by the Decision Documents for each site. Permanent structures (including storage buildings) assessed in this EA must meet the setback limits of 100 feet from the landfill boundary (*i.e.*, the SWMU fence). No intrusive or trespass actions are allowed within fenced sites to protect human health and the environment. Alternative locations that are determined to conflict with existing SWMU management practices will be eliminated from full consideration in this EA.

6. Compatibility with existing land uses. Any alternative considered must provide a site that has and is surrounded by land uses compatible with live-fire military training exercises. Any alternative that cannot provide such compatibility will be eliminated from full consideration in this EA.

7. Regulatory compliance. Alternatives considered must comply with all applicable federal, state, local, and Installation laws, regulations, and policies. Any alternative that fails to comply with one or more of these will be eliminated from further consideration.

1.5 **Project Scoping and Public Involvement**

1.5.1 Project Planning Meetings

On 19 September 2005, the project manager and representatives from Fort Bragg Range Control met in an initial project scoping meeting to discuss the details of the proposed actions and identify any reasonable alternatives. The information provided at this meeting was used to develop the initial project documentation and maps presented to the SMEs at the second project scoping meeting.

On 22 September 2005, a second project scoping meeting was held to discuss the proposed actions, the possible alternatives, and the concerns the Fort Bragg subject matter experts (SMEs) might have with those actions and alternatives. Appendix B at the end of this document contains this meeting's attendance list and meeting notes.

As this document was developed, the SMEs also provided review of their respective resource sections to verify the resource descriptions and impact assessments in those sections. The comments, concerns, and recommendations made at these meetings and in the project review comments are incorporated as necessary in the impacts discussion of Section 3.0.

1.5.2 Key issues to address in this EA

Based on the results of the two project scoping meetings, it was determined that the proposed actions potentially would have impacts on only the resource areas in the following list. As a result, the resource and impacts assessment discussions in Section 3.0 will be limited to these resource areas:

- Wetlands;
- Endangered Species (Red Cockaded Woodpecker [RCW], particularly);
- Stormwater management and erosion control;
- Hazardous materials / waste, particularly asbestos issues; and
- Potable water.

All other resource areas were determined to have no impacts, and thus will not be fully assessed in this EA. See Section 3.1.2 for more information on this.

1.5.3 Public Participation Process

The EA and a draft Finding of No Significant Impact (FNSI) will be made available to state and federal agencies and the public for a 30-day review period once they are completed. During the public review and comment period, copies of the draft EA will be made available online at http://www.bragg.army.mil/envbr/nepa_review.htm and at the following locations:

- Cumberland County Library, 300 Maiden Lane, Fayetteville, NC 28301.
- John L. Throckmorton Library, Bldg. 1-3346, Randolph St., Fort Bragg, NC 28310.

During and immediately following this public comment period, any comments received will be collected, logged, and incorporated into the EA and draft FNSI as necessary. Once all comments from comment period have been received, a final FNSI (and final EA, if necessary) will be prepared and released to the appropriate local, state, and federal repositories.

1.6 Scope of this EA

Title 32 Code of Federal Regulations (CFR) Part 651 (29 March 2002) implements the National Environmental Policy Act (NEPA) of 1969 for the Army and requires Army Installations to consider the environmental impacts of a proposed action and its alternatives prior to proceeding with those actions.

Military construction projects that do not meet any of the listed categorical exclusions (CX) must undergo an environmental impact analysis to determine whether the proposed action may have a significant impact on the environment. The proposed site activities will exceed five contiguous acres and does not meet any of the listed CXs. Therefore, this EA is necessary to assess the potential environmental impacts of the proposed action.

This EA is limited to assessing the environmental and socioeconomic effects that might result from the identified alternatives during the planning, design, and construction of the selected alternative. Construction of the selected alternative is anticipated to begin Fall 2006 with construction close-out estimated for Fall 2007. The scope of this EA also includes the alternative locations described in Section 2.2.

The proposed actions assessed in this EA should be viewed as representative of the type and magnitude of activities that would occur at the cited locations at Fort Bragg. If the proposed actions

change in scope or timing once the EA is completed, the findings presented in this EA will be used to determine if any supplemental environmental documentation is required.

This EA was written with the best data and information available at the time of its development. Any changes to the project scope (*e.g.*, location, size, or number of projects) or its potential impacts (*e.g.*, new information is found about potential impacts on any of the resources described herein or on additional resource areas) requires that the project manager responsible for this project shall coordinate with the Fort Bragg NEPA team to reevaluate this document for consistency with and applicability to the revised project. Any changes in the scope of the described action inconsistent with the descriptions and assessments in this EA shall require a reevaluation of the conclusions of this EA. This reevaluation shall be performed based on the new information and shall result in either a finding of sufficiency between this EA and the new project information, or the completion of a supplemental NEPA analysis to assess the potential impacts of the new project scope. All work on the action exceeding that described in this EA shall be halted until the new assessment is completed.

2.0 DESCRIPTION OF THE PROPOSED ACTION & ALTERNATIVES

2.1 Description of the Proposed Action

Fort Bragg proposes to construct an UAC at one of the existing ranges within the Installation Range and Training Lands. The standard UAC design includes five separate stations with their own requirements. The proposed UAC with all elements, stations, and parking would encompass less than nine acres. Based on the best available information, the UAC would be constructed with the following primary and supporting facilities:

Station 1 – Individual and Team Task/Technique Trainer. This station would be a threeroom live fire training facility where team leaders and squad leaders would train on the basics of building and room clearing. It would be a single story wood structure consisting of posts embedded in concrete foundations with wood sheathing for walls. No roof sheathing or slab-on-grade is required for this structure, but a lattice-work of wood will form a "roof." The floor will be sand to promote drainage. The footprint of this building would be 780 square feet (sf).

Station 2 – Squad and Platoon Task/Technique Trainer. This live fire station would have four structures with multiple rooms. This station would be designed so it could be used as individual buildings with a narrow street or as rooms inside a building with a long connecting hallway. Three of the four structures would be constructed the same as Station 1; the fourth structure would be a wooden two-story structure with wood framing.

Station 3 – Grenadier Gunnery Trainer. This station would be a live-fire station where M203 gunners master target engagements in an urban area, move tactically, and respond to fire commands. It would include an open area with concealment positions and target positions leading up to a wooden two-story façade with an elevated walk to access the second story windows. Targets would be installed on this range for the live-fire exercises to be performed here.

Station 4 – Urban Offense/Defense Building. This station would be for training a platoon to attack and/or defend a building. It also could be divided into a number of smaller training stations to reinforce training or to train tasks not yet trained at other stations. It would consist of a two-story building with a basement. It would be constructed of masonry, cast-in-place and precast concrete, and a wooden truss roof.

Station 5 – Underground Trainer. This station would provide training for subterranean operations. It would be constructed of buried, precast, 36-inch diameter sewer pipe sections.

Operations/Storage building. Also known as the Ammunition Distribution building, this structure would be a 12-foot by 24-foot (288 sf) one-story building with masonry walls, steel columns, and a wood truss and sheathed roof. The foundation would be concrete strip footings with concrete slab floor. This building would be used for temporary storage and issue of ammunition to units using the UAC. A second room would be used to store items used in the range operations.

Range Observation Platforms. Four 4-foot by 4-foot platforms would be constructed to facilitate observation of the training exercises. One platform each would be placed adjacent to Stations 1, 2, 3, and 4.

After Action Shelter. This shelter would be used after a training to discuss the results of that training between the instructors and the students. It would be a 64-foot by 24-foot, open sided structure with a floor of compacted earth covered by 2 inches of gravel. The roof would be asphalt fiberglass shingle roof supported by eight steel columns on concrete foundations.

Latrine and water supply. Sanitation facilities would be provided through the use of portable toilets. A well would be installed to provide non-potable water for construction purposes only. Once

construction is completed, the well would be plugged and abandoned in accordance with North Carolina Department of Environment and Natural Resources (NCDENR). No potable water source would be provided at this facility as part of the proposed action. Potable water would be brought by the units training at this complex via use of water buffalos, water trucks, personal hydration systems, or other similar devices.

Parking. There are no hardstands of pavement proposed for this project. Access roads and parking areas would be covered with crushed aggregate. There would be no defined sidewalks of concrete or asphalt. Maximum use of this facility at any one time would be limited to 100 personnel, most arriving by bus or truck.

Demolition Activities. This proposed action would include demolition of one building as part of the Facility Reduction Program (FRP). The functions of this building would be replaced by the new construction in the proposed action. The building to be demolished is Building A-3923. Due to its age, it will require an asbestos survey and potentially asbestos abatement prior to demolition. While lead-based paint (LBP) also may be present in this building due to its age, it would not be a concern. Since the building is to be demolished and not renovated, any LBP will be contained in the demolition debris and eventually encapsulated in the Fort Bragg landfill. As a precaution, this building will be wet down during the demolition process to reduce dust and visible emissions.

Utility services. Utility service to the site would be provided in a number of different ways. Electric service would come from a direct tie-in to power lines adjacent to the selected site. There would be no emergency generators installed on-site as part of this project. Potable water would be provided by use of water buffalos, water trucks, or other similar devices. Portable toilets placed at the range would provide sanitation facilities.

Other Information. Stations 1, 2, and 3 would be used for live-fire training. All three stations would be oriented and designed to support 5.56-mm service ammunition, with Station 3 also supporting 40-mm TP ammunition. These stations and the range generally would manage misfired cartridges and spent brass in accordance with AR 385-64, "U.S. Army Explosives Safety Program."

All buildings would comply with design criteria specified in the Fort Bragg IDG and the UFC DOD 4-010-01, *Minimum Antiterrorism Standards for Buildings*. These buildings also would meet all applicable state building codes. Further details about the architectural and construction details of these buildings may be found in the concept design report prepared by Stevens & Wilkinson of South Carolina, Inc. (USACE, 2005).

2.2 Alternatives Considered in this EA

The number of tenant units at the Installation is expected to continue to grow in coming years. The demand for training space at the Installation ranges continues to grow in response. Therefore, the availability of suitable and reasonable alternatives for new range activities is becoming more and more limited.

The alternatives considered below were identified during the project planning and design development processes as part of the discussions between the Installation Range Control office, Master Planning, and the units proposing to use the new facilities. Additional discussions about the suitability of each alternative occurred during the project scoping meeting held at the beginning of the EA development process.

2.2.1 Alternative 1: No Action Alternative (Use of Existing Facilities)

Consideration of the No Action Alternative is required by NEPA to provide a baseline against which the other alternative(s) may be compared. It would require that the XVIII Airborne Corps and the other units expected to use the proposed facility continue to train on ranges that do not allow for the specialized training in advanced live fire techniques in urban terrain. However, as noted in the purpose and need

(Section 1.0 of this EA), implementing this alternative would limit the ability of the units to adequately train for this type of combat. While feasible, this alternative is not desirable.

2.2.2 Alternative 2: Reconfigure Range 60

This alternative would construct the proposed actions using Range 60 at the Installation. Range 60 is located on the north side of Chicken Road about 0.7 miles east of the intersection of Chicken Road with Ken Road and Preachers Road. Presently, this range is used as a 25-meter zeroing range for calibrating M-16 sights. Figure 2-1 (at the end of this section) shows the current boundaries of Range 60 overlain by the boundaries of the proposed action. The proposed site boundaries shown on this figure are for rough estimation purposes only.

Use of this range for the proposed action would involve regrading the western two-thirds of the M-16 range and constructing the new training Stations 1, 2, and 3. Stations 3, 4, and 5 would involve some tree clearing and significant amounts of regrading to prepare the new protective berms at Station 3 and cover the concrete piping for Station 5. The eastern one-third of the M-16 range would remain as a zeroing range.

2.2.3 Alternative 3: Reconfigure Range 62

This alternative would construct the proposed actions using Range 62 at the Installation. Range 62 is located on the east side of Preachers Road about 0.8 miles north of the intersection of Preachers Road with Ken Road and Chicken Road. Figure 2-2 (at the end of this section) shows the current boundaries of Range 62 overlain by the boundaries of the proposed action. The proposed site boundaries shown on this figure are for rough estimation purposes only.

Currently, this range is used for training on a Military Assault Course (MAC) with a new shoot house being constructed as of the time of this EA. This range has a similar number and type of structures and training as the proposed UAC, but currently operates at its training capacity each year. Use of this range for the proposed action would involve renovation of the existing facilities and the addition of a grenadier gunnery training range and its associated facilities (Station 3 in the proposed action). There would be little change in the existing layout, but there would be some clearing and land grading necessary to develop the grenadier gunnery range.

As shown on Figure 2-2, the southwest corner of the proposed range is overlain by the core area of RCW cluster 0021. There are two cavity trees in this area. In order to minimize any disturbance of the RCW in this area, all construction, parking, or training activities would be prohibited in this area.

2.2.4 Alternative 4: Reconfigure Range 34

This alternative would construct the proposed actions using Range 34 at the Installation. Range 34 is located on the south side of Longstreet Road just east of the intersection of Longstreet Road and Lamont Road. Figure 2-3 (at the end of this section) shows the current boundaries of Range 34 overlain by the boundaries of the proposed action.

Currently, this range is used for field fire training, and is anticipated to be updated to an M-16 qualification range as part of the modular force changes in progress at the Installation. Use of this range for the proposed action would involve the removal of the existing berms and range lanes. Once done, the facilities for the UAC would be sited on the range with the least impact on the surrounding environment. The proposed boundaries shown on this figure are for rough estimation purposes only.

2.3 Alternatives Screening Process

2.3.1 Alternatives Eliminated from Full Consideration

Table 2-1 on the next page summarizes the results of the alternative screening discussion. None of the alternatives listed were eliminated from full assessment in this EA.

2.3.2 Alternatives Carried Forward for Analysis

Since none of the alternatives were eliminated based on the screening criteria, all four alternatives will be fully assessed in this EA.

2.4 Preferred Alternative

Of the alternatives considered, the preferred alternative is Alternative 2 – construction of the proposed actions on Range 60.

	Alternatives Considered (see Section 2.2 for descriptions)			
Screening Criteria	Alt 1 No Action	Alt. 2 Range 60	Alt. 3 Range 62	Alt. 4 Range 34
1. Conflict with Existing Mission?	No	No	No	No
2. Compliance with Installation Security & AT/FP requirements?	Yes	Yes	Yes	Yes
3. Compliance with Range Safety requirements?	Yes	Yes	Yes	Yes
4. Conflict with Endangered Species?	No	No	No	No
5. Conflict with Cultural Resources?	No	No	No	No
6. Conflict with IRP or SWMUs?	No	No	No	No
7. Compatible with existing land use?	Yes	Yes	Yes	Yes
8. Regulatory Compliance?	Yes	Yes	Yes	Yes
Status of Alternative?	Carry Forward	Carry Forward	Carry Forward	Carry Forward

Table 2-1 Summary of Alternative Evaluation Process

Notes: Responses highlighted with grey background and with an asterisk conflict with the screening criteria, causing the alternative to be discarded (except No Action Alternative). Even if the No Action Alternative has potential conflicts with the listed Screening Criteria, it must be carried forward for consideration as per 32 CFR 651 and Council on Environmental Quality (CEQ) Guidance.



Figure 2-1 Alternative 2: Range 60 – Current & Proposed



Figure 2-2 Alternative 3: Range 62 – Current & Proposed



Figure 2-3 Alternative 4: Range 34 – Current & Proposed

3.0 AFFECTED ENVIRONMENT & IMPACTS ANALYSIS

This section describes the existing environmental resources affected by the proposed actions and the potential impacts on those resources for each alternative considered. This section combines the standard "Affected Environment" and "Environmental Consequences" sections described in the CEQ regulations (40 CFR 1500-1508) and DA regulations (32 CFR 651) governing this document. Additional regulations governing the described resources are discussed as needed in the appropriate sections.

This section does not describe the entire existing environment of the proposed project sites, but instead focuses on those resources that would affect or be affected by the proposed actions if implemented as described in Section 2.1.

Each resource discussion begins with a brief description of that resource within the proposed action's region of influence (ROI). After the resource description, there is an assessment of the potential impacts on that resource from implementing the proposed actions and alternatives. In all cases, these impacts have been assessed and verified by an appropriate resource manager or SME at the Installation.

3.1 Assessing Impacts

3.1.1 General Information

Existence of an impact. An "impact" is defined as a noticeable change in a resource from the existing environmental baseline conditions caused by an action. The degree of change is determined by measuring the difference between the baseline conditions and the conditions that result following the assessed action. Any difference between the baseline conditions and the site conditions following an action suggests that the action has an impact on that resource.

Types of Impacts. There are three general types of impacts: direct, indirect, and cumulative impacts. Direct impacts are caused by the assessed action and occur at the same time and place as that action. For there to be a direct impact on a resource, that resource must be present in the area of the assessed action. For example, if highly erodible soils were disturbed due to construction, there would be a direct impact to the site soils from erosion.

Indirect impacts are caused by the assessed action but occur later in time or at some other location than that action. Even so, this type of impact is still reasonably foreseeable. To extend the prior example regarding disturbance of erodible soils, sediment-laden runoff might indirectly impact surface water quality in areas downstream from the project site.

Cumulative impacts result from the incremental effect of separate past, present, and reasonably foreseeable future actions on a resource. These impacts can accrue from individually minor but collectively significant actions taking place over an extended period of time. The assessment of cumulative impacts requires information from all the resource discussions. Section 3.8 provides more detailed information about these types of impacts.

Intensity of Impact. Once an impact is identified, the SME also must determine if an impact approaches a level of significance. "Significance", as defined by the CEQ in 40 CFR 1508.27 (*Regulations for Implementing NEPA*), requires consideration of both the context and intensity of the impact evaluated. Significance can vary in relation to the context of the proposed action, and thus, where significance is not defined by regulation or policy it must be evaluated in several contexts. These contexts vary with the setting of the proposed action, and can include consideration of effects across both time (short vs. long-term effects) and space (local vs. regional scale).

As per CEQ and Army NEPA guidance, an EA is only required to determine if an impact is significant or not. Thus, this document describes the intensity of an impact only as no impact, non-significant impact, or significant impact.

Sources of Information and Analyses. The resource information and environmental impact analyses provided in the following sections were provided, assessed, and verified by SMEs currently available at Fort Bragg or at other applicable local, state, or federal agencies. A complete list of the SMEs consulted for this EA is provided in Section 5.2 and 5.3. References are provided in the text where necessary to identify the source of specific information or analysis. A complete list of the references cited in this document is provided in Section 5.4.

3.1.2 Limiting the Impact Analysis

32 CFR 651 (*Environmental Analysis of Army Actions*) recommends that NEPA documentation seek to reduce its length and detail of analysis by focusing the content of those documents on being "analytic rather than encyclopedic" (32 CFR 651 Appendix E(a)(1)). This regulation provides for discussion of impacts "in proportion to their significance; and insignificant impacts will only be briefly discussed, sufficient to show why more analysis is not warranted."

To this end, this EA only discusses those resources areas on which one or more of the alternatives may have an impact or which are required by regulation to be assessed. The resource areas that will not be discussed in detail in this EA, and the brief reasons why not, include:

- **Biological Resources Fish, Wildlife, and general vegetation:** The alternatives to be assessed are already used as firing ranges by units at the Installation. As such, the modification and then continued use of these sites for the same function would not change the existing impacts on these resources.
- Water Resources Surface Water & Floodplains: The alternatives will not increase the impacts on nearby surface waters, and may decrease those impacts through better stormwater management methods. There are no floodplains on or near any of the alternative locations.
- **Cultural Resources:** The Fort Bragg Cultural Resources Management Program (CRMP) has reviewed the alternative locations and determined that the proposed action would be cleared to proceed on any of these locations. However, the CRB notes that, while unlikely, if unanticipated cultural or archaeological resources are identified during construction, personnel are required to stop all construction activities in the area and notify the CRB. Subsequent construction and consultation activities are required to follow the procedures outlined in the Installation Cultural Resources Management Plan (ICRMP). The CRB also would notify the State Historic Preservation Office (SHPO) within 48 hours if significant damage to an archaeological site has occurred.
- Air Quality Emission Sources: The Environmental Compliance Branch has reviewed the proposed action and has found no potential from the proposed action or alternatives to adversely affect regional or local air quality. There are no significant emission sources proposed and no sensitive receptors within the region of influence of the alternative locations.
- Solid Waste Management Units (SWMUs), Above Ground Storage Tanks (ASTs), Underground Storage Tanks (USTs): None of these items are located at any of the proposed sites, and none are to be installed as part of the proposed action.
- Lead Based Paint (LBP): Neither the proposed sites nor the building proposed for demolition contain LBP. With no LBP, there would be no impacts associated with handling or disposing it.

- Safety and Restricted Zones Airfield Clearance Zones: None of the proposed alternatives is within the airfield clearance zone of either the Installation or the regional airfields.
- Infrastructure Transportation: None of the alternatives will use any of the region's airfields or railroad routes. Further, the amount of traffic on range roads will not increase significantly over current levels as a result of the proposed action.
- Infrastructure Utilities: There would be no change in the communication, wastewater management, or gas utility systems as a result of the proposed action. Electrical demands will be minimal as nearly all training would occur during daylight hours. Very little electrical equipment and no new emergency generators would be installed as part of the proposed action. Potable water would be provided onsite by the units training at the complex using water buffalos, water trucks, or similar sources of water. Wastewater would be managed through the use of portable toilets onsite. Thus, there would be little or no impact on existing Installation utilities.
- Land Use: The assessed alternatives are all within the Fort Bragg range and training lands. Given that all of them are proposed within an area of appropriate land use and will not affect land use issues beyond the Installation boundaries, this resource area will not be discussed further.
- **Socioeconomic Impacts:** Local and regional populations and economies would be minimally affected by the proposed action, given the size of the construction project and the anticipated numbers of soldiers to be trained at the new facility. Nearly all the soldiers to be trained would come from the existing Installation population, further limiting the impacts of the proposed action on local housing markets and community services.

3.2 Biological Resources

3.2.1 Wetlands

Congress enacted the Clean Water Act (CWA) in 1972 to restore and maintain the chemical, physical, and biological integrity of the nation's waters. Section 404 of the CWA delegates jurisdictional authority over wetlands to the USACE and the US Environmental Protection Agency (USEPA). Waters of the United States protected by the CWA include rivers, streams, estuaries, most ponds, lakes, and wetlands.

Wetlands are important in several natural processes, including groundwater discharge and recharge, flood flow attenuation, sediment stabilization, nutrient removal or transformation, and as fish and wildlife habitat. Of the five federally endangered species found at Fort Bragg, two (Saint Francis's Satyr butterfly and rough-leaved loosestrife) depend on wetlands as habitat.

The USFWS completed National Wetland Inventory (NWI) mapping for all of Fort Bragg, showing approximately 9,200 acres of potential wetlands. While this method is cost efficient, it is not the most accurate depiction of the wetlands present. For alternative sites that show NWI wetlands, an accurate wetland delineation must be conducted to identify the true extent of jurisdictional wetlands present on those sites.

3.2.2 Threatened and Endangered Species

Plants and animals federally classified as endangered or threatened are protected under the Endangered Species Act (ESA) of 1973, as amended. These are collectively referred to as threatened and endangered (T&E) species. The goal of the ESA is to protect and restore populations of protected species and conserve the habitats upon which T&E species depend. The intent of the ESA emphasizes recovery of T&E species.

3.2.2.1 Endangered Plant Species

Fort Bragg has populations of three Federally-listed endangered plants: Rough-leaved loosestrife (*Lysimachia asperulaefolia*); Michaux's sumac (*Rhus michauxii*); and American chaffseed (*Schwalbea americana*). The 1997 Fort Bragg *Endangered Species Management Plan* (ESMP) provides monitoring and management programs for all three species (PWBC, 1997).

3.2.2.2 Endangered Animal Species

The RCW (RCW; *Picoides borealis*) and the Saint Francis' satyr butterfly (*Neonympha mitchellii francisci*) are the only Federally-listed endangered species known or expected to occur at Fort Bragg. The ESMP provides monitoring and management programs for the RCW and Saint Francis' satyr.

Saint Francis' Satyr Butterfly. The Saint Francis' satyr is one of the rarest and least known American butterflies. On Fort Bragg, it has 23 known colonies, which consists of one metapopulation. This extremely small geographic range encompasses only a few square miles. It is over 400 miles south of the nearest historic locality of its related nominate subspecies (*N. m. mitchellii*). This species is not found within, or proximate to, the alternative sites and, therefore, will not be discussed in detail in this EA.

Red Cockaded Woodpecker. As reported in the Installation Natural Resources Management Plan (INRMP; PWBC, 2001a), the RCW was once distributed throughout pine forests of the Southeast, from east Texas to peninsular Florida and northward to Oklahoma, Missouri, Kentucky, and Maryland. The species' current range is greatly reduced; populations are isolated, small, and, in many cases, declining. In 1973, the species was afforded protection under the ESA.

The RCW are unique among woodpeckers in that they excavate cavities in living pine trees that are used for roosting and nesting. Trees are typically 60 years old or older and infected with red heart fungus. The process of excavating a cavity usually takes one to several years to complete.

Trees used by a group for nesting and roosting are called a "cluster." A cluster may have from 1 to 30 cavity trees including trees with completed cavities, cavities in the process of being excavated (called "start holes"), and inactive cavities. More than one cavity and type of cavity can be present in a single tree. Usually the cavity trees used by a RCW group are located within a 1,500-foot diameter circle. The most desirable RCW habitat consists of open old pine stands with a diverse ground cover, consisting of warm season grasses, forbs, and legumes, and has few or no mid-story hardwood trees. The RCW is a cooperative breeder that lives in social groups. In addition to the core area of cavity trees, each group defends a territory that ranges from 100 acres to over 247 acres.

The endangered status of the RCW has had far-reaching effects at Fort Bragg. Among the more major effects was the establishment of the Green Belt as a result of a Section 7 consultation with the USFWS and part of a broader effort to support RCW habitat and its population (PWBC, 2001).

3.2.3 Potential Impacts from Identified Alternatives

3.2.3.1 Alternative 1: No Action Alternative

Under this alternative there would be no change from the urban warfare training activities currently performed at the Installation ranges, nor any change in the locations at which those activities are performed. Given their layout and ongoing maintenance activities, these locations and activities currently have minimal impacts on the biological resources in their immediate area. Thus, maintaining these activities would result in no change in the intensity of the minimal impacts these activities have on the biological resources at those locations.

3.2.3.2 Alternative 2: Reconfigure Range 60

Range 60 has NWI-delineated wetlands to the north and east. There also is a small area of NWIwetland located inside the southern boundary of this range, along Chicken Road. The Fort Bragg Natural Resources Division (NRD) performed a preliminary wetland delineation and prepared an updated map showing the delineated wetland areas. Figure 2-1 shows the current and proposed range boundaries, the NWI wetlands, and the Fort Bragg delineated wetlands at this site.

There are two RCW clusters that overlap Range 60: Cluster 0329 over the central to southwest portion of the site, and Cluster 0061 on the central to northeast portion of the site. The cavity trees for Cluster 0329 are located about one-third of a mile to the west of Range 60, while those for Cluster 0061 are located about one-quarter of a mile northwest of the range boundary.

Direct Impacts: The proposed action would be designed to avoid encroaching on and potentially impacting the wetlands north, east, and south of this site. Since this project would not be constructed in or impact on a wetland, there would be no direct impacts if the proposed action were built at Range 60.

As noted in Sections 3.3.3 (water quality management and conservation) and 3.4.1 (Soils and Soil Conservation), all necessary Best Management Practices (BMPs) would be used over the course of this project to avoid impacts on these wetlands. The actual BMPs proposed for this alternative are detailed in those two sections. Based on the proper and effective use of the recommended BMPs, potential impacts on nearby wetlands would be non-existent.

The recommended BMPs that would be used to prevent significant impacts for this alternative (and every alternative) are listed in Section 4.3.1.

A site survey conducted by Moorman, Kizer, and Reitzel, Inc. and habitat analysis by the Installation NRD concluded this alternative would have very little direct impact on the forage habitat of the two RCW clusters that overlay Range 60. Of the 413 trees estimated to be removed for this project, only 138 (33 percent) were listed as pine trees. The rest were oaks (216; 52 percent) and a mix of maples, dogwoods, hickory, and persimmon (15 total; 4 percent). The majority of these species are unsuitable as RCW forage or cavity tree habitat. The vegetation that might be suitable (*i.e.*, the pines) do not represent a significant percentage of the overall forage habitat of these two clusters. Thus, direct impacts on these clusters are non-significant (NRD, 2005b).

An endangered plant species survey conducted on 13 September 2005 concluded that there were no federally listed species found at this site (NRD, 2005a). Thus, there would be no direct or indirect impacts to endangered plant species from implementing the proposed action at this location.

Indirect Impacts: Proper and effective maintenance of erosion control measures would result in no indirect wetland impacts.

During the construction process, there would be short-term non-significant impacts on nearby RCW clusters from the construction noise. Once construction has been completed, there would be non-significant impacts on these nearby RCW clusters from the noise of the training activities.

3.2.3.3 Alternative 3: Reconfigure Range 62

Range 62 covers approximately 26 acres. Most of the site has been previously disturbed and currently is used for live-fire training.

There are two RCW forage partitions that overlap Range 62: Clusters 0020 across the northeast corner of the site and Cluster 0021 across the southern portion of the site. Both of the clusters are actively managed (breeding groups) and are part of the Mission Compatibility Goal for the Sandhills East RCW recovery population. The current and proposed range boundaries were drawn so that most of the suitable RCW forage for each cluster is located outside proposed range boundaries. However, there

are two cavity trees from Cluster 0021 that are inside the current and proposed range boundary in the southeast corner of the site.

There are two NWI-Delineated wetland sites located near Range 62. The closest is about 200 feet east-southeast of the range. The other wetland is about 900 feet west of the range, across Preacher's Road.

There are no endangered plant species sites located at this range.

Direct Impacts: There is a wetland area east of the old roadbed along the eastern boundary of this site. However, neither the proposed action nor its impacts would extend beyond this roadbed and all applicable BMPs would be used over the course of this project to avoid any impacts on these wetlands. The BMPs proposed for this alternative would be the same as those for the Alternative 2.

The forage habitat that belongs to local clusters is located outside of the proposed boundaries so there would be little to no direct impact on the RCW populations. The core RCW area in the southwest corner of this site would be off-limits to any construction, parking, or training activities in order to minimize any impacts on the two RCW cavity trees there.

Indirect Impacts: As long as BMP erosion control measures are implemented and carried out to prevent sedimentation, there would be no impacts on nearby wetlands.

The project is not expected to adversely affect the cluster viability of nearby clusters as long as appropriate design, site layout, and BMPs are implemented during and after construction.

3.2.3.4 Alternative 4: Reconfigure Range 34

The proposed size of Range 34 covers approximately 41 acres. Of these 41 acres, the current range of about 25 acres has been previously disturbed (cleared and graded) for use as a live-fire range. The remaining area is loosely vegetated scrub and hardwood with small stands of pine scattered throughout. Figure 2-3 shows these and the following details.

The NWI identifies a large wetland area to the south-southeast of Range 34. This wetland comes within about 100 feet of the proposed range boundary at the southeast corner of that boundary. However, this wetland area generally is about 500 feet or more from that boundary. No site survey has been performed to fully delineate the extent of these wetlands or to determine if there are additional wetlands within the current or proposed range boundaries.

Range 34 is on the southern edge of RCW clusters 0395 (to the northwest) and 0394 (to the northeast). Cluster 0394 is closest to this range (about 1,200 feet to the northeast) and is an active recruitment cluster. This cluster's forage partition overlaps all of Range 34 but the habitat is considered unsuitable for RCW's. The proposed range boundary overlaps about five acres of Cluster 0395's forage partition. This area also is mostly scrub and hardwood and considered unsuitable habitat for RCW's.

Direct Impacts: All necessary BMPs would be used over the course of this project to avoid impacts on the identified wetlands as much as possible. The BMPs proposed for this alternative would be the same as those for the Alternative 2.

The habitat that would be affected by the proposed action is not suitable for RCW's; therefore this alternative would have no significant impacts on the two nearby clusters.

Indirect Impacts: Developing this alternative would have potential long-term sedimentation impacts on the nearby wetlands if the proposed erosion control structures (*i.e.*, BMPs) were not maintained over the life of the project. However, the proper and effective use of these BMPs would prevent these impacts, rendering them non-significant.

There would be no indirect impacts on the RCW clusters or to the birds themselves.

3.3 Water Resources

3.3.1 Regulatory Compliance

The Army's water resources management program focuses on compliance with all applicable federal, state, and local laws and regulations regarding the management of all water resources. The following sections provide descriptions of the water resources within the ROI of the proposed actions and the alternative locations. Generally, Range 60 and 62 drain south first into Little Rockfish Creek, then Rockfish Creek, and then into the Cape Fear River. Range 34 also drains south but into Bones Creek. Bones Creek flows south, also draining into Rockfish Creek and the Cape Fear River.

3.3.2 Storm Water Management

The storm drainage system on the Installation consists of collection and diversion structures such as curb inlets, catch basins, stilling wells, storm sewers, and open drainage channels and ditches. All of the collected storm water discharges into natural drainage channels. This system is designed to be completely separate from the sanitary sewer system. Storm water exposed to possible contamination at equipment maintenance shops is routed through grit chambers and oil/water separators prior to discharge to sanitary sewers for further treatment at the installation sewage treatment plant. All other constructed storm water channels discharge to open ditches, channels, or creeks, flowing either in a northerly or southerly direction depending on the watershed in which they are located. The drainage courses are predominately earthen, although some have sides or bottoms with riprap or gabions. A few concrete channels exist that discharge into the earthen ditches.

Fort Bragg has a National Pollution Discharge Elimination System (NPDES) Storm Water Permit (NCS000331). NCDENR assigns this permit to the Installation as a whole. Thus, it is the Installation's responsibility to ensure compliance with this permit for all sites and activities on post. Fort Bragg currently is under Phase I of this permit, giving the Installation permission to discharge storm water from industrial sites, including motor pools. Additionally, each construction site on the Installation that is one acre or more in size is issued a temporary storm water construction permit by NCDENR once an erosion control plan has been approved by that agency.

In April 2007, Phase II of the storm water permit will become the new storm water management guideline for the Installation. This phase still will regulate industrial site discharge but will expand its coverage to regulate discharges from additional sites. All new construction one acre or more in size still will be required to obtain a temporary construction permit but more sites will be covered under these new guidelines for post construction storm water management.

There is no existing storm drainage infrastructure in the Northern Training Area. Rainfall either infiltrates the sandy soil or accumulates into wetlands or streams.

The storm water drainage system at Fort Bragg is generally able to meet the demands of normal rainfall conditions. Gradients are adequate, and conduits are generally in good condition and of sufficient size to convey design storms. However, the soils are susceptible to erosion, and this is one of the major problems at the Installation related to storm drainage.

To reduce these impacts, Fort Bragg instituted several BMPs required of all new development. These include the use of Low Impact Development (LID) measures to control storm water in a sustainable way. All new development is required to control its storm water runoff so that post-construction runoff does not exceed pre-development discharge rates. To calculate these rates, all site pre-development conditions are assumed to be forested land use with the existing soils and topography and 100 percent pervious ground cover. All new construction is required to develop an erosion control plan to control erosion and runoff during and after construction. Additional related BMPs are available from the Installation Water Management Branch and the Installation Design Guide.

3.3.3 Water Quality Management and Conservation

Storm water discharges from industrial facilities are regulated under the Installation NPDES permit (#NCS000331) issued in May 2002.

The primary potable water source for Fort Bragg is the Lower Little River, though other surface water bodies also provide potable water. Water from the Lower Little River is treated at the water treatment plant for use in the cantonment and at Pope Air Force Base (AFB). There are a few wells in the range and training areas that provide potable water. However, by agreement with NCDENR no new potable water wells are to be drilled in the range and training areas. More commonly, potable water is brought to the ranges by the units training there. There are no potable water wells currently in use at any of the three proposed locations.

The wastewater treatment plant, operating under a USEPA NPDES permit (#NC0003964) discharges treated wastewater into Little River. The discharge from the treatment plant has been in compliance with all NPDES effluent limitations.

Fort Bragg manages its water conservation efforts by subdividing the reservation into 62 watershed management units. There are approximately 6,305 acres of restricted areas around Installation lakes and streams to protect the surface waters and downstream users. Surface waters are protected, in part, by 100-foot-wide buffer strips along the shore of each lake and stream bank. Training restrictions, such as no mechanical digging or earth moving, control the activities within these buffer areas in the range and training areas.

3.3.4 Potential Effects of the Proposed Alternatives

Every alternative location assessed in this EA has the same low potential for impact on surface & groundwater quality, floodplains, storm water management, and water quality management. The No Action Alternative would not result in any additional impacts from the current range activities, provided all storm water management and water quality management structures and equipment are kept in proper working order.

For the remaining alternative locations, Fort Bragg and the State of North Carolina have very defined building codes and BMPs designed to minimize impacts, as noted in the discussion above. Regardless of which alternative location is selected, these codes and BMPs shall be incorporated as a standard part of the contracting and construction process.

As a result, all of the alternative locations considered would have a non-significant potential for impacts on the water resources of the Installation and the region.

3.4 Geology and Soils

3.4.1 Soils and Soil Conservation

The surface of Fort Bragg is predominantly covered by sandy soils whose composition ranges from loose sands to silty and clayey sands in some subsoils. Most of these soils are well-drained or even excessively well-drained. Poorly drained soils are primarily limited to flood plain and some terrace deposits that tend to be silty sands of usually high organic content.

Each of the soil types found at the Installation has particular engineering limitations (*i.e.*, limits as to what may be constructed on them). These soil types and their limitations are discussed in detail in the US Geologic Service (USGS) soil surveys for the region. The information in those documents is incorporated into this EA by reference. All of these engineering considerations would be accounted for at any of the alternative locations through proper application of the relevant state regulations and building codes.

Soil conservation is a high priority in any area of Fort Bragg that has insufficient ground cover. This is due primarily to the sandy and easily eroded nature of most soils in the region. A combination of vegetative and drainage system maintenance is necessary to address these concerns.

Fort Bragg and NCDENR have defined several BMPs that must be followed to prevent erosion and consequent damage to endangered species habitat or sedimentation of streams and wetland areas. These requirements include the development and implementation of a sedimentation and erosion control plan (SECP) for projects exceeding one acre reviewed and approved first by the Fort Bragg Water Management Branch and then by NCDENR at the state level. Any projects smaller than an acre still must have a SECP reviewed by the Fort Bragg Water Management Branch and in place before construction begins.

All construction, operation, and maintenance activities involving land disturbance must consider and comply with soil conservation measures and the Installation's Storm Water Management Permit in their planning and execution. Fort Bragg's soil conservationist reviews all projects for compliance.

3.4.2 Potential Effects of the Proposed Alternatives

3.4.2.1 Alternative 1: No Action Alternative

The No Action alternative would not change any of the current training activities at the alternative locations. As a result, there would not be any change to the impacts on the topography or soils of the Installation.

3.4.2.2 Alternative 2: Reconfigure Range 60

Range 60 slopes downhill from west to east with an elevation change from 75 meters to about 60 meters above sea level along that grade (about a 5.8 percent slope). The two soil types on this range (Blaney loamy sand, 2 to 8 percent slope [BaB], and Gilead loamy sand, 2 to 8 percent slopes [GdB]) are both listed as prime agricultural soils. Little Rockfish Creek runs north to south about 100 meters east of this range.

To prevent impacts on the soils of the site and to the nearby wetlands and river, construction on this site would require a NCDENR-approved SECP and permit. All necessary BMPs should be documented in this plan and used to prevent these activities from causing impacts in terms of soil erosion and sedimentation downstream. If Fort Bragg implements this alternative, soil impacts would be rendered non-significant by the use of appropriate BMPs for controlling runoff, erosion, and sedimentation.

3.4.2.3 Alternative 3: Reconfigure Range 62

Range 62 slopes downhill from north to south with an elevation change from about 92 meters to 85 meters above sea level along that grade (about a 1.4 percent slope). Of the two soil types on this range (Blaney loamy sand, 8 to 15 percent slopes [BaD], and Candor sand, 1 to 8 percent slopes [CaB]), BaD is listed as prime agricultural soils. The stream running north to south about 480 meters east of this range eventually runs into Little Rockfish Creek near Range 34.

To prevent impacts on the soils of the site and to the nearby wetlands and river, construction on this site would require a NCDENR-approved SECP and permit. All necessary BMPs should be documented in this plan and used to prevent these activities from causing impacts in terms of soil erosion and sedimentation downstream. If Fort Bragg implements this alternative, soil impacts would be minimized by the use of appropriate BMPs for controlling runoff, erosion, and sedimentation.

3.4.2.4 Alternative 4: Reconfigure Range 34

The topography of Range 34 is mostly flat with a slight slope from north to south. The elevation changes from about 92 meters at the northern boundary to about 88 meters above sea level at the southern boundary (about a 1.2 percent slope). There is a small stream 30 meters west and another

stream about 230 meters east of the current range boundaries. Both streams eventually flow south together to become Bones Creek. The western stream is inside the proposed boundary of the range area.

To prevent impacts on the soils of the site and to the nearby wetlands and river, any construction activities would need to follow the BMPs identified by the Fort Bragg Water Management Branch to protect against erosion and sedimentation. Construction on this site would require a NCDENR-approved SECP and permit. All necessary BMPs should be documented in this plan and used to prevent these activities from causing impacts from soil erosion and sedimentation downstream. If Fort Bragg implements this alternative, soil impacts would be minimized by the use of appropriate BMPs for controlling runoff, erosion, and sedimentation.

3.5 Human Health and Safety

3.5.1 Solid Waste Management

Solid wastes generated by Fort Bragg are recycled, disposed of in landfills, or incinerated. Fort Bragg does not have an active municipal solid waste landfill. Private contractors collect and dispose of municipal solid waste from the Installation. Construction and demolition (C&D) waste and land-clearing and inert debris (LCID) is disposed of on-post at the combined waste landfill (C&D and LCID waste) located on Lamont Road. Asbestos is buried in a separate permitted landfill area. Special wastes such as non-hazardous solid wastes generated by industrial activities that cannot be disposed of as general refuse are managed and disposed of in accordance with current standards and practices.

The combined LCID / C&D landfill has a remaining life of about 14 to 15 years, based on a projected waste disposal rate of 228,000 tons per year. In order to extend this useful life as far as possible, Fort Bragg also has a recycling program to identify and remove from the waste stream those materials that may be reused or recycled. Items included in the recycling program include cardboard, newspaper, magazines, plastic, aluminum, and cardboard. In addition to the recycling program, concrete and brick are crushed and re-used as erosion control material. Non-saleable trees and shrubs are chipped and used as mulch around the Installation (PWBC, 2004).

3.5.2 Asbestos

Asbestos and asbestos containing materials (ACM) are managed at Fort Bragg in accordance with the Fort Bragg Facility Asbestos Management Plan. ACM was widely used throughout the building industry before the hazards of asbestos exposure were well understood. It may be found in insulation, fireproofing, floor tiles, ceiling tiles, caulks, grouts, and decorative or acoustical treatments of walls and ceilings that contain any of six naturally occurring fibrous asbestos minerals.

For any building built prior to 1979, an asbestos survey is required prior to the start of any renovation or demolition of that building. Fort Bragg personnel have inspected numerous buildings for friable (crumbling, broken, or pulverized) ACM. The data from these inspections are entered into an asbestos database. Abatement is performed on a project-by-project basis and primarily consists of removal ACM using required processes. The Installation landfill has a permitted cell for disposal of ACM.

Depending on the age of a building, there are several components that could contain ACM. These include old walls, tile, ceilings, partitions, and thermal insulation on older heating, ventilation, and air conditioning systems. When a building is scheduled for demolition, it must have an asbestos survey conducted by a North Carolina-certified inspector. The Demolition Manager notifies the appropriate personnel to assess the building for ACM. Any necessary abatement of ACM is on a project-by-project basis. In all cases, the ACM must be removed and disposed of prior to demolition in accordance with all applicable regulations.

3.5.3 Potential Effects of the Proposed Alternatives

3.5.3.1 Alternative 1: No Action Alternative

The No Action alternative would not change any of the current training activities at the alternative locations, nor would there be any new construction generating construction debris, nor would the demolition described in the proposed action take place. As a result, there would be no change in the current non-significant impacts to the installation landfill, and there would be no asbestos concerns.

3.5.3.2 Alternatives 2, 3, and 4

For each alternative location, the amount of construction planned to implement the proposed action would not result in a significant amount of construction debris. While Alternatives 3 and 4 may result in a greater number of trees being removed, where possible, these trees would be sold as timber. Where it's not possible to sell the wood or cuttings, it would be chipped and recycled as mulch, thus removing this material from the Fort Bragg waste stream. Thus, there only would be non-significant impacts on the landfill.

The proposed action includes the demolition of building A-3923 as part of the Facility Reduction Program, regardless of the alternative location chosen. Due to the age of this building, it will require an asbestos survey. If ACM is found in the building, it would be removed and disposed of prior to demolition in accordance with all applicable regulations.

3.6 Infrastructure

3.6.1 Utilities Services: Potable Water

Potable water at Fort Bragg is provided by two different sources. Remote locations in the outlying areas of the post, which include ranges and recreational areas, are provided with potable water by groundwater wells. The cantonment area receives water service through a combination of facilities including surface supply, water treatment, water storage, and distribution lines. In addition to serving Fort Bragg, this water system supplies Pope AFB.

The main source of water supply for Fort Bragg is the Lower Little River which runs along the northern installation boundary. Historical data show a minimum flow in the Lower Little River to be 20 million gallons per day (mgd). Additional water is available from two impoundments on the post: McKellars Pond and McArthur Lake. Total storage available in these two impoundments is 37,500 acre-feet. An additional standby supply is available from the City of Fayetteville through a connection to the city water main at Gruber Road and Murchison Road. This connection can provide up to 3.0 mgd. A connection exists between the city's 20-inch main and the Installation 12-inch main to provide water to Simmons Army Airfield.

The water treatment plant (WTP; Building V3308) has a hydraulic capacity of 15.0 mgd. However, the plant currently is permitted to treat only 10.0 mgd with total in-plant storage of 3.0 mgd. The water treatment facility operates 24 hours per day, seven days per week.

The cantonment water storage system consists of six elevated storage tanks, one stand pipe, and two ground storage tanks with a current total storage of approximately 3.25 million gallons. These elevated tanks are used primarily for fire emergency situations.

There are approximately 2 million linear feet of water distribution mains ranging in size from 2 inches to 24 inches in diameter on the Fort Bragg cantonment. The age of the area on Fort Bragg would indicate the condition of the water mains; that is, the older areas of the facility tend to have older water lines and therefore their condition will be not as good as the lines in newer areas.

Individual water supply wells in the Installation, surface water supplies for the cantonment area and Pope AFB, pumping and treatment facilities can provide adequate water supply to the Installation for the foreseeable future.

3.6.2 Potential Effects of the Proposed Alternatives

3.6.2.1 Alternative 1: No Action Alternative

The No Action alternative would not change the current levels of use of any aspect of Fort Bragg's potable water infrastructure. Thus, the No Action alternative would have no impact on the Installation potable water supply or the infrastructure that supplies it.

3.6.2.2 Alternative 2: Reconfigure Range 60

As per the proposed action description, there would be minimal use of electricity if the proposed action were implemented on this range. The well installed for construction water supplies would be plugged and abandoned once construction is completed. Potable water would be provided to the site by the units training there using water buffalos, water trucks, or similar devices.

Wastewater services would be provided through use of potable toilets with a service contract for cleaning and maintenance.

As a result, there would be no impact on the existing Installation potable water, wastewater, or electrical supplies, collection, or distribution systems.

3.6.2.3 Alternative 3: Reconfigure Range 62

The provision of utility services to this range would be the same as those described for Alternative 2. As a result, there also would be no impact on Installation infrastructure from use of this site.

3.6.2.4 Alternative 4: Reconfigure Range 34

The provision of utility services to this range would be the same as those described for Alternative 2. As a result, there also would be no impact on Installation infrastructure from use of this site.

3.7 Socioeconomic Issues

3.7.1 Region of Influence

Fort Bragg, Pope AFB, and Camp Mackall sit at the center of a six-county area in the Sandhills region of North Carolina. The Installation is part of and surrounded by Cumberland County and the City of Fayetteville to the southeast, Hoke County to the south, Scotland County to the southwest of Camp Mackall, Richmond County west of Camp Mackall, Moore County to the north-northwest, and Harnett County to the northeast. Figure 3-3 shows Fort Bragg's location relative to its neighboring counties and cities.

3.7.2 Environmental Justice (EO 12898)

Environmental justice considerations are based on the premise that no segment of population should bear a disproportionate share of adverse human health or environmental effects. To this end, Executive Order (EO) 12898 *Federal Actions to Address Environmental Justice in Minority and Low Income Populations* was signed February 11, 1994. This EO requires all federal executive branch agencies to "make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health and environmental effects... on minority and low-income populations...."

A Presidential memorandum that accompanied EO 12898 specified that Federal agencies "shall analyze the environmental effects, including human health, economic and social effects, of Federal actions, including effects on minority communities and low-income communities when such analysis is required by the NEPA of 1969". The memorandum further stated that Federal agencies "shall provide opportunities for community input into the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities".

Based on the text of EO 12898, there are several criteria that must be met for there to be a determination that a "disproportionately high and adverse impact on minority or low-income populations" exists. First, there must be a "high and adverse impact" present. Second, there must be a low-income and minority population present; and third, those populations must bear a disproportionate share of the high and adverse impact. Should these criteria be met, the EO and related guidance documentation directs that an additional community involvement process is necessary to discuss and effectively address the identified impacts.

For environmental justice considerations, impacts to be considered are any actual or potential health, economic or environmental threat arising from existing or proposed Federal actions and policies. Low income is defined as a personal or family income less than 120 percent of the locally-defined poverty level. Minority populations are those ethnic populations with the smallest population represented in the community.

Significant impacts for environmental justice considerations occur when the area of a high and adverse impact disproportionately affects a low-income or minority population. "High and adverse effects" would be impacts from an action that exceed the criteria for "significance" for a particular resource assessment (*e.g.*, noise, air quality, water quality, cumulative impacts, etc.). A "disproportional" effect on these populations would be one where the majority of an impact affects more low-income or minority populations than non-low-income or non-minority populations. This disproportional effect is assessed by determining the area of impact and the percent of ethnic populations affected by that impact.

3.7.3 Protection of Children (EO 13045)

Executive Order 13045 (Protection of Children from Environmental Health and Safety Risks) is founded on a growing body of scientific evidence that children may suffer disproportionately from environmental health and safety risks. This EO requires all federal executive branch agencies to identify and assess environmental health and safety risks that may disproportionately affect children and ensure that policies, programs, activities, and standards reflect this concern.

Children are defined as those members of a population below 18 years of age. Identification of an impact on these populations in a region is based on the area of effect of that impact and whether that area contains children. The disproportional impact is based on the best available scientific data regarding the susceptibility of children to those types of impacts beyond what would be expected of a healthy adult as reported by the National Institute of Child Health and Human Development.

3.7.4 Potential Effects of the Proposed Alternatives

3.7.4.1 Alternative 1: No Action Alternative

The No Action Alternative would not change the current activities and impacts associated with using the installation ranges. There would be no change in the type of training on or in the number of troops using these ranges. Thus, there also would be no change in the regional economic or environmental impacts associated with these activities.

There are no significant adverse impacts identified for the No Action alternative, and the non-significant impacts identified do not cross Installation boundaries into areas with low-income, minority, or children populations. As a result, there would be no impacts related to either EO 12898 or 13045 from this alternative.

3.7.4.2 Alternative 2: Reconfigure Range 60

The cost of constructing this project (\$2.1 million) would not significantly impact the regional economy. In addition, there are no anticipated increases in the number of troops to be trained at this facility once constructed. Thus, there would be no change to the Installation impact on the regional economy as a result of this project.

There are three primary considerations to be made in assessing the potential environmental justice impacts of constructing the proposed action at Range 60. First, as determined in sections 3.1 to 3.6, using Range 60 would not cause any significant environmental impacts. Second, there are no minority or low-income populations within the regions of influence of the non-significant impacts that have been identified. And third, without significant impacts and more important without a low-income or minority population to affect, there can be no disproportionately high and adverse impacts on those populations. Therefore, there would be no environmental justice impacts associated with construction of the proposed action at Range 60.

The same logic applies to assessing the potential impacts on children from this alternative. As there are no children within the region of influence of even the non-significant impacts identified, there would be no impacts associated with protection of children from use of this alternative.

3.7.4.3 Alternative 3: Reconfigure Range 62

The impacts associated with this alternative location would be the same as for Alternative 2. Thus, there would be no impacts from this alternative on regional or installation socioeconomics, nor with regard to environmental justice or protection of children.

3.7.4.4 Alternative 4: Reconfigure Range 34

The impacts associated with this alternative location would be the same as for Alternative 2. Thus, there would be no impacts from this alternative on regional or installation socioeconomics, nor with regard to environmental justice or protection of children.

3.8 Cumulative Impacts

3.8.1 Regulatory Compliance

The requirement to assess cumulative impacts as part of the EA process is set by NEPA (40 CFR 1508.7) and further discussed within the Army context by 32 CFR 651.16, *Environmental Analysis of Army Actions*. Further guidance on this process is provided by the CEQ in its document, *Considering Cumulative Impacts Under the National Environmental Policy Act* (CEQ, 1997).

Cumulative impacts result from the incremental effect of separate past, present, and reasonably foreseeable future actions on the environment, regardless of what agency or person undertakes those actions. They can accrue from individually minor but collectively significant actions taking place over an extended period of time. Taken in sum, all environmental damage is incremental, occurring one action at a time. However, determining the significance of the collective actions requires an understanding of their effect on the larger environment.

3.8.2 Cumulative Impact Analysis

The cumulative impact analysis is prepared at a level of detail that is reasonable and appropriate to support an informed decision by the US Army in selecting a preferred alternative. To do this, it is necessary to identify those projects that may interact with the potential impacts of the proposed action. This is done by defining the greatest extent of potential impacts from the proposed action and then identifying those projects that also have impacts within that area. This is known as the cumulative impact analysis area.

Given the scale of the proposed action and its potential impacts, the cumulative impact analysis area for this EA is limited to the Installation Range and Training Lands and the wetlands and watershed areas immediately downstream of the alternative locations.

Having defined the cumulative impact analysis area, the past, present, and reasonably foreseeable future actions that could interact with the proposed actions to produce cumulative impacts also must be identified. These actions are described briefly in the following sections.

The cumulative impacts on a resource become significant when the sum total of impacts from individual projects pushes those impacts beyond the identified significance criterion for that resource. This determination depends on the resource being assessed and the individual project impacts on that resource.

3.8.2.1 Past Actions

For this analysis, past actions are those that were completed within the analysis area before December 2005 (the baseline date for this EA). These include past actions at Fort Bragg and past land use and development trends in the region around the Installation, as generally described below:

- Training activities conducted by Fort Bragg's assigned personnel and units;
- Construction, alteration, repair, rehabilitation and maintenance of buildings, structures, site improvements, and utility systems as required ensuring that Installation ranges are capable of meeting the training standards and requirements;
- Range maintenance at Fort Bragg as necessary to ensure the long-term viability of plant growth, reduce pest and insect infestations, reduce the potential for inadvertent power outages caused by trees and tree limbs falling onto power lines, and to maintain a professional, military appearance; and
- Natural and cultural resources management programs including the continued adherence to Fort Bragg's management plans that have been designed to protect the existing diverse fish, wildlife and plant habitats present on the Installation. The Installation would continue coordination with the SHPO and the ACHP concerning management of cultural resources. Natural and cultural resources management policies and actions at Fort Bragg include the continuation of programs to reduce and eliminate damage to the environment such as the INRMP, ESMP, and ICRMP, as well as Endangered Species Act (ESA) Section 7 Consultation with the USFWS when applicable.

3.8.2.2 Present Actions

Present actions are those that were taking place in the analysis area as of December 2005. These include:

- Current operations and training activities on the Installation ranges;
- Ongoing construction projects at the Installation ranges; and
- Current Installation resource management programs (cultural or natural), other governmental agency and private sector land use activities and development projects being implemented within the cumulative impact analysis area.

3.8.2.3 Reasonably Foreseeable Future Actions

Reasonably foreseeable future actions are limited to those that have been approved and can be identified and defined with respect to timeframe and location. Actions that meet these criteria and will be located in the cumulative impacts analysis area are listed below.

Reasonably foreseeable future actions include the following:

- Continuation of present management actions within the surrounding civilian community and the continuation of existing civilian development trends; and
- The proposed North Carolina Department of Transportation (NCDOT) construction of the I-295 Outer Loop that would extend from I-95 north of Fayetteville, cross the Cape Fear River, loop around Fayetteville on the west near Fort Bragg, and then reconnect to I-95 south of Fayetteville. Following development of the I-295 Outer Loop, it is also reasonably foreseeable to anticipate secondary commercial and residential development near and proximate to the new intersections.

3.8.3 Potential Cumulative Effects of the Proposed Alternatives

3.8.3.1 General Cumulative Impacts

There are several general cumulative impacts that are applicable to every alternative being assessed.

The construction activities also would have the potential for a slight increase in small spills or leaks of hazardous substances from construction equipment. These spills would generate small quantities of contaminated media (*i.e.*, soil, vegetation) requiring disposal. However, these impacts would be relatively minor and would be controlled through proper application of BMPs on the construction sites.

Future development within the cantonment and in the surrounding community would contribute to air emissions and could increase the potential for sediment runoff and associated deposition in downstream areas. Both on and off the Installation, these impacts would be controlled by proper application of state recommended and required BMPs on the construction sites.

If not coordinated with ongoing and future mission activities, continued development along the Installation boundary might result in unintentional conflicts between mission requirements at the Installation and development in the surrounding communities. Continued communication and coordination with neighboring local planning agencies will work to avoid such impacts to the Installation mission activities.

Construction debris deposited into the C&D landfill would decrease available landfill space. This decrease, in conjunction with debris deposited from other projects would decrease landfill capacity and shorten the anticipated life of the landfill. This impact would be lessened through the recycling of many of the construction materials. Thus, there would be minimal cumulative impacts on the landfill.

Projects occurring on Fort Bragg (in addition to the proposed actions) would be required to follow the BMPs described in this EA. As long as these BMPs are properly implemented and maintained for each project, there would be only minor cumulative impacts on air quality, water quality, cultural resources, or biological resources (including wetlands). When necessary, the latter two resource categories also would require consultation with the appropriate state and federal agencies, and impacts on the respective resources would be avoided by following the agency recommendations.

3.8.3.2 Alternative 1: No Action Alternative

Under the No Action Alternative, no new training facilities would be constructed to support urban assault training. The on-going mission at the Installation would continue as planned, and construction projects

designed to renovate and modernize existing buildings would continue along with the projects listed in Section 3.8.2. Cumulative impacts would be limited to those described in Section 3.8.3.

3.8.3.3 Alternative 2: Reconfigure Range 60

This alternative would not have any other cumulative impacts than the general impacts discussed above. None of those mentioned would be anything more than non-significant.

3.8.3.4 Alternative 3: Reconfigure Range 62

This alternative would not have any other cumulative impacts than the general impacts discussed above. None of those mentioned would be anything more than non-significant.

3.8.3.5 Alternative 4: Reconfigure Range 34

This alternative would not have any other cumulative impacts than the general impacts discussed above. None of those mentioned would be anything more than non-significant.

In conclusion, there would be only non-significant cumulative impacts from any of the alternatives assessed in this EA.

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4.0 SUMMARY AND RECOMMENDATIONS

This section summarizes the impact assessments of Section 3.0 and selects the alternatives(s) to be implemented to fulfill the proposed actions. This section also summarizes any necessary impact reduction activities for the selected alternative(s). If such activities are required to keep the impact level of the selected alternative below a level of significance, this section will provide a mitigation monitoring plan describing the actions to be taken, when they are to be done, by whom, and for how long. This plan also will provide a schedule by which the performance and success of these mitigation actions will be monitored and documented.

4.1 Findings and Recommendations

Table 4-1 summarizes by resource area the impacts assessed for each of the alternatives discussed in this EA. Given the requirement of an EA to assess only the significance of an impact on a resource, these impacts are identified using only three degrees of impact severity: "no impact," "non-significant impact," and "significant impact." These impacts also are described as either beneficial or adverse. As summarized in Table 4-1, none of the impacts identified for any of the alternatives assessed are significant.

After consideration of the proposed actions and their associated impacts, as well as any required mitigation measures and BMPs, it has been determined that no significant impacts would occur as a result of implementing the proposed actions at any of the alternative locations considered. An EIS is not required to proceed with implementation of the proposed actions. Thus, the Army will prepare and publish a Finding of No Significant Impact (FNSI) to document this decision. This FNSI will summarize briefly why the proposed action would not significantly affect the environment and why, therefore, an EIS would not be necessary.

4.2 Selected Alternative

Based on a review of the results of this EA, Alternative 2 (Range 60) is the alternative selected to implement the proposed actions. It will be the responsibility of the assigned Fort Bragg Project Manager to coordinate with the project architectural and engineering firm to design an appropriate facilities layout on this site. The site design, planning, and eventually the construction activities shall incorporate the recommendations, requirements, and restrictions on the design and construction activities detailed throughout this EA and summarized in Section 4.3.

4.3 Impact Reduction Measures for the Selected Alternative

There are three types of activities that may be used to reduce the impact of an action on the affected environment. These are, in increasing importance of regulatory requirement: (1) BMPs, (2) identified required mitigation measures, and (3) regulatory consultations and permits. There are no mitigation measures required to keep any of the listed impacts below the level of being significant. There are, however, several standard BMPs that are required for any construction activities that occur on the installation. An overview of these BMPs is provided below.

	Potential Impacts of Alternatives Assessed in this EA				
Affected Environmental Resource	Alt. 1: No Action	Alt. 2: Reconfigure Range 60	Alt. 3: Reconfigure Range 62	Alt. 4: Reconfigure Range 34	
1. Biological Resources					
1a. Wetlands	Non-significant	Non-significant, with BMPs *	Non-significant, with BMPs *	Non-significant, with BMPs *	
1b. T&E species	Non-significant	Non-significant	Non-significant	Non-significant	
2. Water Resources					
2a. Storm water Management	Non-significant	Non-significant	Non-significant	Non-significant	
2b. Water Quality Management & Conservation	Non-significant	Non-significant	Non-significant	Non-significant	
3. Geology and Soils					
3a. Soils and Soil Conservation Efforts	Non-significant	Non-significant, with BMPs *	Non-significant, with BMPs *	Non-significant, with BMPs *	
4. Human Health and Safety					
4a. Waste Mgmt: Solid Waste	Non-significant	Non-significant	Non-significant	Non-significant	
4b. Special Hazards: Asbestos	Non-significant	Non-significant	Non-significant	Non-significant	
5. Infrastructure					
5a. Utilities: Potable Water	Non-significant	No Impact	No Impact	No Impact	
5b. Utilities: Wastewater	Non-significant	No Impact	No Impact	No Impact	
6. Socioeconomic Issues					
6a. Env'l Justice (EO 12898)	Non-significant	Non-significant	Non-significant	Non-significant	
6b. Protection of Children (EO 13045)	Non-significant	Non-significant	Non-significant	Non-significant	
7. Cumulative Impacts	Non-significant	Non-significant	Non-significant	Non-significant	

 Table 4-1
 Summary by Alternative of Potential Impacts on Affected Environment

Notes: * For a list of the recommended BMPs, see Section 4.3.

4.3.1 Best Management Practices (BMPs)

Fort Bragg has identified a number of activities to keep potential impacts on resources from becoming problems. These measures are designed to protect, maintain, restore, or enhance the existing environmental conditions. Because of their effectiveness, these activities have been adopted by Fort Bragg as standard practice and requirements for projects on the Installation. The BMPs to be incorporated into the design and construction of the selected alternative are summarized below.

- Techniques to minimize fugitive dust would be employed, as appropriate. All controls on fugitive dust would conform to established regulations.
- Vegetation and structural erosion control practices would be employed and maintained according to standards and specifications of the North Carolina, and/or the USEPA document entitled *Storm Water Management for Construction Activities*. The more stringent of the state or the USEPA standards would be employed. All necessary storm water permits and a state-approved (NCDENR) erosion control permit shall be obtained prior to the start of construction.
- Native plantings would be maintained through a combination of prescribed burns and mechanical mowing.
- Clearing and grubbing would be sequenced with construction to minimize the exposure time of cleared surfaces. These activities would not be conducted during periods of wet weather. Building these structures during dry periods and implementing proper construction BMPs can minimize possible impacts to water quality. Erosion and sediment control structures (silt fence, straw bales) would be in place and functional before earth moving operations begin, and would remain intact throughout the project duration. Weekly inspections would be conducted. Upon completion of any project, the borrow area would be closed through the following methods: dressed with topsoil to a depth of 6 inches, seeded by approved mixtures to provide adequate groundcover throughout the entire year. Positive drainage would be maintained. Vehicle ruts, rills, and gullies from erosion would be land smoothed and the area would be seeded.
- Construction activities would be staged to allow for the stabilization of disturbed soils. Erosion
 and sediment control measures would be maintained during the construction effort, and until
 vegetation has recovered in a manner to ensure compliance with Clean Water regulations. Fort
 Bragg would implement erosion control measures in coordination with normal construction
 practices required by the USACE for all construction project elements (including those
 accomplished by civilian contractors and government personnel).
- Construction would follow the North Carolina Clean Water regulation requirements for construction activities. Provisions for surface water control, including the construction of drainage swales, and both temporary and permanent surface water control ponds, would be provided where required by implementation of the storm water control plan.
- Coordination with the USACE would be conducted by the project proponent regarding stream crossings, jurisdictional wetlands, and navigable waters in the project study area. The project proponent would apply for all necessary permits for any stream or wetland impacts if needed and use the completed Final EA to serve as supporting documentation to satisfy Section 404(b) (1) of the CWA. Section 401(a) water quality certification would be in conjunction with the Section 404 permit.
- On banks of low water crossings and other severe slopes, state and federal approved BMPs would be followed. Surface erosion control mats would be staked into place to protect bare ground, and native vegetation seeding would be used to reduce erosion problems. Silt fence would also be in place throughout the project duration. Straw bales would be placed in waterways and in road ditches to prevent headcutting on an as-needed basis.

- The installation and the USACE would endeavor to avoid impacts to sites that are potentially eligible for listing on the National Register, as well as any additional potentially eligible sites identified during future investigations.
- If projects are expected to occur in areas that have not been surveyed to current standards, the Cultural Resources Management Program (CRMP) would evaluate each area on a case-by-case basis in order to determine if there is a need for resurvey. The new surveys would be completed in accordance with current standards between the installation and the State of North Carolina SHPO.
- The installation and the USACE would ensure that construction contractors mark known archaeological sites, including the cemeteries, with construction tape, fencing, or barriers prior to the start of construction. Personnel involved in the construction activities would be informed that they should not traverse over the marked areas, nor use the marked areas for equipment, materials or vehicle staging.
- Should unanticipated archaeological resources be identified, personnel are required to stop activities in the area and notify the CRMP. Subsequent activities are required to follow the procedures outlined in the Discovery Plan and ICRMP. The CRMP also would notify the SHPO within 48 hours.
- If it could be anticipated that Native American remains could be discovered, the CRMP would be notified and would immediately notify the installation commander. Further activity would be directed by standard operating procedures as indicated in the Fort Bragg ICRMP.

4.3.2 Required Mitigation Measures

For those adverse impacts that cannot be avoided or reduced, mitigation measures include activities designed to avoid, reduce, or eliminate potential adverse impacts. Although no significant impacts were identified for the selected alternative, this section describes mitigation measures that will be implemented by the Installation to eliminate or reduce the impact of the other (non-significant) adverse impacts.

Mitigation for potential wetlands impacts would consider the nature and extent of those impacts and would be based on an assessment of actual projected loss of wetland area and wetland function. Primary among these mitigation measures, however, would be to avoid wetland impacts and losses by designing and siting the proposed actions away from wetland areas. All necessary sedimentation and erosion controls (*i.e.*, BMPs) would be used to further reduce impacts on these areas. Using these measures/actions, no wetland impacts are anticipated.

Plantings would be accomplished in conjunction with other species management programs at Fort Bragg, in order to maximize the synergistic benefits offered by these potential plantings. The exact location and design of the area or areas to be planted would be selected as part of the overall design effort for the project.

4.3.3 Required Permits and Agency Consultations

To manage post-construction runoff, post-construction storm water discharge rates must not exceed pre-development storm water discharge rates. For all construction projects, "pre-development" site conditions will be defined as forested land use, using the existing site soils and topography, and 100 percent pervious ground cover.

The implementation of the proposed actions at the selected alternative must have a Soil Erosion Control Plan reviewed and approved by the Fort Bragg Water Management Branch before any construction begins. As this project is greater than one acre in size, NCDENR also must review and approve this Soil Erosion Control Plan and grant a state erosion control permit based on that plan. All mitigation and

BMP activities described in the Soil Erosion Control Plan must be carried out as indicated in that plan and permit.

There were no agency coordination efforts required to perform the impacts analyses for the selected alternative. As noted with the letters in Appendix A, agency coordination will be performed during the public review and comment process to allow state agencies the opportunity to review and comment on this document and analysis.

4.4 Mitigation Monitoring Plan

As there are no mitigation activities required to bring assessed impacts below the significant level, there is no need for a formal mitigation monitoring plan. Each resource agency on Fort Bragg will be responsible for ensuring that the appropriate BMPs for each project are identified, incorporated into this project, implemented properly, and achieve the desired results.

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5.0 PREPARATION AND CONSULTATION

5.1 List of Preparers

This document was prepared for the Fort Bragg Directorate of Public Works by David Corzilius, AICP, Environmental Protection Specialist under contract number FA4890-04-D-0004, delivery order CK08. Mr. Corzilius is employed by Science Applications International Corporation, Incorporated (SAIC), Reston, Virginia. Mr. Corzilius and SAIC have no financial interests or obligations related to the actions assessed in this document.

5.2 List of Agencies Consulted

The following agencies were consulted during the development of this EA:

- Headquarters, Fort Bragg Garrison Command (Airborne), Installation Management Agency (IMA), Fort Bragg, NC
- Office of the Staff Judge Advocate.
- Directorate of Public Works (DPW), Environmental Sustainment Division (ESD).
- DPW, Natural Resources Division (NRD).
- N.C. Department of Cultural Resources, State Historic Preservation Office.
- N.C. Department of Environment and Natural Resources
- US Department of the Interior (USDI), US Fish and Wildlife Service (USFWS), Raleigh Field Office, Raleigh, NC.

5.3 Persons Consulted

The following persons were consulted during the development of this EA:

- Aycock, A., Colonel, U.S. Army. Garrison Commander, Fort Bragg Garrison Command (Airborne), Installation Management Agency, Fort Bragg, NC.
- Bean, G.G., Colonel (ret.), U.S. Army. Director of Public Works, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Gade, W. Renn, Colonel, U.S. Army. Staff Judge Advocate, Headquarters, XVIII Airborne Corps, Fort Bragg, NC.
- Gray, J.B.. Botanist, Endangered Species Branch, Public Works Business Center, Fort Bragg Garrison Command (Airborne), Installation Management Agency, Fort Bragg, NC.
- Goodwin, B., Captain, U.S. Army. Environmental Law, Office of the Staff Judge Advocate, HHC, XVIII Airborne Corps, Fort Bragg, NC.
- Harris, S. NEPA Coordinator, EMB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Hayden, R. Air Quality program, Environmental Compliance Branch (ECB), ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Hoffman, E.L. Wildlife Biologist, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Irwin, J.D. Archaeologist, Cultural Resources Management Program (CRMP), ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Lantz, J.C. Soil Conservationist, Water Management Branch (WMB), ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Locklear, L. Project Manager, Real Property Master Planning, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.

- Michael, M. Historian, CRB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Myers, T.L. Chief, Endangered Species Branch, NRD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Schwacke, E. Installation Restoration Program, ECB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Simko, L. Urban Forester, NRD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Vaughan, L. Water Quality Program, ECB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Ward, L. Soil Conservationist, WMB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.
- Williams, W., Captain, U.S. Army. Environmental Law, Office of the Staff Judge Advocate, HHC, XVIII Airborne Corps, Fort Bragg, NC.
- Williamson, S. Solid Waste Program, ECB, ESD, DPW, Fort Bragg Garrison Command (Airborne), IMA, Fort Bragg, NC.

5.4 References Cited and Literature Consulted

This EA directly references or incorporates by reference the following documents:

- Council on Environmental Quality (CEQ), 1997. Considering Cumulative Impacts Under the National Environmental Policy Act. Washington, DC: Executive Office of the President, CEQ. January 1997.
- Department of the Army, 2002. Army Regulation 200-2, Environmental Analysis of Army Actions. As published in the Federal Register, Vol. 67(61): 15290-15332. Washington, DC: Headquarters, Department of the Army. 29 March 2002.
- Fort Bragg, 2004. Oil/Water Separator & Washrack Removal for OMA/MCA Projects (Standard Operating Procedure [SOP] #0001). Fort Bragg, NC: Headquarters, XVIII Airborne Corps and Fort Bragg. 12 January 2004.
- Natural Resources Division (NRD), 2005a. Memorandum from Ms. Gray to Mr. Erich Hoffman regarding the results of an endangered species survey conducted at Range 60 on 13 Sept 2005. 16 Sept 2005.
- -----, 2005b. Email from Mr. Hoffman to Mr. David Corzilius regarding potential impacts of implementing Urban Assault Course actions at Range 60. 16 September 2005.
- North Carolina Administrative Code (NCAC), 2001. Guidelines for Assessment and Corrective Action (15A NCAC 2L.0106-.0115). 1 July 2001.
- North Carolina Department of Environment and Natural Resources (NCDENR), 2002. Installation of Wells in Cantonment Area of Fort Bragg (letter from NCDENR to Fort Bragg). Raleigh, NC: NCDENR. 10 May 2002.
- Public Works Business Center (PWBC), 2005. Biological Assessment for Fort Bragg's Future Years Defense Program in the Green Belt Area. Fort Bragg, NC: Public Works Business Center, Natural Resource Division, Endangered Species Branch. March 2005.
- -----, 2004. Environmental Assessment and Finding of No Significant Impact for Erosion Control on Big Branch (final). Fort Bragg, NC: Prepared for PWBC by ECW Environmental Group, Inc. August 2004.
- -----, 2001. Integrated Natural Resources Management Plan. Fort Bragg, NC: Environmental and Natural Resources Division, PWBC. November 2001.

- -----, 1997. *Endangered Species Management Plan*. Fort Bragg, NC: Environmental and Natural Resources Division, PWBC. 1997.
- The Nature Conservancy (TNC), 1993. Rare and Endangered Plant Survey and Natural Area Inventory for Fort Bragg and Camp Mackall Military Reservations. The Nature Conservancy, North Carolina Natural Heritage Program. 1993.
- U.S. Army Corps of Engineers (USACE), 2005. Urban Assault Course (PN 57314, FY 06), Fort Bragg, North Carolina – Concept Design. Fort Bragg, NC: Prepared by Stevens & Wilkinson of South Carolina, Inc., for USACE-Savannah District. 14 January 2005.
- U.S. Fish and Wildlife Service (USFWS), 2003. RCW Recovery Plan. Raleigh, NC: USFWS. 2003.

5.4.1 Federal Regulations cited

Clean Air Act, 40 CFR Parts 51 and 93 (as amended 1990; 42 USC 7401 et seq.)

Clean Water Act, 1972.

Endangered Species Act of 1973 (as amended), U.S. Fish and Wildlife Service, Washington, DC, 1988.

National Environmental Policy Act of 1969 (as amended; 40 CFR 1500 *et seq.*), U.S. Environmental Protection Agency, Washington, D.C., 1975.

5.4.2 Executive Orders cited:

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations, 1994.

Executive Order 13045, Environmental Health and Safety Risk Upon Children, 1997.

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6.0 DISTRIBUTION LIST

As part of the internal and public review and comment process on this document, the following libraries and agencies have received copies of the draft and final copies of this EA and its FNSI. In addition, this EA and associated FNSI are available for download and review from the following website: http://www.bragg.army.mil/envbr/nepa_review.htm.

6.1 Libraries

- (1) John L. Throckmorton Library Bldg # 1-3346, Randolph St. Fort Bragg, NC 28310 Circulation/Information Desk: 910-396-3526
- (2) Cumberland County Library System Headquarters Library Services 300 Maiden Lane Fayetteville, NC 28301 Reference and Information: 910-483-7727

6.2 Agencies

- (1) North Carolina State Clearinghouse Department of Administration 116 West Jones Street Raleigh, NC 27603-8003
- (2) United States Fish and Wildlife Service Raleigh Field Office PO Box 33726 Raleigh, NC 27636-3726
- (3) XVIII Airborne Corps and Fort Bragg Fort Bragg, NC 28310
 - (a) Garrison Commander (IMSE-BRG-GC)
 - (b) Office of the Staff Judge Advocate (IMSE-BRG-SJ)
 - (c) Public Safety Business Center (IMSE-BRG-PS)
 - (d) Directorate of Public Works (IMSE-BRG-PW)
 - (i) Environmental Sustainment Division (IMSE-BRG-PWE)
 - (ii) Natural Resources Division (IMSE-BRG-PWN)
 - (e) Readiness Business Center (IMSE-BRG-RBC)

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APPENDIX A: AGENCY COORDINATION LETTERS

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DEPARTMENT OF THE ARMY INSTALLATION MANAGEMENT AGENCY HEADQUARTERS, FORT BRAGG GARRISON COMMAND (AIRBORNE) FORT BRAGG, NORTH CAROLINA 28310

12 April 2006

Directorate of Public Works

Mrs. Chrys Baggett, Director North Carolina State Clearing House Department of Administration 1302 Mail Service Center Raleigh, North Carolina 27699-1302

Dear Mrs. Baggett:

Please find attached two (2) paper copies and sixteen (16) electronic (CD) copies of the Environmental Assessment (EA) and draft Finding of No Significant Impact (FNSI) for the construction of an Urban Assault Course at Fort Bragg, NC. Please distribute these documents to the appropriate agencies of the State of North Carolina for their review and comment. The review and comment period for this document will run from 17 April to 17 May 2006.

Any questions regarding this EA and draft FNSI should be directed to Mr. David Corzilius, NEPA Analyst, by email at <u>david.corzilius@us.army.mil</u> or by phone at 910-432-8865. Once the review and comment period has ended, any comments received from the state agencies on this document should be forwarded to Mr. Corzilius, care of the Directorate of Public Works, ATTN: IMSE-BRG-PW-M, Bldg. 3-1137, Reilly Street, Fort Bragg, North Carolina 28310.

Thank you for your assistance with this process.

Sincerely,

tahi

Steven Harris NEPA Coordinator



APPENDIX B: PROJECT SCOPING MEETING NOTES

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PROJECT SCOPING MEETING for URBAN ASSAULT COURSE (PN 57314) ENVIRONMENTAL ASSESSMENT

Thursday, 22 September 2005

Environmental Sustainment Division Conference Room, Bldg 3-1137

Fort Bragg, North Carolina

Meeting Agenda

8:00 AM	Open Meeting / Introductions	David Corzilius
8:05 AM	Overview of UAC Projects	Bill Edwards / David Corzilius
8:15 AM	Alternative Location Discussions	Bill Edwards / David Corzilius
8:25 AM	Resource-specific Concerns (impacts, mitigations)	Resource experts
8:40 AM	Questions & Answers	All
8:45 AM	Summary of meeting discussions	David Corzilius
8:50 AM	Final Questions / Comments	All
9:00 AM	Adjourn	

Notes:

1. In order to keep this meeting on schedule, please keep in mind the start times listed above. Other meeting times may be scheduled if there is a need for more detailed discussions, particularly with the E&E staff.

2. An attendance sheet will be passed around to document who attended this meeting. Meeting notes will be available a few days after the meeting.

Meeting facilitated by: David Corzilius, Fort Bragg EMB/SAIC 910-432-8479

Summary of Project Scoping Meeting Discussions

Convened: 8:10 AM to 9:00 AM

Attendees: See attached list

Summary of discussion:

Following quick introduction of the attendees and project information – including the expanded area to be assessed on the east side of the site – the meeting progressed very quickly around the table to each subject matter expert in attendance to provide comments on their concerns. In short, each person provided the following information:

- 1. Bill Edwards / John Doss: Answered questions / clarified project information for SMEs. John Doss also stated that there may be endangered species concerns on all three alternative locations, but that confirmation of this issue and any resulting concerns/impacts would have to come from Erich Hoffman at Natural Resources Division (NRD) in consultation with the USFWS.
- 2. Lynn Vaughan (Water & Wastewater Program): Re-iterated her concerns that any well drilled and used on the range for potable water have a large pump house capable of holding a chlorination system along with the purchase and installation of said chlorination system. The water treatment plant personnel will get the necessary public water system permit and ID number; and they will service the chlorinator on a continual basis. If you only supply water for a latrine and <u>no</u> lavatory or sink (potential drinking water source) you will not need a large pump house. Use of the well water onsite for construction purposes is allowable, but may not be used for potable water without testing and purification.
- 3. Gary Cullen (Air issues/Asbestos/Lead Based Paint): Reaffirmed there are NO air quality or lead issues with this project. The demolition of building A-3923 under the Facility Reduction Program does require an asbestos survey and potential asbestos abatement prior to its demolition.
- 4. Michelle Michael (Cultural Resources): Reaffirmed that cultural had no issues with the site as originally proposed, but would check on the expanded area to make sure there were no issues there, either. Received email following this meeting that confirmed there are NO cultural resource issues in the expanded area either.
- 5. Lee Ward & Barbara Bass (Erosion Control / Stormwater Management): Project already has a state-approved erosion control plan and there are no issues with stormwater management on the preferred site.
- 6. Erich Hoffman (Wetlands / endangered species):
 - a. Project will require a Fort Bragg wetlands delineation to be sure the construction limits and stormwater outflows do not cause potential impacts on the nearby wetlands. The survey will be performed on 22 Sept. 2005 and the results coordinated as needed with Wilmington ACOE. The results of that survey and any BMP or mitigation recommendations will be forwarded to the NEPA team as soon as possible.
 - b. Endangered species has completed its plant survey on the site and found NO endangered species. A copy of the plant survey will be forwarded as soon as possible to the NEPA team to be included as needed in the EA.
 - c. An informal consultation with the USFWS may be required on the potential impacts on RCW forage in or near the proposed action. If consultation is necessary, a letter to

USFWS will be completed and the informal consultation process will take at least 30 days from the time USFWS receives the letter.

- 7. All other SMEs have noted either directly or by lack of response to emails that there are no issues on their respective resource areas from this project. If necessary, a brief explanation of will be included in the document for each of these. These 'no impact' resource areas include:
 - a. Oil/water separators;
 - b. Solid waste;
 - c. Electric utilities/infrastructure;
 - d. Land use;
 - e. Socioeconomics;
 - f. Noise;
 - g. IRP/UST/AST; and
 - h. Hazardous materials / hazardous waste.

Based on these discussions and responses to the original email to the SMEs requesting review of this project, the only resource areas that need to be addressed in detail in the subsequent EA are:

- a. Wetlands;
- b. Endangered species, RCW in particular (plants have no effect);
- c. Stormwater management / erosion control;
- d. Asbestos (inspection and possible abatement of building A-3923); and
- e. Potable water.

Urban Assault Course (PN 57314) EA – Project Scoping Meeting 22 September 2005

Attendance Sign-in Sheet

	NAME PLEASE PRINT	ORGANIZATION	PHONE #	EMAIL ADDRESS
1	David Corzilius	DPW-EMB	910-432-8479	David.corzilius@us.army.mil
2	Bill Edwards	DPTM Range Division	910-432-5318	William.h.edwards@us.army.mil
3	John Doss	DPTM Range Division	910-396-7971	John.m.doss@us.army.mil
4	Lynn Vaughan	DPW-ECB	910-907-2419	Lynn.vaughan@us.army.mil
5	Gary Cullen	DPW-ECB	910-90703645	Gary.cullen@us.army.mil
6	Michelle Michael	DPW-CRMP	910-396-6680	Michelle.michael@us.army.mil
7	Lee Ward	DPW-WMB	910-396-2301	Lee.p.ward@us.army.mil
8	Barbara Bass	DPW-WMB	910-396-2301, ext 221	Barbara.bass@us.army.mil
9	Erich Hoffman	DPW-NRD	910-396-2867	Erich.hoffman@us.army.mil
10	Jennifer Whittinham	DPW-ESD-EMB	910-432-8903	Jennifer.whittinham@us.army.mil
11	Paul Wirt	DPW-ESD-EMB	910-396-6518	Paul.wirt@us.army.mil