FINDING OF NO SIGNIFICANT IMPACT (FNSI)

Conversion of 4ID Brigade Combat Teams at Fort Carson, Colorado

1. Introduction

In accordance with the National Environmental Policy Act of 1969 (NEPA) and its implementing regulations at 40 CFR Parts 1500 to 1508 and 32 CFR Part 651, the Army has prepared an Environmental Assessment (EA) for the Conversion of Fort Carson's Brigade Combat Teams (BCTs). The EA is incorporated by reference. The conversion is based on Headquarters, Department of the Army (DA) decisions. First, the Army announced on June 25, 2013 that it would inactivate one of Fort Carson's Armor Brigade Combat Teams (ABCTs). This announcement also included realignment of Fort Carson's remaining BCTs. On January 13, 2014, DA announced its decision to convert one of Fort Carson's remaining ABCTs to a Stryker Brigade Combat Team (SBCT). The decision to convert an ABCT to a SBCT at Fort Carson follows National Environmental Policy Act (NEPA) review by DA, which took into consideration various components that are involved in stationing implementation. That decision took into account other possible locations for activating and stationing a SBCT. Fort Carson was found to be the only installation that had an ABCT available for conversion that met the established criteria as well as the appropriate point in the deployment cycle. A SBCT would be located at Fort Carson; therefore, the EA analyzed how best to implement that decision. The proposed action is to implement these DA decisions, referred to together as 4ID BCT conversions, at Fort Carson.

2. Purpose and Need

The Installation, which encompasses Fort Carson and Piñon Canyon Maneuver Site, must take those actions necessary to support the BCT conversion decisions made at Headquarters, Department of the Army (HQDA). The purpose of the Proposed Action is to implement the Army's BCT conversion decision for Fort Carson. The need for the Proposed Action is to provide training capability and adequate facilities for the resulting 4ID BCT configuration. Fort Carson must provide for the training readiness, deployment, administrative functions, and Soldier and Family quality of life elements in support of the proposed action.

3. Alternatives Considered

3.1 No Action Alternative

Under the No Action Alternative, the conversion (realignment, inactivation, and conversion) and training of the 4th Infantry Division (4ID) BCTs would not be implemented. Force structure, assigned personnel and equipment, and training operations would remain unchanged and no facility renovation would occur. Fort Carson would retain the vehicles and equipment at the Installation and would continue to conduct current training activities. The No Action Alternative, however, is not feasible as Fort Carson is required to implement the conversion and stationing decision made by HQDA. The decision made in

June 2013 was to realign all of the Infantry BCTs (IBCTs) and ABCTs in the continental U.S. One of Carson's ABCTs had to be inactivated under DA's decision, and another ABCT must convert to a SBCT as discussed in the introduction, above. The No Action Alternative is included in the Environmental Assessment (EA) to provide baseline conditions and a benchmark from which to compare environmental impacts of the Proposed Action.

3.2 Proposed Action

The Proposed Action is to inactivate one ABCT, realign an ABCT and an IBCT by adding an additional maneuver battalion to each, and convert the remaining ABCT to a SBCT. The final configuration will result in 4ID consisting of 3BCTs: one ABCT, one IBCT, and one SBCT equipped with 360 Stryker vehicles including the new double V-bottom version. All BCTs will also add an engineering battalion. The Proposed Action will be accomplished without any construction. Implementation may include the renovation and modernization of non-historic buildings. The Proposed Action is expected to reduce the number of Soldiers in the 4ID by 1,386, and Family members by 2,356; reduce the number of M1A1 Abrams tanks by 50% (87), and Bradley Fighting Vehicles by 50% (84); and reduce artillery weapon systems from 64 to 54. Fuel consumption is expected to be reduced by 20% (nearly 41,000 gallons).

4. Alternatives Considered and Eliminated From Detailed Study

The alternative of conducting regular installation-level training at locations other than Fort Carson would essentially negate the DA conversion decisions and, therefore, is not within the scope of this EA. DA made the decision to convert the ABCT to a SBCT based on a 2008 PEIS and a 2014 ROD; therefore, selecting another installation is outside the scope of this EA. The same logic applies to the DA decisions in 2013 that inactivated and realigned Fort Carson BCTs.

Training at other locations would be too expensive and the travel time required would diminish unit readiness. It would also cause conflicts with the other installation's training schedule. Training at other locations would take Soldiers away from their home stations, decreasing time with Families, and thereby adversely impact Soldier and Family quality of life.

5. Public Review

Pursuant to 651.14(b), Title 32 Code of Federal Regulations (Environmental Analysis of Army Actions), the Army made the EA and Draft FNSI available to the public for review and comment for 30 days prior to a final decision. A Notice of Availability (NOA) of the documents was announced in local media, and made available online at: http://www.carson.army.mil/DPW/nepa.html

Anyone wishing to provide comment on the Proposed Action, EA or Draft FNSI, or to request additional information, had the option of writing to the Fort Carson NEPA Program Manager, Directorate of Public Works, Environmental Division, 1626 Evans Street, Building 1219, Fort Carson, Colorado 80913-4362 or submitting comments via email to: usarmy.carson.imcom-central.list.dpw-ed-nepa@mail.mil.

In addition to encouraging involvement by the general public, the Installation contacted various Federal, state, and county agencies and entities, as well as Native American Tribes. Consultation is ongoing with the State Historic Preservation Officer, Native American Tribes with cultural affiliation to Fort Carson lands, and other interested parties related to a programmatic agreement for military training and operational support activities for downrange Fort Carson.

No public comments were received for this Environmental Assessment or draft Finding of No Significant Impact.

6. Environmental Consequences

Potential direct, indirect, and cumulative impacts of the Proposed Action and No Action Alternative were identified in the analysis of the EA, which is attached and incorporated by reference in this Draft FNSI. The Final EA analyzed the effects of the Proposed Action and No Action alternative on the following Valued Environmental Components: land use, air quality and greenhouse gas (GHG), noise, geology and soils, water resources, biological resources (including special status species and wetlands), cultural resources, socio-economics, traffic and transportation, airspace, utilities, and hazardous and toxic substances.

The impacts on land use on Fort Carson will remain unchanged; existing ranges would be used, and there would be no change in the types of training. There would be no new construction on Main Post or within the training ranges. The small overall reduction in Soldiers and Families means there would be no expected change in off-post land use. There should be negligible change to air quality, with no new stationary sources on Main Post, and fuel consumption reduced in the tactical vehicle fleet by approximately 20%. Noise generated from weapon firing is expected to be reduced because there are fewer tanks and artillery pieces firing. There will also be a slight overall reduction in firing from small arms ranges. Changes in levels of soil and vegetation disturbance and dust generation in Army training is measured in Maneuver Impact Miles (MIMs). The MIMs model is based on historic observations and measurements in a variety of environments and soils, and it represents the best available estimate of the relative differences in impact between the Stryker vehicles and the tracked vehicles they will replace. The MIMs model indicates that converted BCTs should have a slightly reduced impact on soil and vegetation when compared to the impacts currently experienced as a result of maneuver training by tracked vehicles. Therefore, the EA concludes that any impacts for geology and soils will be less than significant. Impacts to water resources are expected to be less than significant. Some impacts to wetlands occur because of ongoing erosion control measures, but direct impacts from training are not anticipated. Biological resource impacts are expected to be less than significant. Fort Carson's programs for endangered species, invasive species, vehicular collision reduction will remain in effect. Impacts to cultural resources are expected to be roughly the same as under the no action alternative, and therefore less than significant. Fort Carson is finalizing consultation on a programmatic agreement for downrange training under section 106 of the National Historic Preservation Act that will provide additional protection for these resources. Socio-economic impacts will be less than significant because the net loss of Soldiers at Fort Carson will be very small. For the same reason, impacts on utilities and

transportation are anticipated to be negligible. There will be no impacts to airspace. Fort Carson's comprehensive program for the management of hazardous materials, toxic substances, spills, and waste means that there will be no significant impacts for this resource area. Fort Carson will continue to monitor actual impacts to soil and vegetation, as well as dust generation. Fort Carson will adjust preventive and corrective actions as necessary to minimize the impacts of maneuver training to natural resources.

7. Conclusion and Findings

The Conversion of 4 ID BCTs at Fort Carson, Colorado EA was prepared pursuant to the Army's NEPA regulation, Title 32 Code of Federal Regulation (CFR) Part 651 and President's Council on Environmental Quality (CEQ) regulations (Title 40 CFR Parts 1500-1508) for implementing the procedural requirements of NEPA. The Proposed Action is expected to reduce the number of Soldiers in the 4ID by 1,386, and Family members by 2,356, and contribute to an overall loss of 17 Soldiers at Fort Carson by 2017. It will also reduce the number of M1A1 Abrams tanks by 50% (87), and Bradley Fighting Vehicles by 50% (84); and reduce artillery weapon systems from 64 to 54. Fuel consumption is expected to be reduced by 20% (nearly 41,000 gallons). Maneuver impact, is also expected to be reduced (See EA, Table 2.1). All of these factors, along with Fort Carson's ongoing mitigation and management programs, indicate that impacts from the proposed action will be less than significant.

The proposed action will not require expansion of PCMS. A separate, site-specific NEPA document will be prepared for PCMS.

Based on the analysis contained in the EA and the Army's intent to follow prescribed regulations, acquire required permits, perform monitoring, and implement of continued mitigation measures, I have determined that the Proposed Action will have no significant direct, indirect, or cumulative adverse effects on the human or natural environmental. Therefore, based on review of the EA, the Proposed Action is not a major Federal action which would significantly affect the quality of the environment within the meaning of Section 102(2)(c) of NEPA.

Accordingly, an environmental impact statement is not required and will not be prepared. With this finding, I approve selection of the Proposed Action.

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14 MARCH 2014
Date

Conversion of 4ID Brigade Combat Teams at Fort Carson, CO

Final Environmental Assessment
&
Finding of No Significant Impact

Prepared by:

U.S. Army Environmental Command

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Conversion of 4ID Brigade Combat Teams at Fort Carson, CO

Contents

1.0 INTRODUCTION

1.1 Background

The Army announced on 25 June, 2013 that it was reducing the number of Active Army Brigade Combat Teams (BCTs) from 45 to 33 over the next several years. At Fort Carson, this announcement included inactivation of an Armor BCT (ABCT). The remaining three BCTs at Fort Carson would be reorganized to receive a third maneuver battalion and other assets. The Army also announced elimination of a Stryker BCT (SBCT) at Joint Base Lewis McCord (JBLM), Washington, leaving the Army with seven SBCTs. The Army stated that it would have to adjust the proportional mix of Infantry, Armor, and Stryker BCTs that emerged from the 25 June, 2013 announcement. Because of their capabilities, the Army decided to retain eight SBCTs even as other types of BCTs were slated to be eliminated. One additional ABCT had to be eliminated to attain the correct mix. To maintain the proper balance of BCT types after the inactivation of the SBCT at JBLM, the Army must establish a SBCT at another location and eliminate an ABCT. For reasons explained below, Fort Carson was the only reasonable and practical location at which to establish the SBCT.

1.1.1 Fort Carson, Colorado.

In January, 2014 the Army announced the conversion of an ABCT to a SBCT at Fort Carson, Colorado. This decision was based on the 2008 Final Programmatic Environmental Impact Statement (EIS) for Permanent Stationing of the 2/25th Stryker Brigade Combat Team (HQDA, 2008) and embodied in the associated Record of Decision (ROD) dated March, 2008. Conversion of the 4ID BCTs includes the inactivation of one ABCT and the conversion of an existing ABCT to a SBCT. Also, the current Infantry BCT (IBCT) and the remaining ABCT will be reorganized as larger units through the addition of a maneuver battalion, and the addition of an Engineer Company. The end result will be that Fort Carson will go from having three ABCTs and one IBCT to a configuration consisting of one ABCT, one IBCT, and one SBCT. These conversions are expected to occur by the end of 2015. A restructuring of the three remaining BCTs will decrease the number of Soldiers in these BCTs by 1,386 personnel. Because a Combat Aviation Brigade (CAB) is being established at Fort Carson and will receive additional Soldiers during FY14-17, the actual net number of Soldiers on Fort Carson will decrease by only 17 by the end of FY17. (See Table 1.1 for details). Implementation of the conversion will not result in any new construction, but there may be some renovation of buildings and equipment storage areas over time. Brigade Combat Team training tasks on Fort Carson will remain essentially unchanged. This action does not affect the implementation of the stationing of the CAB, which is expected to be complete by 2017.

1.1.2 Piñon Canyon Maneuver Site (PCMS)

The 4th Infantry Division plans to conduct training of the SBCT only on Fort Carson for a potential 2015 deployment of the brigade. Appropriate NEPA analysis will be completed prior to any decision to train the SBCT at PCMS. Expansion of PCMS is not required as part of the conversion of BCTs at Fort Carson. The Army is preparing to initiate and conduct a comprehensive Environmental Impact Statement to study the full range of impacts of Army training on PCMS, which will include an integrated analysis of future SBCT training.

Table 1.1: Change in Number of Soldiers Due to Conversion of BCTs at Fort Carson, CO

4th Division		FY 13
1st BDE	ABCT	3,757
2nd BDE	ABCT	3,757
3rd BDE	ABCT	3,754
4th BDE	IBCT	3,523
Total Soldiers		14,791

4th Division		FY 15
1st BDE	SBCT	4,454
2nd BDE	IBCT	4,296
3rd BDE	ABCT	4,655
Total Soldiers		13,405

Change in Soldiers by 2017	Soldiers
Due To Conversion and Inactivation of BCTs =	-1,386
Fort Carson Strength FY17 (all stationing actions)=	-17

1.2 Purpose and Need

The Installation, which encompasses Fort Carson and PCMS, must take those actions necessary to support the BCT conversion and restructuring decisions made at Headquarters, Department of the Army (HQDA). For purposes of simplicity in this environmental assessment (EA), "conversion" is meant to include the ABCT conversion to a SBCT, the inactivation of one ABCT, and the restructuring of 4ID's remaining ABCT and IBCT. It also includes provision of facilities and training resources for the BCTs. The purpose of the Proposed Action is to implement the Army's BCT conversion decisions for Fort Carson. The need for the Proposed Action is to provide adequate facilities and training capability for the resulting BCTs. Fort Carson must provide for the training readiness, deployment, administrative functions, and Soldier and Family quality-of-life elements for those assigned to and supporting the BCT conversion.

1.3 Scope of the Analysis

This environmental assessment has been developed in accordance with the National Environmental Policy Act (NEPA), regulations issued by the Council on Environmental Quality (CEQ) published in 40 Code of Federal Regulations (CFR) Parts 1500-1508, and the Army's NEPA-implementing procedures published in 32 CFR Part 651, *Environmental Analysis of Army Actions (Army Regulation 200-2)*. This EA facilitates the Installation's planning and informed decision-making by the Garrison Commander. It helps the Army, stakeholders, and the public understand the potential extent of environmental impacts of the Proposed Action and alternatives, and whether those impacts (direct, indirect, and cumulative) are significant. The scope of this document does not include use of PCMS because the stationing and training of the SBCT for a potential deployment in 2015 will occur on Fort Carson; a separate comprehensive EIS is being prepared to address training on PCMS, as discussed in 1.1.2, above. This is appropriate as PCMS is located 150 miles southeast of Fort Carson with different resources and community concerns and provides training for more than just the 4th ID. Finally, PCMS is not necessary for the training of the SBCT for a potential FY15 deployment.

The scope of this document also does not include the ongoing stationing of a CAB at Fort Carson. The CAB stationing was the subject of an environmental analysis completed in 2012 (U.S. Army, 2012). This document also does not include the ongoing realignment of smaller units at Fort Cason. For instance, Fort Carson will lose a quartermaster company of 31 Soldiers in 2014; this unit and other small units are outside the scope of this EA. It is important to point out that the net loss of Soldiers on Fort Carson due to the conversions of the BCTs is 1,386. With the movement of other smaller units and individual Soldiers coming to Fort Carson in FY14-17 as part of the CAB, Fort Carson will have a net loss of only 17 Soldiers as demonstrated in Table 1.1. These numbers refer to active duty Soldiers and do not include temporary duty or Reserve Component personnel.

1.3.1 Major Activity Categories

The Proposed Action is to inactivate one ABCT, realign an ABCT and an IBCT by adding an additional maneuver battalion to each, and convert the remaining ABCT to a SBCT. The final configuration will result in 4ID consisting of 3BCTs composed of 1 ABCT, 1 IBCT, and 1 SBCT. Each of the three BCTs will include a third maneuver battalion. The Proposed Action will be accomplished without any major construction.

The scope of this EA encompasses the three major categories of Army activities required to convert the BCTs at Fort Carson: Main Post area renovation and modernization of existing non-historic buildings; live-fire training; and maneuver training.

1.4 Related Environmental Documentation

This environmental analysis incorporates by reference the *2014 Conversion of the ABCT to SBCT at Fort Carson Record of Decision* (HQDA, 2014) and the *2008 Final Programmatic Environmental Impact Statement for the Permanent Stationing of the 2/25th Stryker Brigade Combat Team* (HQDA, 2008). Specific reference to applicable portions of the *2007 Grow the Army PEIS* (HQDA, 2007),*the 2012* Fort Carson Combat Aviation Brigade Stationing Implementation Final Environmental Assessment (U.S. Army, 2012) and the *2013 Programmatic Environmental Assessment for Army 2020 Force Structure Realignment* (U.S. Army, 2013) are provided, as appropriate and where relevant in the analysis portion of this EA. This environmental analysis also incorporates by reference the February 2009 *Final Environmental Impact Statement for Implementation of Fort Carson Grow the Army Stationing Decisions* (Fort Carson, 2009), herein referred to as the 2009 *Fort Carson Grow the Army FEIS*. Where analysis conducted for this EA results in a changed conclusion from the *2009 Grow the Army PEIS*-related analysis, the change and/or difference is presented in this EA. Mitigation measures identified for Fort Carson that are listed in the 2013 Conversion ROD are incorporated into this EA.

1.5 Public Involvement

A Notice of Availability (NOA) was announced in local media, and the documents made available online at: http://www.carson.army.mil/DPW/nepa.html

This EA was made available to the public for 30 days along with a Draft Finding of No Significant Impact (FNSI). Anyone wishing to provide comment on the Proposed Action, EA or Draft FNSI, or to request additional information, had the option of writing to the Fort Carson NEPA Program Manager, Directorate

of Public Works, Environmental Division, 1626 Evans Street, Building 1219, Fort Carson, Colorado 80913-4362 or submitting comments via email to: usarmy.carson.imcom-central.list.dpw-ed-nepa@mail.mil.

At the end of the 30-day public review period the Army had received no comments on the Environmental Assessment or draft Finding of No Significant Impact.

1.6 Agency and Tribal Coordination

In accordance with 32 CFR 651.36 regarding other agency and organizations involvement, Fort Carson has provided a copy of these documents to appropriate local, state, and Federal government agencies and Native American tribes for their review and comment. More information concerning other ongoing government agency and tribal consultation is set forth throughout this document.

1.7 Decision to be Made

A decision will be made on whether the proposed action will have significant impacts. As stated in Section 1.5, an EA results in either a FNSI or a NOI to prepare an EIS. As part of the decision-making process, the Garrison Commander will consider all relevant environmental information and stakeholder and public issues of concern raised as part of this EA process. If the process results in a FNSI, the Garrison Commander will document the decision, which will be signed no earlier than 30 days from the publication of the NOA of the Final EA/Draft FNSI (see Section 1.5 above for information on the NOA publications). Upon a determination that there are no significant impacts, the Army will sign the FNSI and carry out the decision.

2.0 PROPOSED ACTION, NO ACTION ALTERNATIVE, AND ALTERNATIVE SCREENING CRITERIA

This chapter considers the Proposed Action and No Action Alternatives and provides details about the components of the Proposed Action. It also presents the criteria used to determine whether other alternatives were reasonable and therefore should be carried forward for analysis.

2.1 Proposed Action

This section discusses the Proposed Action considered for Fort Carson to implement the conversion of the 4ID BCTs. The No Action Alternative and Alternatives Considered but Dismissed from Analysis are addressed in sections 2.3 and 2.4, respectively.

Fort Carson will convert and train the 4th Infantry Division's BCTs as described in Section 1.3.1 (Major Activities). The Proposed Action includes BCT live fire and maneuver training activities at Fort Carson. No new construction is needed as adequate facilities currently exist to support the 4ID BCT conversion. The Proposed Action is anticipated to result in the loss of 1,386 Soldiers and an estimated 2,356 Family members. The anticipated net change at Fort Carson between FY14 and FY17 for all actions is a loss of 17 Soldiers as a result of the Proposed Action and other ongoing stationing actions. Any further changes in the number of Soldiers on Fort Carson are not reasonably foreseeable at this time and are therefore not taken into account in this analysis. The following sections provide a description of the Proposed Action components the Army would undertake to carry out the 4ID BCT conversion without new construction.

2.1.1 Conversion of the Existing BCTs

Once the conversion is completed, the SBCT will have approximately 4,454 Soldiers, the IBCT 4,296, and ABCT 4,655. This results in approximately 1,386 fewer Soldiers than the current 4ID BCT configuration. A comparison of the current and future unit organizations and equipment is discussed below and in Appendix E.

2.1.1.1 Convert the 1st Brigade (ABCT) to a SBCT

The conversion of the 1st Brigade from an ABCT to a SBCT would result in shipping many of the tracked vehicles to another installation. A SBCT equipment package would be shipped to Fort Carson from another installation. The SBCT is anticipated to have 4,454 Soldiers, 360 Stryker vehicles of which 27 are Mobile Gun Systems (105mm), and 18 artillery pieces (155mm Towed). As compared to the current ABCT, the engineer battalion will have enhanced gap-crossing and breaching capabilities as well as route clearance assets.

2.1.1.2 Inactivate 2nd Brigade ABCT

The equipment and personnel from this ABCT will be transferred to other units and installations following deactivation.

2.1.1.3 Realign the 3rd Brigade (ABCT)

A third maneuver battalion will be added to the existing ABCT, which also will receive additional engineer and artillery capabilities. Under the reorganization the Brigade Support Troops Battalion in the

ABCT will be converted into a Brigade Engineer Battalion. This engineer battalion will have enhanced gap-crossing and breaching capabilities, as well as route clearance assets over the current ABCT. This would expand the number of engineers in the new ABCT to 596. The ABCT also will have increased artillery capabilities by converting from two batteries with 8-guns (16 total) in the artillery battalion, to three batteries of six guns for a total of 18, an increase in two guns. This gives the ABCT one additional battery and two additional guns to support the three maneuver battalions.

2.1.1.4 Convert the 4th Brigade (IBCT)

A third maneuver infantry battalion will be added to the existing IBCT, which also will receive additional engineer and fires capabilities discussed for the ABCT in paragraph 2.2.1.3.

2.1.2 Construction of Facilities

2.1.2.1 Main Post Construction

Fort Carson does not require any new construction or renovation to accommodate the conversion of the BCTs. Some minor renovation of non-historic buildings may occur over time as necessary and as funds become available. A 16 acre temporary storage area will be established that, in part, will provide a location to store equipment that is either moving to a new location on post, or moving to another installation. Additionally, the storage yard will support SBCT equipment moving to Fort Carson. The storage area consists of gravel base, fence, and lighting. Because this facility will also serve unrelated actions which are outside of this EA, it has already been the subject of NEPA analysis in a Record of Environmental Consideration (REC) for a Temporary Vehicle Storage Area. Additional housing for families and barracks for unmarried Soldiers is not planned for this conversion.

2.1.2.2 New Range Construction

Under the Proposed Action alternative no new ranges will be constructed. It should be noted that an Infantry Platoon Battle Course (IPBC) is planned for potential construction in 2017. However, this range has been under consideration for several years and is not needed by Fort Carson to accommodate the Conversion of the BCTs.

2.1.3 Live-fire and Maneuver Training

Under the Proposed Action, levels of maneuver training would vary slightly from year-to-year, but are not expected to change significantly as a result of the Proposed Action. The current list of training activities would not change (see Appendix B). The amount of live fire for small arms qualification would decrease in conjunction with a decrease of 1,386 Soldiers at Fort Carson as part of the 4ID BCT conversions. The overall net decrease of 17 Soldiers by 2017 would result in a negligible reduction in small arms live fire training. A decrease in artillery weapons from 64 to 54 under the Proposed Action will result in a commensurate decrease in artillery training.

A critical component of Army unit training and preparation for combat deployment is maneuver training. The Army standard unit of measure for predicting the impact of maneuver training on vegetation and soils is the Maneuver Impact Mile (MIM). The MIM model is a methodology that has been uniquely developed for the Army to understand the impacts of maneuver training on training lands. The methodology incorporates the number of vehicles, vehicle weight, ground contact pressure,

operational training requirements (which is reflected in the annual number of miles allowed per vehicle type per year for training) and other factors to estimate the effects of training associated with an Army unit and its vehicle fleet. A comparison between the current 4ID BCT configuration and the BCT configuration under Proposed Action is contained in Table 2.1. For the purpose of comparison only, the impacts associated with the configuration based on the Proposed Action have been modeled utilizing the MIMs for years 2012 and 2013. This hypothetical piece of Table 2.1 is only for illustrative purposes to provide clarity to the projected difference between the current 4ID BCT configuration and the configuration under the Proposed Action. In other words, the conversion had not occurred in fiscal years 12 and 13, but the authorization of MIMs was available. A key difference between the fleet of vehicles currently stationed at Fort Carson and the future fleet associated with the 4ID BCT conversion is the transition from tracked vehicles to wheeled Stryker vehicles. The modeled difference in MIMs between the two configurations will serve as the basis for the comparison of impacts in Chapter 4. Implementation of maneuver training as part of the Proposed Action would result in a 5% decrease in the aggregate number of MIMs at Fort Carson. It is important to recognize that there are a number of factors that influence the final calculated MIMs for a brigade of the course of a single year that result in annual difference in total MIMs such as allotted mileage allowed for vehicle units and vehicle types.

Table 2.1: Fort Carson Maneuver Impact Comparison

Fort Carson Maneuver Impact Analysis									
BCT Type	**# of BCTs**	**FY 12 MIMs**	**Total MIMs**	**FY 13 MIMs**	**Total MIMs**	**FY 14 MIMs**	**Total MIMs**	**FY 15 MIMs**	**Total MIMs**
No Action Alternative- 2 Maneuver Battalion Configuration (current configuration)									
ABCT	3	345,263	1,332,835	328,328	1,267,460	225,236	869,489	296,363	1,144,064
IBCT	1	297,046		282,476		193,781		254,975	
Proposed Action- 3 Maneuver Battalion Configuration									
ABCT	1	439,896	1,266,671	418,320	1,204,541	286,971	826,326	377,593	1,087,271
IBCT	1	366,546		348,567		239,120		314,632	
SBCT	1	460,229		437,655		300,235		395,046	
		Net Difference	% Change	Net Difference	% Change	Net Difference	% Change	Net Difference	% Change
		-66,164	-4.96%	-62,919	-4.96%	-43,163	-4.96%	-56,793	-4.96%

The Stryker, an eight-wheeled vehicle, weighs 22 Tons, considerably less than the 70 Ton Abrams main battle tank and the Bradley vehicle (33 tons). The SBCT at Fort Carson will receive the new Double V-bottom Stryker vehicle. The hull of this vehicle is designed to provide Soldiers increased protection from land mines. The Stryker is authorized to drive 2.5 times more miles than the Abrams and Bradley vehicle fleets, but gets 12 times better gas mileage. Regarding live fire training, the SBCT also contains 27 Mobile Gun Systems which produce slightly less noise than the 120mm main gun of the Abrams.

2.2 No Action Alternative

Under the No Action Alternative, the conversion of 4ID BCTs at Fort Carson, to include the conversion of an ABCT to a SBCT, would not be implemented. Force structure, assigned personnel and equipment, and training operations would remain unchanged and no new facility renovation would occur.

The No Action Alternative includes construction and other changes associated with past Grow the Army (GTA) and CAB decisions and activities. As part of the No Action Alternative, Fort Carson would retain the Army equipment currently stationed at the installation and would continue to conduct ongoing training requirements.

This alternative is included as required by the CEQ and 32 CFR Part 651, the Army's NEPA-implementing regulations. The No Action Alternative, however, is not feasible as the Installation is required to implement the conversion and stationing decisions made by HQDA. The No Action Alternative is included in this EA to provide baseline conditions and a benchmark against which to compare environmental impacts of the Proposed Action.

2.3 SCREENING CRITERIA

Screening criteria were used to assess whether an alternative was "reasonable" and would be carried forward for evaluation in this EA. The screening criteria are based upon balancing training requirements with sustainment of the land, maximizing troop readiness, and supporting Soldier and Family quality of life at the installation. The Army established the following screening criteria to identify the range of potential alternatives to meet the Purpose and Need of the Proposed Alternatives for converting and training the 4ID BCTs on Fort Carson.

2.3.1 Military Construction Planning Considerations

Reasonable alternatives must use minimal construction and renovation given limited fund availability.

2.3.2 Training Considerations

Reasonable alternatives must accommodate the training requirements of the three different types of brigades; SBCT, ABCT, and IBCT as well as air-ground integration training by utilizing existing Fort Carson ranges and training areas.

2.3.3 Land Constraints

Reasonable alternatives must consider:

- Topography (and ability to train);
- Contaminated sites under the management of the Installation's Installation Restoration Program;
- Off-limits to training/restricted areas;
- Unexploded ordnance (UXO); and
- Impacts to existing infrastructure and maneuver lands.

2.3.4 Quality of Life

Reasonable alternatives must consider impacts on the quality of life of the Soldier and their Families. With continuing overseas deployments the Army is committed to reducing the amount of time a Soldier must be away from home station for training.

2.3.5 Alternatives Carried forward for Analysis

Conversion of the 4ID BCT structure as described under the paragraphs of 2.2 allows the Army to implement the conversion decision with minimal construction and within the land constraints noted, while accommodating the training and deployment requirements and at the same time maintaining the necessary quality of life for Soldiers and Families. Therefore, the Proposed Action is the only course of action that has been carried forward for analysis in addition to the No Action Alternative.

2.4 Alternatives Considered but Dismissed From Analysis

2.4.1 Train SBCT at Other Locations

The Army's decision to station a SBCT at Fort Carson was partially based on the potential training resources at Fort Carson and potential future training at PCMS . It was also influenced by the opportunity for the SBCT to train with an ABCT and IBCT. Studying an alternative to conduct regular installation-level training at locations other than Fort Carson would essentially negate the decision documented in the Conversion of ABCT to SBCT at Fort Carson ROD and, therefore, is not within the scope of this EA. Training at other locations would also be too expensive and the travel time required would diminish unit readiness. Training at other locations would take Soldiers away from their home stations, decrease time with Families and thereby adversely impact Soldier and Family quality of life. It would also strain the capacity of the other installation to train units stationed there. This alternative would not meet the training considerations and quality of life criteria. It also would be more costly.

2.4.2 Construct New Facilities for the SBCT on Fort Carson

New Main Post and range construction is not required or approved for the conversion of 4ID BCTs and requisite training. This alternative would not meet the military construction planning consideration criterion and would be very expensive. Therefore, this alternative was not carried forward for additional analysis.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This section provides a summary of the analysis presented in Chapter 4. Overall, the 4ID BCT conversion is expected to result in reduced environmental impacts on Fort Carson.

3.1 Valued Environmental Components and Focusing of the Analysis

Valued Environmental Components (VECs) are categories of environmental and socio-economic resources for which impact analysis is conducted to enable a managed and systematic analysis of these resources. VEC categories analyzed in this EA include:

- Land Use
- Air Quality and Greenhouse Gases (GHG)
- Noise
- Geology and Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Socio-economics
- Traffic and Transportation
- Airspace
- Utilities
- Hazardous and Toxic Substances

3.2 Summary of Environmental Consequences by VEC

This summary is a tool to assist Fort Carson (including the decision maker), regulatory agencies, and the public in understanding the relative impacts of the Proposed Action to the VECs listed in Section 3.1.

3.2.1 Impacts of alternatives

Table 3.1 depicts the environmental consequences associated with the Proposed Action compared with the current environmental baseline at Fort Carson and their associated level of environmental consequences exceeding or differing from the No Action Alternative baseline. Ongoing efforts at Fort Carson to protect the environment and mitigate environmental impacts are contained in Table 3.4 and reflect those efforts that support the current environmental baseline.

Table 3.1: Anticipated Direct and Indirect Impacts to Valued Environmental Components

VEC	Proposed Action: Existing Facilities
Land Use	Less than Significant
Air Quality and GHG (Dust Only)	Less than Significant
Noise	Less than Significant
Geology and Soils	Less than Significant
Water Resources	Less than Significant
Biological Resources	Less than Significant
Cultural Resources	Less than Significant
Socio-economics	Less than Significant
Traffic and Transportation	Less than Significant
Airspace	Less than Significant
Utilities	Less than Significant
Hazardous and Toxic Substances	Less than Significant

3.2.2 Cumulative Effects

Cumulative impacts are the impacts of the proposed action combined with the impacts of past, present, or reasonably foreseeable future actions.

Information on future construction projects was presented in the 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009). Table 3.2 below identifies projects and activities at the Installation that are in addition to those identified in the 2009 *Fort Carson Grow the Army FEIS*. The projects in Table 3.2 have been or will be addressed in separate NEPA documents and are included here to provide a complete picture of cumulative impacts. No new construction is required for the Proposed Action.

Table 3.2: Projects and Activities in Addition to Those Identified in the 2009 GTA EIS

Project or Activity	Time Frame
Projects at Fort Carson	
Mission Training Complex	Started FY 2012 (approximately 73% complete)
Approximately 20 CAB- related projects are completed, underway, or will be initiated in the near future including a control tower, bulk fuel facility, hot refuel point, central energy plant, and support infrastructure	FY 2012-2017
Infantry Platoon Battle Course Ranges	FY17
Tactical Unmanned Aerial Vehicle Facility	FY 2018
Physical Fitness Center at Wilderness Road	FY19
Medical clinic addition and alteration	FY20
Iron Horse Park Development	Ongoing
Family Housing	Ongoing
Net Zero Energy, Water, and Waste Projects	Ongoing
Chapel at Fort Carson	Long Range
Biofuel Co-generation project	Long Range
Turkey Creek Fire Station	Long Range
Banana Belt Redevelopment	Long range

The cumulative effect analyses sections in Chapter 4 are based on the combination of the impacts of implementation of the conversion of BCTs on Fort Carson, and on those other actions proposed or identified as past, present, or reasonably foreseeable at Fort Carson. Table 3.3 provides a summary of the results of these cumulative impacts analyses by VEC for Fort Carson.

Table 3.3: Anticipated Cumulative Impacts from the Conversion of 4ID BCTs at Fort Carson

VEC	Fort Carson
Land Use	Less than significant
Air Quality and GHG	Less than significant
Noise	Less than significant
Geology and Soils	Less than significant
Water Resources	Less than significant
Biological Resources	Less than significant
Cultural Resources	Less than significant
Socio-economics	Less than significant
Traffic and Transportation	Less than significant
Airspace	Less than significant
Utilities	Less than significant
Hazardous and Toxic Substances	Less than significant

3.3. Current Programs and Proposed Mitigation

The Army is committed to sustaining and preserving the environment at all of its installations. In keeping with that commitment Fort Carson has an active environmental management program that employs a full array of best management practices (BMPs) and environmental management programs to ensure environmental compliance, stewardship, and sustainability of those areas potentially impacted by the 4ID BCT conversion at Fort Carson. Fort Carson would continue to implement all existing mitigation measures, BMPs, and environmental management programs to minimize the impacts of the BCT conversion.

Table 3.4: Fort Carson Mitigation Measures and Best Management Practices

Impact by Resource at Fort Carson	Current Requirements	Proposed Additional Considerations
Land Use		
• No additional Impact Identified		
Air Quality and GHG		
• increased fugitive dust from more frequent off-road vehicle travel,	• All training activities are subject to the Installation's Fugitive Dust Control Plan. Military convoys must comply with a lower speed limit than regular traffic. The Installation applies chemical stabilizer (dust palliative) to tank trails parallel to Interstate- 25 and State Highway 115, as well as to unpaved areas within the Main Post and downrange areas	• Monitor dust generation and increase current BMPs as necessary
Noise		
• No additional Impact Identified	• Continue current noise minimization measures.	• None Identified.
Geology and Soils		
• Soil erosion in training areas from ground maneuver.	• Fund and implement land management practices and procedures described in the Integrated Training Area Management (ITAM) annual work plan to reduce erosion and geologic impacts. • Adhere to MS4 requirements.	• The installation may increase ITAM program activities, if necessary, to address additional erosion from SBCT training on vehicle two tracks and within existing training areas when appropriate.
• Erosion of range access roads.	• Maintain range roads and vehicle two tracks to minimize erosion IAW ITAM and facilities management program requirements. • Adhere to MS4 requirements.	• The installation will seek additional funding, if necessary, based on monitoring or observation, to address increased levels of wear and tear on roads if needed.
Water Resources		
• Stormwater runoff from land disturbance, hazardous substances storage, and discharges of non-stormwater from the site.	• Continue coordinating with the U.S. Army Corps of Engineers (USACE) for Section 404 compliance. • Continue use of BMPs. • Continue to manage hazardous materials IAW applicable Installation regulations and management plans. These include: Fort Carson Regulation 200-1, Pollution Prevention (P2) Plan, Spill Prevention, Control, and Countermeasures Plan (SPCCP), and Hazardous Waste Management Plan (HWMP).	• None Identified

Impact by Resource at Fort Carson	Current Requirements	Proposed Additional Considerations
Biological Resources		
• Increased disturbance to breeding raptors.	• Continue to implement INRMP and Bald Eagle Management Plan. • Continue to prevent breeding season fires from encroaching on breeding habitat by burning adjacent areas in late winter or early spring. • Continue to retrofit utility systems with avian protection devices and follow practices outlined in the Avian Protection Plan Guidelines. • Continue to establish seasonal restrictions around active eagle eyries .	• None identified
• Vehicular collisions with deer and other wildlife.	• Use lower speed limits in downrange areas to reduce safety and environmental hazards.	• None identified
• Damage to vegetation and subsequent increase in noxious weed infestations due to more frequent tactical vehicle use.	• Continue to manage training lands IAW the Installation's ITAM, INRMP, Invasive Species Management Plan, and program requirements. • Continue to employ integrated weed management strategies (biological, chemical, cultural, and physical/mechanical control techniques). • Continue to eradicate all Colorado List A species when found. • Conduct mission activities in a manner that precludes the introduction or spread of invasive species. • Continue procedures for cleaning vehicles and equipment prior to shipment from one location to another, deployment, and/or redeployment.	• Consider potential increase use of herbicide and bio-control agents as needed
• injury to or harassment of sensitive species and disturbance or destruction of their habitat from modification, maintenance, and training activities	• Survey and monitor sensitive species habitat and conduct construction, maintenance, and training activities IAW the INRMP, which describes appropriate species management and impact mitigation techniques.	• None identified

Impact by Resource at Fort Carson	Current Requirements	Proposed Additional Considerations
Cultural Resources		
• Loss of unrecorded archaeological resources during training activities.	• Unsurveyed areas required for military use would be surveyed sometime in the future, and resources identified during survey would be evaluated for NRHP eligibility according to the Secretary of the Interior's Standards for Archaeology and Historic Preservation, as well as applicable Colorado standards.. • The Installation would continue development and implementation of the cultural resources education and awareness programs for Army personnel, Families, civilians, and the public to enhance the conservation of historic properties on Installation lands. • Until a Programmatic Agreement (PA) for training is established that enables a revised process, continue to implement the National Historic Preservation Act (NHPA) Section 106 consultation for training activities that constitute an undertaking as defined by 36 CFR 800.16(y) prior to each major training activity to ensure that the Army considers ways to avoid, minimize, or mitigate adverse effects. • If subsurface cultural resources are discovered or disturbed during training or construction, the Installation's Inadvertent Discovery of Archaeological Resources or Burials SOPs or Native American Graves Protection and Repatriation Act (NAGRPA) SOPs and appropriate Section 106 or 110 consultation would be implemented as appropriate. • Continued implementation of the ICRMP	• None identified.

Impact by Resource at Fort Carson	Current Requirements	Proposed Additional Considerations
• Damage to cultural resources resulting from accidental wildfires caused by live-fire and maneuver training.	• The Army would continue to comply with cooperative agreements with the Colorado Springs Fire Department and USFS. • Continue to provide a variety of protection measures for cultural properties that are historic properties, sites whose eligibility has not yet been determined and those identified as "Needs Data."	• None identified.
Socio-economics		
• Negligible economic impact associated with slight population increases such as increased sales volume, employment, and income in the ROI.	• None identified	• None identified.
Traffic and Transportation		
• Decreased demand at Access Control Points (ACPs).	• Alternative transportation modes are being explored in traffic demand management and low impact vehicle studies. • Continue to support Goal 2 – Sustainable Transportation objectives and targets of the Installation's 25 Year Sustainability Goals in 2002, regulations which outline policies and procedures for noise abatement, minimum altitudes.	• No Identified

Impact by Resource at Fort Carson	Current Requirements	Proposed Additional Considerations
Airspace		
• No additional Impact Identified		
Utilities		
• Decreased solid waste generation	• Solid wastes and recyclable materials would continue to be managed IAW the existing Integrated Solid Waste Management Team (ISWMP) and P2 Plan.	• None identified.
Hazardous and Toxic Substances		
• Increased Hazardous materials use and potential releases commensurate with increase in Stryker Vehicle	• Continue to manage hazardous materials IAW Hazardous Materials Control Center (HMCC) and applicable Installation regulations and management plans. These include: the Fort Carson Regulation 200-1, P2 Plan, SPCCP, and HWMP. • Continue to implement the Ammunition Supply Point (ASP) SOP for storage and transportation of additional munitions. • Designated Installation Explosives Ordnance Detachment would continue to respond to discoveries of unexploded ordnance (UXO) for safe open detonation either in place or at Range 121.	• None identified.
• Expected decreases in UXO generation as a result of reduced live-fire training BCT units	• Continue to implement management plans and SOPs for munitions handling, UXO removal, and maintenance and management of vegetation in impact areas to preclude surface water or wind transport.	• None identified.

4.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

Analysis of potential impacts of implementing the conversion of BCTs at Fort Carson is provided in the following sections. Per Section 3.1, each section in Chapter 4 addresses one of 12 VECs, which are categories of environmental and socio-economic resources that enable a managed and systematic analysis of these resources, to determine if there are any significant impacts, and whether they can be mitigated. The VECs analyzed in this section are:

- Land Use
- Air Quality and Greenhouse Gas
- Noise
- Geology and Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Socio-economics
- Traffic and Transportation
- Airspace
- Utilities and Infrastructure
- Solid and Hazardous Waste

4.2 Land Use

4.2.1 Affected Environment

4.2.1.1 Location and Size

Fort Carson is located in central Colorado at the foot of the Rocky Mountains and occupies portions of El Paso, Fremont, and Pueblo counties (see Figure 4.1). The Installation is bounded by State Highway 115 on the west and Interstate 25 and mixed development to the east. Colorado Springs and Denver lie approximately 8 miles and 75 miles, respectively, to the north; while the city of Pueblo (not shown on the map) is located approximately 35 miles south of the Main Post area.

Fort Carson covers approximately 137,000 acres, and extends between 2 and 15 miles), east to west, and approximately 24 miles, north to south. The Main Post, located in the northern portion of the Installation, covers approximately 6,000 acres. Of Fort Carson's total acreage, more than half provides maneuver land suited for vehicle and non-vehicular military training (HDQA, 2011a).

4.2.1.2 On-Post Land Use

Fort Carson is an active military training facility for both weapons qualifications and field training. Land use falls generally into three broad categories: the Main Post which consists of developed land and a

high density of urban uses; downrange areas, which consists of open land used for training purposes; and land specified for non-training uses, which are designated in various areas and are accessible by the public. The Main Post area comprises approximately 6,000 acres and contains most of the installation infrastructure, such as Soldier and Family housing; administrative, maintenance, community support, recreation, supply, and storage facilities; utilities; and classroom and simulation training facilities. Principal industrial operations include the repair and maintenance of vehicles. These operations mostly occur within the vicinity of the "banana belt" (so- called because it is a banana-shaped arc of brick buildings) located along the north and east side of the Main Post area.

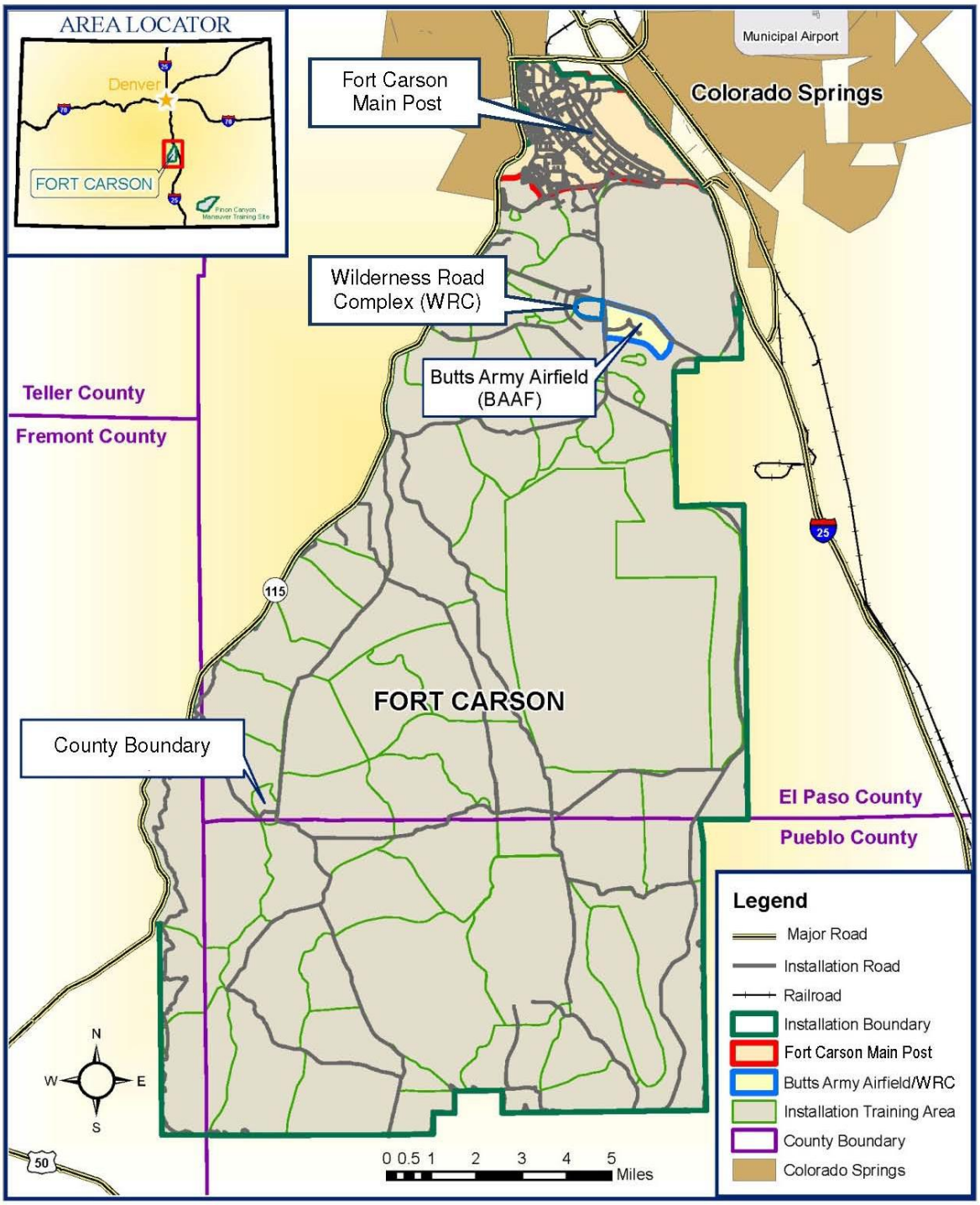
The downrange area consists of 56 training areas (approximately 131,000 acres) and Camp Red Devil (1,166 acres). Downrange areas, with the exception of Camp Red Devil, are generally unimproved, meaning it has either no permanent facilities or very limited facilities used by troops to complete training missions. Camp Red Devil consists of a number of permanent and semi-permanent facilities that support extended duration tactical training on Fort Carson.

Portions of the downrange area are restricted from use or are available for limited training to protect natural and cultural resources, fragile soils, recreation areas, or other environmental concerns. Recreational uses include hunting, fishing, dog training, and activities such as picnics and trail rides. Military training is generally off limits at these sites, and the intensity, level, and type of recreational activities vary by site. Most of the sites that support recreational uses are also waterfowl nesting refuges; some sites also protect other species, including fish. Two permits have been issued by the State of Colorado to mine refractive clay on Fort Carson, near the Stone City site. Fort Carson is required by law to allow mining at existing sites provided permit conditions continue to be met by permittees.

4.2.1.3 Surrounding Off-Post Land Uses/Regional Land Use Planning

Off-post land use remains consistent with that described in the 2011 CAB *Stationing PEIS (HQDA, 2011a), and 2012 Fort Carson Combat Aviation Brigade Stationing Implementation EA (U.S. Army, 2012)*. Developed land and land planned for future development border the northern one-third of Fort Carson. These lands are part of unincorporated El Paso County to the west, the City of Colorado Springs to the north and west, and Security-Widefield and the City of Fountain to the east. The town of Penrose is located to the west of the southwest corner of Fort Carson. Land bordering the southern and southeastern portion of Fort Carson is generally comprised of undeveloped agricultural land with parcels protected from development with conservation easements as part of the Installation's Army Compatible Use Buffer (ACUB) program.

Figure 4.1: Location of Fort Carson, Colorado



The goal of the ACUB program is to buffer the ranges and training areas along the southern and eastern boundaries of Fort Carson. Although there is conservation value to some of the land, the primary driver for the buffers is to prevent training restrictions due to incompatible development. By the end of September 2013, 24,288 acres were protected from non-compatible use (23,252 acres with permanent conservation easements and 1,036 acres with fee simple title) through the ACUB program. By precluding incompatible development off-post through ACUB, the Installation is mitigating factors that would otherwise affect the use of training ranges, including: decreasing civilian safety concerns associated with illegal trespass, mitigating off-Installation lighting sources that limit use of night vision devices and other night mission training, and decreasing public complaints regarding dust, smoke, noise, and vibrations.

Additional details on land use planning, recreational opportunities, and land use both on- and off-post are available in the 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009).

4.2.2 Environmental Consequences

4.2.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at its current levels, configurations, and locations. There would be no change to land use at Fort Carson, as training related to conversion of 4ID BCTs and facility renovation activities would not be implemented.

4.2.2.2 Proposed Action

Under the Proposed Action there is a 5% reduction in the overall maneuver impacts as noted in Table 2.1. No significant changes to land use impacts have been identified on Fort Carson for this action. The current list of training activities would not change on Fort Carson, but intensity or duration of the activities could change as mission requirements change. The converted BCTs would utilize existing ranges on Fort Carson to satisfy live-fire and maneuver training. BCT conversion related operations would not be expected to result in any changes to current land use on Fort Carson.

4.2.2.3 *Cumulative Effects*

The 4ID BCT conversion at Fort Carson would not result in a change of land use in or around Fort Carson, or present a conflict with existing land uses in areas adjacent to Fort Carson. As shown in Table 1.1 the net decrease in Soldiers on Fort Carson will have a very small effect on the total change in population on El Paso County . Other reasonably foreseeable actions would not result in a change of land use in or around Fort Carson, and therefore there are no significant cumulative impacts.

4.3 Air Quality and Greenhouse Gases

4.3.1 Affected Environment

4.3.1.1 National Ambient Air Quality Standards and Attainment Status

In Colorado, air quality is regulated by the Colorado Department of Public Health and Environment (CDPHE) and the EPA Region VIII. The Clean Air Act (CAA) of 1970, 42 USC 7401 et seq., amended in 1977 and 1990, is the primary federal statute governing air pollution. The CAA established the National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) to protect human health and welfare, allowing for an adequate margin of safety. Primary and secondary NAAQS have been established for six air pollutants, known as criteria pollutants: ozone (O3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and two types of particulate matter, PM_{10} and $PM_{2.5}$. $PM_{2.5}$ is matter 2.5 micrometers or less in diameter and PM_{10} is matter 2.5 to 10 micrometers in diameter.

Fort Carson is within the air quality control areas of El Paso, Fremont, and Pueblo counties, including the City of Colorado Springs. Both Fremont and Pueblo counties are in attainment (meeting air quality standards) for all NAAQS criteria pollutants. The Colorado Springs Urbanized Area in El Paso County is in attainment for five NAAQS criteria pollutants. This area was classified as a maintenance area for carbon monoxide in 1999 due to a 1988 violation of the 8-hour CO standard (PPACG, 2008). This CO maintenance area includes the majority of Fort Carson's Main Post (north of Titus Boulevard and Specker Avenue). This designation is currently set to run through 2019 (CDPHE, 2009). In December 2009, the CDPHE approved the *Revised Carbon Monoxide Attainment/Maintenance Plan, Colorado Springs Attainment/Maintenance Area*, the most current State Implementation Plan (SIP) for the maintenance area (CDPHE, 2009). In the future, this area may become part of an ozone (O_3) non-attainment area. Local O_3 monitors show violation of the proposed 2010 standards. The proposed 2010 standards are more stringent than the current standard, but have not yet been implemented.

4.3.1.2 Pollutants and Sources

Fort Carson stationary and fugitive emission sources, in general, include boilers, high temperature hot water generators, furnaces/space heaters, emergency generators, paint spray booths, fuel storage and use operations, facility-wide chemical use, road dust, military munitions, and smokes/obscurants. Fort Carson's air pollutant emissions generation occurs through the combustion of fossil fuels via equipment such as boilers (a stationary source) and motorized vehicles (mobile sources). Combustion products mainly include GHGs, predominantly carbon dioxide (CO_2), CO; NO_x, SO_2, and PM_{10} and $PM_{2.5}$. Road dust is predominantly a source of PM_{10}. In 2010, after tightening the ambient air emissions standard for lead, the U.S. Environmental Protection Agency found Fort Carson emits too little lead to further investigate any potential to exceed the new standard.

4.3.1.3 Permits, Management Plans, and Best Management Practices

The Installation manages its air emissions per regulatory requirements, management plans, and BMPs for Fort Carson. Key among these is Fort Carson's CAA Title V operating permit (No. 95OPEP110). This type of permit is required of facilities located in an attainment area with the potential to emit (i.e., the

maximum emissions a facility could emit given physical, enforceable, and permitting constraints) more than 100 tons per year (tpy) of a criteria pollutant.

The Title V permit limits the amount of pollutants from CAA-regulated significant emission sources in various ways, depending on the source type (e.g., restricting operating hours, fuel type, throughput amount, and emission rates). Almost exclusively, the Title V permit limits equal those found in applicable CAA rules and permits. As a major Title V source, Fort Carson must submit a permit application for renewal every 5 years. The Title V Permit Renewal and Modification Permit Application was submitted to the CDPHE on July 1, 2011. This application was determined to be administratively complete and is currently under review at the state agency. Additionally, a 2012 Permit Modification and 2013 Modification are currently under review as well. The Installation will operate under the approved 2007 Title V permit until issuance of the new permit. As part of Fort Carson's Title V operating permit, the installation is permitted as a minor (area) source of hazardous air pollutants (HAPs) as it does not emit more than 10 tpy of a single HAP (of 186 regulated HAPs) or 25 tpy of total HAPs. Fort Carson took a voluntary permit limit with CDPHE that reduces the limits to eight (8) tpy and 20 tpy, respectively. Also of note, the Title V permit limits use of smoke munitions and the generation of fog oil smoke for training exercises, activities that are typically unique to the military.

Fort Carson's air quality BMPs include the development and implementation of a Fugitive Dust Control Plan (Fort Carson, 2012a), Integrated Wildland Fire Management Plan (Fort Carson, 2013b), Title V Paint Booth Operating Standards, Ozone Depleting Compound Management Plan, and the Emergency Generator Operations and Maintenance Plan. The Fugitive Dust Control Plan includes taking action to ensure military maneuver actions do not result in emissions greater than 20% opacity crossing the Installation boundaries. Soldiers observe training operations for fugitive dust generation and smoke obscurants and stop those activities where fugitive dust or smoke obscurants has the potential to leave the Installation.

BMPs support the Installation in ensuring environmental compliance, stewardship, and sustainability.

4.3.1.4 Climate and Greenhouse Gases

Scope 1 emissions are those originating on-post and are predominantly boiler emissions, but also include emissions from generators, WWTPs, landfills, on-post vehicles (other than tactical), and leaking refrigerant. Scope 2 emissions are those emitted from power and steam plants in producing power and steam consumed at the installation. Fort Carson's predominant Scope 1 stationary greenhouse gas emission sources are boilers. Scope 2 includes emissions from utilities in providing power to Fort Carson and PCMS. The Installation reports GHG emissions from Fort Carson, as required, on an annual basis per 40 CFR 98 Subpart C. In 2008, the Army estimated these emissions (Scope 1 + Scope 2) to be about 100,000 tons CO_2 equivalent per year.

4.3.2 Environmental Consequences

4.3.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at current levels, configurations, and locations. There would be no change to air quality or criteria and HAP emissions at Fort Carson, as conversion of BCTs and renovation activities would not be implemented.

4.3.2.2 Proposed Action

The change in the level of air pollutant emissions due to implementation of the 4ID BCT conversion is negligible for both stationary and mobile sources. The converted BCTs will use the existing buildings, and with a small decrease in Soldiers there is expected to be little or no change in stationary source emissions.

Table 4.1: Change in Fuel Consumption with Conversion of 4ID BCTs

Type of Tactical Vehicle	Authorized Miles per Vehicle [1][2]	Miles per Gallon [3]	Total Gallons per Vehicle [4]	Total Number of Vehicles [5]	Total Gallons Consumed	Total Miles
Current 4th ID Tactical Vehicles						
M-1 Tank	390	0.5	780	174	135,720	67,860
M-2/3 Bradley	464	1	464	165	76,560	76,560
Total					**212,280**	**144,420**
Future 4th ID Tactical Vehicles						
M-1 Tank	390	0.5	780	87	67,860	33,930
M-2/3 Bradley	464	1	464	81	37,584	37,584
Stryker	1100	6	183	360	65,880	396,000
Total					**171,324**	**467,514**
		Change from current to future			**-40,956**	**323,094**

(1.) HQDA restricts the number of miles these vehicles may drive in one year without wavier.

(2.) Based on fiscal year 2014 allocated mileage.

(3.) Average miles per gallon for vehicle type

(4.) Total gallons each vehicle consumes in one year.

(5.) Total number of this vehicle in the 4ID before and after conversion of BCTs.

It is anticipated that the converted BCTs will emit less air pollutants than the current BCTs as a result of training. With the conversion of an ABCT to a SBCT, vehicle usage in training will transition from use of the Abrams and Bradley family of tracked vehicles to wheeled Stryker vehicles. The Stryker vehicle has a much better gas mileage than either the Abrams or Bradley vehicle families (Table 4.1). Another factor is the number of miles the vehicles are expected to travel. The Army has placed limits on the miles different combat vehicles can travel each year (Table 4.1). Assuming the maximum usage and applying the fuel used per miles, we can determine the total fuel used by the 4ID's Abram, Bradley, and Stryker vehicle fleet. Table 4.1 demonstrates that total fuel use of the existing BCTs is 212,280 gallons per year and for the BCTs following conversion is 171,324 gallons per year, a reduction of 40,956 gallons per year

for tactical combat vehicles. This represents a 20% reduction in fuel usage per year due to BCT conversion as conversion specifically relates to the reorganization of the Abrams, Bradley, and Stryker vehicle fleet. Therefore, emissions are expected to decrease as a result of burning less fossil fuel in combat vehicles during maneuver training for the three vehicle families included in the analysis.

Dust is anticipated as a result of vehicle travel on unpaved roads, tank trails, and vehicle two tracks (informal vehicle paths) at Fort Carson. The installation has in place policies and programs to address dust related impacts. All training activities are subject to the Fort Carson Fugitive Dust Control Plan (Fort Carson, 2012a) and military convoys must comply with a lower speed limits; additionally, chemical stabilizers (dust palliative) are applied as appropriate throughout the year. The end result is that dust impacts would continue to be to less than significant.

Since no construction is planned for the conversion of the BCTs on Fort Carson and any modification of buildings would be minor and spread over time, emissions from construction equipment is anticipated to be negligible.

4.3.2.3 Cumulative Effects

Although the number of Soldiers and Family members decrease due to the 4ID BCT conversion, the net change in Soldiers and Family members by 2017 will only be a decrease of approximately 17. This is considered an insignificant change.

Regional air quality is a function of the emissions sources, amount of pollutants emitted, size and topography of the air basin, and prevailing meteorological conditions. Although Colorado does not identify airsheds (geographical areas that share the same air mass due to topography, meteorology, and climate), it divides the state into five multi-county monitoring areas based on topography: the Eastern Plains, the Northern Front Range, the Southern Front Range, the Mountain counties, and the Western counties (CDPHE, 2006). Fort Carson is located in the Southern Front Range monitoring area.

Most criteria pollutants are emitted directly from sources; however, ground-level O_3 is formed by complex photochemical reactions in the atmosphere among nitrogen oxides (NO_X), volatile organic compounds (VOCs), and the hydroxyl radical (OH). Additionally, acid deposition is the result of gaseous emissions of SO_2 and NO_X that undergo complex reactions in the atmosphere resulting in the formation of sulfuric and nitric acid, respectively. The primary man-made sources of SO_2 are the burning of fossil fuels (e.g., coal, fuel, oil, and diesel) while NO_X is primarily the result of are motor vehicle, electric utility, and other industrial, commercial, and residential sources that burn fuels. Visibility-affecting pollutants include NO_X, SO_2, PM, VOCs, and ammonia.

Cumulative emissions from the proposed action in combination with reasonably foreseeable projects are unlikely to lead to a violation of the NAAQS because regional concentrations would have to double over the existing emissions to approach the regulatory threshold. The amount of emission increases anticipated during operations and military training is not anticipated to have an adverse cumulative effect, and violations of NAAQS are not anticipated. Further, Fort Carson's air program has implemented various initiatives to address air quality issues (e.g., minimizing criteria and HAP emissions from stationary sources on the Installation and reducing fugitive dust emissions).

4.4 Noise

4.4.1 Affected Environment

Army Regulation (AR) 200-1 lists housing, schools, and medical facilities as examples of noise-sensitive land uses. The zone designations are used to determine if the noise environment is compatible with noise-sensitive land uses, as illustrated in Table 4.2. AR 200-1 delineates noise generated by military operations into four zones, each representing an area of increasing decibel (dB) level.

Table 4.2: Noise Zone Descriptions

Noise Zone	Aviation (ADNL)	Small Arms (PK15(met))	Large Arms, Demolitions, Etc. (CDNL)	Noise-sensitive Land Use Compatibility
Land Use Planning Zone (LUPZ)	60-65	N/A	57 – 62	Acceptable
Zone I	<65	<87	<62	Acceptable
Zone II	65-75	87 – 104	62 – 70	Normally Not Recommended
Zone III	>75	>104	>70	Never Recommended

Recognizing there are noise sensitive land uses near the installation, Fort Carson has established a "Fly Neighborly" policy that seeks to reduce noise through Army helicopter pilot training. The policy is described in the Installation Environmental Noise Management Plan (Fort Carson, 2006b), which is currently in the process of being updated.

Noise-sensitive areas adjacent to Fort Carson include Cheyenne Mountain State Park to the west; Colorado Springs to the north and west; and the Towns of Security, Widefield, and the City of Fountain to the east. Other noise sensitive areas include Turkey Canyon Ranch and Red Rock Valley Estates along the installation's western boundary and El Rancho and Midway Ranch along the eastern boundary. Noise-sensitive locations near the southern boundary of Fort Carson include the communities of Penrose and Pueblo West. Noise-sensitive areas within Fort Carson are primarily located within the Main Post area which encompasses the majority of family housing, schools, office space, and child development centers. The primary sources of noise at Fort Carson are the firing of weapons, specifically large-caliber weapons such as artillery and tank main guns, as well as the operations of military aircraft at Butts Army Airfield.

The U.S. Army Center for Health Promotion and Preventative Medicine conducted a study of the noise impacts associated with Army training at Fort Carson. The study utilized the BNOISE2 program that accounts for differing day and nighttime noise levels and impacts, and accounts for variations in the terrain. The study generated noise contour data for Fort Carson which was presented in Appendix D of the 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009) and in Appendix B of the 2012 CAB *Stationing PEIS* (HQDA, 2011a).

Figure 4.2 depicts the baseline demolition and large caliber weapons noise contours for Fort Carson. The Land Use Planning Zone (LUPZ) extends beyond the eastern boundary of Fort Carson, past Interstate-25 encompassing El Rancho, Midway Ranches, and the City of Fountain. The LUPZ represents an intermediate annual noise average that separates Noise Zone I and Noise Zone II. The LUPZ provides land use planners a modeled intermediate daily noise contour. The LUPZ extends into an undeveloped area to the south and beyond the western boundary encompassing Turkey Canyon Ranch. Zone II (62 CDNL) extends into El Rancho and Midway Ranches; and slightly into the Turkey Canyon Ranch. Zone III (70 CDNL) extends slightly into undeveloped areas of Fountain, El Rancho, and Turkey Canyon Creek.

4.4.2 Environmental Consequences

4.4.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at its current levels, configurations, and locations. There would be no change to noise at Fort Carson, as converted BCT training activities would not be implemented.

4.4.2.2 Proposed Action

No substantial changes to noise impacts have been identified for the proposed action. Noise impacts from converted BCT training operations are discussed below.

Fort Carson environmental management programs would continue to use existing measures to minimize adverse noise effects both on- and off-post. Below are expanded discussions regarding noise impacts from small arms ranges and large-caliber live-fire as a result of BCT conversion. The analysis of impacts to noise contained in the 2011 CAB Stationing PEIS remains unchanged.

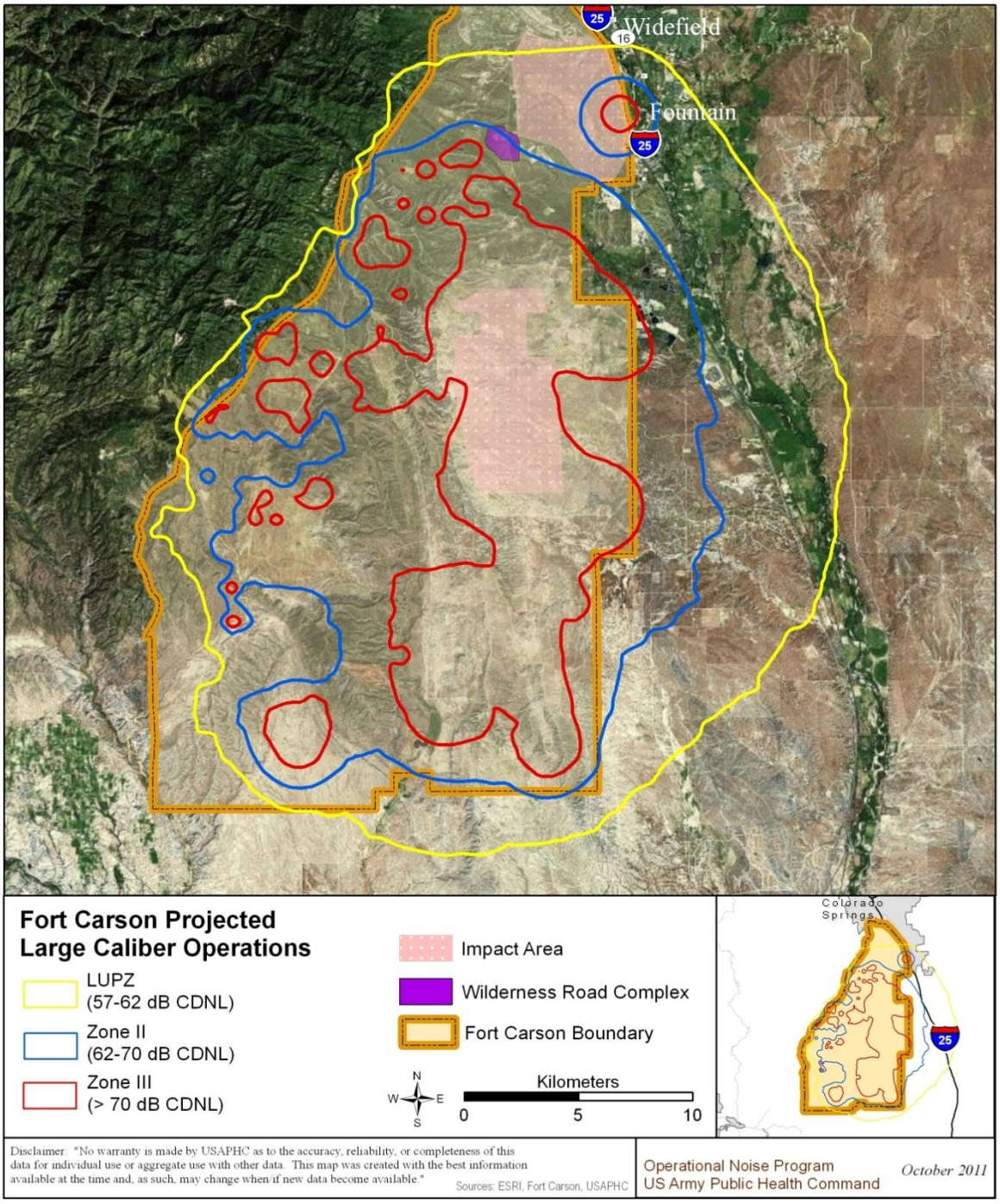
4.4.2.2.1 Small Arms Ranges

Small arms Noise Zones are developed based on peak levels rather than a cumulative metric. There is anticipated to be no discernible change in small arms activity given the net reduction of 17 Soldiers at Fort Carson due to all Fort Carson changes over the next several years. No impact to existing noise levels is anticipated from Small Arms Ranges as a result of the conversion of BCTs at Fort Carson.

4.4.2.2.2 Large-caliber Live-fire Noise

Large-caliber live-fire noise is expected to decrease as a result of the Proposed Action. The 120mm main gun on the Abrams tank in the ABCT generates more noise than the 105mm gun on the Mobile Gun System(MGS) in the SBCT. 4ID BCT conversion will result in the loss of 87 Abrams tanks and a gain of the 27 MGS with an anticipated overall reduction in noise from the live firing of these converted BCTs. Additionally, noise generated from artillery weapons firing is anticipated to also decrease with the net reduction of artillery weapons systems from 64 to 54 as a result of the 4ID BCT conversion.

Figure 4.2: Fort Carson Large Caliber Noise Contours for Existing and Conversion of 4ID BCT Activities



4.4.2.2.3 SBCT Activity

Noise from maneuver training, specifically vehicle noise, is not a major contributor to noise impacts on Fort Carson. Noise from wheeled Stryker vehicles is expected to be less than the tracked Abrams and Bradley vehicles they are replacing. It is thus anticipated that the current noise contours as depicted in Figure 4.2 will remain unchanged.

4.4.2.3 Cumulative Effects

Cumulative impacts resulting from the increased duration and frequency of training as singe noise events generated by the Proposed Action are not expected. Implementation of the Proposed Action at Fort Carson would not result in a significant adverse change to noise outside Fort Carson. As a result of the Proposed Action there will be a decrease of 1,386 Soldiers at Fort Carson. With the movement of other smaller units, and arrival of CAB personnel, the net loss of Soldiers would be 17 by 2017. It is anticipated that there will be no discernible change in noise generated through small arms training (section 4.4.2.2.1) and a decrease in large-caliber (section 4.4.2.2.2) noise. No substantial changes in noise impacts have been identified beyond those previously analyzed in the 2009 Fort Carson Grow the Army FEIS (Fort Carson, 2009) and the Army's 2012 CAB Stationing PEIS (US Army, 2012).

4.5 Geology and Soils

4.5.1 Affected Environment

4.5.1.1 Geology

Characteristics of the geology of Fort Carson, which has its eastern portion within the Colorado Piedmont section of the Great Plains Province and its western portion in the foothills of the Rampart Range section of the Southern Rocky Mountains Province, are described in the 2011 CAB *Stationing PEIS* (HQDA, 2011a). Fort Carson is located within the low risk Seismic Zone 1; where earthquake potential is on a scale of zero to four, with a "four" having the greatest potential for earthquakes (Fort Carson, 2013a). Seismological conditions of the region, which contains three main fault lines, and mineral resources of economic importance in the Pikes Peak Region are described in the 2011 CAB *Stationing PEIS*.

4.5.1.2 Soils

Thirty-four soil categories and 65 soil associations have been recognized on Fort Carson. Predominant soil associations identified are the Penrose-Minnequa complex, Penrose-Rock complex, Razor-Midway complex, and Schamber-Razor complex (Fort Carson, 2013a). Additional information on Fort Carson soil types and characteristics can be found in the Integrated Natural Resources Management Plan (INRMP) (Fort Carson, 2013a). Information specific to El Paso, Fremont, and Pueblo counties can be obtained from the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data (NRCS, 2011).

Live fire ranges, munitions impact areas, and training areas on Fort Carson cover the majority of land on-post and have the largest percentages of undisturbed soils on the Installation. For information on soil types and characteristics of soils in the downrange area, see Fort Carson's INRMP (Fort Carson, 2013a) and the 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009).

As noted in more detail in the 2011 *CAB Stationing PEIS* (HQDA, 2011a), soil erosion, primarily from water runoff, is a concern on Fort Carson. Soils of greatest potential for erosion are clays, silty clays, and clay loams (Fort Carson, 2013a). Specific soil types on Fort Carson of greatest concern for erosion are Wiley-Kim, Penrose-Manvel, and Rizozo-Neville (Fort Carson, 2013a). Also, soils with high shrink-swell potential on Fort Carson, as occurs with montmorillonitic clays, can result in problems with building foundations and stability. Soil erosion is greatest in areas where vegetation has been removed and soils have been disturbed due to construction or training activities. The western portion of the downrange area has a high degree of wind erosion associated with disturbed soils (areas that have been cleared for training operations, including berms).

Fort Carson has erosion and sediment control plans which outline many erosion and sediment control measures and BMPs. Maneuver related BMPs to control sheet, rill, and gully erosion include:

- Repairing gulleys by bank sloping (replacing steep slopes with more gently sloping walls);
- Reducing velocity and volume of run-off;
- Installing check dams (small structures usually consisting of rip-rap to reduce velocity of water);

- Seeding with native plants;
- Installing erosion control dams with collection basins (usually in a series);
- Constructing turnouts, diversions, and terraces (ditches or small earthen berms) to divert water from problem erosion areas; and
- Placement of hardened crossings where appropriate.

4.5.2 Environmental Consequences

4.5.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at current levels, configurations, and locations. There would be no change to geological and soils at Fort Carson, as conversion of BCTs and renovation activities would not be implemented.

4.5.2.2 Proposed Action

Implementation of the conversion of BCTs is not expected to cause significant impacts to the soils on Fort Carson as a result of maneuver training. An annual reduction of 5% in maneuver impacts (as demonstrated in Table 2.1) will decrease impacts to the soils at Fort Carson as compared to the No Action Alternative. The primary impacts to soils are predicted to result from maneuver training of the BCTs at Fort Carson. These impacts could include increased surface disturbance of soils and removal of vegetation, soil compacting and rutting, reduced infiltration of water, and indirect effects from increased potential for fire and loss of vegetative cover. Finally, no new construction is included with the proposed BCT conversion and only relatively minor infrastructure improvements, therefore, no significant impacts are expected to soils as a result of construction.

Mitigation measures to reduce impacts to vegetation and soils include: Soldier awareness training on procedures that avoids or minimizing soil disturbance such as staying on established tank trails when possible rather than creating new trails; continued implementation of existing BMPs such as reseeding, erosion control measures, and environmental management procedures; and continued actions to prevent and repair maneuver damage under the Installation's Integrated Training Area Management (ITAM) program. With these measures, impacts will be less than significant. No additional mitigation is required.

4.5.2.3 Cumulative Effects

Impacts to the soils at Fort Carson as a result of the Proposed Action are anticipated to be less than the No Action Alternative as demonstrated by the reduction in MIMs in Table 2.1. The training lands at Fort Carson are utilized by a number of units other than the brigades of the 4ID, both large and small. Supporting the training needs from the 43rd Sustainment Brigade to individual teams with the 10th Special Forces Group, as well as the short-term, temporary training needs of the National Guard have been taking place within the context of the affected environment for decades. It is anticipated the cumulative impacts associated with the maneuver training of these additional units in conjunction with the Proposed Action will result in less than significant impacts to soils.

4.6 Water Resources

4.6.1 Affected Environment

Water resources include surface water, groundwater, and riparian areas. The 2009 *Fort Carson Grow the Army FEIS* (Fort Carson, 2009) and 2011 CAB *Stationing PEIS* (HQDA, 2011a) provide much of the background pertinent to this current assessment and should be referenced by the reader for detailed information regarding water resources at Fort Carson.

4.6.1.1 Surface Water

The primarily undeveloped southern and western portions of Fort Carson drain to the Arkansas River to the south. The highly developed and industrialized portion of Fort Carson (the Main Post area) consists of four tributaries within the Fountain Creek watershed that provide local surface drainage: B Ditch, Clover Ditch, Central Unnamed Ditch, and Rock Creek. The main document that currently guides surface water and watershed management at Fort Carson is the Fort Carson Stormwater Management Plan (SWMP) (Fort Carson, 2013d). This SWMP is designed to reduce the discharge of pollutants from Fort Carson to the maximum extent practicable and to protect water quality. The constituent of concern in Fort Carson's portion of the Fountain Creek watershed is *E. coli* bacteria.

4.6.1.2 Groundwater

Groundwater at Fort Carson exists in both alluvial and bedrock aquifers. The primary aquifer at Fort Carson is the Dakota-Purgatoire bedrock aquifer. In general, the quality of the groundwater on Fort Carson is good with the exception of localized areas of high dissolved solids and sulfates exceeding secondary drinking water standards and elevated nitrates and Selenium (Se) exceeding primary drinking water standards.

A site wide Selenium study looking at the occurrence and distribution of Se in groundwater at Fort Carson was conducted in August 2011 (Summit Technical Resources, 2011), with results coordinated with and concurred in by the CDPHE (CDPHE, 2011), as documented in Appendix B of the 2012 Fort Carson CAB *Stationing Implementation Final EA*. Selenium has been detected at concentrations greater than the Colorado Ground Water Standard (0.05 milligrams per liter [mg/L] (0.05 parts per million [ppm])) and the Fort Carson background concentration (0.27 mg/L [0.27 ppm]) in samples collected from groundwater monitoring wells located primarily within Fort Carson's Main Post area. Analysis of qualitative and quantitative data from this study indicates a naturally occurring source (Pierre Shale) for relatively high Se concentrations in Fort Carson's compliance monitoring wells (Summit Technical Resources, 2011). Section 4.12.1 presents a discussion regarding potable water use at Fort Carson.

4.6.2 Environmental Consequences

4.6.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at current levels, configurations, and locations. There would be no change to water resources at Fort Carson, as conversion of BCTs and renovation activities would not be implemented.

4.6.2.2 Proposed Action

The BCT conversion on Fort Carson is not expected to change the impacts on water resources.

There is no new construction planned to support the Proposed Action, therefore no water resource impacts are expected. BMPs will be implemented to control any stormwater discharge from building renovation projects. Standard procedures are in place to prevent or control release of hazardous substance to water resources. Fort Carson will continue to use existing BMPs.

It is anticipated that the Proposed Action will result in an increased use and disposal of solvents and other hazardous and toxic substances. Accidental discharges of fuels, solvents, and other hazardous and toxic substances into the environment are not expected to increase as the installation will continue to follow spill prevention practices within the Installation SWMP, P2 Plan, SPCCP and HWMP.

Increased impacts to water resources are anticipated to be less than significant as a result of implementation of the Proposed Action. With the implementation of current and future BMPs, sedimentation, naturally occurring selenium, and pollutant discharges into the environment would be negligible or less than significant. No significant impacts are expected to occur to surface water, stormwater, floodplains, hydrogeology, or groundwater as a result of this action.

4.6.2.3 Cumulative Effects

With the implementation of BMPs identified in the Stormwater management plan, compliance with stormwater permits, and other management practices, the cumulative effect to water quality would be less than significant to Fort Carson surface and groundwater sources. Fort Carson will continue current water resource mitigation measures.

4.7 Biological Resources

4.7.1 Affected Environment

Fort Carson, continues to be a leader in sustainability and ecosystem management by proactively seeking partners to facilitate natural resources conservation while maintaining the installation's training mission. The Fort Carson ACUB program, the Greenprint Project, the Central Shortgrass Prairie Eco-regional Assessment, and Front Range Eco-Regional Management Team initiatives are successful example of current and past partnerships. Through collaboration with multiple agencies, organizations and individuals, Fort Carson has initiated grassland prairie ecosystem assessments, noxious weed management and control, forest health assessments in collaboration with the U.S. Air Force (USAF) Academy, regional fire management plan development, and establishment of conservation easements that will buffer Installation boundaries from incompatible development while concurrently conserving critical shortgrass prairie habitat.

In August 2011, under Fort Carson's ACUB Program, a partnership between the Army and The Nature Conservancy (TNC) enabled the entirety of Fort Carson's southern boundary and portions of its eastern boundary to be protected from further development in an area that extends approximately 2 miles from Fort Carson's boundary. The 23,252 acre buffer, managed by TNC, is the culmination of more than 7 years of effort and $35 million in funding. The buffer permanently protects Fort Carson from irreversible encroachment that would otherwise have adversely affected mission capabilities, and ensures that Fort Carson remains an ideal place to train Soldiers and conserve natural resources. El Paso County is also a partner in Fort Carson's ACUB program, managing 1,036 acres which helps to protect the military mission at Fort Carson from encroachment.

4.7.1.1 Vegetation and Wildlife including Threatened and Endangered Species

As further described in the 2011 CAB *Stationing PEIS* (HQDA, 2011a), Fort Carson is located at the western edge of the Central Shortgrass Prairie Ecoregion and is within the upper regions of the Prairie Grasslands Plant Zone. Fort Carson consists of approximately 45 percent grasslands, 14 percent shrub lands, 37 percent forest and woodlands, and 4 percent other (Fort Carson, 2009). Fort Carson habitat supports, among others, the Mexican spotted owl (*Strix occidentalis lucida*), a rare winter resident to Fort Carson (Fort Carson, 2013a). Listed plant species reported in the 2011 CAB *Stationing PEIS* remains unchanged: Federally-threatened Ute ladies'-tresses (*Spiranthes diluvialis*) occur in El Paso County; there are no listed plant species in Pueblo and Fremont counties. No listed plant species are known to occur on Fort Carson.

Integrated Pest Management is used to manage invasive plant populations such as the exotic invasive tamarisk (*Tamarix ramosissima*), as mandated by DoD. Integrated Pest Management includes biological, chemical, mechanical, and cultural management techniques. The myrtle spurge (*Euphorbia myrsinites*) is a List A (high priority) weed species requiring control, and known to have occurred on Fort Carson. It has been eradicated from the installation but monitoring for regrowth continues. Japanese knotweed (*Ploygonium x bohemicum*) was found on Fort Carson in 2011. The plant has been treated and the site will be monitored for the foreseeable future. This plant has been added to the State "A" list as a result of this finding. Field bindweed, a List C (low priority) weed species, has been targeted for biological

control and an effective biological control agent, the bindweed mite (*Aceria malherbae*), has been made available. The mite has been released at Fort Carson to help suppress populations of field bindweed. The *2008 Fort Carson Invasive Plants Management Plan* provides more detail on weed distribution and control strategies. Also as reported in the 2011 CAB *Stationing PEIS*, the Main Post area and Butts Army Airfield (BAAF) consist primarily of non-native ornamentals and large trees.

The status of wildlife species listing also remains with the same as that reported in the 2011 CAB *Stationing PEIS* (HQDA, 2011a). The Federally-threatened Mexican spotted owl (*Strix occidentalis lucida*) is the only listed species known to occur at Fort Carson. The Arkansas darter (*Etheostoma cragini*) (candidate) is under consideration for listing but not yet protected under the Endangered Species Act. State-listed species on Fort Carson include Arkansas darter (threatened), southern redbelly dace (*Phoxinus erythrogaster*) (endangered), and burrowing owl (*Athene cunicularia*) (threatened). The *Fort Carson and Piñon Canyon Maneuver Site Integrated Natural Resources Management Plan 2013-2017* (Fort Carson 2013a), approved by the U.S. Fish and Wildlife Service (USFWS) and the Colorado Parks and Wildlife (CPW), discusses management of rare and listed species, to include the Mexican spotted owl. Spawning of the threatened greenback cutthroat trout (*Oncorhynchus clarki stomias*) has not occurred on Fort Carson for years (Fort Carson, 2013a). The threatened Preble's meadow jumping mouse (*Zapus hudonius preblei*) is a candidate for ESA listing and continues to be species not known to occur on Fort Carson. The 2009 *Fort Carson Grow the Army FEIS* presents the special status wildlife species that occur (i.e., have been observed) on Fort Carson and the Installation's INRMP also discusses management of these species of concern and other wildlife (Fort Carson 2013a). In October, 2013 the U.S. Fish and Wildlife Service implemented a Programmatic Safe Harbor Agreement with an adjacent landowner and released approximately fifty endangered black-footed ferrets *(Mustela nigripes)* into a designated reintroduction site. The management of the ferrets at the site under the Safe Harbor Program is supported by a Biological Opinion (USFWS, 2013) issued pursuant to Section 10(a) of the Endangered Species Act (ESA), as amended (16 U.S.C. 1531-1544). Section 10 and the Safe Harbor Program are uniquely designed to enhance recovery and survival of the species, while encouraging the development of recovery sites by providing assurances that neighboring lands can continue to conduct lawful activities under the auspices of the Biological Opinion, which also describes the USF&WS consultation history on the matter. Fort Carson is in continuing communication with the USF&WS on this matter, but further formal consultation is not required.

4.7.1.2 Wetlands

Wetlands on Fort Carson are generally characterized as linear (e.g., streambeds) or small and isolated. Linear wetlands occur along intermittent and perennial stream channels and tributaries. Wetlands can be primarily found near Rock, Little Fountain, Turkey, Little Turkey, Red, Sand, and Wild Horse Creeks. Isolated wetlands usually occur where an erosion control dam, most of which are 1-2 acres in size. The largest downrange wetland is on the upper reaches of Teller Reservoir, encompassing about 100 acres. In addition to cattails, common wetland species are cottonwood and willow. There are also a number of wetland areas scattered throughout the main post area, typically in natural or stormwater runoff drainages and in wildlife management area south of BAAF (Fort Carson, 2013a).

4.7.2 Environmental Consequences

4.7.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at current levels, configurations, and locations. There would be no change to biological resources at Fort Carson, as conversion of BCTs and renovation activities would not be implemented.

4.7.2.2 Proposed Action

Implementation of the Proposed Action would have limited impact to existing native vegetation. Impacts, which include loss of habitat from training and maneuver activities are not expected to be significant and are anticipated to decline modestly relative to current levels that are reflected in the No Action Alternative. Implementation of maneuver training as part of the Proposed Action would result in a 5% decrease as put forth by the MIM model (Table 2.1).

Training impacts associated with the Proposed Action which potentially affect vegetation, presence of noxious weeds, disturbance to mammals and breeding raptors are expected to be less than significant as training will not increase as a result of the Proposed Action. Fort Carson will continue to follow existing management plans such as the INRMP, Bald Eagle Management Plan, Avian Protection Plan Guidelines, and the Invasive Species Management Plan. Disturbance to breeding raptors will continue to be minimized by burning areas adjacent to breeding habitat to prevent breeding season fires and by continuing to establish seasonal restrictions around active eagle eyries. Training impacts to vegetation and subsequent increase in noxious weeds will be reduced by continuing to manage training lands in association with the Installations ITAM program. Fort Carson will continue to employ integrated weed management strategies as well as consider potential increase use of herbicide and bio-control agents as needed. All mission activities will continue be conducted in a manner that precludes the introduction or spread of invasive species, such as following procedures for cleaning vehicles and equipment prior to shipment and deployment. When found, all Colorado List A species will continue to be eradicated.

Vehicular collisions with deer and other wildlife are not expected to increase as a result of the Proposed Alternative. BCTs will continue to use lower speed limits in downrange areas to increase safety and reduce environmental hazards. Fort Carson components, including the Conservation Branch of the Directorate of Public Works Environmental Division, in partnership with University of Colorado, Colorado Springs, and the USAF Academy continue to conduct research investigating the relationship between training and deer on the Installation. Forty-two deer were radio-collared. Preliminary results of this on-going study have indicated that deer react more strongly to small arms fire (less than 0.79 inches [20 mm]) than to large caliber weapons (greater than 0.79 inches [20 mm]) by contracting their range and shifting their movements to areas outside of their known home range. The preliminary study recommends that wooded areas where deer seek protection from predation or military activities should not be thinned. In addition, guzzlers (drinking water troughs) will continue to provide a form of training mitigation when placed in areas away from ranges where tree and shrub cover are high. Other management actions that may reduce impacts to big game resulting from increased training activities as a result of conversion of BCTs could include (1) repair and maintenance of existing water sources and development of new sites on Fort Carson to provide a water source for deer, pronghorn, and elk

temporarily displaced as a result of training; (2) prescribed fire to rejuvenate habitat; and (3) reseeding of disturbed areas.

Conversion of the 4ID BCTs is anticipated to have no effect on the occurrence or spread of Chronic Wasting Disease (CWD), a fatal neurological disease found in deer, elk, and moose, that is, present on Fort Carson. The disease attacks the brains of infected ungulates causing the animals to become emaciated, display abnormal behavior and impaired mobility, and eventually die. The prevalence and spread of CWD is density dependent and is being monitored in cooperation with Colorado Parks and Wildlife.

Some minimal individual and cumulative impacts (see Section 4.7.2.3) to wetlands could occur as a result of Fort Carson soil erosion control activities. These impacts are covered under the CWA Section 404 regional permit issued by the USACE, Albuquerque District (Permit No. SPA-2008-00058-SCO, expired, currently being updated). Typical erosion control measures covered under Fort Carson's Regional General Permit include erosion control and stock watering impoundments, bank sloping of erosion courses, check dams, rock armor, hardened crossings, culverts and bridges, erosion control terraces and water diversions, water turnouts, and other erosion control activities approved by USACE. Due to the avoidance and minimization efforts the Army currently implements as part of its INRMP and ITAM procedures, direct impacts to wetlands from training activities do not normally occur.

4.7.2.3 Cumulative Effects

Biological resources have been impacted by increasing development both within Fort Carson and along the Rocky Mountain Front Range. There has been a loss of vegetation and habitat within the Front Range from private and Federal land development. Implementation of the Proposed Action at Fort Carson may result in a variety of potential impacts to biological resources, which may include mortality, disturbance, or displacement, and loss of habitat or nesting or foraging territory; however results are unlikely to exceed what is currently taking place. Effects from implementation of the conversion of the 4ID BCTs in combination with other future actions would not likely result in increased adverse impacts.

4.8 Cultural Resources

4.8.1 Affected Environment

Cultural resources includes sites, areas, and properties as defined by the National Historic Preservation Act (NHPA), cultural items as defined by the Native American Graves and Repatriation Act (NAGPRA), archaeological resources as defined by the Archaeological Resources Protection Act, sacred sites as defined in Executive Order (EO) 13007, to which access is afforded under American Indian Religious Freedom Act, and collections and associated records as defined in 36 CFR Part 79, *Curation of Federally-owned and Administered Archaeological Collections*. The term *"historic property"* refers to a prehistoric or historic archaeological or architectural site, district, or object that has been evaluated and determined to be officially eligible for inclusion in the National Register of Historic Places (NRHP).

Fort Carson manages cultural resources associated with all major prehistoric and historic cultural periods recognized on the southern Great Plains and Rocky Mountains at both Fort Carson and PCMS. Cultural resources management on Fort Carson encompasses conservation and preservation of historic properties, as well as Properties of Religious, Traditional, and Cultural Importance (PRTCI) to American Indians, which include sites and areas designated as Traditional Cultural Properties (TCPs) and sacred sites. Fort Carson partners with 13 Federally-recognized Indian Tribes who have an affiliation with Fort Carson lands. A Comprehensive Agreement between Fort Carson and 10 tribes for tribal access, privacy, and inadvertent discovery of human remains and other cultural items was finalized and signed in 2004, and a second Comprehensive Agreement with an 11th tribe was signed in 2005.

Management of cultural resources for Fort Carson is detailed in the Installation's *Integrated Cultural Management Plan* (ICRMP) (Fort Carson, 2002b) soon to be replaced with a new draft expected to be finalized in FY14, and follows the *Secretary of the Interior's Standards* regarding archaeological identification, evaluation, and documentation, as well as architectural and engineering guidelines for the rehabilitation and treatment of buildings and structures, and incorporates state standards outlined by the Colorado Office of Archaeology and Historic Preservation (OAHP). The Installation's Cultural Resources Management Program (CRMP) will continue to maintain resource sustainability through existing management strategies, procedures, and policies.

The ICRMP identifies BMPs used during project design and planning to avoid or minimize effects to historic properties. If a potential impact cannot be avoided, consultation in accordance with Section 106 of the NHPA would be initiated. If subsurface cultural resources are discovered or disturbed during project activities, Fort Carson's Inadvertent Discovery of Archaeological, Cultural, and Paleontological Resources Standard Operating Procedure (SOP) or Native American Graves Protection and Repatriation Act (NAGRPA) SOP and appropriate Section 106 consultation would be implemented.

The ICRMP provides details regarding National Register-eligible sites on Fort Carson. Management and preservation strategies are in place for four types of resources, all of which occur on Fort Carson: 1) historic architectural properties; 2) archeological properties; 3) TCPs and PTRCI's; and 4) paleontological resources. To date, 95,791 acres have been inventoried for cultural resources on Fort Carson, out of 118,186 available for survey. Less than 22,800 acres are left to be inventoried. At present, 2,261 sites

and isolated finds have been recorded. Both archaeological and architectural NRHP-eligible resources are present, and one sacred site has been identified.

At present, downrange training constraints and/or conditions related to cultural resources are:

- Dismounted training may occur within all training areas on Fort Carson. However, Soldiers are not to disturb anything while walking through archaeological properties.
- Off-road driving may occur in areas that have been inventoried for cultural resources. Within these areas, NRHP-eligible and potentially eligible sites are protected in one of the following ways to minimize for adverse effects that may occur during training:
    - Protected by natural terrain.
    - Marked with a post-and-wire fence or with Siebert stakes at 10 meter intervals.
    - Site locations identified and provided to training units.
    - Off-road driving is prohibited within the Turkey Creek Rock Art District and Stone City.
- Excavation (mechanical digging) activities may occur in areas designated for that activity or in areas where NHPA Section 106 consultation has been completed.
- Approximately 22,800 acres of currently-utilized training land has not been inventoried for cultural resources. This situation will be remedied through the on-going consultation related to the programmatic agreement for military training and operational support activities.

In order to streamline the Section 106 process in accordance with 36 CFR 800.14(b), Fort Carson developed a *Programmatic Agreement Among the U.S. Army Garrison Fort Carson, the Colorado State Historic Preservation Officer, and the Advisory Council on Historic preservation Regarding Construction, Maintenance, and Operations activities for Areas of Fort Carson, Colorado* (March 2013). At present, this Programmatic Agreement pertains to the Main Post (for the purpose of cultural resource management designated as the area of Fort Carson north of Rock Creek) (Fort Carson, 2013c).

Consultation with the Colorado State Historic Preservation Officer, Native American Tribes, other consulting/interested parties, and the public is ongoing to develop a programmatic approach to the Section 106 process regarding military training, land use, and administrative operations on the areas of Fort Carson not covered within the current PA. Consultation for this action will be covered during that effort. However, until such an agreement is concluded, compliance with Section 106, under 36 CFR 800.3, is required for all non-exempted undertakings at Fort Carson.

4.8.2 Environmental Consequences

4.8.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at its current levels, configurations, and locations. There would be no change to cultural resources impacts at Fort Carson.

4.8.2.2 Proposed Action

It is not expected that the conversion of the BCTs will substantially reduce off-road vehicle miles. As such, off-road maneuver training activities are expected to remain the same with the exception of

additional combat engineer training that would increase the excavation (ground disturbance) for survivability, mobility and counter-mobility training activities.

Impacts to cultural resources on Fort Carson may occur as a result of implementation of the Proposed Action, but not expected to be at any greater frequency then the no-action alternative. Effects to cultural resources from military training are historically associated with off-road activities, but it is not anticipated that the Proposed Action will substantially increase the potential for adverse effects to historic properties, as long as all applicable rules and administrative procedures are followed.

4.8.2.3 Cumulative Effects

The training associated with the proposed action and other Fort Carson training could cause damage to cultural resources in the training areas. Because there will be a net reduction in maneuver training as measured by MIMs, it is possible that cumulative impacts will be less than current overall impacts to cultural resources. Helicopter training associated with the CAB does not pose much risk to cultural resources. It is anticipated that no significant adverse cumulative impacts to cultural resources would be caused as a result of this Proposed Action. Nevertheless, Fort Carson is in the process of negotiating a Programmatic Agreement to address the adverse effects of training activities on cultural resources, generally.

4.9 Socio-economics

4.9.1 Affected Environment

The socio-economic analyses conducted for the 2011 CAB Stationing PEIS (HQDA, 2011a) and the programmatic environmental assessment for Army 2020 Transformation (U.S. Army, 2013) remain valid. Included in those NEPA documents are social and economic information such as population, employment, sales, housing, and schools. The net change in Soldiers due to the BCT conversion and other ongoing and planned stationing actions at Fort Carson is shown in Table 1.1.

There will be a net loss of 17 Soldiers as a result of the Proposed Action in conjunction with other ongoing stationing actions at Fort Carson. It is important to understand how these losses fit in with the overall Soldier population picture at Fort Carson over the next several years. Fort Carson is in the middle of establishing a Combat Aviation Brigade. CAB stationing has already been approved and was the subject of previous NEPA analysis (U.S. Army, 2012). Some members of the 2,600-Soldier CAB have already arrived, with 1,387 scheduled to arrive in 2014 or later. This addition nearly cancels out the losses from BCT conversion and other unit inactivation. There will be a short-term gain in Soldiers in 2014 prior to the deactivation of the ABCT.

Overall, there will be a slight decrease in the population at Fort Carson over the next four years. There were 23,788 permanent-party Soldiers assigned to Fort Carson at the end of fiscal year 2013 and there will be 23,771 at the end of fiscal year 2017. Personnel levels of other military services stationed at Fort Carson are anticipated to remain constant throughout this period.

Table 4.3: Fort Carson Troop Socio-economic Impact Measured by 2012 Population versus Future Population

		Due to BCT Conversion		Due to all Changes by 2017	
Impacts	**2012**	**# of Personnel**	**% Change**	**# of Personnel**	**% Change**
Military Population	26,000	-1,386	-5%	-17	-0.1%
Military Family Population	42,000	-2,356	-5%	-29	-0.1%
Total Military Population	68,000	-3,742	-5%	-46	-0.1%
Change in Military Payroll ($1 m)	1,500M	-63	-5%	-1.0	-0.1%
Population Impact El Paso Co.	645,000	-3,742	-0.6%	-29	-0.01%

4.9.2 Environmental Consequences

4.9.2.1 No Action

Under the No Action Alternative, Fort Carson would retain its force structure at its current levels, configurations, and locations. There would be no change to socio-economics at Fort Carson.

4.9.2.2 Proposed Action

Implementation of the conversion of the BCTs at Fort Carson is expected to result in negligible impacts as a result of the proposed BCT conversion. The estimated loss from the proposed action is 3,742 (combined Soldier and Family Member). The overall change is a reduction of 17 Soldiers by 2017, and is not anticipated to have any significant impacts. During 2014 the Combat Aviation Brigade will continue to receive Soldiers, which accounts for the balance in the reduction of Soldiers as a result of

the 4ID BCT conversion. For purposes of identifying impacts for this resource area, it is appropriate to proceed directly to overall Fort Carson population changes. The net loss of 17 Soldiers indicates that the action will not have significant socio-economic impacts. Construction is not included as part of the Proposed Action, therefore economic benefits related to construction labor, supplies and equipment are not anticipated.

4.9.2.3 Cumulative Effects

The cumulative effects of implementing the BCT conversion, along with other past, present, and reasonably foreseeable future actions that affect economy, employment, demographics, housing, quality of life, schools, community services, or environmental justice on and around Fort Carson are expected to be less than significant. With a population of 645,000, El Paso County will not notice the change of approximately 17 Soldiers and their Family members over 4 years.

4.10 Traffic and Transportation

4.10.1 Affected Environment

A Comprehensive Post-wide Transportation Study (CPTS) was conducted for Fort Carson in 2005, primarily in response to BRAC (Fort Carson, 2006a). The CPTS was updated in 2008 due to additional growth and infrastructure requirements based on Army Growth and Force Structure Realignment and again in May, 2012. While the new study is not available for publication at this time, the preliminary results of the CPTS discussed below are valid and sufficient for the purpose of analyzing the Proposed Action.

Historically traffic congestion leading into Fort Carson was a common problem at gates 3,4, and 20. Improvements have been made to gates 3 and 20, while a plan, proposed as part of the Post-wide Transportation Study, is in place to increase the volume of traffic that can be processed through gate 4 during peak hours. Nevertheless, there continue to exist identified traffic congestions issues at gates 3,4, and 20 during peak access hours. Increasing traffic throughput at each of the three gates has been proposed and plans to implement the proposals are in development.

Following increases in Fort Carson's population as a result of BRAC and Grow the Army stationing actions, internal traffic congestion within the post became problematic. A number of actions were taken to mitigate the negative impacts of increased internal traffic including the opening of gate 19 and the associated improvement of Essayons Road. Currently a project is under design to alleviate internal traffic congestion leading to and from the Wilderness Road Complex, which includes increasing traffic lanes in the affected area and reconstruction of the existing bridge leading to the complex.

4.10.2 Environmental Consequences

4.10.2.1 No Action

Under the No Action Alternative, Fort Carson would retain force structure at its current levels, configurations, and the Proposed Action would not be implemented at Fort Carson. Current traffic improvements under way to support the CAB located at Butts Army Airfield and the Wilderness Road Complex are discussed in Section 4.10.1 and are more fully discussed in the 2011 CAB *Stationing PEIS* (HQDA, 2011a).

4.10.2.2 Proposed Action

There is little or no impact related to transportation on Fort Carson resulting from conversion of the BCTs. From a traffic perspective, this could be a negligible decrease in cars when one considers there are 26,000 military, 6,700 civilian workers on Fort Carson, and another 42,000 military family members, on Fort Carson on a given day.

Fort Carson will continue to explore alternative modes of transportation and low impact vehicle studies. Fort Carson will also continue to support Goal 2 – Sustainable Transportation objectives and targets of the Fort Carson's 25 Year Sustainability Goals in 2002 (Fort Carson, 2002a).

4.10.2.3 Cumulative Effects

Although the BCT conversion results in a loss of 1,386 Soldiers, when the Soldier gains by other units on Fort Carson are included, the net loss on Fort Caron by 2017 is 17. This loss of 17 personnel would have an insignificant impact on traffic. Because there are no impacts from the Proposed Action on this resource area, there are no cumulative impacts. Ongoing and identified peak hour traffic congestion around gates 3,4, and 20 will continue to a concern until planned efforts to alleviate congestion are complete.

4.11 Airspace

4.11.1 Affected Environment

Army aviation assets are stationed at and flight operations are conducted out of Butts Army Airfield on Fort Carson. The Fort Carson airspace conditions are generally described in the 2011 CAB *Stationing PEIS* (HQDA, 2011a). The types of aircraft that use the airspace are helicopters, fixed-wing aircraft, unmanned aerial systems (UASs), and transient aircraft.

The use of the term UAS in this document is intended also to refer to as unmanned aerial vehicles (UAVs), TUAVs, or "drones." The only UASs stationed at Fort Carson are reconnaissance systems, which have no live-fire capability. These are the RQ-7 Shadow 200, RQ-11 Raven, Puma, and Silver Fox (Figure 4.4). Transient units also occasionally train on Fort Carson with similar small reconnaissance UASs.

As described in the 2011 CAB *Stationing PEIS* (HQDA, 2011a), Fort Carson implements all applicable regulations and policies on flying to maximize safety and minimize noise complaints. The 2011 CAB *Stationing PEIS* includes a general description of Fort Caron's airspace, which can be found in Appendix A of that document.

Fort Carson has 152 square miles of Federal Aviation Administration (FAA) designated permanent restricted use and special use airspace (SUA), with no limit in altitude. The airspace is controlled by the FAA in Denver, Colorado. Military operations areas (MOAs) (a type of SUA) are located around Fort Carson; however, they are higher altitude MOAs and are not utilized by helicopters. Further airspace details may be obtained from the 2011 CAB *Stationing PEIS* and from within the noise study contained in Appendix D of this EA.

Transient aircraft from various Federal, state, and local entities use the airspace over Fort Carson for training operations. Additionally, there are units stationed at Fort Carson that are equipped with UASs, and that train and employ UASs at Fort Carson. The four types of UASs currently stationed at Fort Carson, the RQ-7 Shadow 200, RQ-11 Raven, Puma, and Silver Fox fly in the same restricted airspace and MOAs used by transient and Fort Carson aviation units. There are no extended range multi-purpose UASs at Fort Carson.

Figure 4.3: Unmanned Aircraft Systems Stationed at Fort Carson

RQ-7 Shadow 200

Source: GlobalSecurity.org (http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/intell/systems/images/shadow200-uas_dod_hrs_74861.jpg|||)

Puma

Source: AeroVironment (http://www.avinc.com/downloads/PumaAE_0910.pdf)

RQ-11 Raven

Source: GlobalSecurity.org (http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/intell/systems/images/raven_uav_throw.jpg|||)

Silver Fox

Source: BAE Systems (http://www.acrtucson.com/UAV/silverfox/index.htm)

4.11.2 Environmental Consequences

4.11.2.1 No Action

Under the No Action Alternative, Fort Carson would retain aviation force structure at its current levels, configurations, and locations. Establishment of the CAB would continue. There would be no change to airspace at Fort Carson

4.11.2.2 Proposed Action

The conversion of the BCTs will have no impacts to airspace, as there would not be a change in UAS training.

4.11.2.3 Cumulative Effects

Because there are no impacts from the proposed action on this resource area, there are no cumulative impacts.

4.12 Utilities and Infrastructure

4.12.1 Affected Environment

Fort Carson's Directorate of Public Works manages utilities and infrastructure on Fort Carson. This includes drinking water, waste water, natural gas, electricity and solid waste disposal as well as road and building construction.

Water management includes wells that provide downrange industrial use water, and surface water that provides military training, downrange fire protection, recreational waters, wildlife habitat, and irrigation. Fort Carson purchases its drinking water from Colorado Springs Utilities. In 2010, Fort Carson used approximately 850 million gallons of water. Even with all the growth on Fort Carson, water use since 2001 has been reduced by more than 20 percent through proactive garrison and housing watering policies and initiatives.

The Waste Water Treatment Plant on Fort Carson treats sanitary sewage and Industrial Wastewater Treatment Plant effluent. The WWTP is adequate in size and capacity based upon the projected development for the area.

Three stormwater permits are utilized at Fort Carson as part of the storm water program: the NPDES General Permit for Stormwater Discharges for Construction Activity in Colorado (COR12000F), MS4 Permit (COR042001), and the EPA's Multi-Sector General Permit.

Currently, all solid waste from Fort Carson, including waste from housing units, is shipped to offsite landfills by a licensed contractor. Fort Carson has an extensive recycle program.

Fort Carson purchases natural gas and electricity from Colorado Springs Utilities. The installation obtains 2.3 percent of its energy needs from solar panels and is currently researching other sources of renewable energy for future use. Power for maneuvers and target training within the downrange area is supplied locally by battery or generator. The peak historical electrical demand at Fort Carson is 27.9 megavolt amperes (MVA) and the peak historical daily consumption of natural gas at Fort Carson is 9,329 million cubic feet (mcf)/day (261.2 million cubic meters [m^3]/day).

Stormwater management, solid waste removal, and energy supplies are all adequate for the current community size.

Fort Carson has adequate building space and living quarters for Soldiers and Families currently living on post. The Final Fort Carson GTA EIS covered the construction of facilities to support the installation.

Fort Carson has long been at the forefront of implementing sustainability practices within the Army. In April, 2011, Fort was selected as a pilot installation for "Net Zero" waste, water, and energy reduction. Net Zero efforts at Fort Carson include three main efforts: 1) produce as much renewable energy on the Installation as it uses annually; 2) limit the consumption of freshwater resources and return water back to the region so as not to deplete the groundwater and surface water resources of that region in quantity or quality; and 3) reduce, reuse and recover waste streams by converting them to resource value with zero solid waste land filling. For specific information about the environmental impacts of Fort

Carson's Net Zero initiatives refer to the *Fort Carson Net Zero Waste, Water and Energy Implementation EA* (Fort Carson, 2012b).

4.12.2 Environmental Consequences

4.12.2.1 No Action

Under the No Action Alternative, Fort Carson would retain force structure at its current levels, and conversion of the BCTs would not be implemented at Fort Carson. There would be no change to Fort Carson utilities, including drinking water, waste water, solid waste, energy and other utilities. Fort Carson would continue to pursue Net Zero waste, water and energy technologies.

4.12.2.2 Proposed Action

Under the Proposed Action, the Army would implement the conversion of BCTs and other previously approved changes such as CAB stationing over the next two years. This would have a negligible impact on utilities on Fort Carson when compared to the total population on Fort Carson.

4.12.2.3 Cumulative Effects

The cumulative impact to utilities consists the impacts of the proposed action in combination with the impacts of past, present, and reasonably foreseeable future actions which affect the capacity or use of utilities on and around Fort Carson. The overall decrease of 17 Soldiers on Fort Carson would have an insignificant impact on Fort Carson and the surrounding community utilities.

4.13 Hazardous and Toxic Substances

4.13.1 Affected Environment

Hazardous and toxic materials used at Fort Carson include gasoline, batteries, paint, diesel fuel, oil and lubricants, explosives, JP-8 jet fuel, pyrotechnic devices used in military training operations, radiological materials at medical facilities, radioactive materials, pesticides, and toxic or hazardous chemicals used in industrial operations such as painting, repair, and maintenance of vehicle and aircraft.

Fort Carson has a comprehensive program to address the management of hazardous waste, hazardous materials, and toxic substances. The program includes the proper handling and disposal of hazardous waste, as well as appropriate procurement, use, storage, and abatement (if necessary) of toxic substances. Several plans are in place to assist with the management of hazardous materials and waste including a Pollution Prevention (P2) Plan (also known as the Waste Minimization Plan), Polychlorinated Biphenyl (PCB) Management Plan, Facility Response Plan, Hazardous Waste Management Plan (HWMP), and the Spill Prevention, Control, and Countermeasures Plan (SPCCP).

4.13.2 Environmental Consequences

4.13.2.1 No Action

Under the No Action Alternative, Fort Carson would retain force structure at its current levels, configurations, and locations. There would be no change to hazardous and toxic substances.

4.13.2.2 Proposed Action

The conversion of the BCTs would have less than significant impact on the generation and handling of Toxic and Hazardous materials and waste. The reduction in petroleum waste products due to the loss of Abrams and Bradley's is expected to be offset by the addition of Stryker vehicles. Environmental impacts, however, are anticipated to be less than significant due to the comprehensive program addressing the management of hazardous waste, hazardous materials, and toxic substances. Additionally, extensive outreach and training program on spill prevention, major site contamination and cleanup, and other special hazards resulting from increases in personnel, and training activities would further reduce the potential for impacts.

4.13.2.3 Cumulative Effects

The cumulative impacts of hazardous and toxic substances consist of past, present, and reasonably foreseeable future actions that increase the handling of these substances or the generation of hazardous wastes. Only minor cumulative impacts are predicted from the increased hazardous waste and petroleum, oils, and lubricants product generation as the installation has the capacity to handle the increased quantities. The Installation is currently considering a variety of proposed initiatives under Net Zero to minimize hazardous waste (Fort Carson, 2012b).

5.0 ACRONYMS

ABCT	Armored Brigade Combat Team
ACHP	Advisory Council on Historic Preservation
ACP	Access Control Point
ACUB	Army Compatible Use Buffer
AR	Army Regulation
BAAF	Butts Army Airfield
BCT	Brigade Combat Team
BDE	Brigade
BMP	Best Management Practice
BRAC	Base Realignment and Closure
CAA	Clean Air Act
CAB	Combat Aviation Brigade
CDPHE	Colorado Department of Public Health and Environment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COSHPO	Colorado State Historic Preservation Officer
CPTS	Comprehensive Post-wide Transportation Study
CWA	Clean Water Act
CPW	Colorado Parks and Wildlife
CWD	Chronic Wasting Disease
dB	Decibel
DoD	Department of Defense
DPW	Directorate of Public Works
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEIS	Final Environmental Impact Statement
FNSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gas
GTA	Grow the Army
HAP	Hazardous Air Pollutant
HQDA	Headquarters, Department of the Army
HWMP	Hazardous Waste Management Plan
IAW	In accordance with
IBCT	Infantry Brigade Combat Team
ICRMP	Integrated Cultural Resources Management Plan
ID	Infantry Division
INRMP	Integrated Natural Resources Management Plan

IPBC	Infantry Platoon Battle Course
ITAM	Integrated Training Area Management
JBLM	Joint Base Lewis McCord, Washington
LUPZ	Land Use Planning Zone
m2	Square meter
MIM	Maneuver Impact Mile
mm	Millimeter
MPG	Miles per gallon
MS4	Municipal Separate Storm Sewer
MSGP	Multi-Sector General Permit
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves and Repatriation Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO2	Nitrogen Dioxide
NOA	Notice of Availability
NOI	Notice of Intent
NOX	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O3	Ozone
OH	Hydroxyl Radical
ORTC	Operation Readiness Training Center
P2	Pollution Prevention
PA	Programmatic Agreement
Pb	Lead
PCB	Polychlorinated Biphenyl
PCMS	Piñon Canyon Maneuver Site
PEIS	Programmatic Environmental Impact Statement
PM	Particulate Matter
PM10	Particulate Matter 2.5 to 10 micrometers
PM2.5	Particulate Matter less than 2.5 micrometers
PSD	Prevention of Significant Deterioration
PV	Photovoltaic
REC	Record of Environmental Consideration
ROD	Record of Decision
SBCT	Stryker Brigade Combat Team
Se	Selenium
SH-	State Highway
SO2	Sulfur Dioxide
SOP	Standard Operating Procedure
SPCCP	Spill Prevention, Control, and Countermeasures Plan
SWMP	Stormwater Management Plan

SWPPP	Stormwater Pollution Prevention Plan
TUAV	Tactical Unmanned Aerial Vehicle
TCP	Traditional Cultural Properties
TNC	The Nature Conservancy
TPY	Tons per year
UAS	Unmanned Aircraft System
UIC	Unit Identification Code
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAF	US Air Force
USC	United States Code
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife service
UXO	Unexploded Ordnance
VEC	Valued Environmental Component
WRC	Wilderness Road Complex
WTE	Waste-to-Energy
WWTP	Wastewater Treatment Plant

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Appendix A: Mission and Training of the Brigade Combat Teams

The Brigade Combat Teams train in a very similar manner, by conducting fires and maneuver. All individuals and teams qualify with their small arms and vehicle weapons and maneuver with vehicles or dismounted.

A.1 Mission and Training of the ABCT and SBCT.

The training of the ABCT includes gunnery training with the Abrams and Bradley weapon systems. With or without infantry, mounted or dismounted, the ABCT maneuvers to the objective. The SBCT typically dismounts the infantry from a protected area, and the Stryker vehicle provides covering fire for the dismounted Soldiers, they maneuver on to the objective.

A.2 Mission and Training of the IBCT remains unchanged.

The training of the IBCT is essentially the same as the SBCT with the exception of maneuver training without the Stryker vehicle.

A.3 Mission and Training of the BCT

A.3.1 Mission of the BCT

The primary mission of the BCT is to deploy in support of the mission commander's ground maneuver needs in the operational theater. When at home station the units train on critical tasks to enhance readiness. The mission of a BCT is to conduct the following operations:

- Ground assault operations
- Provide supporting direct and indirect fires
- Command, control, communications, computers, and intelligence operations
- Combat service support operations
- Combat support operations
- Deployment/redeployment operations
- Mission planning and preparation
- Mobility, counter mobility, and survivability operations

- Reconnaissance and surveillance operations
- Stability operations and support operations
- Casualty evacuation

A.3.2 Training of the BCT

This introduction to brigade training is provided to facilitate an understanding of BCT training activities as related to the environmental effects of the potential BCT stationing implementation.

Training is the Army's number one priority for units. Commanders train their units to be combat ready. "Battle Focus" is a concept used to derive training requirements, and units train according to their Mission-Essential Task Lists (METLs). This is derived from wartime operational plans (why they fight), specific (to unit) combat capabilities (how they fight), the operational environment (where they fight), directed missions (what they must do) and any external guidance. The Army trains Soldiers in individual skills, units on collective tasks, and different levels of units through multi-echelon training. The Army trains as it fights, as a combined arms team. Combined arms training is a doctrinal approach to training, which seeks to integrate critical combat forces, ensuring they are trained together as a single team to accomplish mission objectives. Training ranges, training lands, and training airspace are the Army's classrooms and, "Commanders take every opportunity to move Soldiers out into the field, to fire weapons, maneuver as a combined arms team and incorporate protective measures against enemy actions" (Field Manual 7-1, Battle Focused Training).

All Soldiers qualify with their individual weapon (rifle or pistol) at least twice annually; crew-served weapons qualification varies by type of unit. This training is usually accomplished at the company level on fixed ranges described in Training Circular 25-8. Weapons system training consists of a series of "tables" and occurs on large range complexes.

All units train in "field-craft," which includes establishing logistical and command and control operations in maneuver areas. BCT's establish Forward Operating Bases (FOB) during field training exercises. From those forward area locations the units train on their METL.

A key component of BCT readiness is training with other ground and air units to integrate air and ground operations. In training with ground units on complex maneuver and live-fire tasks, Soldiers and leaders also enhance their effectiveness in understanding the requirements and expectations for other types of ground unit support. Stryker Units may cross-train with both Tanks and Infantry units at Fort Carson. Training together, units are able to enhance each

other's readiness and reach optimal effectiveness as a combined arms team. A list of training activities is located in Appendix B.

A.3.2.1 Individual/Crew Qualification Ranges

The following describes the difference in required individual and crew qualification ranges at the Installation. All four types of ranges described below exist at Fort Carson.

25-Meter Zero Range. Train Soldiers in basic marksmanship by teaching them techniques to engage stationary targets and sighting adjustment techniques. It can support M16 or M4 rifle firing, as well as that of crew-served machine guns.

Qualification Training Range: This range is a multi-functional range that can meet the weapons qualifications requirements for multiple BCT weapons systems. This range combines the capabilities of the Modified Record Fire Range (MRF), Sniper Field Fire Range, Combat Pistol Qualification Course (CPQC), MK–19 Range, and the Multipurpose Machine Gun Range (MPMG).

Modified Record Fire Range: Train support unit Soldiers in basic marksmanship tasks by teaching them to quickly aim and engage stationary infantry targets.

Combat Pistol Qualification Course: Train Soldiers to identify, engage, and defeat an array of targets using the 9 millimeter (mm), .38-caliber, or .45-caliber pistol.

Multi-purpose Machine Gun Range: Train Soldiers to engage stationary infantry and moving infantry targets and stationary vehicle targets with the full range of Army machine guns to include the M249, M60, M240, and .50-caliber arms.

A.3.2.2 Collective Training Range Requirements

The following describes the types of required training that occurs on the integrated ground maneuver and qualification ranges at the installation. Fort Carson currently maintains the suite of ranges detailed below.

Multi-Purpose Range Complex (MPRC) or Digital Multi-Purpose Range Complex (DMPRC): Train and test BCT, aviation, armor, and infantry crews, sections, squads, and platoons on skills necessary to detect, identify, engage, and defeat stationary and moving infantry and armor targets in a tactical array. These ranges will be modified with additional targets for Stryker units. This complex also accommodates training with sub-caliber and/or laser training devices. All targets are fully automated, utilizing event-specific, computer-driven target scenarios during scoring.

Infantry Squad Battle Course (ISBC): The ISBC is a collective squad or crew range designed to train and test infantry squads or crews, either mounted or dismounted, on the skills necessary to conduct tactical movement techniques and detect, identify, engage and defeat stationary and moving infantry and armor targets in tactical array.

Infantry Platoon Battle Course (IPBC): The IPBC is a collective range designed to train and test infantry platoons, either mounted or dismounted, on the skills necessary to conduct tactical movement techniques and detect, identify, engage and defeat stationary and moving infantry and armor targets in a tactical array.

Urban Assault Course (UAC): This facility is used to train individual Soldiers, squads, and platoons on tasks necessary to operate within an urban environment. All Active Component and Reserve Soldiers are required to train on this range.

A.3.2.3 Live-fire Training

Live-fire training is an essential component of Army training and of the implementation of the Proposed Action. To be operationally effective, Soldiers must have the skills and experience necessary to operate and maintain their weapons. Live-fire involves both munitions and explosives that will be used in combat and non-explosive training rounds. Soldiers must "train as they fight" in order to properly prepare for combat situations. At a minimum, all Soldiers must qualify on individual weapons per their METL at least twice a year. In addition, platoons, companies, and battalions of BCTs must conduct collective live-fire training exercises on firing ranges to ensure they have rehearsed and coordinated battle procedures and are prepared to deploy to support wartime operations. Various weapons systems use different types of munitions. Live-fire training of BCT units primarily includes small arms weapons to include the use of M-4 rifles with 5.56 mm munitions, 9 mm pistols, and M240 machine guns loaded with 7.62 mm munitions. The BCT must also fire larger caliber weapons systems as part of live-fire training, to include the M2 .50-caliber and M230, Mark 19, and the 105mm cannon on the Mobile Gun System. Other weapon systems include the Javelin and Tow anti-tank weapons, the 60mm and 81mm mortars. BCT units must conduct live-fire training in a variety of settings to ensure unit readiness for deployment. Reconnaissance units must conduct integrated training with other combat maneuver ground units in both urban and open terrain settings.

A.3.2.4 Maneuver and Flight Operations Training

Collective Training and Air-Ground Integration Training: Army units regularly conduct collective training to prepare for operations. Collective training is done at the team or aircrew level up through the highest levels of Army tactical organizations and normally at the brigade or BCT level. When Army combat arms units (such as infantry, armor, Stryker and aviation) conduct collective training that involves the movement of troops and the use of firing (live- or

simulated-), it is termed “maneuver training”. When collective training is conducted in concert with two or more types of combat arms units, it is termed “combined-arms” training and is done to ensure that all of the units’ capabilities can be integrated and synchronized to execute missions under stressful operational conditions. By definition, combined-arms training is a type of maneuver training. Maneuver training consists of collective training of the constituent units of the BCT working together to integrate their combined capabilities and skills. It is a critical component of the unit collective training plan to train units on how to synchronize the execution of battle tasks and shoot, move, and communicate on the battlefield. BCTs must conduct and rehearse maneuver training at every echelon from platoon through brigade level to ensure they can accomplish their mission-critical tasks. BCT units are normally employed in support of ground maneuver by BCTs as a part of the combined arms team. The BCT must train regularly with other BCTs at home station prior to deploying in support of operations. Such training is termed “air-ground integration training”. Air-ground integration training with BCT units and aviation and ground units allows each type of unit to maneuver more effectively with the other, understanding key limitations and requirements, while promoting increased training readiness and effectiveness. Large-scale battalion and brigade maneuver training events that conduct air-ground integration operations are often the capstone training exercise that tests and certifies units for operational deployments abroad. Movement techniques are designed to exploit mobility of vehicles while employing fire and maneuver concepts. Movement techniques are:

- Traveling. This technique is employed to move rapidly over the battlefield when enemy contact is unlikely or the situation requires speed for evading the enemy.
- Traveling overwatch. This technique is employed when speed is essential and enemy contact is possible. This technique is normally associated with reconnaissance, security, and attack missions when threat and/or environmental conditions preclude use of bounding overwatch. Units often employ contour or
- Bounding overwatch. This technique is employed when enemy contact is anticipated and the greatest degree of concealment is required. It is the slowest movement technique, too slow for high tempo operations and too vulnerable for nonlinear and/or urban operations. Each bound is varied depending on availability of vegetation and terrain for concealment.

Estimated Breakouts of Training at Fort Carson: Maneuver training of BCT units stationed at Fort Carson would include training exercises at all levels to brigade and air-ground integration.

A Battalion task force consisting of approximately 1000 Soldiers and vehicles would conduct maneuver training on Fort Carson once per year. This task force would train for an approximately two week battalion level maneuver rotation. There are three maneuver

battalions and a cavalry battalion in the BCT to be stationed at Fort Carson. The BCT would also train as a brigade for two weeks. Accordingly, ten weeks (2.5 months) of task force maneuvers has been assumed to be required once every 2-3 year training rotation. Training assumptions are based on doctrinal training requirements. Operational needs, funding limitations, or maneuver space limitations may result in doctrinal training requirement work-arounds, to include increased use of simulator facilities for individual and crew training, if appropriate.

Wheeled Vehicles. BCT training would also involve use wheeled vehicles. Wheeled vehicles (none-Stryker vehicles such as HMMWV and 2.5 Ton trucks) of BCT units would not be anticipated to conduct cross-county maneuvers and would mainly operate within the main post area and on approved roads and established vehicle two-tracks in training areas.

Appendix B: Training Activities on Fort Carson

A. Ground LIVE FIRE TRAINING

- INDIVIDUAL WEAPONS – each Soldier is assigned an individual weapon, depending on each individual's role, the weapon could be a pistol, rifle, squad automatic weapon, 40mm grenade launcher or in some cases, a combination of two weapons.
- CREW SERVED WEAPONS- these weapons include medium and heavy machine guns, grenade launcher, and machine guns. These are weapons that require a team of two, to set up and operate.
- CONVOY LIVE FIRE
- NON-EXPLOSIVE MORTARS- Mortars (60mm, 81mm) are fired from a vehicle (tracked or wheeled) specially designed for mortars, or can be fired individually, without a vehicle platform.
- DEMOLITIONS/RANGE/TACTICAL
- PROPELLANT BURNING TRAINING
- IED Training
- ILLUMINATION ROUNDS
- TEAR GAS/RIOT CONTROL AGENT

B. Air live fire training

- AVIATION FORWARD ARMING AND REFUEL POINT (FARP)
- Flares – Aircraft
- CHAFF
- 2.75 INCH ROCKETS FFAR

C. Ground Maneuver Training

- MECHANIZED MANEUVERS
- WHEELED MANEUVERS
- DISMOUNTED MANEUVERS
- NON- LIVE FIRE URBAN OPERATIONS
- LAND NAVIGATION, MAP READING
- CONVOY TRAINING
- FIELD TRAINING EXERCISE
- MISSION READINESS EXERCISE
- TRAFFIC CONTROL POINT
- ROBOTICS, up to 320 lbs
- FORCE ON FORCE
- LASER TRAINING (DESIGNATOR/RANGE FINDER)
- UNMANNED GROUND VEHICLES

D. Air Maneuver Training (air operations).

- UNMANNED AVIATION SYSTEMS
- AVIATION TRAINING FLIGHTS
- HELICOPTER LANDING ZONE
- PARACHUTE DROP ZONE
- HIGH PERFORMANCE AIRCRAFT

E. Digging Fixed Base Operations

- OBSTACLES
- INDIVIDUAL FIGHTING POSITIONS
- VEHICLE FIGHTING POSITIONS
- FORWARD OPERATING BASE/COMBAT OUTPOST
- FIELD SANITATION
- TRENCH WARFARE
- BUNKERS

F. Non-Digging Fixed Base Operations

- TACTICAL OPERATIONS CENTER/TACTICAL ADMINISTRATIVE CENTER
- FIELD AMMUNITION SUPPLY POINT
- DECONTAMINATION
- COMMUNICATIONS RETRANSMISSION (RETRANS)
- HELICOPTER LANDING ZONE
- PARACHUTE DROP ZONE
- NEW EQUIPMENT TRAINING TEAM (NETT)
- MOBILE TRAINING TEAM (MTT)
- PHYSICAL TRAINING/ENDURANCE TRAINING
- COMBAT OUTPOST/FORWARD OPERATING BASE
- EXPERT FIELD BADGE
- FIELD HOSPITAL
- COMMAND POST
- COMBATIVES
- ASSAULT LANDING STRIP
- COUNTER-INSURGENCY/HUMAN INTELLIGENCE
- SMOKE/OBSCURANTS
- WORKING DOG TRAINING
- CAMOFLAUGE NETTING

G. Training Support Operations.

- RANGE SAFETY PROGRAM
- TRAINING RANGE AND FACILITY CONSTRUCTION
- TRAINING RANGE AND FACILITY MAINTENANCE

- TRAINING RANGE AND FACILITY RENOVATION/MODERNIZATION
- RAIL OPERATIONS
- ROAD AND TRAIL MAINTENANCE
- DUST SUPRESSANT APPLICATION
- UTILITIES MAINTENANCE
- FENCE REPAIR

H. Land sustainment Operations.

- PRESCRIBED BURNING
- SPILL CLEANUP
- FORESTRY OPERATIONS
- NOXIOUS/ INVASIVE WEED CONTROL
- WATERSHED MANAGEMENT
- CULTURAL RESOURCE MANAGEMENT
- INTEGRATED TRAINING AREA MANAGEMENT
    - RANGE AND TRAINING LAND ASSESSMENT
    - LAND REHABILITATION AND MAINTENANCE
    - TRAINING RESOURCE INTEGRATION

Appendix C: Stryker Vehicles

A BCT may have up to nine configurations of the Stryker vehicle plus the mobile gun system. These include the M1126 Infantry Combat Vehicle, the M1135 nuclear, biological, chemical reconnaissance vehicle (NBC RV), M1134 anti-tank guided missile (ATGM), M1133 medical evacuation vehicle (MEV), M1129 mortar carrier (MC), M1132 engineer squad vehicle (ESV), M1130 command vehicle (CV), M1131 fire support vehicle (FSV) and the M1127 reconnaissance vehicle (RV). They have parts commonality and self-recovery capabilities and are equipped with a central tire-inflation system. Finally, BCTs also have the M1128 mobile gun system (MGS).

A new variant of the Stryker vehicle has a double hull, V shaped bottom to help protect the crew from Improvised Explosive Devices (IEDs). This variant increases the weight of a typical Stryker vehicle from 19.5 Tons to 22 Tons.

The M1126 infantry carrier vehicle (ICV): The ICV provides armored protection for the two-man crew and a squad of nine infantry soldiers. The basic hard steel armor is augmented by applique panels of lightweight ceramic / composite armor. The armor provides integral all-round 14.5mm protection against machine gun rounds, mortar and artillery fragments. In Iraq, in January 2004, Stryker vehicles were outfitted with a 'cage' of slat armor, which encircles the vehicle about 18 inches from the main body, as protection against rocket-propelled grenades (RPGs). The ICV has a .50-caliber M2 machine gun, MK19 40mm grenade launcher, or MK240 7.62mm machine gun. It is also armed with four M6 smoke grenade launchers.

M1130 command vehicle (CV): The CV provides an operational platform for elements of command within the BCT. The CV integrates the Command and Control equipment for unit commanders. It has the ability to access aircraft power and antenna systems to plan missions while en route aboard aircraft. It is an armored command vehicle based on the Stryker platform. It is used within the BCT to provide means to receive information, analyze and transmit data, and control forces carrying out combat missions.

The M1127 reconnaissance vehicle (RV): the RV is fitted with a long-range advanced scout surveillance system (LRAS3). The system includes a second-generation horizontal technology initiative (HTI) thermal imager, day TV and eye-safe laser rangefinder.

The M1129 mortar carrier (MCV-B): The MCV-B is equipped with a 120mm mortar mounted inside the vehicle and fires through doors that swing open at the top of the vehicle. As well as the mounted mortar the vehicle carries a second mortar which has to be unloaded from the vehicle to be fired. The vehicle has a digital fire control system and a crew of five.

The M1135 nuclear, biological, chemical reconnaissance vehicle (NBC RV): NBC variants can collect and automatically integrate contamination information with vehicle navigation and meteorological sensor data and then transmit digital warning messages to other forces.

The M1133 medical evacuation vehicles (MEV): MEVs are the primary ambulance platform in BCT units. They can accommodate up to six patients and a medical team.

M1134 anti-tank guided missile (ATGM): The ATGM is a long-rang, anti-tank missile carrier. It is the brigade's primary anti-armor system capable of defeating any armored threat even at extended ranges. The M1134 fires the heavy TOW anti-tank missiles this variant is equipped with a 2-tube launcher

M1132 engineer squad vehicle (ESV): The ESV combat engineering variant of the Stryker is issued to combat engineer squads in the Stryker brigade combat teams. Its purpose is to transport and support combat engineers on the battlefield. The vehicle includes obstacle clearing and lane marking systems as well as mine detection devices. The variant's most distinctive feature is a mine-clearance blade. The ESV is often towing a wheeled trailer loaded with additional equipment to support the engineer mission. The vehicle is capable of clearing mines on paved surfaces and some rubble clearance. Other mobility tasks can be completed by the mounted engineer squad with the tools on the vehicle and within the trailer.

M1131 fire support vehicle (FSV): The FSV provides automated enhanced surveillance, target acquisition, target identification, target tracking, target designation, position, location, and communications functionality. Targets can be transmitted instantly to the fire support.

M1128 Stryker mobile gun system (MGS): The MGS variant consists of the basic vehicle with a fully stabilized shoot-on-the-move low-profile turret. The turret is armed with a M68A1E4 105mm cannon with muzzle brake and an M2 .50-caliber commander's machine gun. The Stryker mobile gun system can fire 18 rounds of 105mm main gun ammunition, 400 rounds of 0.50-calibre ammunition and 3,400 rounds of 7.62mm ammunition.

The Stryker can be transported on the ground using trucks or by air on C-17, C-5, or C-130 aircraft. The C-5 and C-17 aircraft can carry seven and four Strykers respectively.

The BCT can deploy and fight as an independent Brigade Combat Team or as an integrated force with IBCT and/or HBCT.

Appendix D: Noise Study for Fort Carson

DEPARTMENT OF THE ARMY
US ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND MD 21010-5403

MCHB-TS-EON

0 4 APR 2007

MEMORANDUM FOR

Environmental Planning Support Branch (SFIM-AEC-TSP/Ms. Alicia Booher), U.S. Army Environmental Command, 5179 Hoadley Road, Aberdeen Proving Ground, MD 21010-5401
Office of the Director (AFZC-ECM/Mr. Tom Warren), Directorate of Environmental Compliance and Management, 1638 Elwell Street, Fort Carson, CO 80913-4356

SUBJECT: Operational Noise Consultation 52-EN-06W7c-07, Operational Noise Contours for Fort Carson, CO, April 2007

1. REFERENCE.

a. U.S. Army, 2003, U.S. Army Construction Engineering Research Laboratories, BNOISE2 Computer Model, version 1.3.2003-07-03.

b. U.S. Army, 2006, U.S. Center for Health Promotion and Preventive Medicine, Operational Noise Consultation 52-ON-046N-06, Operational Noise Contours for Fort Carson, CO, April 2006.

2. AUTHORITY. The Army Environmental Command, Aberdeen Proving Ground, MD requested and funded this study.

3. PURPOSE. To provide U.S. Army Environmental Command and Fort Carson noise contours for the appropriate National Environmental Policy Act (NEPA) documentation for a proposed alternative stationing of a Stryker Brigade Combat Team (BCT) at Fort Carson.

4. BACKGROUND. The Stryker BCT would be added to the current proposed BRAC actions in which Fort Carson will gain one Light Infantry Brigade Combat Team (BCT), two Heavy BCTs, and lose the 3rd Armor Cavalry Regiment (ACR). The resulting change of weapons activity from incoming and outgoing units is addressed as a gain of one Heavy BCT. Although the 3rd ACR is slightly larger than the Heavy BCT, the difference is acoustically insignificant.

5. NOISE ZONE DESCRIPTIONS. Enclosure 1 contains the Noise Zone Descriptions and Land Use Guidelines used in this consultation.

6. NOISE CONTOURING PROCEDURES.

a. The noise simulation program used to assess large caliber weapons (20mm and greater) noise is BNOISE2 (U.S. Army 2003). The BNOISE2 program requires operational data targets for each range or firing point, and the amount of propellant used to reach the target. Existing records on range utilization along with reasonable assumptions are used as BNOISE2 inputs. The assessment period used to create the Fort Carson C-weighted Day-Night Level (CDNL) contours is 250 days. The BNOISE2 program accounted for the terrain at Fort Carson when creating the noise contours.

b. The inputs used to generate the large caliber noise contours for this report were created using the data summarized in Enclosure 2.

7. LARGE CALIBER WEAPONS NOISE CONTOUR MODELING RESULTS.

a. BRAC ACTIVITY (EXISTING PLUS ONE HEAVY BCT) LARGE CALIBER OPERATIONAL NOISE CONTOURS.

(1) For comparison purposes, the noise contours presented as the "future large caliber operational noise contours" in the Operation Noise Consultation ON-046N-06 (U.S. Army 2006) are shown as BRAC activity in Enclosure 3. These contours were created using the existing 2001 ammunition plus the gain one Heavy BCT columns in Enclosure 2.

(2) The Land Use Planning Zone (LUPZ) (57 CDNL) extends beyond the eastern boundary beyond Interstate 25, encompassing El Rancho, Midway Ranches, and most of the City of Fountain. The LUPZ extends less than 2,600 meters beyond the southern boundary; and beyond the western boundary encompassing Turkey Canyon Ranch. The Noise Zone II (62 CDNL) extends beyond the installation's eastern boundary less than 1,300 meters into the City of Fountain; less than 4,000 meters into El Rancho and Midway Ranches; and beyond the western boundary less than 700 meters into Turkey Canyon Ranch. The Noise Zone II (70 CDNL) extends beyond the eastern boundary less than 500 meters into the city of Fountain; less than 1,000 meters between the City of Fountain and El Rancho; less than 400 meters into the western portion of El Rancho; and less than 200 meters into Turkey Canyon Creek.

b. ONE STRYKER BCT PLUS BRAC ACTIVITY (EXISTING PLUS ONE HEAVY BCT) LARGE CALIBER OPERATIONAL NOISE CONTOURS.

(1) The noise contours for the large caliber weapon operations for the addition of one Stryker BCT to the BRAC activity at Fort Carson are shown in Enclosure 4. These contours were created using the existing 2001 ammunition plus the gain one Heavy BCT plus the gain one Stryker BCT columns in Enclosure 2. The addition of the Stryker BCT to the BRAC activity

will slightly increase the noise contour size. When comparing the scenarios, the noise contours increased in size approximately 300 meters west of Fort Carson and approximately 1,800 meters east of Fort Carson.

(2) The Land Use Planning Zone (LUPZ) (57 CDNL) extends beyond the eastern boundary beyond Interstate 25, encompassing El Rancho, Midway Ranches, and the City of Fountain. The LUPZ extends less than 3,000 meters beyond the southern boundary; and beyond the western boundary encompassing Turkey Canyon Ranch. The Noise Zone II (62 CDNL) extends beyond the installation eastern boundary less than 1,500 meters into the City of Fountain; less than 4,700 meters into El Rancho and Midway Ranches; and beyond the western boundary less than 800 meters into Turkey Canyon Ranch. The Noise Zone II (70 CDNL) extends beyond the eastern boundary less than 600 meters into the City of Fountain; approximately 1,000 meters between the City of Fountain and El Rancho; less than 600 meters into the western area of El Rancho; and less than 300 meters into Turkey Canyon Creek.

8. RECOMMENDATIONS.

a. Include the information from this consultation in the appropriate NEPA documentation.

b. Although no Federal Law prohibits the Department of Defense training and testing activities from making noise, the Services have always tried to be good neighbors. Though there are currently few residences exposed to high noise levels, Fort Carson should continue to monitor both the noise environment and any proposed land use changes surrounding the installations.

9. Please contact us if this consultation or any of our services did not meet your needs or expectations.

10. The point of contact is Ms. Kristy Broska or Dr. William Russell, Operational Noise Program, USACHPPM, at DSN 584-3829, commercial (410) 436-3829, or e-mail: kristy.broska@us.army.mil or william.russell4@us.army.mil.

FOR THE COMMANDER:

for Stephen L. Kistner

4 Encls
as

THOMAS T. MOXLEY
LTC, MS
Director, Environmental Health Engineering

Operational Noise Consultation, No. 52-EN-06W7c-07, Fort Carson, Apr 07

NOISE ZONE DESCRIPTIONS AND LAND USE GUIDELINES

1. Day Night Level (DNL). DNL is used to describe the cumulative or total noise exposure during a prescribed time period. DNL is the energy average noise level calculated with a 10 decibel penalty for operations occurring between 2200 and 0700.

2. Land Use Guidelines.

a. The Noise Zone III consists of the area around the source of the noise in which the DNL is greater than 70 dB C- weighted day-night sound level (CDNL) for large caliber weapons. The noise level within Noise Zone III is considered so severe that noise-sensitive land uses should not be considered therein.

b. The Noise Zone II consists of an area where the DNL is between 62 and 70 CDNL for large caliber weapons. Land within Noise Zone II should normally be limited to activities such as industrial, manufacturing, transportation, and resource production. However, if the community determines that land in Noise Zone II areas must be used for residential purposes, then noise level reduction features of 25 to 30 decibels should be incorporated into the design and construction of new buildings.

c. The Noise Zone I includes all areas around a noise source in which the DNL is less than 62 dB CDNL for large caliber activity. This area is usually acceptable for all types of land use activities.

d. The Land Use Planning Zone (LUPZ) DNL noise contours (57 dB CDNL) represent an annual average that separates the Noise Zone II from the Noise Zone I. Taking all operations that occur over the year and dividing by the number of training days generates the contours. But, the noise environment varies daily and seasonally because operations are not consistent through all 365 days of the year. In addition, the Federal Interagency Committee on Urban Noise document states "Localities, when evaluating the application of these guidelines to specific situations, may have different concerns or goals to consider." For residential land uses, depending on attitudes and other factors, a 57 CDNL may be considered by the public to be an impact on the community environment. In order to provide a planning tool that could be used to account for days of higher than average operations and possible annoyance, the LUPZ contour is being included on the noise contour maps.

Enclosure 1

e. See Table for land use guidelines.

Table. Land Use Guidelines

Noise Zones	Large Caliber Weapons (CDNL)
LUPZ	57 - 62
I	< 62
II	62 – 70
III	> 70

FORT CARSON - PROPOSED TRANSFORMATION ANNUAL AMMUNITION EXPENDITURE

		Existing 2001 Ammuntion		PLUS	Gain One Heavy BCT		PLUS	Gain One Stryker BCT	
Firing Location	Weapon and Ammunition Type	DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700
Hellfire North	Hellfire Missile, HE	0	0		145	35		0	0
Hellfire South	Hellfire Missile, HE	0	0		145	35		0	0
Mortar Point 02	120mm Mortar, HE	0	0		250	13		128	7
	120mm Mortar Inert	0	0		1173	62		587	31
	60mm Mortar, HE	0	0		95	5		53	3
	60mm Mortar, Inert	0	0		472	25		331	18
	81mm Mortar, HE	45	2		33	2		11	1
	81mm Mortar, Inert	38	2		174	1		71	0
Mortar Point 03	120mm Mortar, HE	0	0		250	14		128	7
	120mm Mortar, Inert	0	0		1173	62		587	31
	60mm Mortar, HE	0	0		95	5		53	3
	60mm Mortar, Inert	0	0		472	25		331	18
	81mm Mortar, HE	14	1		10	0		3	0
	81mm Mortar, Inert	12	1		54	1		22	0
Mortar Point 16	120mm Mortar, HE	0	0		249	13		128	7
	120mm Mortar, Inert	0	0		1172	61		586	31
	60mm Mortar, HE	12	0		95	5		53	3
	60mm Mortar, Inert	0	0		471	24		330	17
	81mm Mortar, HE	29	2		22	1		7	0
	81mm Mortar, Inert	24	1		112	1		46	0
Mortar Point 17	120mm Mortar, HE	0	0		250	13		128	7
	120mm Mortar, Inert	0	0		1173	62		587	31
	60mm Mortar, HE	0	0		95	5		53	3
	60mm Mortar, Inert	0	0		471	25		330	18
	81mm Mortar, HE	149	8		112	6		36	2
	81mm Mortar, Inert	126	7		580	4		237	2
Mortar Point 20	120mm Mortar, HE	0	0		249	13		128	7
	120mm Mortar, Inert	0	0		1172	61		586	31
	60mm Mortar, HE	444	9		95	5		53	3
	60mm Mortar, Inert	0	0		471	24		330	17
	81mm Mortar, HE	192	10		144	8		47	3
	81mm Mortar, Inert	162	9		745	5		305	2

Note: Inert is defined as any round that does not create noise upon impact

Enclosure 2

FORT CARSON - PROPOSED TRANSFORMATION ANNUAL AMMUNITION EXPENDITURE

		Existing 2001 Ammunition		PLUS	Gain One Heavy BCT		PLUS	Gain One Stryker BCT	
Firing Location	Weapon and Ammunition Type	DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700
	Shape Charge 40 lbs	328	0		100	0		50	0
Range 123	20mm Gun, Inert	6602	0		0	0		0	0
	25mm Gun, Inert	183	0		0	0		0	0
	30mm Gun, Inert	0	0		95450	0		0	0
Range 125	TOW Missile, Inert	0	0		115	0		3	0
Range 127	120mm Tank, Inert	42	0		-42	0		0	0
	155mm Howitzer, HE	368	92		-368	-92		0	0
	155mm Howitzer, Inert	44	5		-44	-5		0	0
	25mm Gun, Inert	9481	499		-9481	-499		0	0
	TOW Missile, Inert	445	0		-445	0		0	0
	Bangalore	22	0		-22	0		0	0
Range 127 IPBC	25mm Gun, Inert	0	0		24395	6099		0	0
Range 139	AT4 Rocket, Inert	561	0		174	0		0	0
	AT4 Rocket, HE	0	0		0	0		120	0
	LAW Rocket, Inert	195	0		36	0		0	0
Range 141	155mm Howitzer, HE	0	0		18	0		20	0
	155mm Howitzer, Inert	0	0		1	0		2	0
	Dragon Rocket, Inert	36	0		8	0		0	0
Range 143 DMPRC	120mm Tank, Inert	6705	2138		2598	1114		1297	556
	25mm Gun, Inert	49376	21161		26471	6618		0	0
	TOW Missile, Inert	191	0		230	0		6	0
Range 145	120mm Tank, Inert	668	267		284	122		142	61
	25mm Gun, Inert	14178	9337		7601	1900		0	0
Range 149	Stinger Missile, HE	0	0		72	0		0	0
Range 151	20mm Gun, Inert	228	0		0	0		0	0
	25mm Gun, Inert	101	0		0	0		0	0
Range 155 CALFEX	120mm Tank, Inert	668	0		174	0		87	0
	25mm Gun, Inert	1087	0		5184	0		0	0
	155mm Howitzer, HE	79	20		124	30		137	33
	155mm Howitzer, Inert	744	287		17	12		30	21

Note: Inert is defined as any round that does not create noise upon impact

FORT CARSON - PROPOSED TRANSFORMATION ANNUAL AMMUNITION EXPENDITURE

		Existing 2001 Ammunition		PLUS	Gain One Heavy BCT		PLUS	Gain One Stryker BCT	
Firing Location	Weapon and Ammunition Type	DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700
Range 155E	120mm Mortar, HE	0	0		608	32		312	16
	120mm Mortar, Inert	0	0		722	70		361	35
	60mm Mortar, HE	0	0		319	17		177	9
	60mm Mortar, Inert	0	0		67	3		47	2
	81mm Mortar, HE	246	13		365	19		118	6
	81mm Mortar, Inert	209	11		76	4		31	2
	Demolition, C4 1.25 lbs	628	0		523	0		323	0
	Crater Charge, 40 lbs	21	0		8	0		4	0
	Shape Charge, 40 lbs	12	0		8	0		4	0
Training Area 07	155mm Howitzer, HE	745	166		281	71		309	78
	155mm Howitzer, Inert	0	255		15	11		27	20
Training Area 09	155mm Howitzer, HE	62	15		24	6		26	7
	155mm Howitzer, Inert	0	0		1	1		2	2
Training Area 10	155mm Howitzer, HE	268	74		102	26		112	29
	155mm Howitzer, Inert	0	42		7	4		12	7
Training Area 11	155mm Howitzer, HE	308	76		117	30		129	33
	155mm Howitzer, Inert	0	174		7	4		12	7
Training Area 12	155mm Howitzer, HE	314	74		119	30		131	33
	155mm Howitzer, Inert	0	19		6	4		11	7
Training Area 14	155mm Howitzer, HE	51	13		20	5		22	6
	155mm Howitzer, Inert	0	21		1	1		2	2
Training Area 16	155mm Howitzer, HE	104	26		40	10		44	11
	155mm Howitzer, Inert	0	20		2	2		4	4
Training Area 17	155mm Howitzer, HE	1019	254		385	97		424	107
	155mm Howitzer, Inert	0	381		22	16		39	28
Training Area 18	155mm Howitzer, HE	155	38		58	14		64	15
	155mm Howitzer, Inert	0	55		3	2		5	4
Training Area 20	155mm Howitzer, HE	305	76		115	29		127	32
	155mm Howitzer, Inert	0	98		6	5		11	9
Training Area 21	155mm Howitzer, HE	543	136		205	51		226	56
	155mm Howitzer, Inert	0	94		12	9		21	16

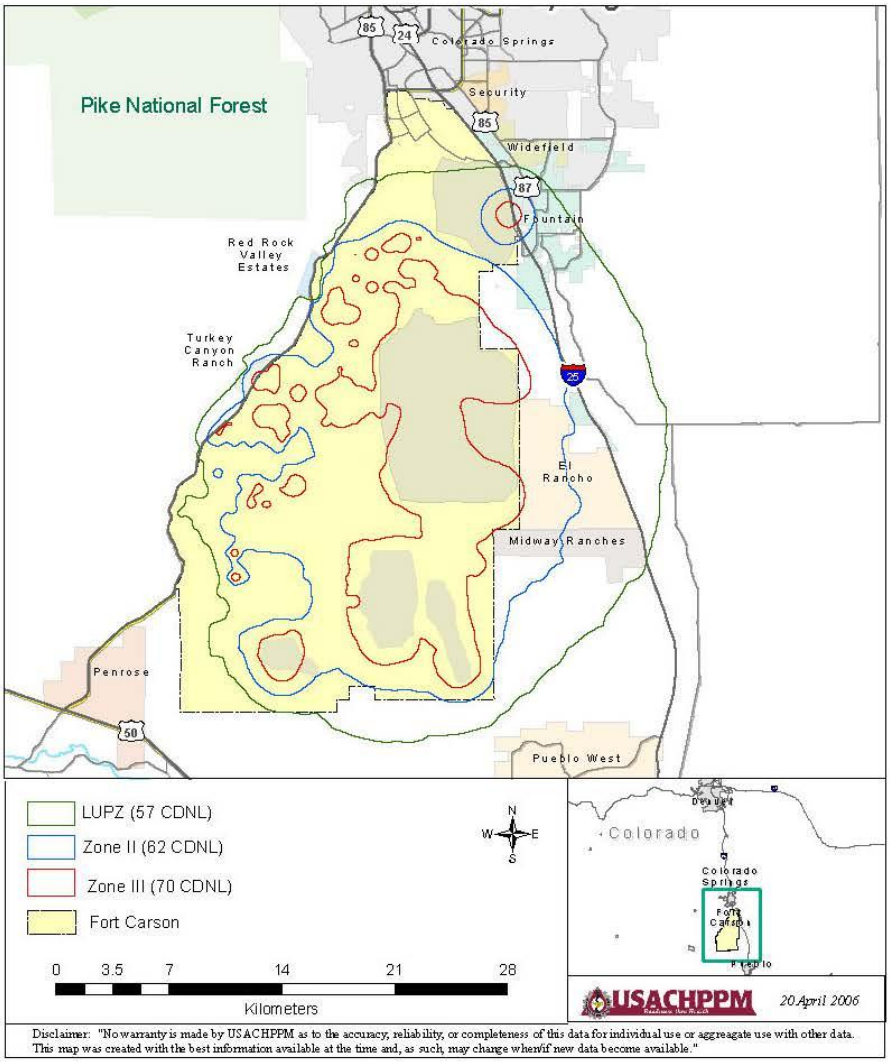
Note: Inert is defined as any round that does not create noise upon impact.

FORT CARSON - PROPOSED TRANSFORMATION ANNUAL AMMUNITION EXPENDITURE

		Existing 2001 Ammuntion		PLUS	Gain One Heavy BCT		PLUS	Gain One Stryker BCT	
Firing Location	Weapon and Ammunition Type	DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700		DayShots 0700-2200	NightShots 2200-0700
Training Area 24	155mm Howitzer, HE	975	244		368	93		405	102
	155mm Howitzer, Inert	0	659		21	16		37	28
Training Area 25	155mm Howitzer, HE	55	14		20	5		22	6
	155mm Howitzer, Inert	0	17		1	1		2	2
Training Area 27	155mm Howitzer, HE	23	6		10	3		11	3
	155mm Howitzer, Inert	0	7		1	1		2	2
Training Area 28	155mm Howitzer, HE	26	7		11	3		12	3
	155mm Howitzer, Inert	0	0		1	1		2	2
Training Area 30	155mm Howitzer, HE	46	11		17	4		19	4
	155mm Howitzer, Inert	0	45		1	1		2	2
Training Area 31	155mm Howitzer, HE	45	11		17	4		19	4
	155mm Howitzer, Inert	0	18		1	1		2	2
Training Area 40	155mm Howitzer, HE	47	12		17	4		19	4
	155mm Howitzer, Inert	0	0		1	1		2	2
Training Area 41	155mm Howitzer, HE	44	11		16	4		18	4
	155mm Howitzer, Inert	0	0		1	1		2	2

Note: Inert is defined as any round that does not create noise upon impact.

FORT CARSON
LARGE CALIBER OPERATIONAL NOISE CONTOURS
BRAC ACTIVITY (EXISTING PLUS ONE HEAVY BCT)



Enclosure 3

Appendix E: Organization and Equipment of the BCTs

This appendix contains details on the organization, number of personnel, and equipment of the Brigade Combat Teams (BCTs) at Fort Carson prior to and after conversion. The 4th Infantry Division (4th ID) currently consist of 3 Armor BCT (ABCT) and 1 Infantry BCT (IBCT). After the BCT Conversion at Fort Carson the division will consist of 1 ABCT, 1 IBCT, and 1 Stryker BCT. Both the ABCT and IBCT will increase in size with the addition of 1 maneuver battalion and 1 engineer company.

Armored Brigade Combat Team (Current)

Total Soldiers: 3,757

Combined arms battalion

- Headquarters and Headquarters Company
  - Medical Platoon
  - Reconnaissance Platoon (M-ATV)
  - Sniper Section
  - Mortar Platoon (M2A7 Bradley 2 Mortar Carrier)
- Tank Company (x 2)
  - Tank Platoon (x 3) (4 x M1A3 Abrams)
- Mechanized Infantry Company (x 2)
  - Mechanized Infantry Platoon (x 3) (5 x M2A6 Bradley 2 IFV)
- Mechanized Combat Engineer Company
  - Mechanized Combat Engineer Platoon (x 3) (6 x M2A9 Bradley 2 Engineer Vehicle)

Combined arms battalion

- Headquarters and Headquarters Company
  - Medical Platoon
  - Reconnaissance Platoon (M-ATV)
  - Sniper Section
  - Mortar Platoon (M2A7 Bradley 2 Mortar Carrier)
- Tank Company (x 2)
  - Tank Platoon (x 3) (4 x M1A3 Abrams)
- Mechanized Infantry Company (x 2)
  - Mechanized Infantry Platoon (x 3) (5 x M2A6 Bradley 2 IFV)
- Mechanized Combat Engineer Company
  - Mechanized Combat Engineer Platoon (x 3) (6 x M2A9 Bradley 2 Engineer Vehicle)

Armored reconnaissance squadron

- Headquarters and Headquarters Troop
  - Sniper Section
  - Forward Air Controller Section
- Reconnaissance Troop (x 3)
  - Tank Platoon (5 x M1A2 SEPv3 Abrams)
  - Scout Platoon (x 2)
    - M3A6 Bradley 2 Cavalry Fighting Vehicle (x 6)
    - M-ATV w/ Long-Range Advanced Scout Surveillance System (LRAS3) (x 4)
  - Dismounted/Mounted Reconnaissance Platoon
  - 120mm Mortar Section (M2A7 Bradley Mortar Carrier)

Fires battalion

- Headquarters and Headquarters Battery
- 155mm SP Firing Battery (x 4) (M106E Crusader SPH)
- Target Acquisition Section

Brigade special troops battalion

- Headquarters and Headquarters Company
  - Military Police Platoon (M-ATV)
  - CBRN Reconnaissance Platoon
- Military Intelligence Company
- Network Signal Company

Brigade support battalion

- Headquarters and Headquarters Company
- Distribution Company
- Maintenance Company (x 2)
- Medical Company
  - Medical Evacuation Platoon (x 3) (M2A8 Bradley 2 MEV x 8)
  - Trauma Platoon (x 2)
- Forward Support Company (Combined Arms) (x 3)
- Forward Support Company (Fires)
- Forward Support Company (Reconnaissance and Surveillance)
- Brigade Combat Engineer Company (Mechanized)
  - Explosive Ordinance Disposal Team (x 4) - M2A9E Bradley 2 Support Vehicle
  - MICLIC Platoon (Assault Breacher Vehicle x 8)
  - Combat Engineer Platoon (x 3) - M2A9B Bradley 2 Engineer Vehicle
  - Bridge Laying Platoon (M104 x 8)
  - Headquarters and Headquarters Platoon

Armored Brigade Combat Team (Converted)

Total Soldiers: 4,655

Combined arms battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon (M-ATV)
    - Sniper Section
    - Mortar Platoon (M2A7 Bradley 2 Mortar Carrier)
- Tank Company (x 2)
    - Tank Platoon (x 3) (4 x M1A3 Abrams)
- Mechanized Infantry Company (x 2)
    - Mechanized Infantry Platoon (x 3) (5 x M2A6 Bradley 2 IFV)
- Mechanized Combat Engineer Company
    - Mechanized Combat Engineer Platoon (x 3) (6 x M2A9 Bradley 2 Engineer Vehicle)

Combined arms battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon (M-ATV)
    - Sniper Section
    - Mortar Platoon (M2A7 Bradley 2 Mortar Carrier)
- Tank Company (x 2)
    - Tank Platoon (x 3) (4 x M1A3 Abrams)
- Mechanized Infantry Company (x 2)
    - Mechanized Infantry Platoon (x 3) (5 x M2A6 Bradley 2 IFV)
- Mechanized Combat Engineer Company
    - Mechanized Combat Engineer Platoon (x 3) (6 x M2A9 Bradley 2 Engineer Vehicle)

Combined arms battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon (M-ATV)
    - Sniper Section
    - Mortar Platoon (M2A7 Bradley 2 Mortar Carrier)
- Tank Company (x 2)
    - Tank Platoon (x 3) (4 x M1A3 Abrams)
- Mechanized Infantry Company (x 2)
    - Mechanized Infantry Platoon (x 3) (5 x M2A6 Bradley 2 IFV)
- Mechanized Combat Engineer Company
    - Mechanized Combat Engineer Platoon (x 3) (6 x M2A9 Bradley 2 Engineer Vehicle)

Armored reconnaissance squadron

- Headquarters and Headquarters Troop
  - Sniper Section
  - Forward Air Controller Section
- Reconnaissance Troop (x 3)
  - Tank Platoon (5 x M1A2 SEPv3 Abrams)
  - Scout Platoon (x 2)
    - M3A6 Bradley 2 Cavalry Fighting Vehicle (x 6)
    - M-ATV w/ Long-Range Advanced Scout Surveillance System (LRAS3) (x 4)
  - Dismounted/Mounted Reconnaissance Platoon
  - 120mm Mortar Section (M2A7 Bradley Mortar Carrier)

Fires battalion

- Headquarters and Headquarters Battery
- 155mm SP Firing Battery (x 6) x2 (M106E Crusader SPH)
- Target Acquisition Section

Brigade engineer battalion

- Headquarters and Headquarters Company
  - Military Police Platoon (M-ATV)
  - CBRN Reconnaissance Platoon
- Military Intelligence Company
- Network Signal Company
- Brigade Combat Engineer Company (Mechanized) (x 2)
  - Explosive Ordinance Disposal Team (x 4) - M2A9E Bradley 2 Support Vehicle
  - MICLIC Platoon (Assault Breacher Vehicle x 8)
  - Combat Engineer Platoon (x 3) - M2A9B Bradley 2 Engineer Vehicle
  - Bridge Laying Platoon (M104 x 8)
  - Headquarters and Headquarters Platoon

Brigade support battalion

- Headquarters and Headquarters Company
- Distribution Company
- Maintenance Company (x 2)
- Medical Company
  - Medical Evacuation Platoon (x 3) (M2A8 Bradley 2 MEV x 8)
  - Trauma Platoon (x 2)
- Forward Support Company (Combined Arms) (x 3)
- Forward Support Company (Fires)
- Forward Support Company (Reconnaissance and Surveillance)

Infantry Brigade Combat Team (Current)

Total Soldiers: 3,523

Infantry battalion

- Headquarters and Headquarters Company
  - Medical Platoon
  - Reconnaissance Platoon
  - Fire Support Platoon
  - Mortar Platoon
  - Signal Section
  - Sniper Section
  - Staff Section
- Rifle Company (x 3) (M-ATVs when deployed)
  - Rifle Platoon (x 3)
  - Mortar Section
- Motorized Heavy Weapons Company (M-ATV w/ TOW)
  - Heavy Weapons Platoon (x 4)

Infantry battalion

- Headquarters and Headquarters Company
  - Medical Platoon
  - Reconnaissance Platoon
  - Fire Support Platoon
  - Mortar Platoon
  - Signal Section
  - Sniper Section
  - Staff Section
- Rifle Company (x 3) (M-ATVs when deployed)
  - Rifle Platoon (x 3)
  - Mortar Section
- Motorized Heavy Weapons Company (M-ATV w/ TOW)
  - Heavy Weapons Platoon (x 4)

Cavalry Squadron (battalion)

- Headquarters and Headquarters Troop
  - Medical Platoon
  - Fire Support Platoon
  - Staff Sections
- Mounted Reconnaissance Troop (x 2)
  - Cavalry Scout Platoon (x 3) - TOW capable
    - M-ATV (x 6-8)
  - Mortar Section (120mm)
- Dismounted Reconnaissance Troop

        - Infantry Scout Platoon (x 3)
        - Sniper Section
        - Mortar Section (81mm)

Fires battalion

- Headquarters and Headquarters Battery
    - Target Acquisition Section
- M119A3 105mm Howitzers (2 batteries x 8 guns)

Brigade special troops battalion

- Headquarters and Headquarters Company
    - Military Police Platoon (M-ATVs)
    - Support Platoon
    - CBRN Reconnaissance Platoon
- Military Intelligence Company
- Network Signal Company
- Combat Engineer Company

Brigade support battalion

- Headquarters and Headquarters Company
- Distribution Company
- Maintenance Company
- Medical Company
- Forward Support Company (Infantry) (x 2)
- Forward Support Company (Cavalry RSTA)

Forward Support Company (Fires)

Infantry Brigade Combat Team (Converted)

Total Soldiers: 4,296

Infantry battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon
    - Fire Support Platoon
    - Mortar Platoon
    - Signal Section
    - Sniper Section
    - Staff Section
- Rifle Company (x 3) (M-ATVs when deployed)
    - Rifle Platoon (x 3)
    - Mortar Section

- Motorized Heavy Weapons Company (M-ATV w/ TOW)
    - Heavy Weapons Platoon (x 4)

Infantry battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon
    - Fire Support Platoon
    - Mortar Platoon
    - Signal Section
    - Sniper Section
    - Staff Section
- Rifle Company (x 3) (M-ATVs when deployed)
    - Rifle Platoon (x 3)
    - Mortar Section
- Motorized Heavy Weapons Company (M-ATV w/ TOW)
    - Heavy Weapons Platoon (x 4)

Infantry battalion

- Headquarters and Headquarters Company
    - Medical Platoon
    - Reconnaissance Platoon
    - Fire Support Platoon
    - Mortar Platoon
    - Signal Section
    - Sniper Section
    - Staff Section
- Rifle Company (x 3) (M-ATVs when deployed)
    - Rifle Platoon (x 3)
    - Mortar Section
- Motorized Heavy Weapons Company (M-ATV w/ TOW)
- Heavy Weapons Platoon (x 4)

Cavalry Squadron (battalion)

- Headquarters and Headquarters Troop
    - Medical Platoon
    - Fire Support Platoon
    - Staff Sections
- Mounted Reconnaissance Troop (x 2)
    - Cavalry Scout Platoon (x 3) - TOW capable
        - M-ATV (x 6-8)
    - Mortar Section (120mm)
- Dismounted Reconnaissance Troop
    - Infantry Scout Platoon (x 3)
    - Sniper Section

        - Mortar Section (81mm)

Fires battalion

- Headquarters and Headquarters Battery
    - Target Acquisition Section
- M119A3 105mm Howitzers (3 batteries x 6 guns)

Brigade engineer battalion

- Headquarters and Headquarters Company
    - Military Police Platoon (M-ATVs)
    - Support Platoon
    - CBRN Reconnaissance Platoon
- Military Intelligence Company
- Network Signal Company
- Combat Engineer Company (x 2)

Brigade support battalion

- Headquarters and Headquarters Company
- Distribution Company
- Maintenance Company
- Medical Company
- Forward Support Company (Infantry) (x 2)
- Forward Support Company (Cavalry RSTA)
- Forward Support Company (Fires)

Stryker Brigade Combat Team (new)

Total Soldiers: 4,454

Stryker Infantry battalion

- Headquarters and Headquarters Company
    - M1130A2 Stryker CV (x 2)
    - Mortar Platoon
        - M1129A2 Stryker 120mm mortar carrier (x 8)
    - Scout Platoon
        - M1127A2 Stryker RC (x 4)
    - Medical Platoon
    - Sniper Section
- Infantry Company (Stryker) (x 3)
    - Stryker MGS Detachment (4 x M1128A2 Stryker MGS 105mm)
    - Infantry Platoon (x 3) (4 X M1126A2 Stryker)
    - Weapons Platoon (x 1) (4 x M1126A2 Stryker)

Stryker Infantry battalion

- Headquarters and Headquarters Company
  - M1130A2 Stryker CV (x 2)
  - Mortar Platoon
    - M1129A2 Stryker 120mm mortar carrier (x 8)
  - Scout Platoon
    - M1127A2 Stryker RC (x 4)
  - Medical Platoon
  - Sniper Section
- Infantry Company (Stryker) (x 3)
  - Stryker MGS Detachment (4 x M1128A2 Stryker MGS 105mm)
  - Infantry Platoon (x 3) (4 X M1126A2 Stryker)
  - Weapons Platoon (x 1) (4 x M1126A2 Stryker)

Stryker Infantry battalion

- Headquarters and Headquarters Company
  - M1130A2 Stryker CV (x 2)
  - Mortar Platoon
    - M1129A2 Stryker 120mm mortar carrier (x 8)
  - Scout Platoon
    - M1127A2 Stryker RC (x 4)
  - Medical Platoon
  - Sniper Section
- Infantry Company (Stryker) (x 3)
  - Stryker MGS Detachment (4 x M1128A2 Stryker MGS 105mm)
  - Infantry Platoon (x 3) (4 X M1126A2 Stryker)
  - Weapons Platoon (x 1) (4 x M1126A2 Stryker)

Reconnaissance, surveillance and target acquisition squadron

- Headquarters and Headquarters Troop
  - Reconnaissance Platoon
    - M1151 UAHs
  - Mortar Platoon
    - M1129A2 Stryker 120mm mortar carrier (x 8)
  - Sniper Platoon
- Mounted Reconnaissance Troop (Stryker) (x 3)
  - Scout Platoon (x 2)
    - M1136A2 Stryker Cavalry Vehicle (recon) (x 8)
    - M1128A2 Stryker MGS 105mm (x 2)
- Surveillance Troop
  - Surveillance Platoon (x 2)
    - M1127A2 Stryker RC (x 4)
    - M1131A2 Stryker FSV (x 2)

Fires battalion

- Headquarters and Headquarters Battery
- 155mm Towed Firing Battery (x 3) (M777A2)

Brigade support battalion

- Headquarters and Headquarters Company
- Distribution Company
- Maintenance Company (x 3)
- Medical Company
    - Medical Evacuation Platoon (x 3)
        - M1133A2 Stryker MEV (x 4)
    - Medical Trauma Platoon (x 2)

Individual companies

- Brigade Headquarters and Headquarters Company
    - M1130A2 Stryker CV (x 3)
- Military Intelligence Company
- Network Signal Company
- Combat Engineer Company
    - Combat Engineer Platoon (x 3)
        - M1132A2 Stryker ESV (x 4)
- Anti-Tank Company
    - Anti-tank Platoon (x 3)
        - M1128A2 Stryker MGS 105mm (x 4)
- TOW Company
    - Tow Platoon (x 3)
        - M1134A2 Stryker AT Vehicle (x 6)
- Tank Company (14 x M1A2 SEPv3 MBT)
    - Tank Platoon (x 3)
        - M1A2 SEPv3 MBT (x4)