

CHAPTER 2

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section describes the alternatives considered and the alternative selection criteria used for this EIS. The No Action Alternative, as required by NEPA (40 CFR 1508.25[b]), is also described.

The range of alternatives for this EIS is dictated in large part by preceding events. As described in **Section 1.1**, the decision to station approximately 1,880 additional Soldiers, including an Expeditionary Sustainment Command (ESC), at Fort Lewis has already been the subject of a Programmatic EIS and ROD. The Army has not yet decided whether stationing of a medium CAB or CSS units will occur at Fort Lewis and YTC. This EIS analyzes the effects of having all three SBCTs training with all of the other major subordinate units currently at Fort Lewis, the stationing of the additional units, the potential stationing of additional CSS units, and potential stationing of a medium CAB at Fort Lewis, as well as the update of the Fort Lewis and YTC ADPs (i.e., the impacts of bringing the units and Soldiers to Fort Lewis and YTC).

2.1.1 Limited Alternatives

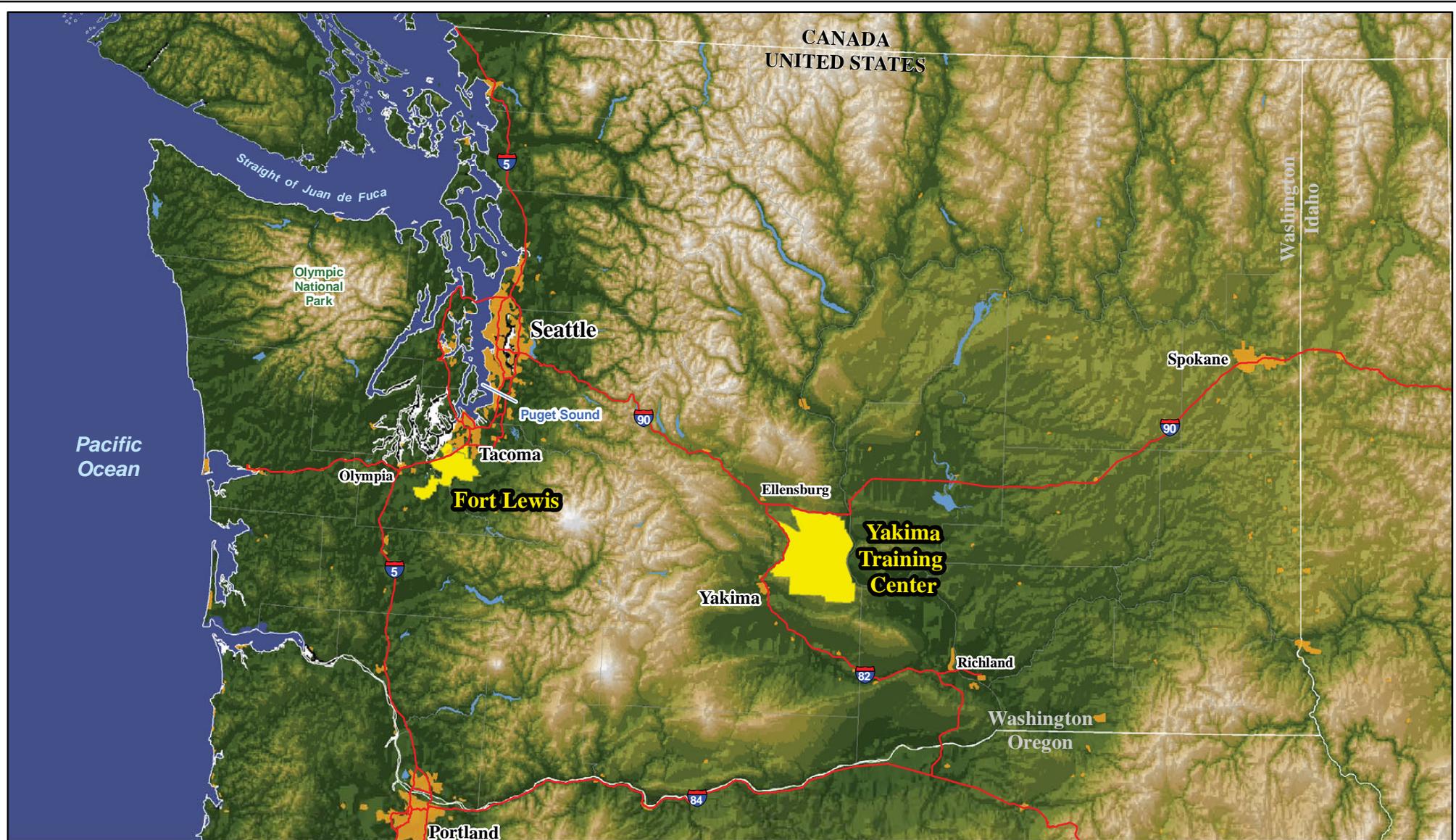
For many aspects of the stationing actions, there are no true alternatives. For example, increased numbers of Soldiers and Families, the need for and location of new facilities, and the need for training are all necessary elements or results of the stationing actions. Analysis of alternatives focuses on the impacts on the natural and human environments from these actions. Appropriate mitigation measures also are presented in this EIS.

2.1.2 Fort Lewis and Yakima Training Center

It is important to note that implementing the proposed action would not alter the essential nature of Fort Lewis or YTC. Both would remain as military installations on which Soldiers train, work, and live and on which facilities exist to support those activities.

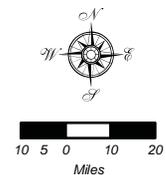
2.1.2.1 *Fort Lewis*

Fort Lewis is an 86,176-acre (34,874-hectare [ha]) military reservation located in western Washington, in Pierce and Thurston Counties, approximately 35 miles (56 km) south of Seattle and 7 miles (10 km) northeast of Olympia. Interstate 5 (I-5), which is the main transportation corridor in the Puget Sound region, runs through the installation (**Figure 2-1**). Fort Lewis is bordered on the north by McChord Air Force Base (AFB), municipalities, and urban unincorporated areas in Pierce County; on the east and south by urban unincorporated and rural unincorporated areas in Pierce County, and several small communities, such as Roy; and on the west by Puget Sound, the Nisqually National Wildlife Refuge, the Nisqually Indian Reservation, and the Lacey and Yelm Urban Growth Areas.



Legend

- Interstate Highway
- Municipal Area
- Project Area
- County Boundary
- Lake
- State Boundary



FORT LEWIS GTA EIS

*Figure 2-1
Relative Locations of Fort Lewis
and Yakima Training Center*

ANALYSIS AREA: Thurston & Pierce Counties, Washington	
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Fort Lewis is a major facility for both weapons qualification and field training. It is home to the I Corps Headquarters and other major units as stated in **Section 1.2**. Army Reserve units and the Washington Army National Guard also use Fort Lewis's facilities. Out-of-state Army units and units from allied nations periodically train at Fort Lewis as well.

Fort Lewis also accommodates a variety of nonmilitary activities. These activities include recreation, commercial timber harvest, and Native American traditional cultural practices. Primary recreational activities are hunting, fishing, horseback riding, and other outdoor activities.

Soldier support facilities are provided in the cantonment area. This built-up area, which is split by I-5 into the Main Post and North Fort, contains Soldier and Family housing; utilities; classrooms; and administrative, maintenance, community support, recreational, supply, storage, and simulation training facilities.

Fort Lewis's training area serves as an active military training facility for both weapons qualification and field training. The downrange area comprises the land area outside the cantonment area, including live-fire ranges, training lands, and impact areas. Overall, training areas (TAs) occupy about 75,570 acres (30,600 ha) or 88 percent of Fort Lewis. They consist of ranges, impact areas, drop zones, and maneuver areas (**Figure 2-2**).

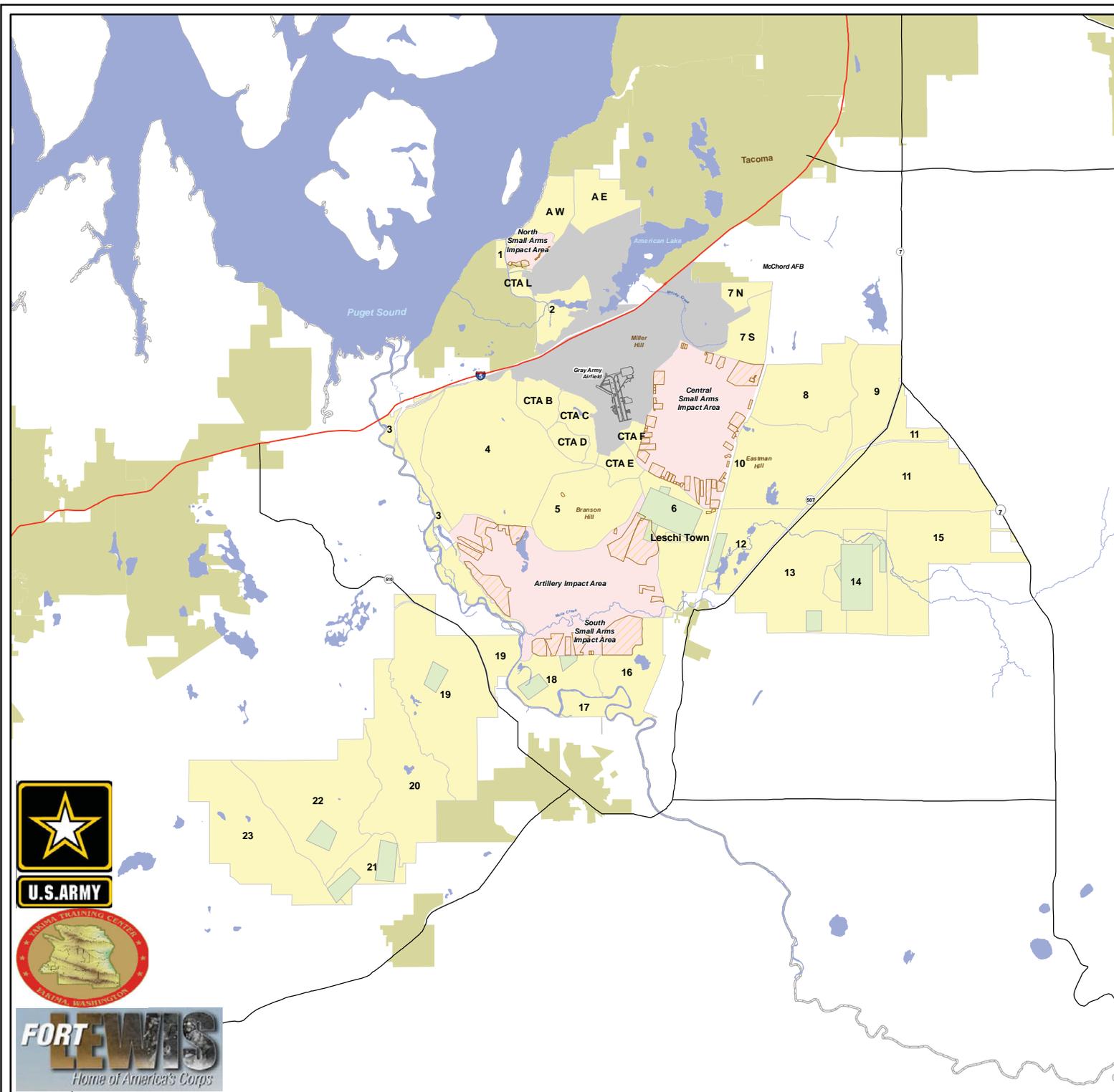
In 2005, the Base Realignment and Closure (BRAC) Commission's recommendation to establish Joint Base Lewis-McChord became law. On February 1, 2010, Fort Lewis and McChord Air Force Base became Joint Base Lewis-McChord. The Army will be responsible for operating JBLM. Although the Army will assign a joint base commander and the Air Force will assign a deputy joint base commander, neither will command any of the Army or Air Force units on the base. The Army and Air Force units will remain under the command and control of their military service. Therefore, the joint basing change will not affect the current or future unit operations at Fort Lewis or McChord AFB. The transformation of both installations into Joint Base Lewis-McChord will be completed on October 1, 2010. As noted in Chapter 1, although the names have officially changed, the Army decided to continue using the previous naming conventions for Fort Lewis and YTC in this document to ensure consistency throughout the current NEPA process.

2.1.2.2 Yakima Training Center

YTC is a training installation located in central Washington northeast of the City of Yakima (**Figure 2-1**) and west of the Columbia River. YTC encompasses approximately 327,242 acres (132,433 ha) in Yakima and Kittitas Counties. Although the active Army units assigned to Fort Lewis and the 81st HBCT of the Washington Army National Guard are the principal users of YTC, other units and forces also use YTC. They include the Special Operations Command, Marine Corps, Air Force, Navy, Coast Guard, local and federal law enforcement, and forces from Canada, Japan, and other allied nations.

Currently, YTC plays a major role as part of the Stryker Center of Excellence. The Center of Excellence (Fort Lewis and YTC) is responsible for concept development, compilation and distribution of lessons learned, and development of technical and tactical expertise for SBCTs.

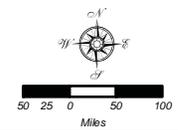
Training facilities encompass all of YTC except the 1,700-acre (690-ha) cantonment area and provide for live-fire training, maneuver training, impact areas, drop zones, and bivouac areas (**Figure 2-3**). In particular, the central impact area (CIA) and Multi-Purpose Range Complex (MPRC) are used for training with conventional and tactical weapons. The CIA is used primarily for tank, artillery, and infantry gunnery. The MPRC is a tank and infantry live-fire range with remotely controlled moving and pop-up targets.



Legend

- City Boundary
- Training Area
- Cantonment Area
- Impact Areas
- Drop Zones
- Ranges
- River / Stream
- Interstate Highway
- State Highway
- County Boundary

* Ranges previously evaluated under NEPA.



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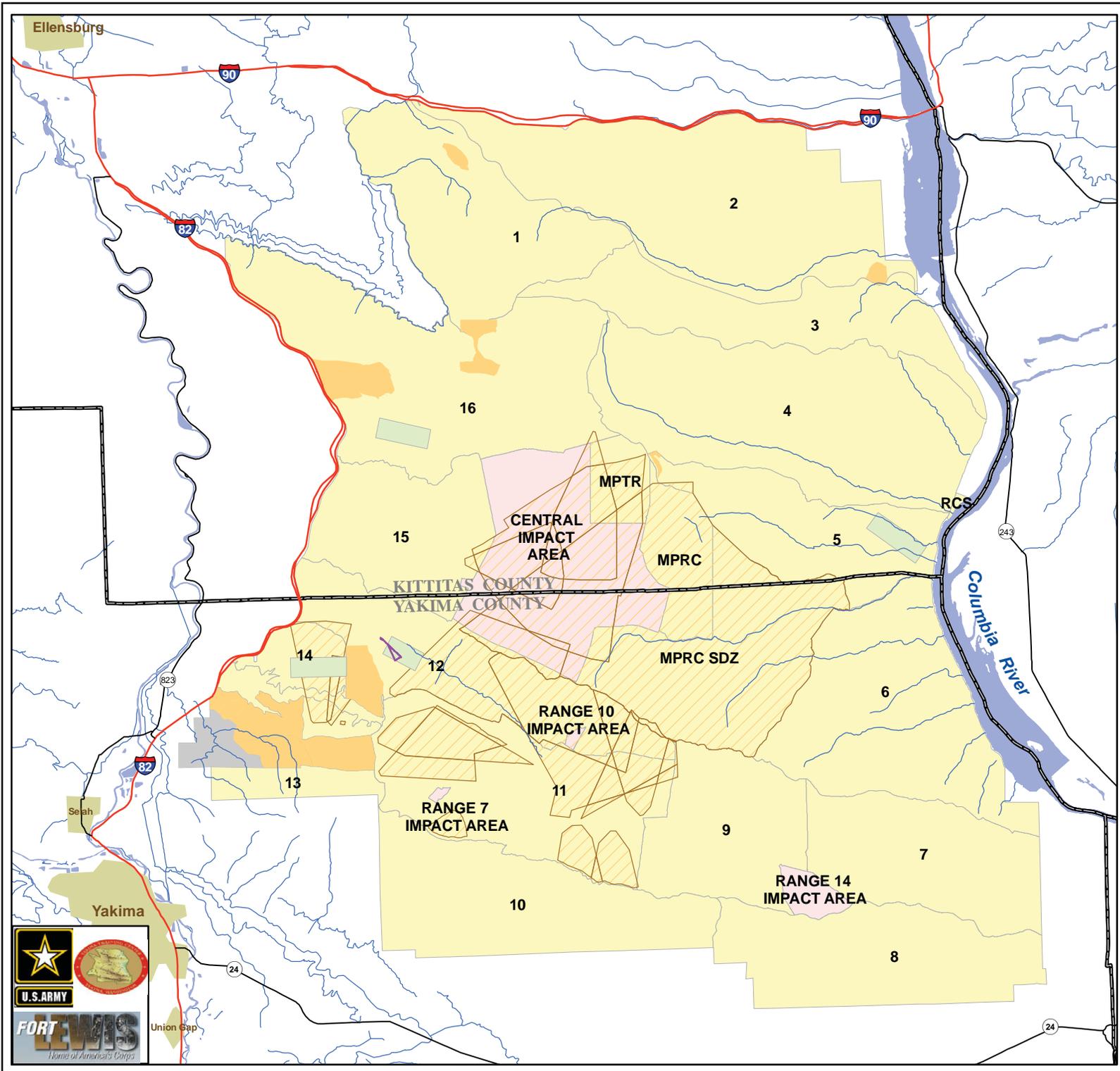


FORT LEWIS
Home of America's Corps

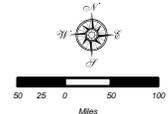
FORT LEWIS GTA EIS

*Figure 2-2
Primary Training Facilities
on Fort Lewis*

ANALYSIS AREA: Thurston & Pierce Counties, Washington	
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- Legend**
- County Boundary
 - City Boundary
 - Selah Airstrip
 - Rivers and Streams
 - Cantonment Area
 - Drop Zones
 - Bivouac Locations
 - Ranges
 - Training Areas
 - Impact Areas



FORT LEWIS GTA EIS

*Figure 2-3
Primary Training Facilities
on the Yakima Training Center*

ANALYSIS AREA: Yakima & Kittitas Counties, Washington	
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2.1.3 Study Area

Most construction associated with the proposed action and alternatives would occur inside the Fort Lewis cantonment area, with additional construction of range projects planned for both Fort Lewis and YTC.

The primary study area includes all land within the boundaries of Fort Lewis and YTC. Baseline conditions and effects to areas surrounding Fort Lewis and YTC are described and considered as appropriate in Chapters 3 through 6, based on the Region of Influence (ROI) for environmental resource areas. For instance, effects to biological and cultural resources would primarily occur within the boundaries of Fort Lewis and YTC, but effects to other resource areas, such as socioeconomics, utilities, and transportation, could be regional in nature. Cumulative effects involve a more extensive analysis of resource areas, combining a historic perspective with present and anticipated future effects for each resource area. Cumulative effects consider Fort Lewis, YTC, and surrounding areas.

2.2 PROPOSED ACTION

The proposed action is to implement those actions from FY 2010 through 2015 needed to support the Army's decisions on growth and realignment at Fort Lewis and YTC. These actions would allow the Army to achieve a size and composition that is better able to meet national security and defense requirements, modify the force in accordance with Army Transformation, sustain unit equipment and training readiness, and preserve quality of life for the Soldiers and their Families. Fort Lewis and YTC must take actions to support the strategic deployment and mobilization requirements of the nation's combatant commanders to ensure they will have the forces necessary to support regional contingency operational requirements.

Specifically, the proposed action includes:

- training of all three SBCTs simultaneously with other currently stationed major subordinate units at Fort Lewis and YTC,
- stationing the new units and accommodating the augmented units identified in the Fort Lewis portions of the ROD for the 2007 GTA FPEIS,
- upgrading infrastructure in the cantonment area for the third SBCT and GTA units so that it meets current standards,
- updating the Fort Lewis and YTC ADPs to accommodate these defined and potential stationing actions,
- potentially stationing at Fort Lewis and YTC CSS units with up to 1,000 Soldiers, and
- potentially stationing at Fort Lewis and YTC a medium CAB with up to 2,800 Soldiers.

The proposed action would:

- **Troop-Level Increase** – Accommodate an overall increase in Soldiers who would work, live, and train at Fort Lewis and YTC. Under the proposed action, up to 5,700 new Soldiers (new GTA units, existing units augmented under GTA, new CSS units, and a medium CAB) would be stationed at Fort Lewis. In addition, Fort Lewis must construct the facilities needed to support the additional Soldiers and to replace substandard facilities currently occupied by the third SBCT stationed at Fort Lewis with facilities meeting Army standards. An SBCT consists of approximately 4,100 Soldiers, 1,000 unit vehicles, and all accompanying equipment.

- **Staged Stationing of Troops** – Include continuous stationing and transformation of Fort Lewis’s force structure. Implementation of full stationing and transformation is expected to be complete by 2013. As the Army proceeds with Transformation planning, the total unit strength may vary throughout the implementation period (although these variations relate to smaller units below the BCT level). Troop arrival schedules at Fort Lewis from stationing and deployment, and availability of facilities for the SBCT, would affect the timing of implementing new training requirements.
- **Facility Construction/Renovation and/or Deconstruction/Demolition** – Remove facilities and infrastructure that are no longer needed, relocate facilities to support new construction, construct new facilities and infrastructure, and renovate existing facilities and infrastructure to support the new population and training activities. Construction under the proposed action would take place at Fort Lewis and at YTC.
- **Timing of Construction Projects** – Accomplish construction in phases throughout the implementation period. The timing of construction projects would be contingent upon funding availability and priorities.
- **Live-Fire Training and Maneuvers** – Provide for training for existing and new units stationed at Fort Lewis while balancing additional or different maneuver training, live-fire training, and environmental management to meet the Army’s integrated goals of maintaining military training readiness and sustaining lands for continued use (**Section 1.2.2**). Live-fire training and maneuver activities under the proposed action would be similar to those described for Alternative 1 (**Section 2.3.1**). The requirements of training three SBCTs simultaneously with all other major units, however, could result in increased frequency of use of maneuver training areas and weapons firing ranges. YTC is anticipated to support most of the requirements for maneuver training at the battalion level and above.
- **Training Strategy** – Continue training under the proposed action throughout Fort Lewis and YTC in accordance with the suitability of the land for different training activities (e.g., maneuver or live-fire) and the ability to sustain the land.
- **Environmental and Training Conditions** – Change in response to factors beyond the Army’s control, such as troop deployments, and climatic conditions, affect the implementation of training. Because environmental and training conditions are dynamic, the Army would monitor training activity under the proposed action and respond to changing conditions to sustain the land for training and provide maximum troop readiness.

2.2.1 Changes in Force Structure and Installation Population

This section presents changes in force structure that would result from implementing the proposed action. As identified above, these changes include those needed to implement the ROD for the 2007 GTA FPEIS, the potential stationing of CSS units with up to 1,000 Soldiers, and the potential stationing of a medium CAB composed of approximately 2,800 Soldiers. Each of these sets of changes is described below.

2.2.1.1 Implementation of the Record of Decision for the 2007 GTA FPEIS

Implementation of the ROD for the 2007 GTA FPEIS would increase the population at Fort Lewis beyond the approximately 1,880 Soldiers scheduled to be stationed there because most of the Soldiers will bring Families with them. These approximately 2,860 Family members would increase the number of people living on and around Fort Lewis. Additional civilians and contractors would be needed at both Fort Lewis and YTC between FY 2010 and FY 2015 to help construct, maintain, and operate the new facilities.

About half of these Soldiers have already arrived at Fort Lewis and have been stationed. These Soldiers were placed in existing buildings and are training on existing ranges within previously approved range capacities. Eventually, however, some of the units would require additional cantonment area construction. With the 1,880 GTA Soldiers and all three SBCTs stationed on Fort Lewis and training simultaneously, Fort Lewis would need new ranges and would experience increased use of training areas. So another part of the purpose of the proposed action is to support the presence of, and training requirements for, the GTA Soldiers, whether their units have already arrived or not.

The population of Soldiers, civilian employees, contractors, and military Family members at Fort Lewis and YTC has fluctuated over time (**Figure 2–4**). For about 10 years, from the mid-1990s to the mid-2000s, the population of Soldiers and their Families decreased slightly. Since the mid-2000s, however, the population at Fort Lewis has grown and would continue to grow for a few more years as the GTA decisions are implemented before leveling off after 2012 (**Figure 2–4**). By 2011, the total population (Soldiers, civilian employees, contractors, and Family members) would increase to about 102,400 at Fort Lewis and 630 at YTC (Vista Technology Services, Inc. 2008).

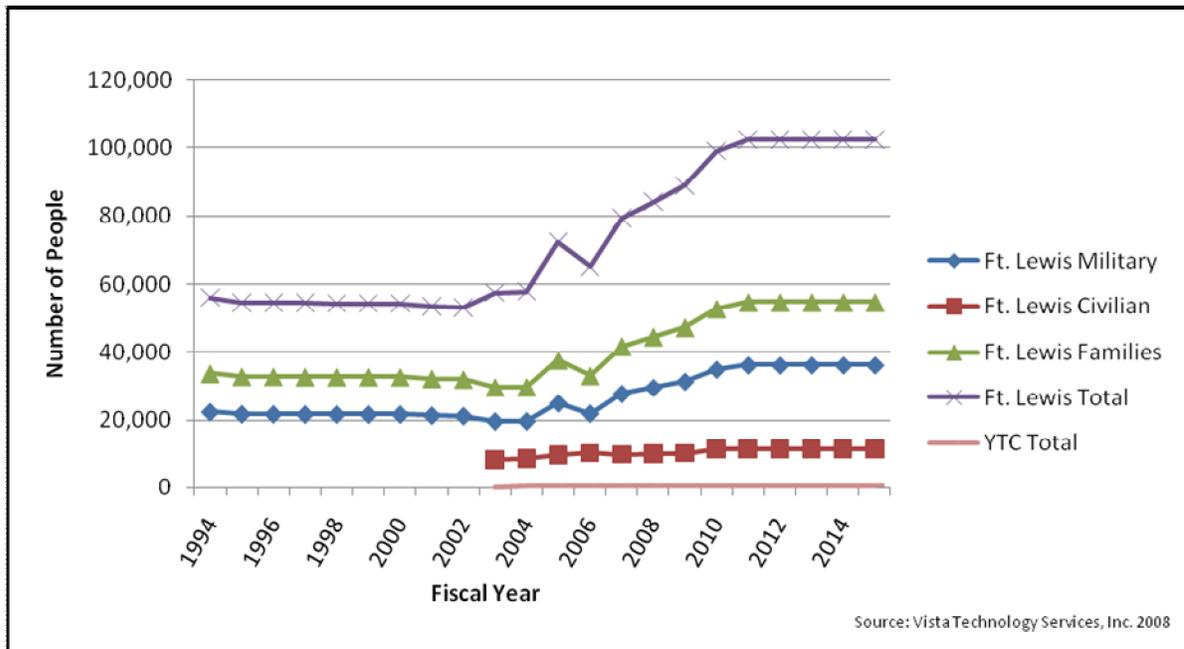


Figure 2–4 Trends in the Fort Lewis and YTC Populations

As announced in the ROD for the GTA FPEIS, Fort Lewis was selected to receive several new units and increases to some existing units. Altogether, the changes involve a net increase of about 1,880 Soldiers at Fort Lewis and YTC (**Table 2–1**). About 30 percent of the changes involve new units and the rest involve increases to existing units, including the three SBCTs.

As shown on **Table 2–1**, the 2007 ROD for the GTA FPEIS identifies several new units for stationing at Fort Lewis and YTC. The ESC is the largest new unit. The ESC is the single logistics command headquarters for a designated area of operations. It plans, controls, and synchronizes all support operations for the Army or Joint Force Commander. It is capable of commanding and controlling the full range of logistics capabilities through multiple phases of operations simultaneously. The ESC is the single provider for Army distribution operations, and it advises and provides logistics planning assistance to the supported command.

Table 2–1 Summary of Grow-the-Army Strength Changes at Fort Lewis and YTC

Activity/Unit/Capability	Fiscal Year	GTA Strength Change¹
Growth		
573 rd Construction Management Team	2008	9
595 th Military Police Company	2009	124
575 th Area Support Medical Company	2009	72
140 th Movement Control Team	2008	21
Test Measurement and Diagnostic Equipment	2010	7
22 nd Expeditionary Sustainment Command (ESC)	2011	254
Military Police Detachments	2011	72
Increase to Existing Units		0
707 th Explosive Ordnance Disposal Company	2007	21
710 th Explosive Ordnance Disposal Company	2007	44
787 th Explosive Ordnance Disposal Company	2007	44
3 rd Explosive Ordnance Disposal Battalion	2008	1
129 th Explosive Ordnance Disposal Company	2009	44
53 rd Explosive Ordnance Disposal Company	2009	21
SBCTs (3/2 nd , 4/2 nd , 5/2 nd)	2008-2010	555
22 nd Human Resources Company	2008	26
201 st Battlefield Surveillance Brigade	2010	547
61 st Heavy Chemical Company	2010	2
62 nd Chemical Company	2010	6
6 th Technical Escort Unit Company Headquarters	2010	8
Total		1,878

Note:

1. The Army adjusts its force structure to meet operational requirements, modernize its units, reflect changes to doctrine, and apply lessons learned. These could cause modifications to these strength changes over the program years.

Source: Army 2007f, g

2.2.1.2 SBCT Organization and Training

The units and organizations at Fort Lewis and YTC support the three SBCTs. Because the three SBCTs are the primary BCTs present at Fort Lewis and YTC, it is useful to understand them. An SBCT has approximately 4,105 Soldiers, 317 Stryker combat vehicles, 588 wheeled support vehicles, 18 155-millimeter (mm) howitzers, and numerous trailers and other pieces of equipment (**Table 2–2**).

Each major unit of the SBCT is composed of a number of smaller constituent units, including battalions, companies, platoons, and squads. About half of the 4,105 Soldiers would be assigned to infantry battalions (**Table 2–3**). The rest would be distributed among the other battalions, companies, and platoons that comprise the SBCT (**Table 2–3**).

An SBCT is a rapidly deployable unit designed for early entry into operational scenarios. The SBCT is capable of deploying with all combat gear and equipment loaded on the vehicle so that it can begin supporting military operations immediately upon its arrival. The increased mobility and speed of the SBCT allows the unit to quickly respond to and prevent, contain, stabilize, or resolve small-scale conflicts. An SBCT participates in major wartime operations as a subordinate component within a division or corps, in a variety of possible roles. The SBCT was designed for increased armored protection, reduced logistical support requirements, and rapid deployment. It uses a highly mobile, medium-weight armored combat/combat support platform, which requires a minimum of logistical support to allow the SBCT to function as more of an expeditionary unit requiring less resupply.

Preconfigured in ready-to-fight combined arms packages, the entire SBCT is designed to be rapidly deployed anywhere in the world in a few days' time.

Table 2–2 SBCT Personnel and Equipment Breakdown

Type	Number
Soldiers	4,105
Intelligence, Surveillance, and Reconnaissance	
Unmanned aerial vehicles	4
Vehicles	
Wheeled support vehicles	588
Combat vehicles	317
Tracked	0
Major Direct Fire Systems	
Mobile gun systems	27
Javelins (Shoulder Mounted Anti-Armor Systems)	121
Anti-Tank Guided Missiles	9
Indirect Fire Systems	
Mortars	
120 mm	36
81 mm	12
60 mm	18
Howitzers	
M777	18

Source: Army 2008c

Table 2–3 Units in a Stryker Brigade

Unit	Assigned Personnel
Brigade Headquarters, Headquarters and Headquarters Company	131
Infantry Battalions (3 at 698 each)	2,094
Support Battalion	621
Reconnaissance, Surveillance, and Target Acquisition (RSTA) Battalion	436
Field Artillery Battalion	393
Engineer Company	127
Military Intelligence Company	79
Signal Company	70
Anti-Tank Company	54
Maintenance	100
Total	4,105

Source: Army 2008c

The SBCT is organized primarily as a combined arms, mounted infantry organization. The Stryker Infantry Carrier Vehicle serves as the platform for infantry carriers; mobile gun systems; mortars; reconnaissance, surveillance, and target acquisition elements; anti-tank carriers; engineer mobility support vehicles; nuclear/biological/chemical reconnaissance; as well as many of the command and control carriers within the brigade. Overall, the Stryker vehicle comes in ten variants, including a

medical evacuation model. The SBCT extends the tactical mobility of commanders in the operational theaters of war and increases the firepower available to support dismounted infantry assaults.

SBCTs move mostly by road, with limited off-road or cross-country operations. The SBCT uses Stryker vehicles to traverse terrain and obstacles to ensure protected delivery of infantry squads to their dismount points. Although the Stryker can maneuver across slopes that are less than 30 percent in pitch and up slopes that are less than 60 percent grade, most mounted movement occurs on roads or unrestricted terrain. This operation allows SBCTs to take full advantage of the Stryker's speed.

In addition, maximum road usage provides the best fuel efficiency (Taylor 2004). The Stryker vehicle travels 5.7 miles per gallon of fuel on roads. In contrast, off-road, cross-country operations result in degradations in performance of as much as 45 to 60 percent (about 2.92 miles per gallon of fuel).

The SBCT uses many of the weapon systems of traditional Army brigades. In addition to these systems, the SBCT incorporates upgraded technologies and more advanced systems, including the Mobile Gun System (MGS), the M777 lightweight howitzer, and reconnaissance and target acquisition systems.

2.2.1.3 Combat Service Support Logistics Units

Typical CSS Logistics (Sustainment) units include transportation, quartermaster, medical, headquarters, and other CSS units and functions. CSS units are responsible for transporting fuel, munitions, parts, food, medical supplies, and battlefield casualties during training and operational scenarios. These units maintain vehicles, recover destroyed or damaged vehicles, and provide medical care to injured Soldiers. The number of Soldiers in the CSS units varies with the function and mission of each unit. In the future, as many as 1,000 Soldiers spread across these units may be stationed at Fort Lewis and YTC with about 1,520 Family members accompanying them.

CSS units use a wide variety of vehicles. Vehicles assigned to each unit are based in part on the types of units they are supporting and the missions they need to accomplish. Wheeled vehicles are capable of on-road and off-road maneuver, but will more often travel on-road.

The following sections describe the missions, numbers of Soldiers, and primary equipment for typical CSS units likely to be stationed at Fort Lewis and YTC.

2.2.1.3.1 Transportation Units

Mission. The mission of the Transportation component is to transport, distribute, and issue general military supplies and equipment. Military supplies and equipment include ammunition; fortification and construction materials; water, subsistence, and water purification equipment; petroleum products; repair parts and end items; and medical supplies.

Soldiers. Transportation units typically consist of company-sized organizations of 100 to 200 Soldiers.

Primary Equipment. Transportation units primarily use High Mobility Multi-Wheeled Vehicles (HMMWVs), other light trucks, cargo trucks with 5-ton (4,500-kilogram [kg] or larger capacity), and fuel trucks (5,000-gallon [18,930-liter]). In addition, they may have Heavy Equipment Transport (HET) trucks, which they use for transporting armored combat vehicles.

2.2.1.3.2 Quartermaster Units

Mission. The mission of the Quartermaster component is to receive, store, and issue general military supplies and equipment. These supplies and equipment include fortification and construction materiel, water, subsistence, repair parts, and medical supplies.

Soldiers. Quartermaster units typically consist of platoon- to company-sized organizations of 30 to 120 Soldiers.

Primary Equipment. Quartermaster units use HMMWVs and cargo trucks with 5-ton (4,500-kg) capacity.

2.2.1.3.3 Medical Units

Mission. The mission of the Medical component is to provide health care support during training and operational deployments.

Soldiers. Medical units vary in size with the type of medical unit and function.

Primary Equipment. Medical units use HMMWVs, some configured as medical evacuation vehicles, and cargo trucks with 5-ton (4,500-kg) capacities.

2.2.1.3.4 Headquarters Units

Mission. The mission of Headquarters units includes collecting information, conducting planning and staffing, disseminating guidance to subordinate units, and overseeing operations. Headquarters units are responsible for the command and control of units in garrison and during training and operational deployments. These units are typically collocated with combat maneuver units during maneuver rotations.

Soldiers. Headquarters units vary in size with the mission and function of the headquarters. Typically, they range from 50 to 400 Soldiers, depending on the span of operational control and number of subordinate units.

Primary Equipment. Headquarters units use HMMWVs, other light trucks, and cargo trucks with 5-ton (4,500-kg) or larger capacities.

If all 1,000 additional CSS Soldiers are stationed at Fort Lewis, they would be expected to bring about 1,520 Family members with them. Consequently, full staffing of the additional CSS units at Fort Lewis would increase the installation's population by approximately 2,520 people.

2.2.1.4 Medium Combat Aviation Brigade

As discussed in **Section 1.2**, the Army is considering Fort Lewis and other locations for the stationing of a medium CAB in the 2010 to 2013 timeframe. Stationing a medium CAB at Fort Lewis and YTC would support the three SBCTs and other units already stationed at Fort Lewis and YTC by supporting and enhancing integrated training. A decision to station a medium CAB to Fort Lewis would result in an increase of approximately 2,800 Soldiers and 4,260 Family members.

A medium CAB plans, prepares, executes, and assesses aviation and combined arms operations to support division and maneuver brigades to find, fix, and destroy enemy forces at a decisive time and place. The structure of the medium CAB is tailored to the types of BCTs it supports. A medium CAB

can support up to five BCTs. It is organized into two attack/reconnaissance battalions, an assault battalion, a general support battalion, an aviation support battalion (medium), and an air traffic service company. Typical mission essential tasks of a medium CAB include conducting:

- air assault operations
- air defense operations
- air movement operations
- air volcano (scatterable mine dispensing system) operations
- command, control, communications, computers, and intelligence operations
- combat service support operations
- combat support operations
- deployment/redeployment operations
- fast rope insertion and extraction system/special patrol infiltration/exfiltration system operation
- mission planning/preparation
- mobility, counter mobility, and survivability operations
- reconnaissance and surveillance operations
- stability operations and support operations
- casualty evacuation

Medium CABs use a variety of equipment and are authorized 110 helicopters. Each attack battalion has 24 attack helicopters (AHs). The assault battalion has 30 utility helicopters (UHs). In addition to eight UHs, the general support battalion has 12 cargo helicopters (CHs) and 12 medevac helicopters. Finally, a CAB is accompanied by approximately 700 tactical vehicles, including light trucks, fuelers, and transport vehicles.

If the medium CAB were stationed at Fort Lewis and YTC, about 2,800 additional Soldiers would be stationed at Fort Lewis. These Soldiers would be expected to bring about 4,260 Family members with them. Consequently, full staffing of the medium CAB at Fort Lewis would increase the installation's population by approximately 7,060 people.

2.2.2 Construction of Facilities at Fort Lewis and YTC

This section describes the construction of facilities that would have to occur to support the proposed action. As with **Section 2.2.1**, the discussion focuses on the GTA ROD, CSS units, and the medium CAB.

Construction of facilities would involve both permanent and temporary disturbances of the ground at Fort Lewis and YTC. Permanent ground disturbance would include the creation of new impervious areas, including buildings, sidewalks, and parking lots. Temporary disturbance would include areas likely to be affected by construction activities, such as staging and trenching areas. All utilities would be underground where possible and disturbed areas would be restored after completion of construction.

2.2.2.1 Implementation of the Record of Decision for the 2007 GTA FPEIS

Construction, for the purposes of implementing the ROD for the 2007 GTA FPEIS, includes those projects that would be required to house, train, and support stationing of units in a manner that

supports the Army Campaign Plan and Army growth initiatives. In addition, Fort Lewis must construct the facilities needed to support the third SBCT at current Army standards.

Actions that Fort Lewis and YTC would need to take to support the 2007 GTA ROD include construction of necessary cantonment area facilities at Fort Lewis and training ranges at Fort Lewis and YTC. Cantonment area construction support involves the construction of SBCT facilities within Fort Lewis's cantonment area that are in line with the alternatives set forth in the Master Plan update. At Fort Lewis, the cantonment area under the Master Plan has been divided into three districts. They are the East Division, Downtown Area, and North Fort. **Appendix A** presents the Fort Lewis cantonment area construction projects that would be part of the 2007 GTA FPEIS implementation and **Figure 2–5** shows the distribution of these projects.

The implementation of Army Transformation has required the Army to overhaul and modernize its training range and training facilities infrastructure. Army TC 25–8 describes the standard designs and requirements of the Army's Sustainable Range Program for training modular Army units to standard. A suite of ranges is required to support Army SBCTs and other brigades to ensure that they can meet all pre-deployment training requirements.

To meet the needs of the proposed action, Fort Lewis and YTC must construct the necessary ranges required to meet training readiness standards of units it receives as part of the growth and realignment of the Army. **Table 2–4** lists the currently scheduled range/training infrastructure construction projects for FY 2010 through FY 2015 at Fort Lewis and YTC. Brief descriptions of each proposed range construction/upgrade and range use are listed below. The locations of the proposed range projects are shown on **Figure 2–6** for Fort Lewis and on **Figure 2–7** for YTC. These range projects are required to meet the collective needs all units stationed on Fort Lewis, including the approximately 1,880 GTA Soldiers.

Table 2–4 Scheduled Range/Training Infrastructure Construction FY 2010–2015

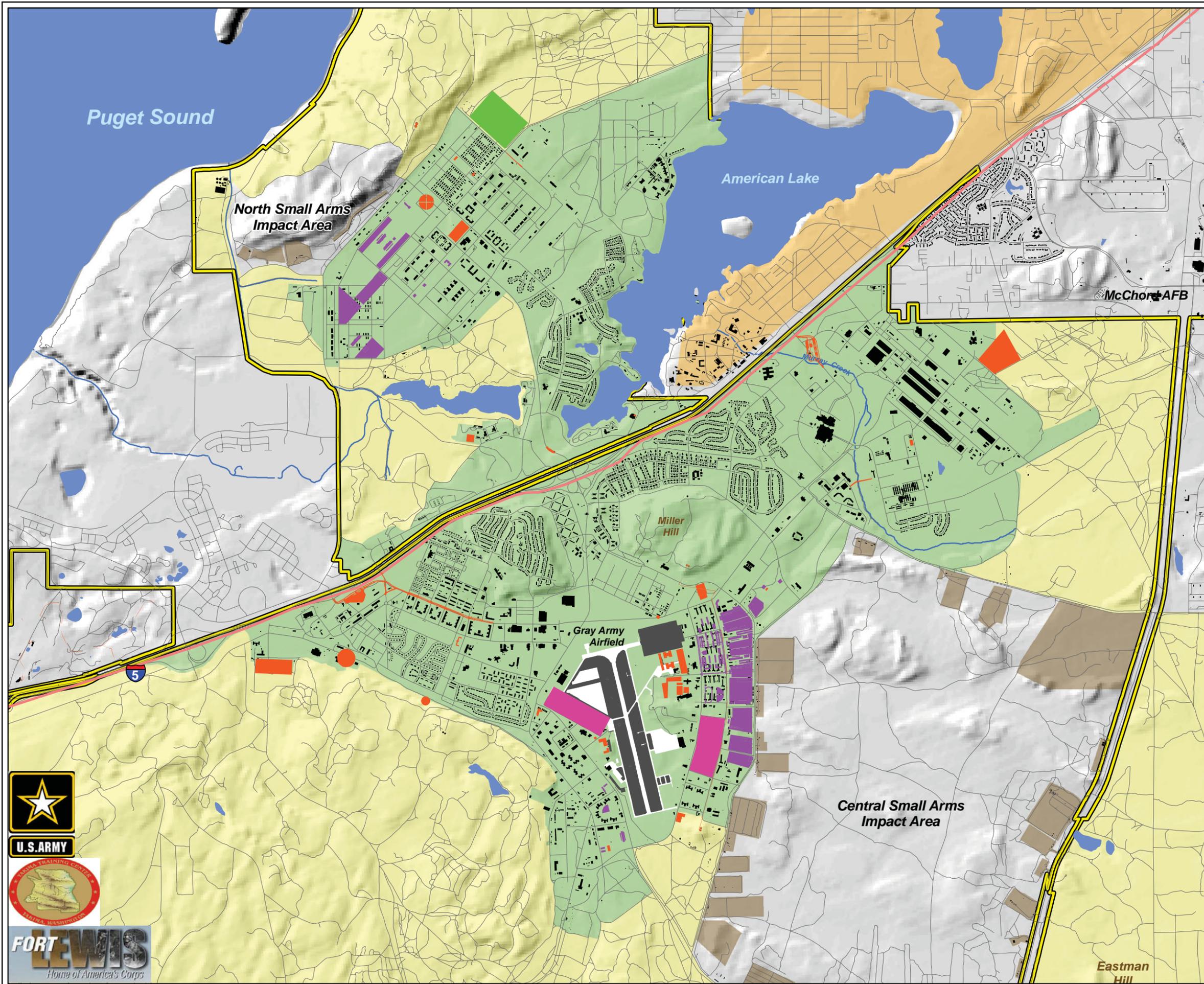
Installation	Range Project Type	FY	Project # (139I #)
Lewis	Shoothouse at Range 25C ¹	2010	41842
Lewis	Modified Record Fire (MRF) at Range 92 ¹	2010	66531
Lewis	MRF at Range 8	2012	67164
Lewis	Fast Rope Rappel Sniper Tower at Range 19	2011	72089
YTC	Sniper Field Fire (SFF) will be a new range in Training Assembly Area 1 (TAA 1)	2011	65386
YTC	Multi-Purpose Machine Gun (MPMG) at Range 5	2014	67544

Note:

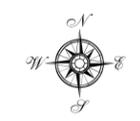
1. Although these range projects are associated with GTA and included here, they were identified before the GTA FPEIS was prepared and, consequently, were evaluated under NEPA previously. They are incorporated in this GTA analysis to ensure all GTA-related projects are addressed in this analysis.

Source: Larson 2009b.

Shoothouse. The Live-Fire Exercise Shoothouse provides the commander with a facility to train and evaluate units on their ability to move tactically (e.g., enter and clear a room, enter and clear a building), engage targets, conduct breaches, and practice target discrimination (Army 2004f). The shoothouse supports blank fire, Multiple Integrated Laser Engagement System/Tactical Engagement System, Special Effects Small-Arms Marking System, and installation-approved small arms service ammunitions.



- ### Legend
- Future Projects**
- No Action
 - Grow the Army (GTA)
 - Combat Support Services (CSS)
 - Medium Combat Aviation Brigade (CAB)
 - Interstate Highway
 - State Route
 - Primary / Secondary Road
 - Existing Structure
 - Water Body
 - River / Stream
 - Fort Lewis Boundary
 - Training Area
 - Live Fire Range
 - Cantonment Area
 - Municipal Area
 - County Boundary

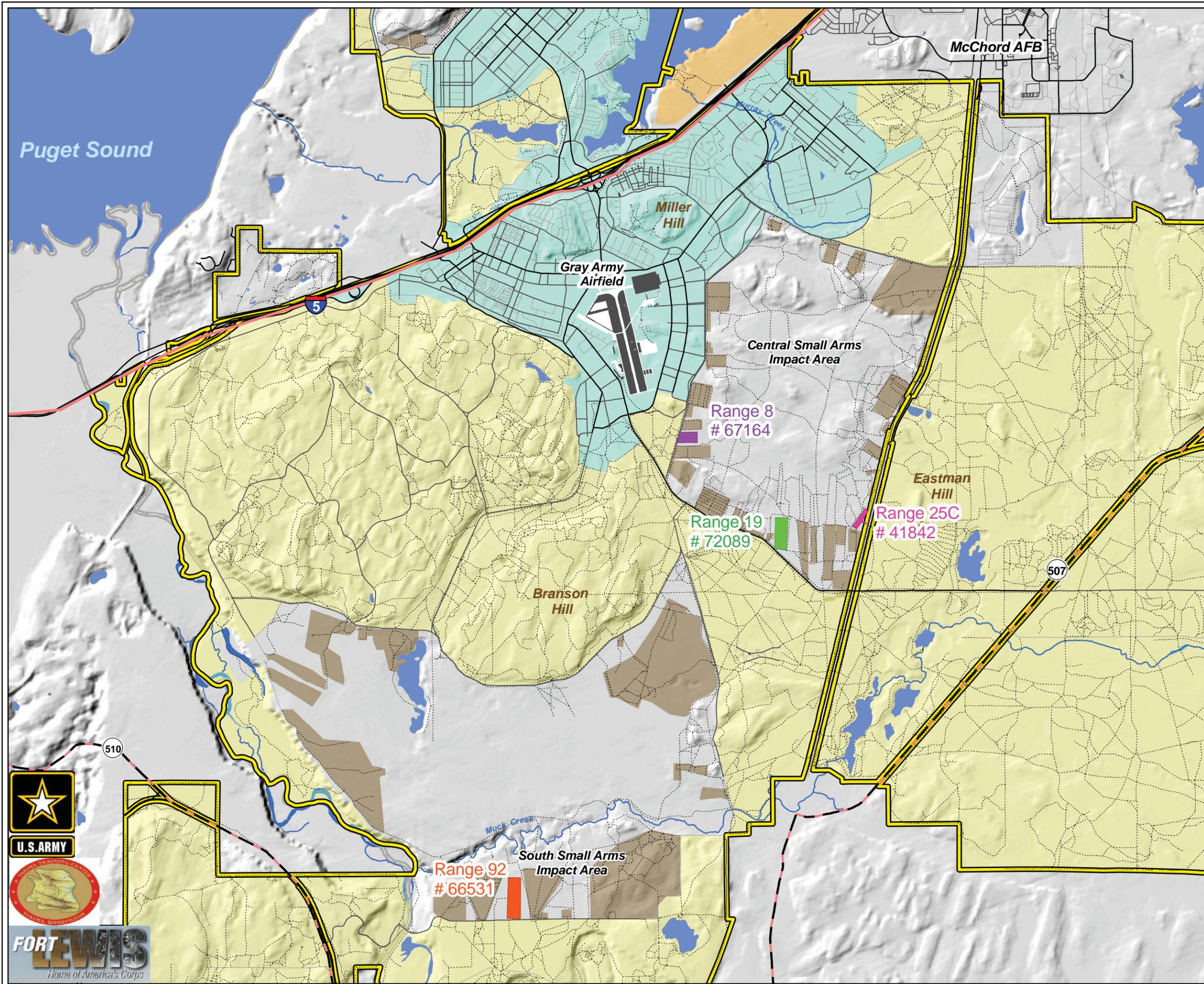


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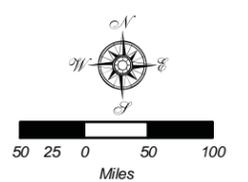
FORT LEWIS GTA EIS	
<p><i>Figure 2-5</i> Distribution of "No Action" Projects and Projects Proposed for Construction in the Fort Lewis Cantonment Area to Implement the 2007 Grow-the-Army Decision, CSS Units, and Medium CAB</p>	
ANALYSIS AREA: Thurston & Pierce Counties, Washington	
Date: 7/14/2009	File: FortLewis\Cantonment.mxd
Prepared By: JG	Layout: Cantonment.pdf



Legend

- Range 92 *
- Range 8
- Range 25C *
- Range 19
- Interstate Highway
- State Route
- Fort Lewis Roads**
- Primary
- Secondary
- Tertiary
- Unpaved
- Water Body
- River / Stream
- Fort Lewis Boundary
- Training Area
- Live Fire Range
- Cantonment Area
- Municipal Area
- County Boundary

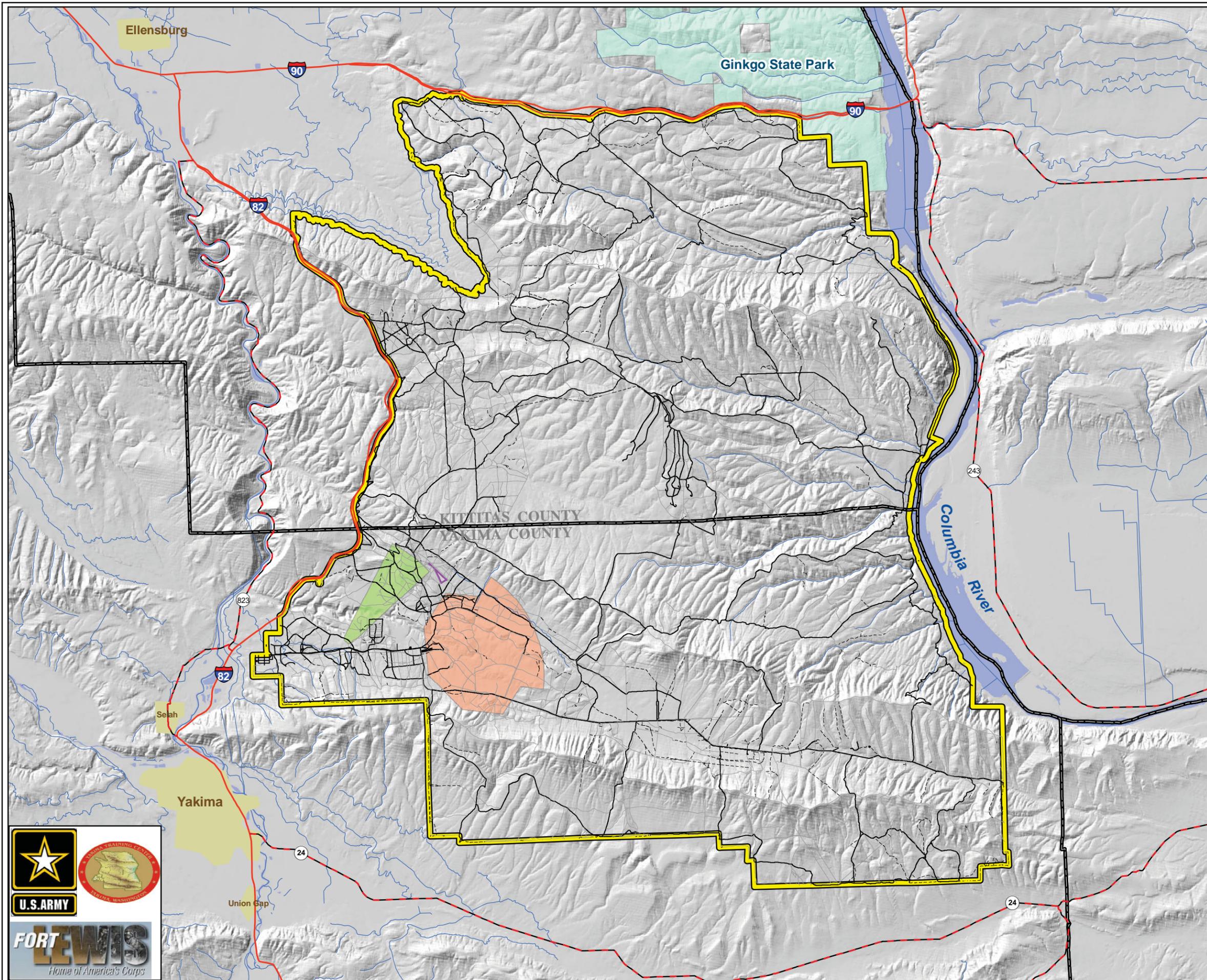
* Ranges previously evaluated under NEPA.



FORT LEWIS GTA EIS

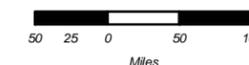
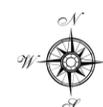
*Figure 2-6
Locations of Training Ranges Proposed
for Construction or Upgrade on Fort Lewis*

ANALYSIS AREA: Thurston & Pierce Counties, Washington	
Date: 7/14/2009	File: FortLewisFL_TrainingAreas.mxd
Prepared By: JG	Layout: FL_TrainingAreas.pdf



Legend

- Yakima Training Center Boundary
 - Interstate Highway
 - State Highway
 - City Boundary
 - County Boundary
 - Rivers and Streams
 - Ginkgo State Park
 - Sniper Field Fire Range
 - Multi-Purpose Machine Gun Range
- YTC Roads**
- Secondary / Light Duty
 - Unimproved
 - Trail
 - Selah Airstrip



FORT LEWIS GTA EIS

*Figure 2-7
Locations of Training Ranges
Proposed for Construction
at Yakima Training Center*

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Modified Record Fire (MRF) Range. The MRF range is used to train and evaluate individual Soldiers on the skills necessary to identify, engage, and defeat stationary infantry targets for day/night qualification requirements with the M16 and M4 rifles. This range combines the capabilities of Automated Field Fire, Automated Record Fire, and the Automated Night Fire to reduce land and maintenance requirements and increase efficiencies. All targets are fully automated, and the event-specific target scenario is computer driven. The proposed action includes the need for two MRF ranges. Meeting this need would be accomplished by upgrading the targetry at existing ranges. Range upgrades would include a range operation and control area, range control tower, range operations and storage building, classroom building, latrine, covered mess shelter, ammunition breakdown building, bleacher enclosure, and building information systems.

Multi-Purpose Machine Gun (MPMG) Range. The MPMG range is designed to train Soldiers to engage stationary infantry and mobile vehicular targets with the full range of Army machine guns to include the M249, M60, M240, and .50 caliber machine guns. Under the proposed action, this would be an upgrade to Range 5 at YTC to include site development, a general instruction building, ammunition breakdown building, bleacher enclosure, range operations tower, range operations and storage building, latrine, covered mess shelter, and building information systems.

Sniper Field Fire (SFF) Range. The SFF range, which would be a new range constructed at YTC, provides training that sniper teams need to build marksmanship skills in weapons use and to detect, identify, engage, and defeat stationary and moving infantry targets in a tactical array. The range is designed to satisfy the training and qualification requirements of the M24 sniper rifle equipped teams. The SFF range provides sniper teams the capability to meet all live training tasks as outlined in Standards in Training Commission (STRAC) live-fire tasks for Army sniper teams. The range would train sniper teams to meet mission essential live-fire training tasks while simultaneously providing the best possible training for threats the Army currently encounters during combat operations in the contemporary operating environment.

2.2.2.2 *Combat Support Service Units*

The construction of the facilities required for the CSS units cannot currently be determined because the precise distribution of units among transportation, quartermaster, medical, headquarters, or other CSS units is unknown. Although exact facilities are unknown currently, **Table 2-5** provides a generalized estimate of facilities required for 1,000 CSS Soldiers. Fort Lewis, however, expects to construct any facilities required for these units on the north side of North Fort. If the Army decides to station the CSS units at Fort Lewis, facilities for these units would be constructed in a 60-acre (24-ha) area in what is now TA A East, which is currently undeveloped (**Figure 2-5**). As these future units are defined, the Army would conduct site-specific NEPA analyses before any construction would occur.

2.2.2.3 *Medium Combat Aviation Brigade*

An Army decision to station a medium CAB at Fort Lewis and YTC would require the construction of a complex of cantonment facilities for the unit. The medium CAB complex would include headquarters and company offices, classrooms, vehicle maintenance facilities, and housing and dining facilities. All cantonment facilities for the medium CAB would be sited on or near Gray Army Airfield (GAAF) and the East Division Area, which are largely developed already (**Figure 2-5**). **Table 2-6** shows the standard set of facilities for a medium CAB.

Table 2–5 Garrison Facilities for 1,000 Combat Support Service Soldiers

Facility¹	Areal Extent (square feet)
Brigade Offices	0
Battalion Offices	22,211
Company Offices	104,849
Organization Classroom	4,116
Ammunition Storage	572
Unit Storage Buildings	41,600
Family Housing	819,643
Barracks Space	147,760
Military Vehicle Parking	385,056
Vehicle Maintenance	25,186

Note:

1. Required facilities also include 151,660 gallons (574,100 liters) in vehicle fuel storage.

Source: Army 2008d

Table 2–6 Standard Medium Combat Aviation Brigade Cantonment Facilities Set

Facility¹	Areal Extent (square feet)
Brigade Offices	17,656
Battalion Offices	63,305
Company Offices	302,623
Organization Classroom	22,925
Ammunition Storage	2,900+
Unit Storage Buildings	34,050
Family Housing	2,049,107
Barracks Space	346,602
Military Vehicle Parking	1,476,810
Vehicle Maintenance	84,365
Aircraft Maintenance Hanger	295,370

Note:

1. Required facilities also include 700,000+ gallons (2,600,000+ liters) in vehicle fuel storage.

Source: Army 2008d

No new live-fire ranges or maneuver training areas are currently identified for the CAB. Live-fire training would occur on ranges already present on Fort Lewis and YTC. Flight and joint military training would occur on the existing Digital Multi-Purpose Range Complex (DMPRC) at YTC.

2.2.3 Training

Training is an Army unit's number one priority, and commanders train their units to be combat ready before deployment. "Battle Focus" is a concept used to derive training requirements, and units train according to their Mission Essential Task Lists (METLs). These METLs are 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.

The objectives of the Army's exercise training program are to:

- Train commanders, staffs, and units in a wartime operating environment;
- Sustain METL proficiency, melding combat, combat support, and combat service support elements into a trained combined arms force;
- Assess operational readiness;
- Conduct joint training with other Services; and
- Provide combined training with other nations.

The Army conducts two types of exercise training at Fort Lewis and YTC: live-fire training and maneuver 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 would be used in combat and non-explosive training rounds designed to meet Soldiers' training needs. Soldiers must "train as they fight" to ensure their readiness for combat situations.

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

In addition, platoons, companies, and maneuver battalions 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. Where possible, some weapons systems use inert rounds, which have less environmental impact, as a substitute for the firing of live rounds.

Army units must conduct regular combined-arms training certifications to ensure that all of the units' capabilities can be integrated and synchronized to execute missions under stressful operational conditions. Maneuver training consists of collective training of the constituent units of the BCT working together to integrate their combined capabilities and skills. Modular BCTs must conduct and rehearse maneuver training at every echelon from platoon through brigade level to ensure they can accomplish their mission-critical tasks.

Training ranges and training lands are the Army's classroom, 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 [FM] 7–1, Battle Focused Training).

2.2.3.1 Implementation of the Record of Decision for the 2007 GTA FPEIS

The primary modularized units stationed and training simultaneously at Fort Lewis and YTC under GTA would be the three SBCTs. The SBCTs would conduct semi-annual individual and crew-served weapons qualifications, in accordance with Army policy for maintaining trained and ready units. Crews, squads, and platoons would also conduct collective training qualifications at least once every six months. In addition, larger units at the company and battalion level that comprise each SBCT would conduct combined arms live-fire training exercises to ensure proper integration and synchronization of its different types of units in combat scenarios.

The 4,105 Soldiers of the SBCT are authorized annually more than 13 million blank and live training rounds of ammunition. **Table 2–7** shows the approximate distribution of the different types of ammunition that would be used to support the training of each SBCT. Together, the three SBCTs would be authorized about 39.3 million training rounds.

Table 2–7 Annual Authorization for Training Ammunition for SBCTs, CSS Units, and Medium CABs

Training Ammunition	Approximate Number Authorized		
	SBCT ¹	CSS Units ²	Medium CAB
105MM (MGS)	3,186	0	0
120MM (mortar)	5,988	0	0
155MM (howitzer)	3,260	0	0
81MM (mortar)	2,040	0	0
60MM (mortar)	3,060	0	0
40MM (grenade)	213,152	51,925	39,022
.50CAL	1,252,220	305,048	177,772
9MM	89,376	21,772	3,712
7.62MM	1,853,686	451,568	269,808
5.56MM	9,511,262	2,316,994	1,447,884
Boosters, Charges, Caps, Detonation cord	77,817	18,957	0
Grenades	51,309	12,499	22,139
Mines	465	0	50
Rocket, missile	133	0	8,006
Shotgun/rifle	12,222	2,977	0
Signal, smoke, flare, simulators	29,148	0	10,060
Total	13,108,324	3,181,740	1,978,453

Notes:

1. The rounds shown here are for a single SBCT. Three SBCTs training at Fort Lewis and YTC would be authorized a total of about 39.3 million rounds and explosives.
2. The annual authorization for training ammunition for the CSS units is an approximation. The actual authorization would depend on the combination of CSS units and number of CSS Soldiers eventually stationed at Fort Lewis.

Sources: Army 2008c, Ackerman 2009

Maneuver training is a critical component of the SBCT collective training plan that trains units on how to synchronize the execution of battle tasks and shoot, move, and communicate on the battlefield. Large-scale maneuver training events (battalion and brigade levels) are often the capstone training exercises that are used to test and certify units for operational deployments abroad. Maneuver training builds on all of the individual skills that Soldiers possess and tests each echelon of command of the SBCT. Platoons, companies, and battalions of the SBCT as well as the entire SBCT itself conduct maneuvers to ensure unit proficiency at each successive level of command. Small unit training at the platoon and company levels, as well as some battalion level training, typically occur at Fort Lewis. Larger unit training at the battalion and brigade levels would typically occur at YTC, and this training often incorporates company level training. If available, a final rotation for unit evaluation and certification for deployment would occur at a combat training center such as the National Training Center (NTC) at Fort Irwin, California. **Table 2–8** depicts the size of the units of the SBCT and the maneuver training area each requires to conduct training to doctrinal standard. TC 25–1 (Army 2004e) is the Army’s definitive source for defining maneuver training land requirements. These requirements were staffed by the Army Training and Doctrine Command and approved and accepted by HQDA.

Table 2–8 SBCT Training Land Requirement

Type of Unit	Soldiers	Vehicles	Land Requirement
Platoon	18 – 39	4 – 6	6x4 km ¹
Company Team	150 – 240	40 – 60	17x6 km
Battalion	800 – 1,200	300 – 450	20x14 km
Brigade Combat Team	4,000 – 5,200	1,000 – 1,400	50x50 km

Note:

1. km = kilometer

Source: Army 2004e

To support SBCT training, each platoon, company, battalion, and brigade must conduct maneuver events to ensure the operational capabilities of the SBCT. Each platoon and company must train up to five weeks per year to meet maneuver-training requirements. In addition, each battalion must conduct semi-annual maneuvers that last approximately four to six weeks per year to certify its subordinate units, and each brigade must conduct maneuvers every 12 to 18 months and in advance of operational deployments, as required.

One or two SBCTs have been training at Fort Lewis and YTC since the Army fielded the first SBCT, which was stationed at Fort Lewis. With the stationing of the third SBCT and full implementation of the 2007 ROD for the GTA FPEIS, three SBCTs could be training at Fort Lewis and YTC annually. Training of three SBCTs simultaneously represents a 50-percent increase in the amount of maneuver and live-fire training conducted by two SBCTs simultaneously at Fort Lewis and YTC previously.

2.2.3.2 *Combat Service Support Units*

Typical CSS Logistics (Sustainment) units include transportation, quartermaster, medical, headquarters, and other CSS units and functions. CSS units are responsible for transporting of fuel, munitions, parts, food, medical supplies, and battlefield casualties during training and operational scenarios. These units maintain vehicles, recover destroyed or damaged vehicles, and provide medical care to injured Soldiers. CSS units use a wide variety of vehicles, based in part on the types of units they are supporting and the missions they need to accomplish. Wheeled vehicles are capable of on-road and off-road maneuver, but will more often travel on-road. The number of Soldiers in each unit varies with the function and mission of specific units. As many as 1,000 Soldiers spread across these units may be stationed at Fort Lewis and YTC in the future.

As described below, the Soldiers in each CSS unit must conduct live-fire training with individual and crew-served weapons. **Table 2–7** shows the approximate amount of training ammunition likely to be authorized annually for 1,000 CSS Soldiers.

2.2.3.2.1 *Transportation Units*

Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew-served weapons training occurs on fixed ranges with firing points and targets contained within marked areas and boundaries. Soldiers and crews train and qualify on these weapons twice annually. Soldiers would also conduct convoy live-fire training and urban operations on an as-needed basis.

Maneuver training consists of individual training and collective training at the platoon and company levels. The primary training events are loading, transporting, and unloading cargo. Unit movements and logistical sites would be on roads, trails, and maneuver areas. Force protection training (for

example, convoy defense and position perimeter defense) is integrated into all training missions. Units would conduct multi-day small unit (platoon and company) training exercises as often as five times per year at each echelon of training and would support combat maneuver elements and battalion and brigade training. Training impacts would also vary according to the size and weight of unit equipment and the types of activities the unit must engage in as part of its doctrinal operations.

2.2.3.2.2 *Quartermaster Units*

Live-fire training consists of individual weapons and crew-served weapons practice and qualification and convoy live-fire training. Individual and crew-served weapons training occurs on fixed ranges with firing points and targets contained within marked areas and boundaries. Soldiers and crews train and qualify on these weapons twice annually. Soldiers would also conduct convoy live-fire training and urban operations on an as-needed basis.

Maneuver training consists of individual training and collective training at the platoon and company levels. Quartermaster units would deploy on multi-day training events up to five times per year at platoon and company echelons. These units would support combat maneuver unit training events when at home station. The primary training events are unloading, storing, and loading cargo. Training impacts would also vary according to the size and weight of the truck and cargo.

2.2.3.2.3 *Medical Units*

Live-fire training consists of individual weapons and crew-served weapons practice and qualification and convoy live-fire training. Individual and crew-served weapons training occurs on fixed ranges with firing points and targets contained within marked areas and boundaries. Soldiers and crews train and qualify on these weapons twice annually. Soldiers would also conduct convoy live-fire training and urban operations on an as-needed basis.

Maneuver training consists of individual training and collective training at the platoon and company levels. The primary training events are moving to or relocating medical operations, establishing unit medical operations, performing Combat Health Support, and defending the unit location. Unit movements and logistical sites would be on roads, trails, and maneuver areas.

Force protection training (for example, convoy defense and position perimeter defense) is integrated into all training missions. Units would support multi-day training exercises and provide attachment support for integrated training exercises on an as-needed basis. Typically, medical squads, platoons, or companies would deploy on multi-day training events up to five times per year at each unit echelon. These units would support combat maneuver elements and battalion and brigade training when at home station. Small units would train at the squad and platoon level to retain their training proficiency.

2.2.3.2.4 *Headquarters Units*

Live-fire training consists of individual weapons and crew-served weapons practice and qualification. Individual and crew-served weapons training occurs on fixed ranges with firing points and targets contained within marked areas and boundaries. Soldiers and crews train and qualify on these weapons twice annually. Soldiers would also conduct convoy live-fire training and urban operations on an as-needed basis. Weapons qualifications usually involve pistol, rifle, and limited crew-served weapons qualification with heavy machine guns (.50 caliber).

Maneuver training consists of maneuvering on trails and in maneuver areas, establishing Tactical Operations Centers (TOCs) at select locations, and establishing communications infrastructure to

monitor events and control battlefield operations. Headquarters units would typically support from four to six maneuver rotations annually. Each of these rotations could involve two- to three-week deployments in support of joint training exercises, brigade training events, and battle command simulation exercises for command headquarters units. These simulation exercises test commanders and the proficiency of headquarters units using computer-simulated scenarios. Exercises take place in a replicated tactical scenario and involve minimal training maneuvers of vehicles in a tactical setting.

2.2.3.3 Medium Combat Aviation Brigade

Medium CAB training would occur at Fort Lewis and YTC. Aviation units must train to fight collectively with supported and supporting units in joint and combined arms environments. Likewise, to support or be supported efficiently by aviation forces, non-aviation forces need the requisite training. The aviation units conduct aviation gunnery tasks, such as door gunner qualification, diving fire engagements, and aviation armor engagements. They also would support maneuver-training rotations at YTC and support combined arms live-fire exercises (CALFEX) at Fort Lewis and YTC. Aviation training would occur at Fort Lewis and YTC and would be conducted to support integrated training exercises.

A critical aspect of the battle-focused concept is understanding the responsibility for and linkage between collective, mission-essential, crew, and individual tasks. **Section 2.2.1.4** describes the mission essential tasks for a medium CAB.

Training would involve execution of day-to-day support operations and routine joint military training at nearby training lands and ranges. Units perform primarily three modes of flight:

- Low-level flight is conducted at a selected altitude at which detection or observation of an aircraft is avoided or minimized. The route is preselected and conforms generally to a straight line and a constant air speed and indicated altitude.
- Terrain or Contour flight is at low altitude conforming generally to the contours of the Earth. This type of flight takes advantage of available cover and concealment in order to avoid observation or detection of the aircraft and/or its points of departure and landing.
- Nap-of-the-Earth (NOE) requires flight as close to the Earth's surface as vegetation or obstacles will permit. Air speed and altitude are varied as influenced by the terrain, weather, and enemy situation.

Pilots can fly their helicopters over most portions of Fort Lewis and YTC using any of the three modes of flight. Although they can fly at altitudes up to approximately 5,000 feet above ground level, they would primarily conduct landings and takeoffs only at GAAF and Vagabond Army Heliport (VAH) at YTC.

Units conduct aerial gunnery at the ranges with the Observation Helicopter OH-58D (Kiowa) and the AH-64 (Apache). Door gunnery live-fire training tasks would be conducted from the CH-47 (Chinook) and UH-60 (Blackhawk). With the Chinook and Blackhawk helicopters, they conduct sling load operations (delivering munitions), assault landings, rappelling, etc., and conduct flight training under day, night, and night-vision goggle conditions. Aerial gunnery occurs infrequently at Fort Lewis because Fort Lewis does not have aerial qualification ranges. Thus, the CAB units would be able to only conduct minimal aerial gunnery familiarization fire using 7.62-mm and .50 caliber machine guns and 2.75-inch rockets with dummy warheads. Primary aerial gunnery qualification would occur at YTC.

Field exercises involve establishing Forward Area Rearming and Refueling Points (FARRPs) and tactical areas for field environments. Weaponry, which is used primarily for Force Protection perimeter guarding, includes the Mark 19, 40-mm grenade launching machine gun, (MK19), M2 .50 caliber machine gun, M240B machine gun, Squad Automatic Weapon (SAW), and personal weapons (i.e., M16 rifle, 9-mm pistol, and .45 caliber pistol). Gunnery training is conducted at least twice per year, but training is conducted throughout the year, to include personal weapon training as well as aircraft gunnery. Field exercises could be combined with gunnery training. Training includes convoy to a designated site, perimeter security, FARRP Operations, and Forward Tactical Operations. **Table 2-7** shows the approximate amount of training ammunition authorized annually for a medium CAB.

The CAB logistics and command and control elements include ground unit vehicles from the Family of Medium Tactical Vehicle (FMTV), Heavy Expanded Mobility Tactical Truck (HEMTT), HMMWV, and wheeled support element vehicles.

A typical medium CAB logs about 250 flight hours per aircraft per year, which equals about 29,000 flight hours annually for the entire brigade. Approximately 27,550 of these hours would be flown in training at Fort Lewis (Clayton 2009a). The addition of these hours would approximately double the current flight training hours conducted at Fort Lewis (Rodriguez 2009).

Stationing a medium CAB at Fort Lewis also would increase the number of takeoffs and landings at GAAF. A typical medium CAB would perform approximately 55,100 takeoffs and landings annually at GAAF. The addition of the medium CAB would increase the overall number of takeoffs and landings at GAAF from approximately 16,000 to 71,100 (Clayton 2009b).

Training a medium CAB at YTC also would increase the number of takeoffs and landings at VAH. A typical medium CAB would perform approximately 2,900 takeoffs and landings annually at VAH. The addition of the medium CAB would double the overall number of takeoffs and landings at VAH from approximately 2,600 to 5,500 (Clayton 2009a).

2.2.3.4 Training Facilities and Range Construction/Upgrades

The implementation of Army Transformation has required the Army to overhaul and modernize its training lands and training facilities infrastructure. TC 25-8 describes the standard designs and requirements of the Army's Sustainable Range Program for training modular Army units to standard. A suite of ranges, as discussed in the GTA FPEIS, is required to support Army BCTs and to ensure that they can meet all pre-deployment training requirements.

Live-fire training is an essential component of Army training. Fort Lewis and YTC have approximately 80 ranges and facilities in their range inventory for use by all units that train there. The range types span from individual weapons qualifications to advanced combined arms events that include heavy artillery live fire. To be operationally effective, Soldiers must have the skills and experience necessary to operate and maintain their weapons. Live-fire training involves both munitions and explosives that would be used in combat and non-explosive training rounds designed to meet Soldiers' training needs. All Soldiers qualify with their individual weapon (rifle or pistol) at least twice annually. Crew-served weapons (machine guns and other automatic weapons) qualification varies by type of unit. This training is usually accomplished at the company level on fixed ranges described in TC 25-8. Weapons system training consists of a series of "tables" and occurs on large range complexes.

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. Where possible, weapons systems use inert training rounds, which have less environmental impact, as a substitute for the firing of live rounds.

Every range on which live-fire exercises are conducted has an associated surface danger zone (SDZ), also called a “range safety fan,” which is active whenever that range is in use. The SDZ comprises the entire surface area on which munitions could possibly land, taking into account the whole spectrum of stray rounds. When Fort Lewis and YTC ranges are in use, their SDZs often cause extensive maneuver areas to be unavailable. The proposed action would increase use of live-fire ranges, which would in turn increase the frequency of activation of SDZs.

2.2.3.4.1 Stryker Brigade Combat Team and Range Facilities

The proposed action would include constructing and/or upgrading several ranges and range facilities at Fort Lewis and YTC required to meet training readiness standards for three SBCTs training simultaneously. Existing ranges to be upgraded and newly constructed ranges/range facilities at Fort Lewis are shown on **Table 2–4**. With the simultaneous training of three SBCTs, use of existing ranges also would increase.

2.2.4 Screening Criteria Used to Identify Range of Potential Construction Locations

2.2.4.1 Military Construction Planning Considerations

Reasonable alternatives must:

- Include sites that have the space capable to construct the facilities within reasonable cost parameters;
- Provide unit cohesiveness;
- Conform to the Master Plan;
- Keep facilities collocated with each other;
- Consider Fort Lewis’s sustainability principles (**Section 1.2.2**); and
- Consider feasibility of timely completion of Military Construction (MILCON).

2.2.4.2 Land/Environmental Constraints

Reasonable alternatives must consider:

- Topography (buildable space and ability to train);
- Wetlands;
- Threatened and endangered species and/or habitat;
- Cultural resources;
- Contaminated sites under the management of the Installation Restoration Program;
- Off-limits training/restriction areas;
- Unexploded ordnance (UXO); and
- Impacts to existing infrastructure and maneuver lands.

Figure 2–8 depicts known major land and/or environmental constraints for future development on the Fort Lewis cantonment area. **Figure 2–9** shows the environmental constraints that Soldiers training on Fort Lewis must follow, and **Figure 2–10** shows the constraints that Soldiers training on YTC must follow.

2.2.5 Fort Lewis and YTC Area Development Plans

Fort Lewis has a Master Plan dating from 1995. The plan describes 11 different uses on Fort Lewis and 11 slightly different uses for YTC. The plan includes objectives and planning factors and makes general comments on present and future land use in different areas. It does not include ADPs or have the level of detail contained in the ADPs.

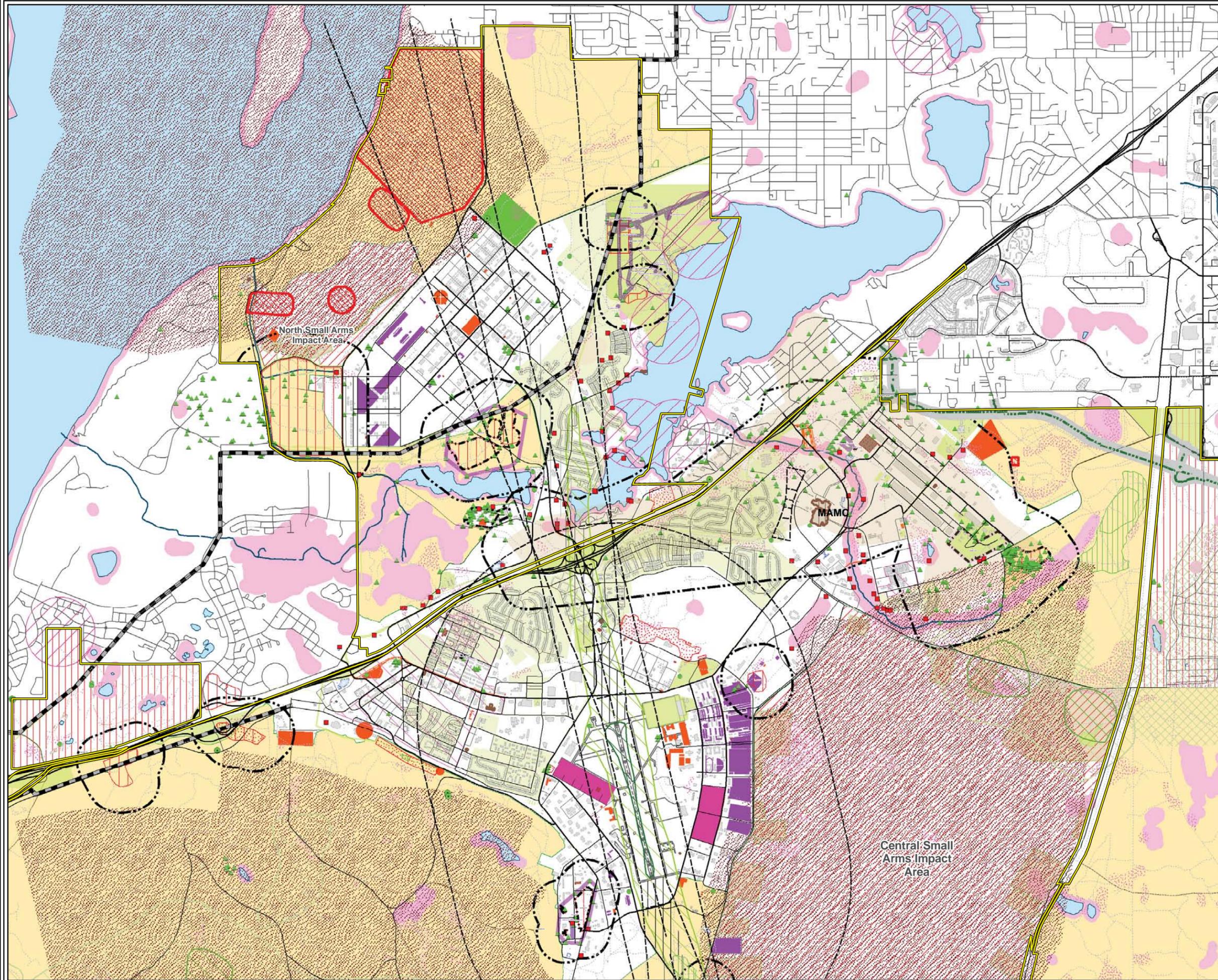
The installation Master Plan for both Fort Lewis and YTC is being revised to accommodate the range of changes that either have occurred due to previous actions or would occur because of the proposed action. These revisions respond to the need for potentially significant changes to traffic (transit) infrastructure and flow, Family housing densities and construction, Soldier and Family “quality of life” attributes, commercial and retail development and offerings, and mission capability enhancements. To facilitate planning, Fort Lewis and YTC cantonment areas have been divided into 14 areas. Each area has a specific ADP, which is the primary planning tool for the update of the overall Master Plan.

The 14 ADPs are:

1. North Fort
2. Historic Downtown
3. East Division
4. Madigan
5. Old Madigan
6. Hillside
7. Jackson
8. Gray Army Airfield
9. Miller Hill
10. Logistics Center
11. Greene Park
12. 3rd Brigade
13. American Lake
14. Yakima Training Center

2.2.5.1 North Fort ADP

The North Fort ADP encompasses most of the developed portion of North Fort (**Figure 2–11**). The ADP builds upon and strengthens the pattern of development the Army has already begun in the area (Urban Collaborative 2009b). It includes a mixed-use town center utilizing a combination of greenspace, barracks, shopfront retail, and community support facilities. The town center will provide people with walkable access to basic shopping, dining, fitness, medical, and recreational facilities. In addition, the town center will be reinforced by the compact development of Company Operations Facilities (COFs), headquarters facilities, and maintenance facilities located within walking distance of one another and the town center. Barracks housing for Soldiers would be within a ten minute walk of the town center and the Soldiers’ places of work, which would improve Soldier health and reduce the costs of driving. Finally, the existing Operational Readiness Training Center (ORTC) area would be revitalized to reduce its footprint.



Legend

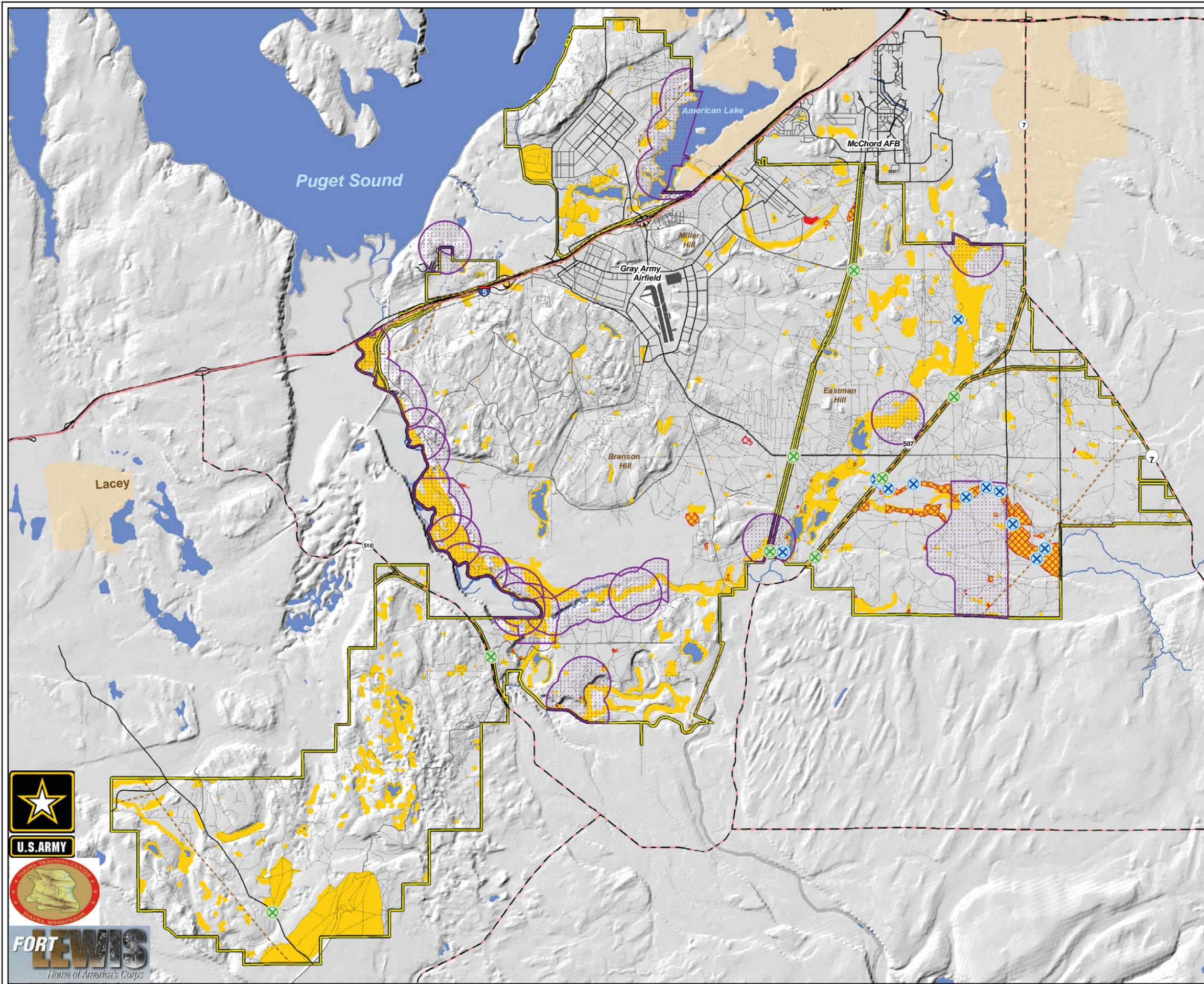
- Alternative 1
 - Alternative 2
 - Alternative 3
 - Alternative 4
- SAFETY ZONE**
- Blgd 4061 Hazardous Chemical Storage Area
 - High Tension Power Line
 - Airfield Linear Safety Feature Line
 - APZ II
 - APZ I
 - CLEAR ZONE
- UNDERGROUND HAZARDS/LIMITS**
- Code 3 Tank Locations
 - Well-head Protection Area
 - Underground Storage Tank (permitted)
 - Logistics Center NPL Site (ground water contamination plume)
- ABOVEGROUND LIMITING FACTORS**
- Cell Tower
 - Well (Drinking Water)
 - Well (Monitoring)
 - Borrow Pit Area
 - Outgrat Area (Housing, Schools)
 - Outgrat Area
 - Surface Danger Zone Area
 - Live Fire Ranges
 - Training Areas
 - EQSD Arcs
 - Stormwater Stilling Basin
 - Proposed Cross Base Highway
- Installation Compatible Use Zone - 1995 (Noise Contours)**
- Maximum Level Decibel Quantity
- 62
 - 65
 - 70
 - 75
- SURFACE HAZARDOUS & TOXIC DISPOSAL AREAS**
- Stormwater Outfall Point
- CERCLA Sites**
- Further Investigation and/or Action Required
 - Remedy Implemented; Maintenance of Institutional Controls Only Remaining Required Action
 - Remedy Implemented; Long-Term Monitoring & Maintenance of Institutional Controls Only Remaining Required Action
 - No Further Action Required (No Land Use Restrictions)
- Institutional Control Extent**
- Land use planning institutional control(s) required
 - Groundwater use planning institutional controls required
- RCRA Sites**
- Further Investigation and/or Action Required
 - Former Range in Active Training Area
 - Landfill
- NATURAL RESOURCES**
- Bald Eagle Mgt Zone (400 m buffer of nest)
 - Historic District Area
 - Oak Habitat
 - Wetland w/50m Buffer
- CULTURAL AREAS - Not shown, consult with CR Manager.**



FORT LEWIS GTA EIS

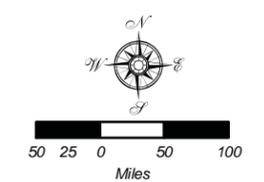
Figure 2-8
Major Land and Environmental Constraints on Future Development in the Fort Lewis Cantonment Area

ANALYSIS AREA: Thurston & Pierce Counties, Washington	
Date: 7/14/2009	File: FortLewis\FL_Constraint\MPEO.mxd
Prepared By: JG	Layout: FL_Constraint\MPEO.pdf



Legend

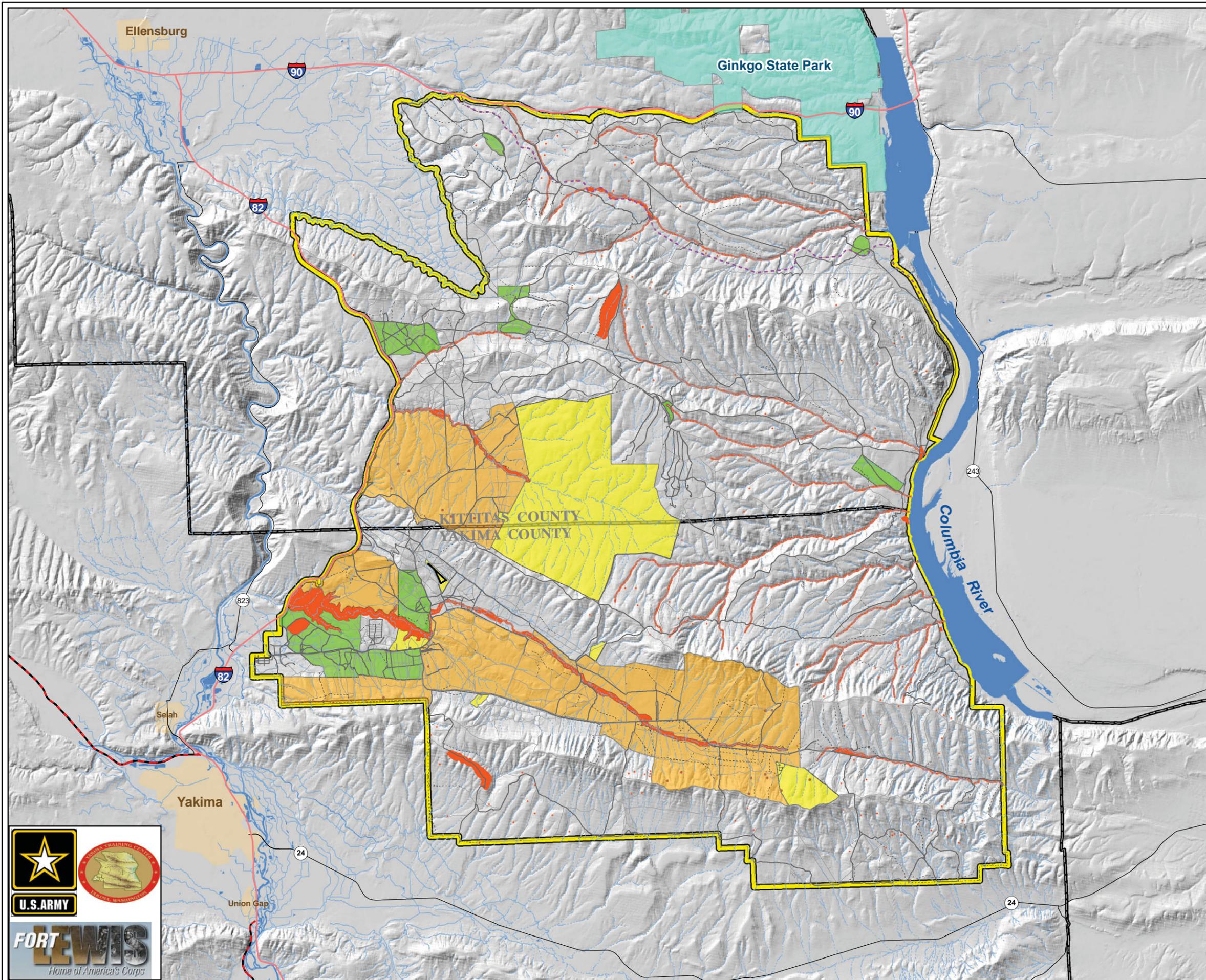
- Approved Tracked Vehicle Crossing
- Approved Vehicle Stream Crossing / Forging Site
- Underground Utility
- Seasonal Constraint
- Interstate Highway
- State Route
- Fort Lewis Roads**
- Primary
- Secondary
- Tertiary
- Unpaved
- Water Body
- Fort Lewis Boundary
- No Access Authorized
- Seibert Staked Area / Foot Traffic Only
- No Digging, Bivouacking, or Off-Road Vehicle Activities Authorized
- River / Stream
- County Boundary
- Municipal Area



FORT LEWIS GTA EIS

*Figure 2-9
Major Land and Environmental Constraints
on Training Areas at Fort Lewis*

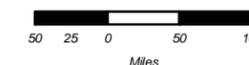
ANALYSIS AREA: Thurston & Pierce Counties, Washington	
Date: 7/14/2009	File: FortLewisFL_ECM.mxd
Prepared By: JG	Layout: FL_ECM.pdf



Legend

- Interstate Highway
- State Route
- Federal Highway
- Selah Airstrip
- YTC Roads**
- Secondary / Light Duty
- Unimproved
- Trail
- John Wayne Trail
- Water
- Perennial Stream
- Intermittent Stream
- Sensitive Environmental Area *
- Sage Grouse Protection Area
- Bivouac Area
- Restricted Area
- Ginkgo State Park
- Municipal Area
- Yakima Training Center Boundary
- County Boundary

* Sensitive Environmental Areas include Wetlands, Riparian Zones, Springs, and Major Streams



FORT LEWIS GTA EIS

*Figure 2-10
Major Land and Environmental
Constraints on Training Areas at YTC*

ANALYSIS AREA: Yakima & Kittitas Counties, Washington

Date: 7/14/2009

File: FortLewisYAK_Constraint.mxd

Prepared By: JG

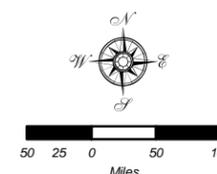
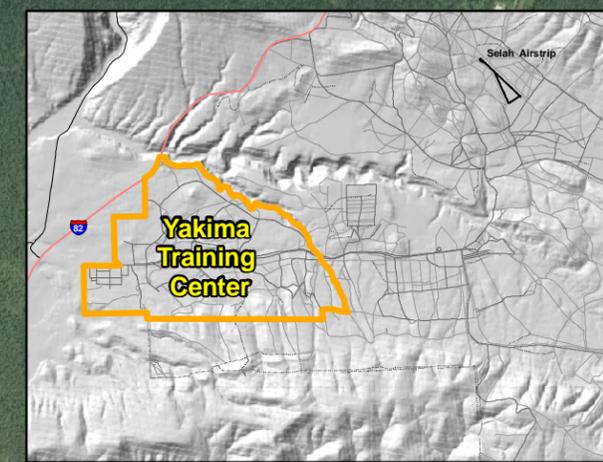
Layout: YAK_Constraint.pdf





Legend

- Area Development Plan Boundary
- Water Body



FORT LEWIS GTA EIS	
<i>Figure 2-11 Distribution of the 14 Area Development Plans for Fort Lewis and YTC</i>	
ANALYSIS AREA: Thurston & Pierce Counties, Washington	
Date: 7/14/2009	File: FortLewisADP.mxd
Prepared By: JG	Layout: ADP.pdf

Few constraints inhibit development within the North Fort ADP area (Urban Collaborative 2008f). The ADP area is an old World War I to pre-World War II artillery and mortar range and requires special awareness measures during construction. Additional constraints include a landfill to the south and southwest of the area. Finally, several small Installation Restoration Program (IRP) sites are located throughout the North Fort ADP area. A north/south GAAF runway is located south of the North Fort ADP area. The Accident Potential Zone extends northward from the runway into a portion of the ADP area. Certain types of development are restricted in this area and must be evaluated before siting.

2.2.5.2 Historic Downtown ADP

The Historic Downtown ADP encompasses the installation's central core (**Figure 2–11**). The ADP focuses on redevelopment of Pendleton Avenue into a multi-way boulevard and the development of the land surrounding Pendleton into a lively historic downtown with community support facilities, such as retail, housing, training, and office functions (Urban Collaborative 2009b). It improves the existing development plans for the Post Exchange (PX) and commissary additions. Elements of the existing historic district, including the street system, planned open spaces, and multi-story, narrow buildings would be preserved. Overall, the ADP is historically sensitive, maximizes views, provides focal point terminations, and provides Fort Lewis with a true downtown center of activity.

The Fort Lewis Garrison historic district is located within the Historic Downtown ADP area. Other than the National Historic Preservation Act (NHPA) restrictions discussed in **Section 3.6.3**, very few constraints exist within this ADP area (Urban Collaborative 2008c).

2.2.5.3 East Division ADP

The East Division ADP encompasses the World War II troop housing area on the east side of GAAF and south of Pendleton Avenue (**Figure 2–11**). The ADP focuses on the redevelopment of this housing area to a modern barracks and company operations area (Urban Collaborative 2009b). It provides space for two large brigades, complete with six battalions, ten companies and their associated maintenance facilities, and more than 75 acres of motor pool hardstand. The barracks space would accommodate 3,330 Soldiers.

Very few constraints exist in the East Division ADP area (Urban Collaborative 2008a). These include an old munitions area located northeast of the area and several IRP sites located between GAAF and 2nd Division Drive.

2.2.5.4 Madigan ADP

The Madigan ADP is centered on Madigan Army Medical Center (**Figure 2–11**). The ADP focuses on the Madigan Army Medical Center (MAMC) and new requirements for Warrior Transition Unit (WTU) facilities, an addition to the women's clinic, additional child development centers, and additional parking (Urban Collaborative 2009b). To accommodate these requirements, the ADP creates an east side town center coupled with improved traffic patterns and clear pedestrian and vehicular connections among the facilities.

Constraints in the Madigan ADP area include wellhead protection areas, oak preserves, wetlands, and airfield criteria (Urban Collaborative 2008e). In addition, no new drinking water wells may be drilled in the area, because it is an investigation site for a National Priorities List (NPL) plume of contaminated groundwater. An emergency trauma helipad exists on the MAMC site east of the Madigan ADP. The clear zones and imaginary surfaces associated with the helipad are situated in the

east portion of the ADP. Any development in this area must account for these restrictions. In addition, a large site that contains fill from the over-excavation of the MAMC is located on the MAMC site. Construction in this area would require investigation and possible special measures to achieve a suitable soil substrate. MAMC also has an emergency septic system located underground in a field west of the facility.

2.2.5.5 Old Madigan ADP

The Old Madigan ADP encompasses the area southeast of MAMC that is bounded by Jackson Avenue/Madigan Bypass to the north, by Y Road to the south and west, and by McKinley Road to the east (**Figure 2–11**). The ADP focuses on two components: construction of a Special Operations Forces (SOF) campus located east of the existing SOF compound and a replacement housing area located south of the Old Madigan facilities (Urban Collaborative 2009b). The housing area, which would be organized around a community center located in a central green, would be easily accessed by a clear and logical street grid system.

The main development constraints within the ADP area are wetlands, historic facilities, and the leased housing area (Urban Collaborative 2008g). Wetlands and marshes are associated with Murray Creek. The ADP area contains the former hospital (Old Madigan) and associated outbuildings that are eligible for listing on the Washington Heritage Register. The Madigan neighborhood has been leased for housing uses through a privatized housing initiative that Fort Lewis created with EQR/Lincoln. The area to the north and east of the ADP area is an investigation site for the NPL plume of contaminated groundwater. It is possible that the contamination could spread west toward the Old Madigan area during the cleanup process, which should be complete before any housing is placed in this area.

2.2.5.6 Hillside ADP

The Hillside ADP encompasses housing areas located to the west of MAMC, known as New Hillside and Evergreen (**Figure 2–11**). The ADP focuses on redeveloping these housing areas into a more sustainable neighborhood model. The area would have a central park that will create a safe, lively, central green for the neighborhood and smaller neighborhood parks. Each single family home or rowhouse would be within a three minute walk of a neighborhood park (Urban Collaborative 2009b). The ADP would double the density of housing units and improve land use efficiency.

There are minimal constraints for most of the Hillside ADP area (Urban Collaborative 2008b). Most of the area is an investigation site for the Logistics Center NPL plume of contaminated groundwater. No drinking wells are planned for the investigation site. A former skeet range is located in the northwest corner. This area requires further remediation and cannot be developed. An emergency trauma helipad is located on the MAMC site east of the ADP. The clear zones and imaginary surfaces associated with the helipad are situated in the east portion of the ADP. Any development in this area must account for these restrictions. In addition, the oak preserve area must not be developed, and consideration must be given to eagle habitat areas within the ADP.

2.2.5.7 Jackson ADP

The Jackson ADP addresses the future development of the area south of Jackson Avenue and southwest of MAMC (**Figure 2–11**). This area is being developed as a single Soldier housing and company operations area. Facilities include barracks, a chapel, medical facilities, and company operations and administrative facilities (Urban Collaborative 2009b). Overall, this ADP creates a

neighborhood where people can live, eat, worship, exercise, and get to the doctor or dentist in the north and work in the south.

The Jackson ADP area is not heavily constrained by environmental contaminants (Urban Collaborative 2008d). Most of the area was once the site of the Evergreen firing range. However, all remediation has been completed and the old environmental cleanup sites have been closed. Two locations have potential groundwater contamination: the area to the southwest (which was the former landfill) and the area to the north (near the Logistics Center). In both of these locations, drinking water wells are discouraged and will require EPA approval if considered for construction. Therefore, drinking water supply must be considered due to limitations on well locations. In addition, the wooded areas and marshes require special attention during construction in this ADP, because these are sensitive resources.

2.2.5.8 Gray Army Airfield ADP

The GAAF ADP focuses on GAAF and its surrounding flightline facilities (**Figure 2–11**). Although the overall structure and circulation pattern of GAAF would remain unchanged, the ADP addresses potential future missions for GAAF. The 4–6 Air Cavalry Squadron would be relocated to the east side of the airfield freeing up space on the west side for a medium CAB (Urban Collaborative 2009b). Along with some limited relocations of other facilities, an option exists to extend the runway by 3,000 feet to the south and provide parking for nine C–5s along that extension.

GAAF and the surrounding areas are largely developed (HDR Nakata Planning Group 2008c). Within GAAF itself, there are very limited opportunities for additional development. Immediately outside the airfield fence line, there are some areas for potential development; however, much of this area is the required clear zone under the flight path. Constraints to development in the area of GAAF primarily relate to aircraft operations. Existing and future development must be compatible with airfield operations. Factors influencing development decisions include clear zones and other imaginary surfaces required to safeguard against aircraft accidents, noise, and other safety restrictions.

2.2.5.9 Miller Hill ADP

The Miller Hill ADP encompasses the area around and including the prominent topographical feature on Fort Lewis, known as Miller Hill (**Figure 2–11**). The ADP preserves Miller Hill itself because it is one of the most valued natural areas on the installation (Urban Collaborative 2009b). Development would create a mixed-use town center focused on the Stone Education Complex and adjoining facilities. The network of streets would be realigned to a symmetrical grid aligned with Pendleton Avenue to the south, which would allow a direct connection to the Historic Downtown area. In addition, a physical fitness trail that runs through the Miller Hill natural area is being developed.

Constraints within the Miller Hill area are naturally influenced and man-made (HDR Nakata Planning Group 2008b). Natural constraints are limited to Miller Hill itself. Because of the existing topography, development on Miller Hill would be very costly. Passive recreational uses and supporting facilities constitute the most feasible uses. Man-made constraints within the ADP boundary include contaminated soils, airfield constraints, and existing wells. The constraints from Miller Hill's proximity to GAAF include clear zone and height restriction requirements. These constraints are concentrated on the west end of the ADP boundary and affect development in both zones.

2.2.5.10 Logistics Center ADP

The Logistics Center ADP encompasses more than 620 acres (**Figure 2–11**), which house most of Fort Lewis’s maintenance, transportation, deployment, and storage functions in mainly World War II era warehouses and administrative buildings. A significant rail connection enters from the east and splits out in the mobilization yard and several other tracks throughout the Logistics Center. The primary truck access control point is on the northern end of the center via 80th Street. The ADP preserves the existing street grid and provides an optimal layout for key facilities (Urban Collaborative 2009b). It also improves traffic flow and provides a separate gate for commercial truck traffic delivering supplies to the Army Materiel Command facilities. Finally, it provides for a possible future connection to McChord AFB as joint basing progresses.

Constraints within the Logistics Center ADP area are both naturally influenced and manmade (HDR Nakata Planning Group 2008a). Natural constraints include the wetlands south of the Logistics Center and Murray Creek to the west. These natural constraints limit expansion availability in their relative areas. Man-made constraints within the ADP boundary include contaminated soils, the Defense Reutilization and Marketing Office (DRMO) yard, and the old landfill. Contaminated soils underlie the entire area. Any potential residential use should be restricted from these contaminated areas. Therefore, the best use for this area is to continue as industrial use.

2.2.5.11 Greene Park ADP

The Greene Park ADP focuses on the largely natural area located between North Fort and the Main Post (**Figure 2–11**). Most of the area is used for training exercises, including medical, air assault, water operations, and rappelling. The key facility in the area is the Fort Lewis Military Museum, and the ADP preserves the area around the museum for its potential future expansion. As a result, the ADP minimizes development and preserves most of the Greene Park area as range and training land (Urban Collaborative 2009b). Key constraints in the Greene Park ADP area include a landfill, a high-tension power line, and historic buildings (Urban Collaborative 2009a).

2.2.5.12 3rd Brigade ADP

The 3rd Brigade ADP encompasses one of Fort Lewis’s key brigade operations areas — the area west of GAAF (**Figure 2–11**). The ADP focuses on redevelopment of the area with properly sized facilities in which Soldiers of an SBCT can live, work, and train (Urban Collaborative 2009b). It also provides relief for the traffic problems that plague the area. One feature of the ADP is a 0.9-mile long physical training trail that will reduce the need to shut down the road network at key traffic hours to accommodate physical training. This trail also would serve as a key pedestrian connector allowing Soldiers access to all of the facilities in the area.

Few constraints exist in the 3rd Brigade ADP area (Urban Collaborative 2009c). These include an old landfill and IRP sites located throughout the area.

2.2.5.13 American Lake ADP

The American Lake ADP would create a unified housing and community area out of the partially developed, partially natural area between the Main Post and North Fort east of 41st Division Drive (**Figure 2–11**). It would continue development of housing in the area, including a waterfront development with a small town center south of American Lake (Urban Collaborative 2009b). All of the housing areas and community support facilities would be connected by a greenway path that would run along the edge of the lake. Housing developments in this ADP area would no longer be isolated and undesirable. Key constraints in the American Lake area consist of wetland buffers (Urban Collaborative 2009a).

2.2.5.14 Yakima Training Center ADP

The YTC ADP encompasses the entire cantonment area at YTC (**Figure 2–11**). The ADP allows for future expansion of the cantonment area in support of YTC’s mission (Urban Collaborative 2009b). Although the ADP includes the development of a tract of land on the east end of the cantonment area to accommodate up to four new BCTs, this development is not contemplated in the near future. For the foreseeable future, the cantonment area at YTC would continue to support SBCTs and other units that travel to YTC temporarily for training. In addition, a number of old temporary buildings (meant to be in place less than five years) continue to be used at YTC; however, some of these buildings have greatly exceeded their useful life. These facilities require additional maintenance, are energy-inefficient, and need to be demolished and replaced (Urban Collaborative 2008h).

2.3 ALTERNATIVES CONSIDERED IN DETAIL

2.3.1 Alternative 1 — No Action Alternative

Alternative 1 serves as the baseline condition for analysis and includes those stationing decisions that have already been made by the Army, including stationing actions recommended by the 2005 BRAC Commission, as well as Army GDPR actions that took place prior to 2009. The addition of upgraded SBCT facilities and approximately 1,880 GTA Soldiers, the potential stationing of CSS units, and the potential stationing of a medium CAB would not be implemented. Force structure, assigned personnel, and equipment would remain as they exist at Fort Lewis and YTC.

Although none of the facilities required for the new and augmented units under the GTA ROD, the potential CSS units, or the potential medium CAB would be constructed under this Alternative, a substantial number of other projects would be constructed. Fort Lewis is undergoing substantial modernization of its facilities, and many projects have been constructed recently, are being constructed, or are planned for construction. Projects include replacing outdated buildings and improving infrastructure. These actions have previously been evaluated and are not further analyzed under this EIS.

A variety of known projects is included in Alternative 1. Nonetheless, additional and yet unidentified facility construction and training activities may be required in the future to support current activities. These projects would undergo separate NEPA review before implementation in accordance with regulations and current practice.

Analysis of Alternative 1 is required by CEQ and Army NEPA-implementing regulations. It is, however, not a feasible alternative. Alternative 1 does not meet the Purpose of and Need for the proposed action. It does not meet the current and future strategic security and defense requirements of the Nation. The Army’s decision to increase the size of the force has been made, after NEPA review, and is reflected in the ROD for the 2007 GTA FPEIS. That decision included the study of the possible locations within the Army for stationing of the new units. Fort Lewis was chosen as a stationing location as part of that process. Likewise, this EIS provides the data and analysis required before the Army determines whether to station additional CSS units or a medium CAB at Fort Lewis. Alternative 1 provides a benchmark to compare the magnitude of the environmental effects of the proposed action and the other Alternatives.

2.3.1.1 Force Structure

Force structure and population are based on the best information currently available. The number of Soldiers assigned to Fort Lewis, however, may vary as frequently as daily based on unit movements, personnel actions, and other factors. The Army is in a constant state of flux (for example, deployments, stationing, modularity, conversion, activation), and population changes are to be

expected. Therefore, the baseline for Alternative 1 considers the force structure that was in place at the end of FY 2009 (**Table 2–1** and **Table 2–9**).

This baseline establishes a measure to compare Alternative 1 with the proposed action. The baseline is realistic in terms of overall troop levels and training needs. The stationing of units, however, is dynamic, and the description of the force structure described here might not depict the actual conditions and related training schedules at Fort Lewis and YTC at any given time. Additionally, deployed troops assigned to Fort Lewis are not physically located on the Post or training at YTC at a particular point in time. Despite these deployments, some Families of deployed Soldiers continue to be supported by Fort Lewis and civilian employees and contractor personnel who continue working at the installation. Under Alternative 1, the major units identified in **Section 1.2** would continue to be assigned to Fort Lewis.

Equipment currently assigned to Fort Lewis and YTC would continue to be assigned to the installations under this Alternative. This equipment includes vehicles, engineering equipment, aerial systems, and various weapons. **Table 2–10** identifies the equipment currently assigned to Fort Lewis and YTC, the mission for each piece, and the type of training for which each piece is used.

2.3.1.2 Construction

Under Alternative 1, maintenance, repair, and replacement of Fort Lewis’s existing facilities and infrastructure would continue. Currently, Fort Lewis is undergoing substantial modernization of its facilities, and many projects have been constructed recently, are being constructed, or are planned for construction. They include replacing outdated buildings and improving infrastructure. **Appendix A** identifies the projects planned for construction in the FY 2010 to FY 2015 period, and **Figure 2–5** shows the distribution of these projects. These projects are all included in Alternative 1.

The Army has conducted environmental review under NEPA for the planned and under-construction facilities identified in **Appendix A** and determined that no significant impact on the environment would occur from these projects. Any new facility construction in support of the three SBCTs, potential stationing of CSS units, or the potential stationing of a medium CAB would not be accomplished on Fort Lewis under Alternative 1. Any new facility construction unrelated to the proposed action not identified in **Appendix A** would be subject to separate NEPA review.

As discussed above, a variety of known projects are included in Alternative 1. Nonetheless, additional, and as yet unidentified, facility construction and training activities may be required in the future to support current activities. These projects would undergo separate NEPA review before implementation in accordance with regulations and current practice.

2.3.1.3 Training

Under Alternative 1, training would be accomplished just as it has been occurring at Fort Lewis and YTC since the SBCTs were developed (**Section 2.2.3.1**). Under this alternative, although three SBCTs would be assigned to Fort Lewis, only two would be training simultaneously at Fort Lewis and YTC because of deployments. Soldier qualification with individual weapons would occur at the live-fire ranges at Fort Lewis and YTC. In addition, as discussed in **Section 2.2.3.1**, small unit maneuvers at the platoon and company levels typically occur at Fort Lewis. Larger unit maneuvers at the battalion and brigade levels typically occur at YTC. Battalion and brigade level maneuvers also occur at Fort Lewis, but much less frequently. Deployments to YTC for battalion and brigade maneuvers are typical. These deployments also often involve the conduct of training at the company level.

Table 2–9 Summary of the Key Attributes of the Alternatives

Attribute	Alternative 1—No Action	Alternative 2—GTA Actions	Alternative 3—GTA Actions + CSS Soldiers	Alternative 4— GTA Actions + CSS Soldiers + Medium CAB
Approx. Number of New Soldiers ¹	None	1,880 Soldiers	2,880 Soldiers (1,880 + 1,000)	5,680 Soldiers (1,880 + 1,000 + 2,800)
Approx. Number of New Soldiers and Family Members	None	4,740 Soldiers and Family	7,260 Soldiers and Family (4,740 + 2,520)	14,320 Soldiers and Family (4,740 + 2,520 + 7,060)
New Cantonment Area Construction:				
<i>Fort Lewis</i>	Several new SBCT facilities throughout cantonment area	Several additional new SBCT facilities throughout cantonment area	Several CSS facilities to be located in the North Fort area	Several medium CAB facilities to be located near Gray Army Airfield and East Division areas
<i>YTC</i>	No construction	No construction	No construction proposed	No construction proposed
New Range Construction				
<i>Fort Lewis</i>	No construction	5 range construction projects	No additional construction proposed	No additional construction proposed
<i>YTC</i>	No construction	2 range construction projects	No additional construction proposed	No additional construction proposed
Medium CAB Training	None	None	None	29,000 hours total annual flight time (1,450 hours at YTC) and 58,000 total takeoffs and landings (2,900 at YTC)
Units Training Simultaneously at Full Intensity	2 SBCTs + all other Fort Lewis units	3 SBCTs + GTA Units + all other Fort Lewis units	3 SBCTs + GTA Units + CSS Units + all other Fort Lewis units	3 SBCTs + GTA Units + CSS Units + Medium CAB unit + all other Fort Lewis units
Number of Annual Maneuver Miles (by Units)				
<i>SBCT:</i>	4,520,000 miles Fort Lewis: 2,710,000 miles; YTC: 1,810,000 miles	6,770,000 miles Fort Lewis: 4,060,000 miles; YTC: 2,710,000 miles	6,770,000 miles Fort Lewis: 4,060,000 miles; YTC: 2,710,000 miles	6,770,000 miles Fort Lewis: 4,060,000 miles; YTC: 2,710,000 miles
<i>GTA Units:</i>	0 miles	144,000 miles Fort Lewis: 91,000 miles; YTC: 53,000 miles	144,000 miles Fort Lewis: 91,000 miles; YTC: 53,000 miles	144,000 miles Fort Lewis: 91,000 miles; YTC: 53,000 miles
<i>CSS Units:</i>	0 miles	0 miles	421,000 miles Fort Lewis: 330,000 miles; YTC: 91,000 miles	421,000 miles Fort Lewis: 330,000 miles; YTC: 91,000 miles
<i>CAB Vehicles:</i>	0 miles	0 miles	0 miles	354,000 miles Fort Lewis: 270,000 miles; YTC: 84,000 miles
<i>Total²:</i>	4,520,000 miles Fort Lewis: 2,710,000 miles; YTC: 1,810,000 miles	6,910,000 miles Fort Lewis: 4,150,000 miles; YTC: 2,760,000 miles	7,340,000 miles Fort Lewis: 4,480,000 miles; YTC: 2,860,000	7,700,000 miles Fort Lewis: 4,750,000 miles; YTC: 2,950,000 miles

Note:

1 All stationing would occur at Fort Lewis. Training of new Soldiers would occur at both Fort Lewis and YTC.

Total may not match precisely with the value obtained by adding unit numbers because of rounding conventions.

Table 2–10 Major Equipment Items Assigned to Fort Lewis and Yakima Training Center

Category/Equipment	Mission	Type of Training
<i>Wheeled Vehicle</i>		
Stryker M1126 Infantry Carrier Vehicle (includes nine configurations)	Provides a highly deployable wheeled armored vehicle that combines firepower, battlefield mobility, survivability, and versatility with reduced logistics requirements	Maneuver and Live-fire
Stryker M1128 Mobile Gun System	Provides a highly deployable wheeled armored vehicle that combines fully stabilized shoot-on-the-move firepower, battlefield mobility, survivability, and versatility with reduced logistics requirements	Maneuver and Live-fire
Family of Medium Tactical Vehicles	Fills the Army's medium tactical vehicle requirements for mobility and resupply, and transportation of equipment and personnel	Maneuver
Heavy Expanded Mobility Tactical Truck	Provides heavy transport capabilities for re-supply of combat vehicles and weapons systems	Maneuver
High-Mobility Multi-Purpose Wheeled Vehicle	Provides a common light tactical vehicle capability	Maneuver
Palletized Loading System	Performs line haul and unit resupply. Rapid movement of combat configured loads of ammunition and all classes of supply, shelters, and containers	Maneuver
<i>Engineer Equipment</i>		
Dozers, Scrapers, Loaders, Excavators, Dump Trucks	Performs horizontal construction to ensure mobility and base support for strike, sustainment, and logistics forces	Maneuver; Engineering (excavation, clearing, grubbing)
<i>Tracked Vehicles (associated with the Washington National Guard)</i>		
M1 Abrams Main Combat Tank	Provides heavy armor superiority on the battlefield (120-mm main gun)	Maneuver and Live-fire
M2/M3 Bradley Fighting Vehicle	Provides protected transport of an infantry squad and over watching fires to support the dismounted infantry (25-mm main gun)	Maneuver and Live-fire
M109 Paladin Self-Propelled Howitzer	Provides the primary artillery support for armored and mechanized units (155-mm artillery round)	Maneuver and Live-fire
M113 Armored Personnel (Mortar) Carrier. This includes the variant M577 command post vehicle.	Provides a highly mobile, survivable, and reliable tracked-vehicle platform that is able to keep pace with Abrams and Bradleys. The M577 provides a mobile command capability	Maneuver and Live-fire
M1117 Armored Security Vehicle	Fills the Army's armored wheeled vehicle requirements for one with a turret and armament system designed to meet the security mission requirements of the Military Police Corps	Maneuver and Live-fire
<i>Aerial Vehicles</i>		
Tactical Unmanned Aerial Vehicles	Used to support integral intelligence, reconnaissance, and target acquisition at distances of up to 78 miles (125 km); detects and identifies targets from a range of 2-3 miles (3-5 km) and offers automatic target tracking	Maneuver
<i>Aerial Systems</i>		
Unmanned Aerial Systems	Provides real-time data, intelligence, surveillance, and reconnaissance support for base perimeter defense and convoy protection	Maneuver
<i>Helicopters</i>		
Attack Helicopter	Conduct aerial gunnery	Maneuver and Live fire
Cargo Helicopter	Conduct sling load operations, assault landings, rappelling, door gunnery, and flight training	Maneuver and Live fire
Observation Helicopter	Conduct aerial gunnery and observation	Maneuver and Live fire
Utility Helicopter	Conduct sling load operations, assault landings, rappelling, door gunnery, and flight training	Maneuver and Live fire
Medevac Helicopter	Conduct medical evacuations	Maneuver

Table 2–10 Major Equipment Items Assigned to Fort Lewis and Yakima Training Center

Category/Equipment	Mission	Type of Training
<i>Indirect Fire</i>		
Towed Howitzer	Provides long-range destructive, suppressive, and protective indirect and direct field artillery fires	Maneuver and Live-fire
Mortars	Provides long- and medium-range indirect fire support	Maneuver and Live-fire
High Mobility Artillery Rocket System (HIMARS)	Provide reinforcing field artillery rocket and missile fires in support of maneuver BCTs	Maneuver and Live-fire
<i>Anti-Armor Weapons</i>		
Javelin Anti-Tank Missile	Provides a man-portable, highly survivable medium anti-tank weapon system	Maneuver and Live-fire
Tube-Launched, Optically-Tracked, Wire-Guided Missile System	Defeats threat armored vehicles and urban enclosed threats at extended ranges in all expected battlefield conditions	Maneuver and Live-fire
<i>Individual and Crew-Served Weapons</i>		
M2 .50-Caliber Machine Gun	Engages targets with accurate automatic direct fire (.50 caliber)	Live-fire
MK19 Automatic Grenade Launcher	Engages targets with accurate automatic indirect fire (40-mm grenades)	Live-fire
M240B Machine Gun	Engages targets with accurate direct automatic fire (7.62 mm)	Live-fire
M249 Squad Automatic Weapon	Engages targets with accurate direct automatic fire (5.56 mm)	Live-fire
M4 Carbine	Engages targets with accurate direct fire (5.56 mm)	Live-fire
M9 Pistol	Engages targets with accurate direct fire (9 mm)	Live-fire
M16 Rifle	Engages targets with accurate direct fire (5.56 mm)	Live-fire
M203 Grenade Launcher	Engages targets with accurate grenade fire (40 mm) grenades	Live-fire

The two SBCTs present for training at Fort Lewis, including all echelons from squad to full brigade, would account for most of the maneuver training that is conducted annually at Fort Lewis and YTC. In general, this training involves units traveling on roads from the assembly area to a point near an objective where they then tactically deploy through off-road movement around the objective. As a result, most of this maneuvering (about 80 percent) occurs on roads, which include everything from paved roads, improved gravel roads, unimproved roads, and trails. About 20 percent of maneuver training involves cross-country or off-road travel that is mostly confined to areas with no roads or trails and areas around objectives.

The Army bases its estimate of the approximate proportion of on-road versus off-road maneuvering (80 percent versus 20 percent) on vehicle tracking and additional Stryker training observations conducted at YTC. During this tracking effort, the Army installed vehicle tracking systems on 20 vehicles in the 3rd Brigade, 1/14 Cavalry during a reconnaissance training exercise at YTC. Data from the vehicles and the additional training observations were used to estimate on-road/off-road distances and proportions of distance traveled per type of road. On average, individual Strykers traveled 16 miles per day (26 km per day) on roads and 4 miles per day (6 km per day) off roads, whereas the support vehicles traveled approximately 90 percent of the Stryker miles on and off road (McDonald 2009d).

Maneuvering by SBCTs varies between Fort Lewis and YTC in terms of total annual miles and off-road versus on-road miles. Units conduct maneuver training more frequently at Fort Lewis because of proximity, but this training involves fewer daily miles because the training areas are smaller. In

contrast, SBCTs travel more daily miles while at YTC, but each vehicle only goes to YTC four to five times annually. An estimated 55 to 70 percent of the maneuver miles occur at Fort Lewis, and 30 to 45 percent occur at YTC (Larson 2009d). Most of the annual maneuver miles that occur off road occur at YTC (70 percent). The primary reason is that fewer places exist on Fort Lewis where the vehicles can leave roads and trails on the maneuver lands (Larson 2009d).

Individual Strykers log approximately 3,200 maneuver miles (5,500 km) per year at YTC and Fort Lewis. About 1,280 maneuver miles (2,060 km) would be driven at YTC annually, and 1,920 maneuver miles (3,090 km) would be driven at Fort Lewis. These estimates would vary from year to year depending on a number of factors, including local conditions, deployments, and types of exercises.

The Army estimates that maneuver training by the two SBCTs under this alternative would involve approximately 4,520,000 miles (7,270,000 km) of driving annually (**Table 2-9**). Approximately 60 percent of the total miles would be driven at Fort Lewis. **Appendix B** describes how the maneuver training mileage estimates were developed. The breakdown of mileage by units, type of vehicle, and class of road are also shown in **Appendix B**.

Before units can train at YTC, they have to move their troops and equipment to YTC. Transportation of units to YTC occurs in convoys as directed by Fort Lewis Regulation 55-2. In general, a convoy consists of six or more vehicles organized to operate as a column or the dispatch of 10 or more vehicles per hour to the same destination over the same route. Stryker vehicles travel in groups of two to 10. The departures of all convoys are timed to avoid the presence of Army vehicles during the primary rush hours (6:00 am to 9:00 am and 3:00 pm to 5:00 pm) on I-5 and Interstate 405 (I-405) (Brayton 2009).

The primary approved convoy route from Fort Lewis to YTC is I-5 to I-405 to Interstate 90 (I-90) to Interstate 82 (I-82). Twenty-minute rest stops are required for every two hours of driving. Identified rest stops along the convoy route include I-90 Exit 38 and Exit 109 (Flying J Truck Stop).

Each year, convoys are dispatched between Fort Lewis and other locations, including YTC, Port of Tacoma, and Camp Rilea. The annual number of convoys varies. In 2008, approximately 1,100 convoys departed from or arrived at Fort Lewis (Brayton 2009). Most of them were traveling between Fort Lewis and YTC. In contrast, the total number of convoys departing or arriving at Fort Lewis in 2007 was approximately 200, and in 2006 the number was approximately 850 (Brayton 2009). A variety of factors influence the total number of convoys each year, including deployments, funding, and unit commander decisions.

2.3.2 Alternative 2 — Take Actions Necessary to Implement GTA Actions and Those Actions Interconnected to GTA

Under this Alternative, Fort Lewis would take the actions necessary to implement GTA and Transformation decisions. This alternative would require supporting the training of all three SBCTs at one time along with all support and other BCTs on Fort Lewis and YTC. In addition to the GTA unit changes, this alternative includes the proposal to house (in facilities that meet current standards), train, and supply support services for three SBCTs and all other Major Subordinate Commands on Fort Lewis and YTC. This alternative would also implement the cantonment area planned construction for FY 2010 through FY 2015 as well as updating the Fort Lewis and YTC ADPs.

The Army estimates that maneuver training by the primary units stationed at Fort Lewis and YTC under this alternative would involve approximately 6,910,000 miles of (11,120,000 km) driving

annually (**Table 2–9**). The three SBCTs would account for the majority of these miles. Approximately 60 percent of the total miles would be driven at Fort Lewis. **Appendix B** describes how the maneuver training mileage estimates were developed. The breakdowns of mileage by units, type of vehicle, and class of road are also shown in **Appendix B**. Maneuver training would primarily involve traveling on roads from the assembly area to an objective as described for Alternative 1.

2.3.3 Alternative 3 — All Actions under Alternative 2 and the Addition of up to 1,000 Combat Service Support Soldiers to Fort Lewis/YTC

Under this alternative, Fort Lewis would take the necessary actions to implement GTA and Transformation decisions as identified in Alternative 2 and the actions needed for the stationing of up to 1,000 CSS Soldiers and their Families at Fort Lewis and YTC. This alternative provides for the construction of facilities and the necessary live-fire and maneuver training to support the stationing of the CSS Soldiers and their Families.

The Army estimates that maneuver training by the primary units stationed at Fort Lewis and YTC under this alternative would involve approximately 7,340,000 miles of (11,810,000 km) driving annually (**Table 2–9**). The three SBCTs would account for the majority of these miles. Approximately 60 percent of the total miles would be driven at Fort Lewis. As with Alternatives 1 and 2, maneuver training would primarily involve traveling on roads from the assembly area to an objective. **Appendix B** describes how the maneuver training mileage estimates were developed. The breakdowns of mileage by units, type of vehicle, and class of road are also shown in **Appendix B**.

2.3.4 Alternative 4 — All Actions under Alternative 3 and the Addition of the Realignment of a Medium Combat Aviation Brigade to Fort Lewis/YTC

Under this alternative, Fort Lewis would take the necessary actions to implement GTA and Transformation decisions as identified in Alternative 2, the actions needed for the stationing of up to 1,000 CSS Soldiers and their Families as stated in Alternative 3, and the stationing of a medium CAB to Fort Lewis and YTC. This alternative provides for the construction of facilities and the necessary live-fire and maneuver training to support the stationing of the medium CAB Soldiers and their Families.

The Army estimates that maneuver training by the primary units stationed at Fort Lewis and YTC under this alternative would involve approximately 7,700,000 miles (12,400,000 km) of driving annually (**Table 2–9**). The three SBCTs would account for the majority of these miles. Approximately 60 percent of the total miles would be driven at Fort Lewis. Maneuver training would primarily involve traveling on roads from the assembly area to an objective as described for Alternatives 1, 2, and 3. **Appendix B** describes how the maneuver training mileage estimates were developed. The breakdowns of mileage by units, type of vehicle, and class of road are also shown in **Appendix B**.

As discussed earlier, stationing a medium CAB at Fort Lewis also would increase the hours of flight time and number of takeoffs and landings. A medium CAB typically logs about 29,000 flight hours and 58,000 takeoffs and landings annually for the entire brigade. Approximately 27,550 of the hours would be flown at Fort Lewis (Clayton 2009a) and 1,450 hours would be flown at YTC. Similarly, about 55,100 of the landings and takeoffs would occur at Fort Lewis and 2,900 landings and takeoffs would occur at YTC.

2.4 ALTERNATIVES CONSIDERED BUT DISMISSED

Through the NEPA process, the Army considered several additional alternatives for this EIS. All alternatives that can reasonably meet the Army's Purpose of and Need for the proposed action (as discussed in **Section 1.2**) have been carried forward for analysis in this EIS. This section discusses the alternatives that were considered but not carried forward for full analysis and why they were considered not reasonable.

2.4.1 Train Troops at Locations Other than Fort Lewis and YTC

The ROD for the 2007 GTA FPEIS identified Fort Lewis and YTC as a specific location to receive additional Soldiers under the GTA action. Considering an alternative that involves installation-level training at locations other than Fort Lewis and YTC was determined to be inefficient or impractical. It would essentially constitute re-examining the GTA ROD stationing decision, including whether those facilities are already being used at capacity.

Finally, home station training is extremely important to prepare Soldiers for combat and for morale. Use of training areas and ranges at Fort Lewis and YTC allows Soldiers to learn the basic skills necessary to meet qualification standards to travel to larger training events elsewhere for their pre-deployment training or to deploy directly. Use of these training facilities also reduces the time Soldiers are away from their Families, a particularly important factor in times like the present, when Soldiers are subject to frequent deployments to combat.

2.4.2 Lease/Purchase Land near Fort Lewis

Acquiring land to eliminate the problems of land constraints is an alternative that would meet the demand for construction of facilities, increased training, and avoid the encroachment on McChord AFB and ranges. There are, however, no large areas of undeveloped lands adjacent to Fort Lewis that could be acquired easily. The area surrounding Fort Lewis is populated and developed, and expansion of Fort Lewis would be incompatible with this surrounding development due to safety concerns, community impacts, and encroachment on training values such as low light levels necessary for effective night training. Even if satisfactory land were available, the timeframe involved in purchasing land would not meet the Purpose of and Need for the proposed action as described in **Section 1.2**. The Army does not have the authority, funding, or plans to expand Fort Lewis.

2.4.3 Construction of Facilities for the Combat Aviation Brigade at Different Sites

Due to the aviation mission requirements and new standard Army operational requirements (Unified Facilities Criteria 4-140-01), the medium CAB must be either collocated or within close proximity to the supported units' airfield. This siting requirement is needed to ensure that Soldiers can adequately maintain their equipment and administrative control of the unit. Therefore, other locations for siting facilities to support the medium CAB will not be analyzed. The configuration of the medium CAB in the proposed action is the only reasonable alternative.