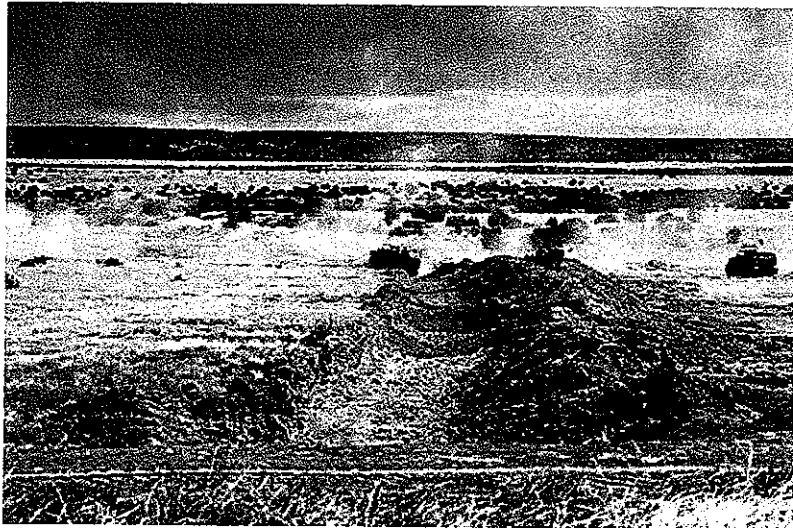


# ARMY RANGES AND TRAINING LAND PROGRAM

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## Analysis of Alternatives Study Piñon Canyon Maneuver Site, Colorado



7<sup>th</sup> Infantry Division and Fort Carson  
Fort Carson, Colorado

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## **Part 1 Executive Summary**

### ***Preface***

The Piñon Canyon Maneuver Site (PCMS) Revision to Section 7 for Fort Carson's Range and Training Land Program (RTLTP) Development Plan, September 2003, identified the multi-phased acquisition of 6.9 million acres of land, currently owned by private land owners and the U.S. Forest Service (Comanche National Grasslands), as an option to the use of this land for large-scale, doctrinally sound Joint and Combined military training for units stationed at or deployed to Fort Carson and PCMS. Likewise, an expanded PCMS offers DoD the ability to simulate the situation in the Middle East, complete from deployment, through operations to re-deployment. The Major Land Acquisition Proposal identified three purposes for this acquisition:

- To provide the necessary land area for the future heavy Brigade/ future forces (Heavy Unit of Action, or UA) and Heavy Armored Cavalry Regiment to train based upon future military doctrine.
- To provide the opportunity to train Joint and Combined military operations on a large scale.
- To provide the land area to train large scale, sustainable continuous operations effectively.

This study reviews the issues and questions surrounding the proposed acquisition, describes alternatives considered, lists the impacts of the feasible alternatives on the natural environment and the mission resource requirements, and makes conclusions and recommendations.

### ***Study Summary***

The study finds that acquisition of the land is the preferred alternative when compared with the "No Action" and mass-transportation alternatives. This study recommends that PCMS begin environmental analysis and real estate planning reports.

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## **Part 2 The Study**

### **Section I Introduction**

#### **1.1 General**

The basic mission of the U.S. Army is to fight and win in combat. As home to the 7<sup>th</sup> Infantry Division Headquarters, 10<sup>th</sup> Special Forces Group (Airborne), 3<sup>rd</sup> Brigade Combat Team (BCT--4<sup>th</sup> Infantry Division), 3<sup>rd</sup> Armored Cavalry Regiment (III Corps) and 43<sup>rd</sup> Area Support Group (III Corps), Fort Carson is an important part of the nation's Total Force structure and Power Projection capability. Fort Carson and Piñon Canyon Maneuver Site (PCMS) must have the land area and facilities to train soldiers, leaders, and units to standard. Training in maneuver and weapons qualification is essential to ensure that soldiers will be ready to accomplish their wartime mission. Additionally, an expanded PCMS will serve as a Joint and Combined Department of Defense training facility for all U.S. forces and allied forces. (See graphic 1)

At the present time, PCMS offers a maneuver area minimally capable of sustaining heavy (mechanized) BCT maneuvers over doctrinal distances. PCMS encompasses 235,300 acres with an infrastructure capable of supporting 8,000 to 10,000 soldiers. PCMS includes eight drops zones, a 5,000 foot improved assault landing strip capable of servicing four C-130 aircraft at a time, and a railhead capacity to receive and unload 165 rail cars on six rail spurs with docks. Given its size, remote location, diverse terrain, and infrastructure, PCMS far surpasses the training experience of any Combat Training Center in CONUS. Currently, PCMS provides mechanized units stationed at Fort Carson land to execute Mission Training Plan (MTP) tasks and conduct training in preparation for rotations to the National Training Center. It also provides the Enhanced Separate Infantry Brigades of the Arkansas, Oklahoma, and Oregon National Guards, which comprise the 7<sup>th</sup> Infantry Division (Integrated), maneuver area to conduct Annual Training. Current Army planning has four heavy Units of Action/ future forces being stationed at Fort Carson and the 3<sup>rd</sup> Armored Cavalry remaining here. These five units, other Department of Defense Joint Forces, as well as all of the National Guard and Reserve units sent here to train, will need to utilize an expanded PCMS for maneuver training.

#### **1.2 Purpose**

The purpose of this study is to expand on the recommendation of the 2003 Revision to Section 7 for Fort Carson's RTLP Development Plan to acquire parcels of land (5.9 million acres of private land, 1 million acres of Forest Service land, approx.) surrounding PCMS in support of heavy Unit of Action (UA)/ future forces training, as well as developing PCMS into a Joint and Combined Department of Defense training facility for all U.S. forces and allied forces. An expanded PCMS offers DoD the ability to simulate the situation in the Middle East, complete from deployment, through operations to re-deployment. The goal of this study is to conduct a thorough and objective analysis of all reasonable

alternatives to the land shortage issue, based upon current and projected doctrinal land requirements.



### 1.3 Assumptions

Several assumptions have been made in preparing the PCMS Analysis of Alternatives Study, these are:

- a. The training focus is the future heavy Unit of Action at PCMS. Semi-annual training exercises will continue to be approximately 4,000 to 5,200 personnel assigned to each of five UAs/ future forces. The OPFOR will be approximately one squadron. Observer/controllers will account for about 300 additional soldiers and 400 vehicles.
- b. PCMS continues to host BCT/ UA/ future force level semi-annual training exercises focused on conducting all critical Army Training and Evaluation Program (ARTEP) missions and preparing for rotations to the National Training Center or for deployment to the combat theatre of operations. Battalion task forces continue to focus on MTP tasks.
- c. PCMS hosts Annual Training by the three Enhanced Separate Infantry Brigades of the Arkansas, Oklahoma, and Oregon National Guard.
- d. Units continue to conduct linear, contiguous operations.
- e. PCMS remains open to any Department of Defense unit that desires to train on it.
- f. Units will use improved organic weapon systems at maximum effective ranges and improved command and control capabilities, which will increase training land requirements.
- g. Units conduct tactical missions over the same terrain.
- h. Units operate over doctrinal distances
- i. Computer simulations increase in use, but do not eliminate the need for soldiers to conduct field training in a realistic combat environment. Computer simulations supplement field training by exercising command and control, but do not replace actual field experience.
- j. Presently, PCMS will not support UA/ future forces level maneuvers.
- k. Current operations in the Middle East will continue for some time.

- i. PCMS will be developed into a Joint and Combined Department of Defense training facility for all U.S. forces and allied forces.
- m. Purchased land will be managed as training land by the Fort Carson G-3.

#### **1.4 Issues and Questions**

PCMS encompasses 235,300 acres, though only 148,500 are useable by mechanized units.

A heavy BCT conducting all critical Army Training and Evaluation Program (ARTEP) missions (movement-to-contact, offense, defense, and retrograde operations) requires 172,970 acres for maneuver, according to TC 25-1, Appendix C. An armored cavalry squadron conducting its critical ARTEP missions (reconnaissance, screening, and deliberate attack) requires 1,334,394 acres for maneuver, according to TC 25-1. Training area requirements for the proposed heavy UA/ future force has not been finalized, but is predicted to be approximately 5.5 million acres.

Current plans address a separate live-fire training area suited for the tactical operations of a Special Forces battalion that requires another 24,710 acres for maneuver. Future training requirements at PCMS incorporate battalion task force isolated-event (attack) live-fire exercises with artillery and close air support, which require an additional 131,700 acres for maneuver. Both these live-fire areas require a 500m buffer zone/impact area around them totaling 16,358 acres to ensure that expended ordinance lands safely within the boundaries of PCMS, bringing the total live-fire land requirement to 172,800 acres. This amount will allow for the safe firing of all current Army weapon systems, minus the Patriot missile defense system.

Current plans also call for the PCMS to be developed into a Joint and Combined Department of Defense training facility for all U.S. forces and allied forces. The amount of land required for such a facility is unknown at this time, but it is certain to be in excess of 5.5 million acres. Likewise, an expanded PCMS offers DoD the ability to simulate the situation in the Middle East, complete from deployment, through operations to re-deployment.

Finally, Army doctrine is changing to encompass a sustainable "continuing operations" concept—where U.S. military forces must be trained to be able to successfully complete an operation, rearm and refuel quickly and undertake another operation efficiently in a minimal amount of time. Very few Army land holdings currently have the amount of training land available to facilitate training at a BCT level. (Information in table a. below was received from the Department of the Army's Eastern Regional (GIS) Support Center, Fort A.P. Hill, Va.)



<b>Installation Name</b>	<b>Acreage</b>
White Sands Missile Range	2,242,161
Fort Bliss	1,137,143
Yuma PG	929,148
Dugway Proving Ground	854,898
Fort Irwin (NTC)	718,339
Fort Carson/ PCMS	373,300
Yakima	359,501
Fort Stewart	265,379
Fort Hood	212,339
Fort Hunter-Ligget	193,815

Table a. Largest CONUS Army Installation by acreage

Please note that the table above lists total acres, not usable acres. As demonstrated above, these installations will have specific land restrictions that will reduce their available training acres accordingly.

### **1.5 Definitions**

All acronyms are written after their first use in the text, thereafter only the acronym is used. Acronyms utilized in this study are also defined in Appendix A.

## ***Section II Revision to Section 7 for Fort Carson's RTLP Development Plan***

### **2.1 Purpose and Scope**

The PCMS Revision to Section 7 for Fort Carson's RTLP Development Plan assisted the installation commander in assessing the availability of training land on PCMS. It validated the requirement for additional training land and provided a basis for the installation to prepare to acquire more land. This study provided the documentation necessary for review and concurrence from Forces Command, the Department of the Army, and others concerning the acquisition of training land to expand PCMS.

### **2.2 Conclusions and Recommendations**

This study concludes that PCMS has a maneuver area shortfall, despite implementing the measures outlined in Section VI of the Revision to Section 7 of Fort Carson's RTLP Development Plan (Analyses of Other Internal Management Actions) to mitigate the impact on training caused by the shortfall. Evolving Army doctrine combined with technological advances in regard to the modernization of equipment exacerbates the existing maneuver area shortfall. The maneuver area at PCMS is insufficient to realistically meet the training needs of the current Force at the brigade and regiment level at this time. Training land requirements will drastically increase as the Army moves toward its future forces or UAs. Because of the fluid nature of current doctrine and the rapid pace of weapon system upgrades, the exact maneuver area requirements for these future forces cannot be accurately determined, but has been estimated to substantially exceed 5.5 million acres.

This study recommended the acquisition of additional training land adjacent to the PCMS in order to alleviate the existing maneuver area shortfall identified on PCMS as well as prepare for the increased land needs of a future Joint and Combined Department of Defense training facility for all U.S. and allied forces PCMS. The expanded PCMS offers DoD the ability to simulate the situation in the Middle East, complete from deployment, through operations to re-deployment. It also offers the ability to do combat deployment training or specialized mission training, with the service members leaving directly from PCMS to their assigned area of operations.

### **Section III Potential Alternatives**

Fort Carson has identified the following viable alternatives to address the primary issue described in Section 1.4 above:

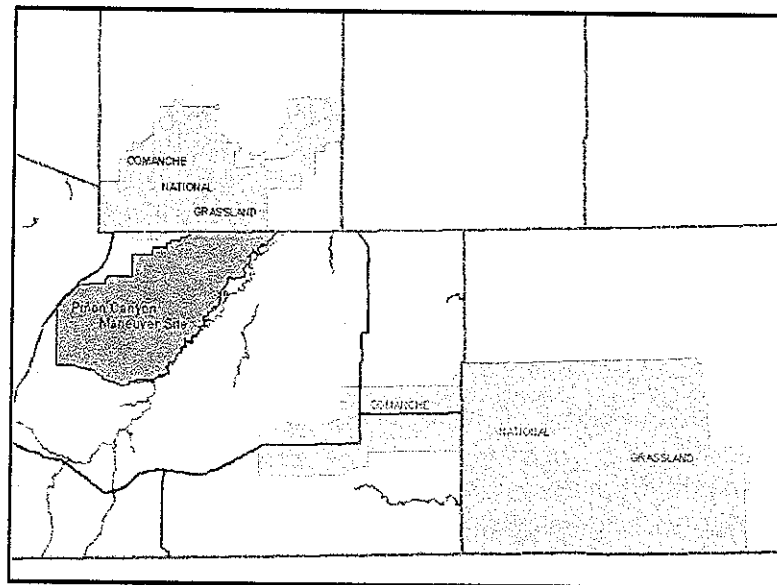
- "No Action"
- Transporting soldiers and/ or their equipment to larger Army land holdings that do permit training to doctrinal standards due to their size.
- Purchase private lands and transfer public lands in the proposed area surrounding PCMS.

Alternatives that were considered but rejected were to purchase/ lease smaller, non-contiguous sites and long-term leasing of required lands for training.

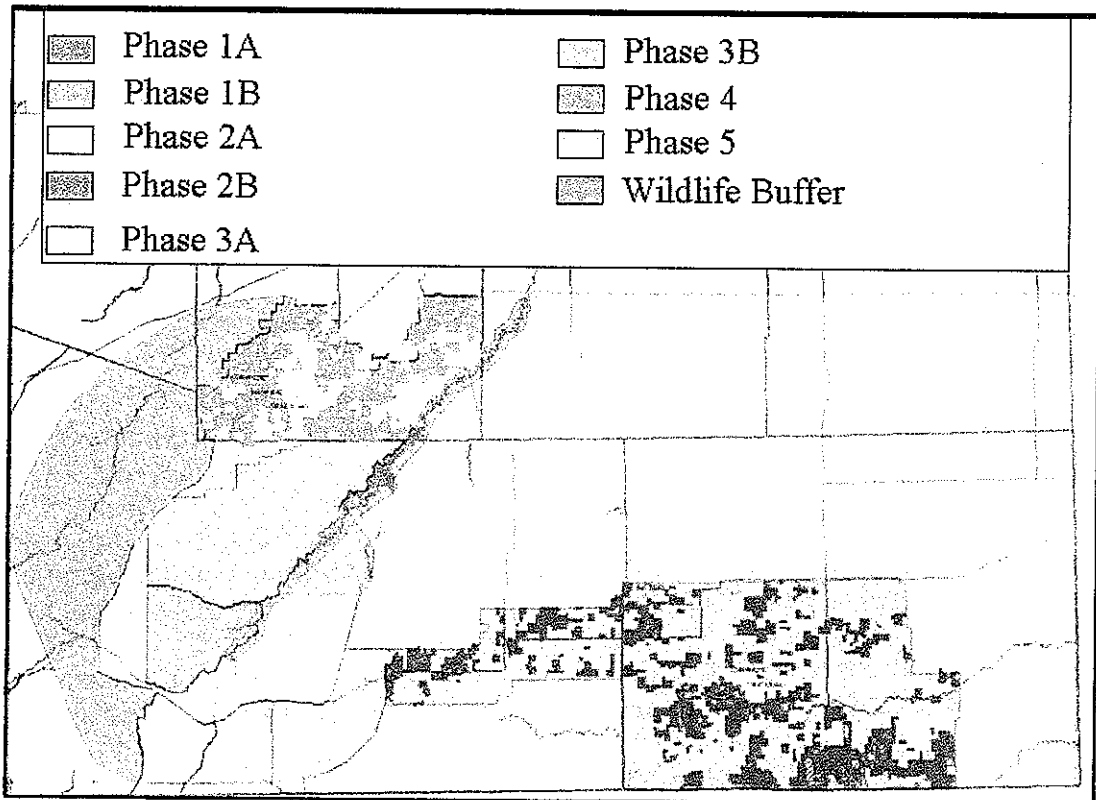
The alternative to purchase smaller, non-contiguous sites was rejected due to increased management concerns. These off-site locations would need to be managed in the same manner as training lands of Fort Carson and PCMS are currently, but would dictate the need for increased manning and equipment to be able to ensure safety and compliance during these training exercises at these off-site locations.

The alternative to enter into long-term leases for required lands enough for doctrinal training to standards was deemed to be too costly to consider further.

The following maps show the a) public lands in the vicinity of PCMS and b) the phases of land acquisition that was proposed.



Map a. Location of Comanche National Grasslands to PCMS.



Map b. Proposed Acquisition phases.

### 3.1 Alternative A – “No Action”

The “No Action” alternative is the decision to take no action other than to continue to undertake those actions necessary to utilize the current training lands as efficiently as possible. This alternative will not alleviate the problem of inadequate training lands for current units to train to doctrinal standard. This problem will be compounded due to the stationing of future forces at Fort Carson under this alternative. Currently, Fort Carson units train up to battalion-level tasks, and then transport to the NTC to train brigade/ regiment and higher tasks (frequency dependent on the Department of the Army planning decisions).

#### 3.1.1 Impacts on the Human and Natural Environment

The decision to choose the “No Action” alternative will change human and natural environment from the present situation due to units attempting to train to doctrinal standards using inadequate amounts of training lands. The current impacts of present operations, as compared to the alternatives below, are:

- Increased erosion and possible water quality violations due to greater training usage.
- Increased dust pollution, due to decreased vegetation cover due to training.

- Increased possibility of wildlife migration off PCMS due to heavy training impacts.

### 3.1.2 Impacts on the Mission and Resource Requirements

The decision to choose the "No Action" alternative will result in:

- Decreased ability to rehabilitate or reclaim training lands due to heavy training.
- Increased maintenance time and costs due to erosion problems and dust.
- Reduction in PCMS utilization as units train at other installations.
- Constrained development options to meet present and future training requirements.
- Continued lack of ability to train Joint and Combined maneuvers due to a continued lack of a Department of Defense training facility for all U.S. forces and allied forces.

## **3.2 Alternative B – Transporting soldiers and their equipment to other training facilities**

The alternative to transport soldiers and their equipment to other training facilities would cause more rail loading and non-training time due to transportation. It would entail units training to standard as much as possible on Fort Carson and PCMS training lands, and then planning to move off-site to train to standard at other Army training lands. (One round-trip cost to the National Training Center for the 3<sup>rd</sup> BCT is approximately \$1.05 million and for the 3<sup>rd</sup> Armored Cavalry Regiment is \$1.2 million.)

### 3.2.1 Impacts on the Human and Natural Environment

The potential impacts on the human and natural environment from this alternative, compared to the present situation, will include:

- A potential lessening of the impacts to PCMS from lessening use.
- An increase to the impacts at the larger Army facilities due to increased training use.
- An increased chance of noxious weed migration due to the transportation to and from other localities.

### 3.2.2 Impacts on the Mission and Resource Requirements

The potential impacts on the mission and resource from this alternative, compared to the present situation, will include:

- Dramatic increase in transportation costs for the units involved.
- Increased possibility of injury to soldiers due to increased rail loading.
- Increased potential for unit equipment loss due to increased potential for terrorist acts.
- Decreased flexibility in unit training plan because of necessity to plan rail assets so far in advance.

- Transportation costs will continue as units continue to need to train to standards.
- Continued lack of ability to train Joint and Combined maneuvers due to a continued lack of a Department of Defense training facility for all U.S. forces and allied forces.

### 3.3 Alternative C – Purchase private lands and transfer public lands in the proposed area surrounding PCMS

The alternative to purchase private lands and transfer public lands in the proposed area surrounding PCMS will appear costly up-front, but the increased training options offered by this alternative far outweigh the initial purchase cost. This alternative is comprised of phases, where specific parcels of both public and private land have been identified and prioritized, as shown in map b. above. Specifics as to the amount and type of land, as well as the estimated displaced population count, are located in the table below:

Phase #	County	Private Land (estimate)	Public Land (estimate)	Total Acres by Phase	Displaced Population (estimate)
1A	Las Animas	79592		79592	150
1B	Las Animas	35492		35492	67
2A	Las Animas	131067		131067	247
2B	Las Animas	29484		310036	55
	Otero	101407	179145		934
3A	Las Animas	54908		54908	109
3B	Las Animas	198304		198304	374
4	Las Animas	420000		501337	792
	Otero	81337			749
5	Baca	1637120	667161	5603592	4517
	Bent	566240			1931
	Las Animas	1578947	163150		2748
	Otero	368174			2641
	Prowers	622800			1949
<b>Totals</b>		<b>5904872</b>	<b>1009456</b>	<b>6914328</b>	<b>17263</b>

#### 3.3.1 Impacts on the Human and Natural Environment

The potential impacts on the human and natural environment from the purchase of private lands and transfer of public lands in the proposed area surrounding PCMS entail:

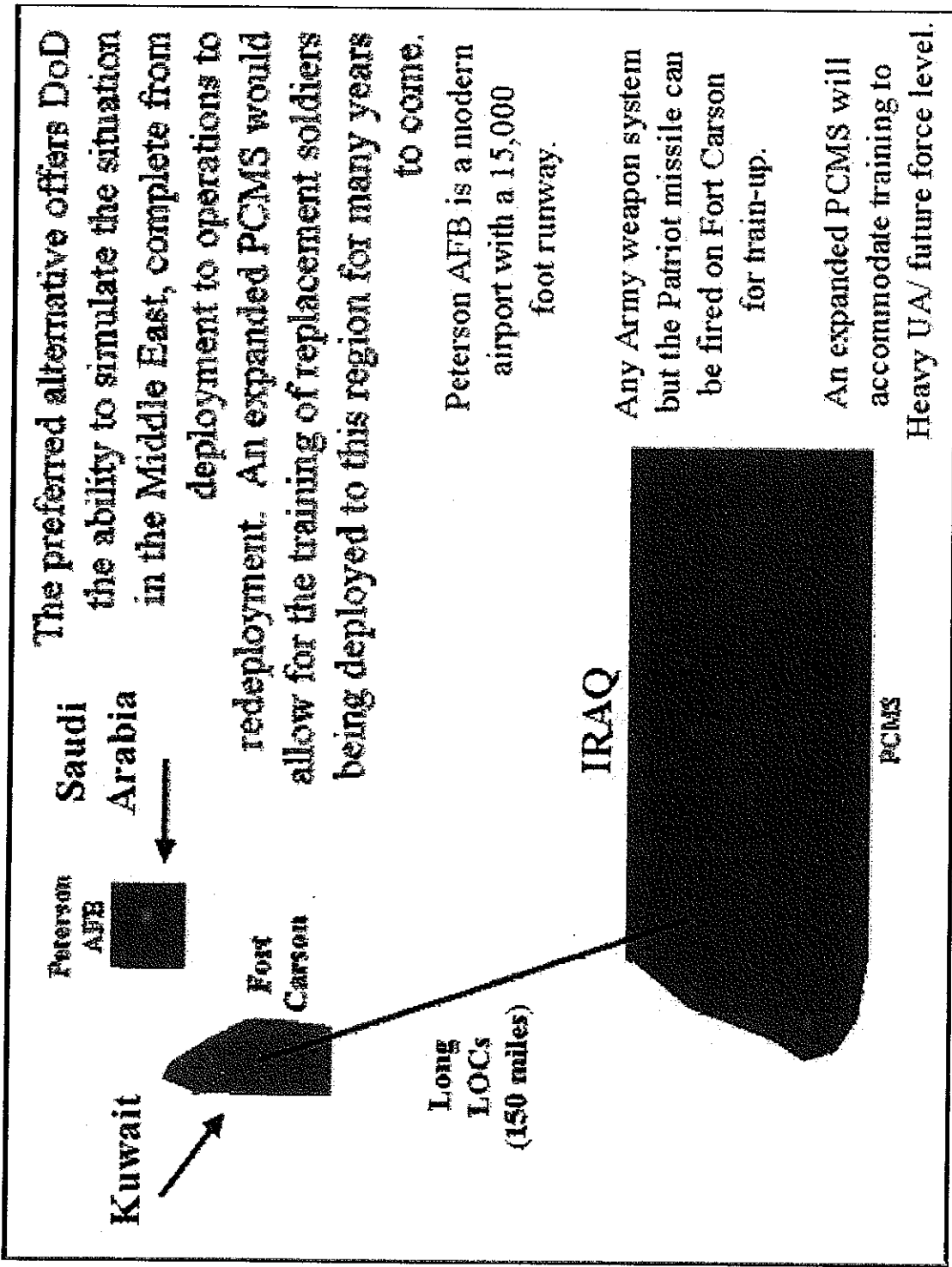
- Potential need for cleanup of possible contaminated sites prior to training use.

- Need for study of the areas (by phases) to determine baselines, cultural and other sensitive areas and necessary rehabilitation projects prior to training use.
- Increased military training impacts in areas that have seen none to date (but will probably be less than those caused by livestock grazing currently).
- Decrease in erosion and dust related problems due to the increased amount of available training lands allowing for more dispersed formations.
- Decreased water quality concerns due to the increased amount of available training lands allowing for more dispersed formations.
- Increased administrative vehicle use impacts due to increased size of training lands.
- Increased infrastructure impacts due to increased size of training lands.
- Population displacement due to land acquisition.
- Impacts due to the construction of underpasses/ overpasses of rails & highways to allow training to occur while not impeding traffic.

### 3.3.2 Impacts on the Mission and Resource Requirements

The potential impacts on the mission and resource from the purchase of private lands and transfer of public lands in the proposed area surrounding PCMS (as opposed to the alternatives above) will include:

- Increased PCMS utilization.
- Increased variability of training to reusing units due to increased available land.
- Ability to train Joint and Combined maneuvers due to generation of a Department of Defense training facility for all U.S. forces and allied forces.
- Decreased transportation costs (especially for National Guard and Reserve and other Department of Defense units coming to PCMS to train—as land will be available to build firing ranges necessary for qualification).
- Potential increased unit OPTEMPO due to greater available area and less administrative transportation.
- Enhanced “night vision” training due to decreased light pollution.
- Potential to use existing structures/ utilities for infrastructure or urban operations training.
- Increased potential for testing future doctrine, weapon systems, UAV/ robotic elements, urban warfare facilities, etc. in a remote, secure environment.
- Ability to train on all current Army weapon systems except the Patriot missile.
- More realistic train-up for soldiers being deployed to the Middle East. (See graphic 2)



Graphic 2. Demonstrating an expanded PCMS's ability to more realistically train troops deploying to the Middle East.



## **Section IV Discussion**

### **5.1 Preferred Alternative**

The preferred alternative is to purchase the land from the private landholders and coordinate the transfer of public lands from the U.S. Forest Service to the U.S. Army. The benefits from the increased ability to train to doctrinal standards and the increased flexibility in available training options outweigh the economic cost and increases in environmental stewardship responsibilities.

Under this alternative Fort Carson G-3 will have management responsibility over the acquired lands, military training may proceed with out interruption all year round, training area and range development options increase, training large-scale Joint and Combined maneuvers on a Department of Defense training facility will be a positive change, DoD will have an enhanced ability to simulate the situation in the Middle East and train deploying soldiers accordingly, and natural wildlife habitation possibilities increase.

### **5.2 Funding Requirements**

With the submission and acceptance of the PCMS Revision to Section 7 for Fort Carson's RTLP Development Plan, AMLAP 18 Questions, and the AAS at HQDA, Fort Carson will need to initiate a Real Estate Planning Report and an Environmental Impact Statement (EIS), which will include an Environmental Baseline Study (EBS). Fort Carson will need to review the scope and requirements of these documents and may require funding support from higher headquarters.

Fort Carson will also require funding from HQDA for the purchase of the land itself with the approval of the environmental documentation, and the approval of the purchase from HQDA and Congress. The total cost for the land has been estimated at \$25 million per 125,000 acres.

The timeline and amount of funding support currently programmed by the Department of the Army stands at \$5 million in FY09, \$25 million in FY10 and \$25 million in FY11.

### **5.3 Environmental Impact Statement Requirements**

Fort Carson will follow AR 200-2 in fulfilling all NEPA requirements associated with the preferred alternative. Initial review indicates the need of an Environmental Impact Statement (EIS). Fort Carson will also seek to undertake an EBS as part of the NEPA documentation to record the conditions before changes in land use and acquisition, and to determine any environmental contamination issues that may or may not exist from years of agricultural activity and other use. All other issues determined to possibly cause impacts will be addressed as well. The findings of the EBS will identify what, if any, remedial or clean-up activities may need to occur prior to transfer.

## ***Section V Conclusions and Recommendations***

The purchase of the private land and the transfer of the U.S. Forest Service land parcels is the preferred alternative in addressing the issue that the units training at PCMS do so on an inadequate amount of available land, and that the required amounts are sure to drastically increase in the near future. These parcels of land address the immediate need for land to meet doctrinal requirements, as well as providing the ability to train large-scale Joint and Combined maneuvers on a Department of Defense training facility for all U.S. forces and allied forces in the future. Likewise, an expanded PCMS offers DoD the ability to simulate the situation in the Middle East, complete from deployment, through operations to re-deployment. Once the land is acquired it should be managed to facilitate long-term realistic military training use. Under this preferred alternative Fort Carson Range Control will have management responsibility over the acquired lands, military training may proceed with out interruption all year round, training area and range development options increase, training large-scale Joint and Combined maneuvers on a Department of Defense training facility will be a positive change and natural wildlife habitation possibilities increase.

It is recommended that Fort Carson continue the land acquisition process by seeking HQDA approval of this AAS document and then proceed to generate the required NEPA documentation and the Real Estate Planning Report. It is also recommended that Fort Carson begin to scope the NEPA and Real Estate Planning Report requirements to determine how these documents will be produced, what costs may be involved, and how those costs will be met in the event HQDA approval is obtained.

## ***Appendix A Abbreviations***

<b>Acronym</b>	<b>Derivation</b>
PCMS	Piñon Canyon Maneuver Site
MTP	Mission Training Plan
BCT	Brigade Combat Team
NEPA	National Environmental Protection Act
HQDA	Headquarters Department of the Army
AR	Army Regulation
EBS	Environmental Baseline Study
RTLTP	Range and Training Land Program
OPFOR	Opposing Forces
ARTEP	Army Training and Evaluation Program
MOU	Military Operations In Urban Terrain
CAMTF	Combined Arms MOU Task Force
OPTEMPO	Operating Tempo
RDP	Range Development Plan
MOA	Memorandum of Agreement
ITAM	Integrated Training Area Management
AAS	Analysis of Alternatives Study
DA	Department of the Army
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
NTC	National Training Center/ Fort Irwin, California
UAV	Unmanned Aerial Vehicle
DoD	Department of Defense
LOC	Lines of Communication

