

Table of Contents

2.1	Introduction	1
2.2	Process for Identifying Alternatives.....	4
2.2.1	Evolution of Alternatives	4
2.2.2	Preferred Alternative	4
2.3	Alternatives.....	7
2.3.1	Evaluation Criteria	7
2.3.2	Alternative I: East/West (Preferred Alternative).....	8
2.3.3	Alternative II: Eastgate/South.....	9
2.3.4	Alternative III: Eastgate	10
2.3.5	Alternative IV: Southwest/Eastgate/UTM 90.....	11
2.3.6	Alternative V: Eastgate/UTM 90.....	13
2.3.7	Alternative VI: No Action.....	14
2.4	Alternatives No Longer Under Consideration	14
2.4.1	Summary of Justification to Remove Alternatives from Further Consideration Modified	
	Avawatz-Silurian Alternative (Preferred Alternative in 1996 DEIS).....	14
2.4.2	Other Considered but Rejected Alternatives.....	16

List of Figures

<i>Figure 2.1-1: Projected Maneuver Intensity.....</i>	<i>3</i>
<i>Figure 2.2-1: Evolution of Proposed Alternatives (1989 – 2000).....</i>	<i>5</i>
<i>Figure 2.2-2: Comparison of Alternatives.....</i>	<i>6</i>
<i>Figure 2.4-1: Alternatives Considered in the 1996 DEIS.....</i>	<i>16</i>

2.1 Introduction

Fort Irwin proposes to increase the current maneuver training land and airspace to meet future training objectives for force-on-force training of light up to heavy brigade- and battalion-sized task forces.

This section provides a detailed discussion of the proposed alternatives under consideration for expanding the maneuver areas for training at Fort Irwin. The intensity of activity that occurs during maneuver training is limited by many factors, including terrain, off-limits areas, and other restrictions. In general, the maneuver training area may be subdivided into high-use, medium-use, low-use, and no-use (off-limits and unusable) areas. The following definitions are provided for each area:

- ❖ **High-Use:** Unlimited cross-country movement by all vehicle types;
- ❖ **Medium-Use:** Movement by all vehicle types restricted to roads, staging or assembly areas. May be located throughout the area;
- ❖ **Low-Use:** All vehicle types on roads, no staging areas, and dismounted (e.g., foot soldiers) traffic off roads; and
- ❖ **No-Use:** Off-limits (no entry to vehicles involved in the rotation except as authorized).

Figure 2.1-1 shows the configuration of these designated use areas throughout existing Fort Irwin and generalizes how use may continue into the study area, which includes the Congressionally withdrawn lands. For a detailed description of operational and battle scenario information, refer to Volume II, Appendix F (*NTC and Fort Irwin Operational Information*). For a detailed description of the NTC and surrounding airspace, refer to Volume II, Appendix G (*Airspace Assessment Report*).

Section 2.2 provides a complete description of the process for identifying alternatives being evaluated under this proposal. Section 2.3 discusses alternatives carried forward for detailed analysis. Section 2.4 discusses the alternatives that were considered but later eliminated from further analysis.

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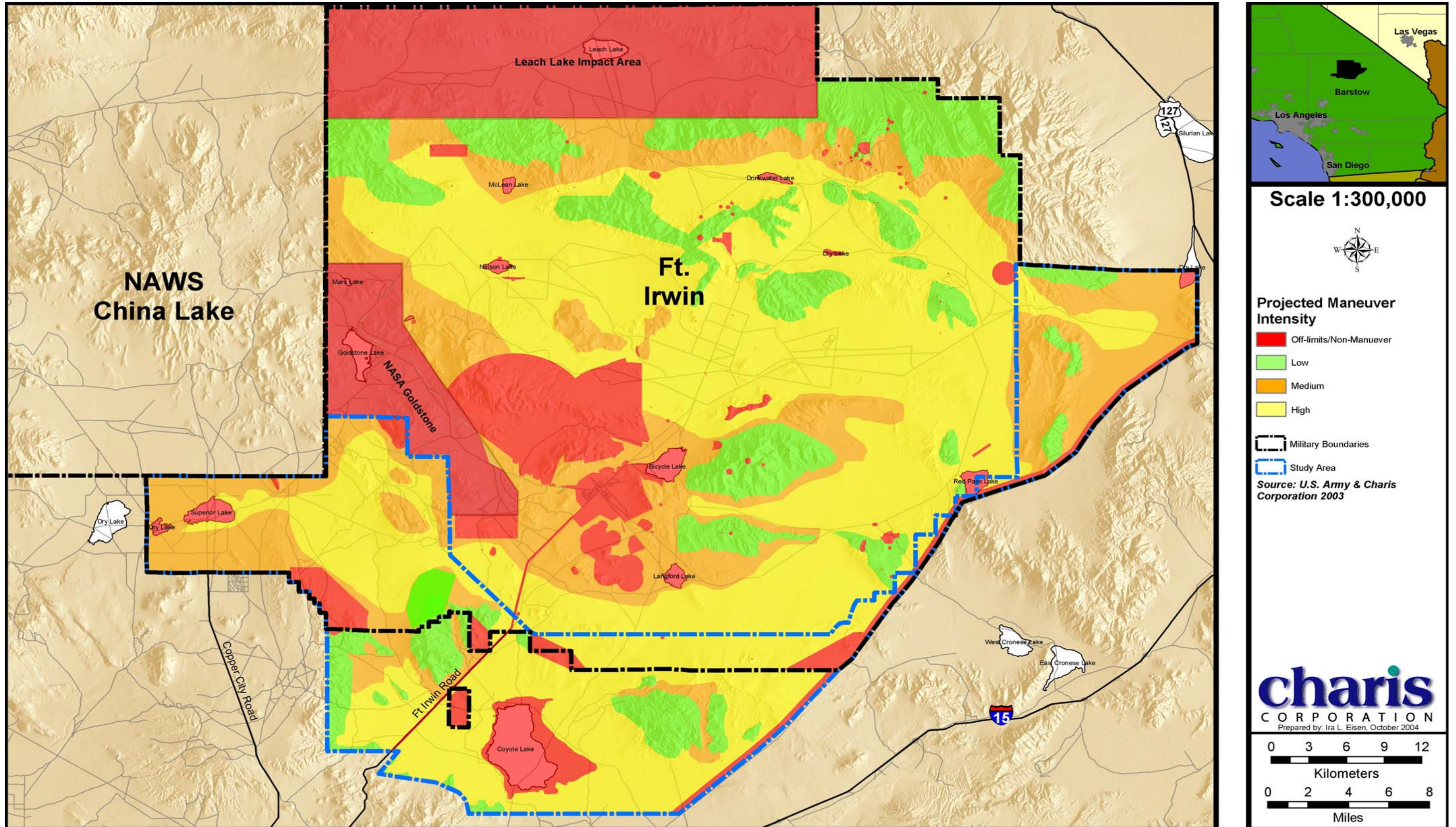


Figure 2.1-1: Projected Maneuver Intensity

The proposed use of additional lands for military training has the potential to create a wide range of environmental issues. The following list indicates specific areas that were analyzed to determine potential impacts:

- Air Quality
- Airspace
- Biological Resources
- Cultural Resources and Paleontology
- Environmental Justice
- Geology
- Hazardous Materials and Solid Waste
- Health and Safety
- Land Use
- Mining
- Noise
- Recreation
- Socioeconomics
- Soils
- Transportation
- Utilities
- Water Resources
- Wilderness Characteristics

2.2 Process for Identifying Alternatives

2.2.1 Evolution of Alternatives

A Draft Environmental Impact Statement for the Army's Land Acquisition Project for the National Training Center, Fort Irwin, California, and Proposed Amendment to the California Desert Conservation Area Plan was distributed for public comment in 1996 (BLM 1996a). The preferred alternative was for expansion to the east of Fort Irwin. This alternative was based on previous BOs and discussions with the USFWS. It did not provide Fort Irwin with the land it critically needed for an expanded maneuver training area but did provide land that could be used for a new staging area and, based on discussions with USFWS, it appeared to represent the only feasible alternative for any expansion. As directed by Congress, prior to publishing the EIS in a final version and a record of decision, the Department of the Army (DA), in coordination with DOI, developed other feasible alternatives to expand Fort Irwin's maneuver training area. This new approach was developed and reviewed between 1997 and 2000. Figure 2.2-1 shows the comparative evolution of proposed alternatives during this period.

2.2.2 Preferred Alternative

The review culminated with DA and DOI reaching consensus on a preferred alternative to be considered in this SFEIS. This SFEIS evaluates five new alternatives and

a No Action alternative. After review of the six alternatives, Alternative I – the East/West Alternative was chosen as the preferred alternative. Figure 2.2-2 illustrates the alternatives evaluated in detail in this document. Figure 2.1-1 shows the entire study area, which is a composite of all land areas being considered.

In 2001, recognizing the importance to our national security of a land expansion for Fort Irwin, Congress withdrew the land proposed in the preferred alternative from BLM for Fort Irwin. Congress made use of the withdrawn land contingent on completion of this SFEIS and Section 7 consultation with the USFWS.

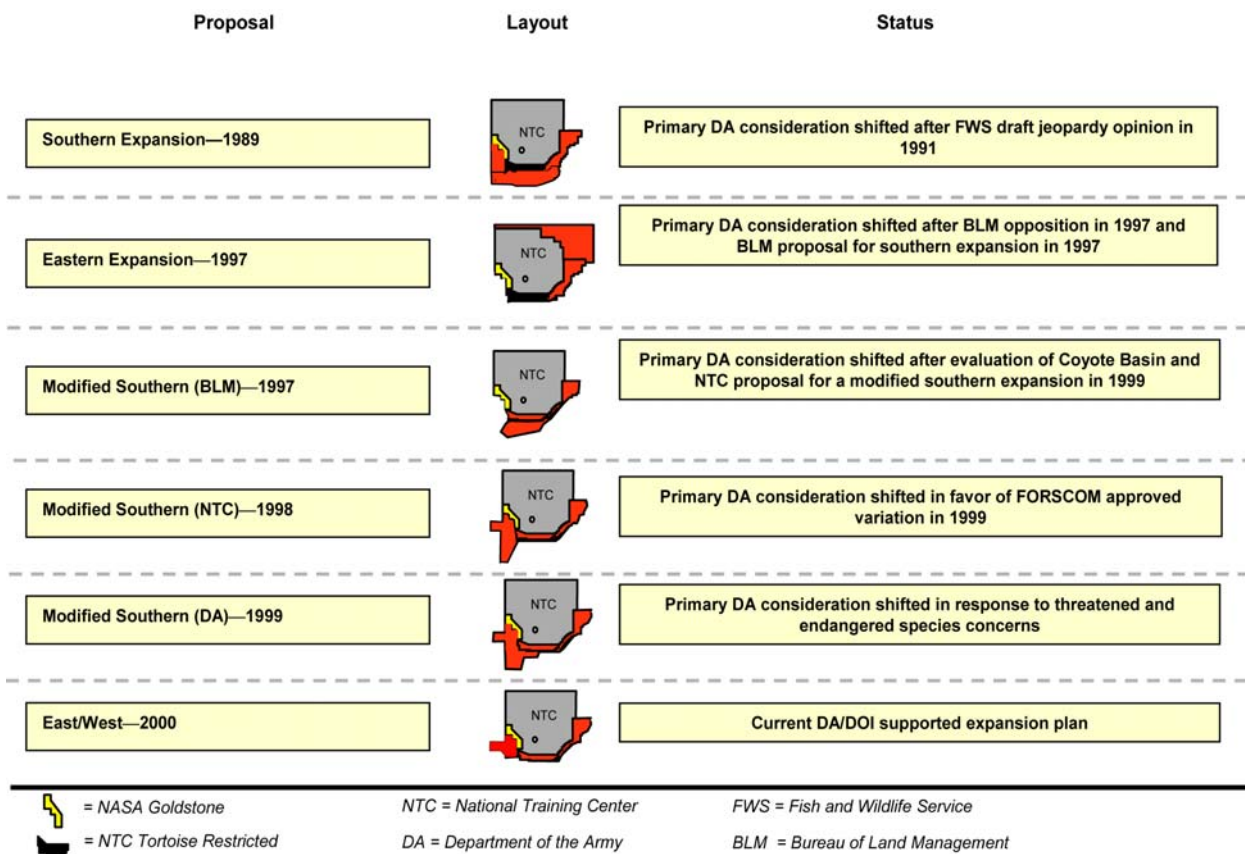


Figure 2.2-1: Evolution of Proposed Alternatives (1989 – 2000)



Figure 2.2-2: Comparison of Alternatives

2.3 Alternatives

The action alternatives discussed in this section were developed to meet Fort Irwin's maneuver training area needs. This process involved Army, BLM, cooperating agencies, and public participation. The alternatives carried forward for detailed analysis in this SFEIS are configured primarily in response to training deficiencies identified in the LURS. (Refer to Volume II, Appendix A for details.) In order to comply with NEPA, alternatives outside of the Congressionally withdrawn areas are evaluated. The action alternatives described in this section have been developed based on a range of considerations, including, but not limited to: redesigning or reconfiguring training options at the NTC to avoid and/or minimize new land acquisitions, the ongoing Army Transformation, the West Mojave Plan and the CDCA Plan, terrain slope and suitability, minimizing the impact on natural and cultural resources, and modifying existing special use airspace. Also described in this section is the No Action Alternative.

2.3.1 Evaluation Criteria

In developing the five action alternatives, the following selection criteria were used in determining which alternatives best met the Army's need for additional maneuver training areas:

- ❖ Adheres to Army Training Doctrine;
- ❖ Modifies the amount of useable maneuver training area, considering constraints such as unusable land (e.g., steep slopes, proximity to the Cantonment area and utility corridors);
- ❖ Supports multiple training scenarios with terrain variation and provides for Joint Operations Doctrine;
- ❖ Minimizes the amount of use of a single piece of land;
- ❖ Allows units to train using doctrinal distances; and
- ❖ Allows utilization of airspace.

2.3.2 Alternative I: East/West (Preferred Alternative)

Alternative I resulted from an evolution of previous alternatives discussed between the Army and DOI between 1989 and 2000. (See Figure 2.2-1 for a graphic depiction of this evolution.) This alternative was proposed to Congress by DA and DOI in 2000 and represents a compromise between previously proposed alternatives. The land area proposed in Alternative I includes the land withdrawn by Congress. The total maneuver training area proposed under this alternative is approximately 150,510 acres, which includes approximately 23,220 acres of Fort Irwin land in the UTM 90 Area. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains and the South Avawatz Mountains and runs parallel southwest along the utility lines located in BLM Utility Corridor D. The southern and western areas of this alternative include the UTM 90 Area, Superior Dry Lake, and a portion of the Paradise Mountains. This alternative requires approximately 310 acres of State lands and approximately 9,930 acres of private lands to be set aside for military maneuver training.

The approximate 48,760-acre eastern parcel in the Avawatz area would provide maneuver training land and logistics support areas to extend the central training corridor of Fort Irwin. Reopening the lands in the southern corridor (approximately 23,220 acres between the UTM 90 gridline and the southern Fort Irwin boundary) would widen and extend the southern training corridor for maneuver training. The western parcel (approximately 70,050 acres) in the upper Superior Valley provides an extension to the southern corridor for maneuver and logistics sites.

Areas with slopes greater than 20 percent are generally considered too steep for maneuver training; however, they may be used for observation posts and training for dismounted infantry and for other training purposes. Volume II, Appendix F (*NTC and Fort Irwin Operational Information*) provides examples of training scenarios that could be used for maneuver training.

In order to facilitate the use of Superior Valley, the Army proposes to improve a current route through NASA Goldstone. NASA Goldstone occupies approximately 33,030 acres northwest of the Cantonment Area of Fort Irwin on land permitted for that use by the Army. The proposed NASA Goldstone Route will be used to transport troops and equipment between the Cantonment Area of Fort Irwin and the Superior Valley parcel of the project area. This improved road will not only allow vehicles to travel with ease

over the surface and without the hazard of washouts and impassible conditions, but also will minimize dust generation. The proposed improved route is already a graded dirt road approximately 30 ft wide. The final design of the route improvements will depend on engineering, cost, and environmental considerations.

Current land uses within Alternative I include the following:

- ❖ One operational mine in the Avawatz Mountains (the Silver Lake Mine) and numerous inactive and/or abandoned mining claims scattered within the boundaries of this area;
- ❖ A major utility planning corridor, BLM-designated Corridor D, running along the southeastern edge of this alternative (There are no proposed new maneuver training areas east of the corridor. The corridor is intended to form the southeastern boundary of the study area. A fence and buffer zone will separate it from the maneuver training area.);
- ❖ Dispersed recreation (e.g., rock hounding, sightseeing, on-trail off-highway vehicle (OHV) use), mostly in the Superior Valley portion of the study area;
- ❖ Training on both sides of Fort Irwin Road within the boundaries of Fort Irwin.;
- ❖ Private lands scattered throughout the Superior and Avawatz portions of this alternative, (They mostly coincide with the mining claims that occur in the area. One actual dwelling occurs within this alternative. Private lands encompass approximately 12,680 acres of the land proposed for additional maneuver training area.); and
- ❖ State lands, comprising approximately 2,250 acres of the study area.

2.3.3 Alternative II: Eastgate/South

Alternative II encompasses approximately 156,340 acres, which includes approximately 23,220 acres of Fort Irwin land in the UTM 90 Area and the Two Square Mile parcel of Army land south of Fort Irwin. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains and the South Avawatz Mountains and runs parallel southwest along the utility lines located in BLM Utility Corridor D (same as Alternative I), and continues along the southern border of existing

Fort Irwin. The area to the south includes the Alvord Mountains and Coyote Dry Lake. Fort Irwin Road serves as the western boundary of the southern portion of this alternative.

The approximate 48,760-acre eastern parcel in the Avawatz area would provide maneuver training land and logistics support areas to extend the central training corridor of Fort Irwin. Reopening the lands in the southern corridor (approximately 23,220 acres between the UTM 90 gridline and the southern Fort Irwin boundary) would widen and extend the southern training corridor for maneuver training. Volume II, Appendix F (*NTC and Fort Irwin Operational Information*) provides examples of training scenarios that could be used for maneuver training.

Current land uses within the Alternative II acquisition area include the following:

- ❖ One operational mine in the Avawatz Mountains (the Silver Lake Mine) and numerous inactive and/or abandoned mining claims scattered within the boundaries of this area;
- ❖ A major utility planning corridor, BLM-designated Corridor D, running along the southeastern edge of this alternative (There are no proposed lands east of the corridor. The corridor is intended to form the southeastern boundary of the study area. A fence and buffer zone will separate it from the maneuver training area.);
- ❖ Dispersed recreation (e.g., rock hounding, sightseeing, and on-trail OHV use) occurring in various areas throughout this alternative;
- ❖ Private lands scattered throughout the Alvord area in the southern portion of this alternative and the Avawatz area to the east. Some of the private lands coincide with the mining claims that occur in the area. Private lands encompass approximately 34,980 acres; and
- ❖ State lands comprising approximately 1,380 acres.

2.3.4 Alternative III: Eastgate

Alternative III comprises approximately 48,760 acres. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains and the South

Avawatz Mountains and runs parallel southwest along the utility lines located in BLM Utility Corridor D (same as Alternative I). This alternative represents the smallest land area proposed under any of the five action alternatives.

The approximate 48,760-acre eastern parcel in the Avawatz area would provide maneuver training land and logistics support areas to extend the central training corridor of Fort Irwin. Volume II, Appendix F (*NTC and Fort Irwin Operational Information*) provides examples of training scenarios that could be used for maneuver training.

Current land uses within the Alternative III acquisition area include the following:

- ❖ One operational mine in the Avawatz Mountains (the Silver Lake Mine) and numerous inactive and/or abandoned mining claims scattered within the boundaries of this area;
- ❖ A major utility planning corridor, BLM-designated Corridor D, running along the southeastern edge of this alternative (There are no proposed lands east of the corridor. The corridor is intended to parallel the southeastern boundary of the study area. A fence and buffer zone will separate it from the maneuver training area.);
- ❖ Dispersed recreation (e.g., rock hounding, sightseeing, and on-trail OHV use) occurring in various areas throughout this alternative;
- ❖ Private lands encompassing approximately 420 acres; and
- ❖ State lands comprising approximately 1,300 acres.

2.3.5 Alternative IV: Southwest/Eastgate/UTM 90

Alternative IV comprises approximately 185,300 acres of land, which include the reintroduction of approximately 23,220 acres of Fort Irwin land in the UTM 90 Area and the Two Square Mile parcel of Army land south of Fort Irwin. The land areas to the east and the UTM 90 Area are identical to those proposed in Alternative I. The land area to the southwest and west of current Fort Irwin boundaries includes Superior Dry Lake and Paradise Mountain.

The approximate 48,760-acre eastern parcel in the Avawatz area would provide maneuver training land and logistics support areas to extend the central training corridor of Fort Irwin. Reopening the lands in the southern corridor (approximately 23,220 acres between the UTM 90 gridline and the southern Fort Irwin boundary) would widen and extend the southern training corridor for maneuver training. Volume II, Appendix F (*NTC and Fort Irwin Operational Information*) provides examples of training scenarios that could be used for maneuver training.

In order to facilitate the use of Superior Valley, the Army proposes to improve a current route through NASA Goldstone. NASA Goldstone occupies approximately 33,030 acres northwest of the Cantonment Area of Fort Irwin on land permitted for that use by the Army. The proposed NASA Goldstone Route will be used to transport troops and equipment between the Cantonment Area of Fort Irwin and the Superior Valley parcel of the project area. This improved road will not only allow vehicles to travel with ease over the surface and without the hazard of washouts and impassible conditions, but also will minimize dust generation. The proposed improved route is already a graded dirt road approximately 30 ft wide. The final design of the route improvements will depend on engineering, cost, and environmental considerations.

Current land uses within the Alternative IV acquisition area include the following:

- ❖ One operational mine in the Avawatz Mountains (the Silver Lake Mine) and numerous inactive and/or abandoned mining claims scattered within the boundaries of this area;
- ❖ One operational mixing plant (the Daily Transit Mix) south of the current installation boundary;
- ❖ A major utility planning corridor, BLM-designated Corridor D, running along the southeastern edge of this alternative (There are no proposed lands east of the corridor. The corridor is intended to parallel the southeastern boundary of the study area. A fence and buffer zone will separate it from the maneuver trainings area.);
- ❖ Dispersed recreation (e.g., rock hounding, sightseeing, and on-trail OHV use) occurring in various areas throughout this alternative;
- ❖ Fort Irwin Road transecting the southwestern portion of this alternative;

- ❖ Private lands scattered throughout the Alvord and Paradise Mountain areas in the southern portion of this alternative and the Avawatz area to the east within this alternative, including 18 residential parcels (Some of the private lands coincide with the mining claims that occur in the area. Private lands encompass approximately 30,670 acres); and
- ❖ State lands comprising approximately 2,250 acres.

2.3.6 Alternative V: Eastgate/UTM 90

Alternative V comprises approximately 72,060 acres of land, which include approximately 23,220 acres of Fort Irwin land in the UTM 90 Area. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains, the South Avawatz Mountains and runs parallel southwest along the utility lines located in BLM Utility Corridor D and the UTM 90 Area.

The approximate 48,760-acre eastern parcel in the Avawatz area would provide maneuver training land and logistics support areas to extend the central training corridor of Fort Irwin. Reopening the lands in the southern corridor (approximately 23,220 acres between the UTM 90 gridline and the southern Fort Irwin boundary) would widen and extend the southern training corridor for maneuver training. Volume II, Appendix F (*NTC and Fort Irwin Operational Information*) provides examples of training scenarios that could be used for maneuver training.

Current land uses within the Alternative V acquisition area include the following:

- ❖ One operational mine in the Avawatz Mountains (the Silver Lake Mine) and numerous inactive and/or abandoned mining claims scattered within the boundaries of this area;
- ❖ A major utility planning corridor, BLM-designated Corridor D, running along the southeastern edge of this alternative (There are no proposed lands east of the utilities within the corridor.);
- ❖ Dispersed recreation (e.g., rock hounding, sightseeing, and on-trail OHV) occurring in various areas throughout this alternative;
- ❖ Private lands encompassing approximately 420 acres; and

- ❖ State lands comprising approximately 1,300 acres.

2.3.7 Alternative VI: No Action

Alternative VI adds no additional maneuver training lands to Fort Irwin. The current land area associated with Fort Irwin (Fort Irwin proper and the withdrawn lands) is approximately 751,980 acres. Of those, approximately 118,000 acres are the withdrawn lands and 23,220 acres of Fort Irwin land in the UTM 90 Area that would not be used for training if the No Action Alternative is selected.

2.4 Alternatives No Longer Under Consideration

Alternatives considered in the 1996 DEIS are illustrated in Figure 2.4-1. These alternatives have not been carried forward for further review in this document, as they are no longer considered to be acceptable alternatives.

2.4.1 Summary of Justification to Remove Alternatives from Further Consideration

Modified Avawatz-Silurian Alternative (Preferred Alternative in 1996 DEIS): This alternative encompassed approximately 270,030 acres to the north and east of Fort Irwin in the Denning Springs area, between the northern boundary of Fort Irwin to the southern boundary of Death Valley National Park. This alternative included the Avawatz and South Avawatz WSA. It also impacted Dumont Dunes, a popular recreation area. There are T&E species known to exist in this area. This alternative did not expand the battle corridor, but did allow the locating of a staging area in the Avawatz Mountains WSA and in the Silurian Valley. The benefit to the NTC's training mission, when weighed against the impacts to all resources, made this alternative unreasonable.

Modified Coyote Basin Alternative: This alternative encompassed approximately 259,470 acres to the east, south, and west of Fort Irwin and included the southern part of the Avawatz and the South Avawatz WSAs. This alternative incorporated a large amount of desert tortoise critical habitat. In addition, Lane Mountain milk-vetch has since been identified as an endangered plant in the abbreviated western portion just south of NASA Goldstone. This alternative also required crossing two power corridors

for training activities. The above considerations of this alternative made it infeasible for further consideration.

Superior Valley Alternative: This alternative encompassed approximately 284,890 acres to the east, south, and west of Fort Irwin, and included the southern part of the Avawatz and the South Avawatz WSAs. This alternative incorporated a large amount of desert tortoise critical habitat. In addition, Lane Mountain milk-vetch has since been identified as an endangered plant in the abbreviated western portion just south of NASA Goldstone. This alternative also required crossing two power corridors for training activities. These considerations, and the receipt of a Draft Jeopardy Opinion from the USFWS, made this alternative infeasible for further consideration.

Avawatz Alternative: This alternative encompassed approximately 185,500 acres to the south and east of Fort Irwin and included the southern part of the Avawatz and the South Avawatz WSAs. This alternative incorporated a large amount of desert tortoise critical habitat. In addition, Lane Mountain milk-vetch has since been identified as an endangered plant in the abbreviated western portion just south of NASA Goldstone. This alternative also required crossing two power corridors for training activities. These considerations made this alternative unreasonable for further consideration.

Alvord Alternative: This alternative encompassed approximately 210,800 acres to the east, south, and west of Fort Irwin. This alternative was very similar to the Modified Coyote Basin Alternative, except that it was smaller by approximately 50,000 acres. This alternative incorporated a large amount of desert tortoise critical habitat. In addition, Lane Mountain milk-vetch has since been identified as an endangered plant in the abbreviated western portion just south of NASA Goldstone. This alternative also required crossing two power corridors for training activities. This alternative was unreasonable for the reasons stated above.

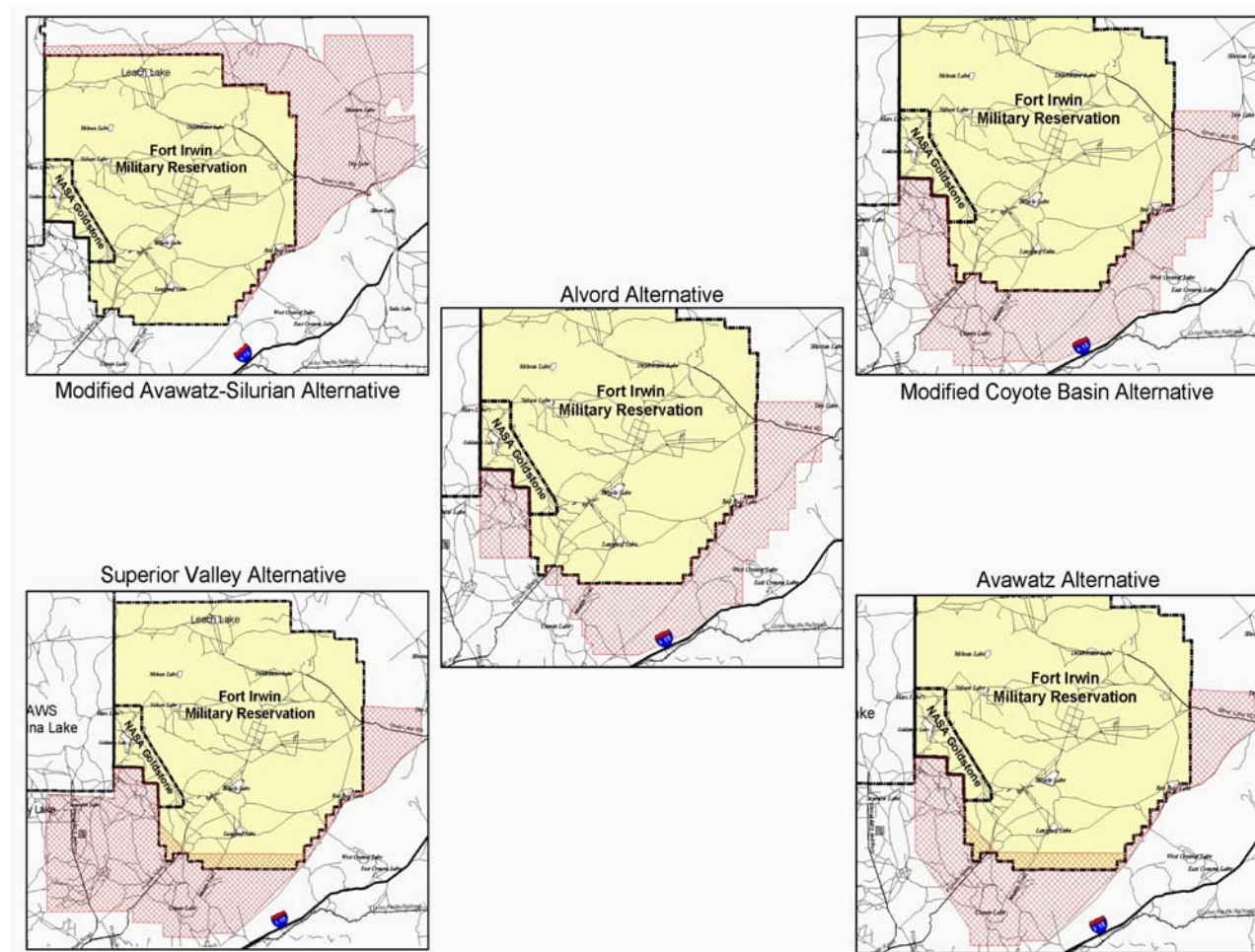


Figure 2.4-1: Alternatives Considered in the 1996 DEIS

2.4.2 Other Considered but Rejected Alternatives

2.4.2.1 Use of Leach Lake Tactical Range

The Leach Lake Tactical Range comprises approximately 92,000 acres within the current Fort Irwin boundaries. It has been used since 1981 for live-fire exercises by the Army and as a live ordnance bombing range for the USAF. Fort Irwin considered the use of Leach Lake to help meet its additional training land needs; however, the following factors made the use of the area infeasible:

- ❖ Training Value: Leach Lake is an essential component of the USAF's Air Warrior Program. The use of Leach Lake provides Air Warrior with realistic live-fire training for their aircrews. During a scenario, the NTC incorporates all

the various facets required to reproduce actual battle conditions realistically. Such realism includes incorporation of Air Warrior sorties in support of training units and the opposing forces to simulate air cover and attack. When Air Warrior completes their live-fire mission, they then support the Army's training by flying simulated attack missions against the rotational training forces. Air Warrior allows both Army and USAF units to train together in the same way they would fight together in actual combat.

- ❖ **Training Compatibility:** If Leach Lake were not available for Air Warrior pilots to drop live ordnance, they would be forced to use bombing ranges at the Nevada Test and Training Range (NTR) north of Nellis AFB. Using valuable training time to access the NTR would greatly reduce the time available to fly to Fort Irwin for Air Warrior combat support missions. Leach Lake is also used as an emergency jettison range for live ordnance to ensure aircrew safety during Air Warrior exercises.
- ❖ **Geography:** Leach Lake is separated from the central training corridor by a mountain range, making it impractical to use as an extension to that corridor. It is also too narrow to be used as a brigade maneuver corridor.

2.4.2.2 Co-Use of Other Military Facilities—Naval Air Weapons Station China Lake

Beginning in March 1989, Fort Irwin began coordination with NAWS on the potential co-use of portions of China Lake. These discussions continued through December, 1992. At the Army's request, the Navy commissioned a *Mission Compatibility Study of the National Training Center's Proposal for NTC Armored Maneuver Training at NAWCWPNS* (NAWS 1993) to determine the compatibility of the NTC and China Lake NAWS missions. The study included: rotational schedules, radio frequency interference from jamming, and airspace interference between Army rotations and on-going NAWS missions. The 1993 study concluded that shared use was not feasible. This study was again revisited in formal discussions with NAWS in May – July 1997, May – July 1999, January 2002, and February 2003. In each of these discussions, the same conclusion was reached; the missions could not be made compatible.

2.4.2.3 Moving the NTC

Moving the NTC to another Army/DoD installation was also reviewed, as noted in the 1996 DEIS. No suitable existing installation could support the land, infrastructure, and training requirements necessary to execute this option without severe reduction in that installation's current mission; this decision has not changed.