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Executive Summary

ES.1 Introduction

This document is prepared as a supplement to the Draft Environmental Impact Statement (DEIS) for the Army's Land Acquisition Project for the National Training Center, Fort Irwin, California published in 1996 by the Bureau of Land Management (BLM). As such, this is a Supplemental Final Environmental Impact Statement (SFEIS). The analysis of alternatives contained within the 1996 DEIS are incorporated herein by reference as alternatives no longer under consideration. All other information contained within the 1996 DEIS is replaced with information presented within this supplement. As such, all information in the 1996 DEIS, with the exception of the analysis of alternatives in the 1996 DEIS, has been superseded by more current information in the SFEIS.

This SFEIS addresses the potential environmental impacts associated with the proposed addition of maneuver training land at Fort Irwin, California within six alternatives. This document may also serve in the future, by way of tiering, as Part 6 of the National Environmental Policy Act (NEPA) documentation required by Federal Aviation Administration (FAA) Order 7400.2E (Procedures for Handling Airspace Matters) in processing Fort Irwin's request for changes to Special Use Airspace, if an alternative is chosen that requires airspace to be altered.

ES.1.1 Lead and Cooperating Agencies

A substitution has been made in the lead agency since the 1996 DEIS. The Army, as the project proponent, has assumed the lead agency role from the BLM. The BLM has accepted a cooperating agency role, as they administer a vast majority of the lands within the study area. National Aeronautics and Space Administration (NASA) has also accepted a cooperating agency role. Because some of the alternatives involve possible changes to airspace, the FAA is a cooperating agency. China Lake Naval Air Weapons Station (NAWS China Lake), Edwards and Nellis Air Force Base have participated in reviews and meetings, but decided not to participate in a formal cooperating agency capacity.

ES.1.2 Public Involvement Process

The first public involvement in this project occurred in 1988. Several public scoping meetings were held at that time. A summary of the prior scoping efforts is set out in the 1996 DEIS and is discussed in detail in the Scoping Report, which can be found on the Internet at:

<http://www.fortirwinlandexpansion.com/scopingreport.htm>

When the DEIS was published in 1996, seven public hearings were held and comments were received. The comments from the public hearings on the DEIS have been considered in the formulation of this SFEIS, where applicable. In addition to the scoping

meetings for the 1996 DEIS, five scoping sessions were held for the SDEIS, beginning in November 2001 and ending in January 2002. Comments from sessions have also been considered in the formulation of this SFEIS.

A 45-day public review of the Supplemental Draft Environmental Impact Statement, with a 15-day extension, began with the publication of the Notice of Availability. The public comment period included hearings at various locations throughout southern California. Written comments and other forms of input from public and private entities were addressed in the SFEIS.

ES.1.3 Study Area

The Study Area for the SFEIS consists of all the acreage in the various alternatives; the total acreage of the study area is less than the total acreage of the 1996 DEIS study area. The study area in the 1996 DEIS comprised approximately 950,000 acres; the current study area is approximately 249,520 acres. The current study area falls predominantly to the south, east and west of Fort Irwin. Areas considered in the 1996 DEIS but no longer considered in the current SFEIS include the area directly north of Fort Irwin, the lands to the east of Highway 127, and any land to the east of the utility lines within BLM Utility Planning Corridor D along the eastern edge of Fort Irwin. The study area includes two parcels of land on Fort Irwin, collectively known as the Universal Transverse Mercator (UTM) 90 Area, on Fort Irwin that had not been considered as part of the study area in the 1996 DEIS. These areas lie, in general, south of the UTM 90 gridline, but also include an additional parcel of land to the northwest of that gridline. These lands were formerly used for heavy mechanized training but were set off-limits by the Army in 1991 due to the presence of the desert tortoise, a species that had been emergency-listed as endangered by the United States Fish and Wildlife Service (USFWS). These areas were subsequently designated as desert tortoise critical habitat.

ES.1.4 Background

The proposed project has been the subject of several Congressional actions and inter-agency coordination efforts. Public Law 106-554, H.R. 5666, Section 323, (the Omnibus Consolidated Appropriations Act of 2001) required the production of several documents in compliance with Congressional requirements. Pursuant to this law, several documents were generated and submitted to Congress. A Key Elements Report was submitted to Congress on 4 January 2001, identifying the history of efforts to expand Fort Irwin, the issues in regard to threatened and endangered species, and the need for expansion, as well as elements of the project. The USFWS provided a Preliminary Review of the effects of the proposed expansion on threatened and endangered species on 28 March 2001. A Proposed Expansion Plan was submitted to Congress on 13 July 2001. This plan combined the findings and recommendations of the prior two reports and set forth a plan to complete the expansion process. These documents can be found on the Internet at:

<http://www.fortirwinlandexpansion.com/Documents.htm>

In 2001, the *Omnibus Consolidated Appropriations Act of 2001* (Public Law 106-554) was enacted, transferring approximately 118,000 acres of Federal land from BLM administration to that of the Army. The land withdrawn by this law is the footprint of the Army's preferred alternative, Alternative I. The use of the withdrawn land is contingent upon compliance with NEPA and the Endangered Species Act, as required by the legislation. This law also requires that reviews of the Army's proposed project be coordinated with reviews of the West Mojave Coordinated Plan.

ES.1.5 Purpose and Need

The purpose of the proposed action is to provide an expanded battle-space environment for training Army brigade-sized units according to the Army's training and combat operations doctrines. The proposed action satisfies the need to train soldiers in the most realistic environment possible. The National Training Center (NTC) at Fort Irwin is a Combat Training Center for the Army, which trains 10 armored brigades each year in exercises called rotations. Rotations last for 28-35 days and involve approximately 9,000 soldiers and Department of the Army civilians. The training at Fort Irwin is designed to provide soldiers the experience needed to excel at their missions. Today's Army can drive faster, operate in wider ranges, and shoot farther. The advancements in military technology and the need to address those advancements are driving factors for this expansion. Operation Desert Storm, Operation Iraqi Freedom, and the current war on terrorism illustrate the necessity of such training.

In order to identify the amount of additional land needed to provide the best training for soldiers, a Land Use Requirement Study (LURS) was conducted in 2002 (Fort Irwin 2002). This study was based on new information regarding the Army's changing mission and technology and identified an average land use need based on those requirements. The LURS found, based on the largest acreage requirement for a brigade maneuver event, that approximately 624,470 net maneuver acres were required to meet Army training requirements. The current maneuver training area on Fort Irwin is approximately 350,300 acres; this leaves a shortfall of approximately 274,170 acres.

ES.2 Description of Proposed Action and Alternatives

The proposed action is to acquire additional lands to expand the maneuver training area on Fort Irwin. There are six alternatives considered in this SFEIS, including the No Action Alternative. Maps of the different alternatives are illustrated in Figure 2.2-2.

ES.2.1 Alternative I - East/West Alternative (Preferred Alternative)

Alternative I, the East/West Alternative, consists of approximately 150,510 acres. This includes the reintroduction of UTM 90 Area to mechanized training. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains, the South Avawatz Mountains and runs parallel northeast to southwest along the utilities in the BLM Utility Planning Corridor D. The southern portion consists of the UTM 90 Area. The western area includes a portion of the Paradise Mountains and two of the Superior dry

lakes. As part of Alternative I, a 3-mile transit route through the NASA Goldstone Complex would be improved for use by Fort Irwin for access to the Superior Valley.

ES.2.2 Alternative II - Eastgate/South Alternative

Alternative II, the Eastgate/South Alternative, consists of approximately 156,330 acres, including the reintroduction of the UTM 90 Area to mechanized training. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains, the South Avawatz Mountains, and runs parallel northeast to southwest along the utilities in the BLM Utility Planning Corridor D, and is bounded on the south by the BLM Planning Corridor Q. The southern portion of this alternative encompasses the Alvord Mountains and Coyote Dry Lake. The western boundary of this alternative is Fort Irwin Road.

ES.2.3 Alternative III - Eastgate Alternative

Alternative III, the Eastgate Alternative, consists of approximately 48,760 acres. This alternative consists of the southern portion of the Avawatz Mountains and runs parallel northeast to southwest along the utilities in the BLM Utility Planning Corridor D. It does not include the UTM 90 Area.

ES.2.4 Alternative IV - Southwest/Eastgate/ UTM 90 Alternative

Alternative IV, the Southwest/Eastgate/UTM 90 Alternative, consists of approximately 185,301 acres, including 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 northeast to southwest along the utilities in the BLM Utility Planning Corridor D. The southwestern portion includes the northern part of Coyote Dry Lake, Paradise Mountains, and the Superior dry lakes. As part of Alternative IV, a 3-mile transit route through the NASA Goldstone Complex would be improved for use by Fort Irwin to provide access to Superior Valley.

ES.2.5 Alternative V - Eastgate/UTM 90 Alternative

Alternative V, the Eastgate/UTM 90 Alternative, consists of approximately 72,060 acres, including the UTM 90 Area. The eastern portion of this alternative includes the southern portion of the Avawatz Mountains and runs parallel northeast to southwest along the utilities in the BLM Utility Planning Corridor D.

ES.2.6 Alternative VI - No Action Alternative

Alternative VI, the No Action Alternative, adds no additional maneuver land to Fort Irwin. The UTM 90 Area would continue to be off-limits to mechanized training. The Congressionally withdrawn lands would continue to be managed by the Army pursuant to the existing *Interim Natural and Cultural Resource Management Plan* until additional Congressional action is taken to return administration of the land to the BLM or some other action is approved for use (Fort Irwin 2003b).

ES.3 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 feasible alternatives. The alternatives proposed in the 1996 DEIS did not meet the objectives of the proposed project to a great enough extent to offset the high impacts on recreation, public utilities, and transportation. Additionally, alternatives considered in the 1996 DEIS were considered duplicative of currently proposed alternatives, as they only involved minor changes in land configurations. Joint use with NAWS China Lake was eliminated as an alternative due to incompatible mission requirements with the U.S. Navy. Increased simulations, clearing of Leach Lake Bombing Range, and relocation of the NTC to another military facility were other options considered but eliminated due to a variety of military requirements and restrictions relating to feasibility and impacts on current uses.

ES.4 Summary of Impacts

The most significant impact from all alternatives, other than No Action Alternative, is the potential loss of desert tortoise individuals, habitat, and critical habitat. Alternative I, the East/West Alternative, and Alternative IV, the Southwest/Eastgate/UTM 90 Alternative, also have significant impacts to Lane Mountain milk-vetch individuals and habitat. In addition, significant impacts have been identified within all alternatives, other than the No Action Alternative, to soils, other biological resources, including sensitive plant and wildlife species, land use, and socioeconomics. The impacts to geology, air space, air quality, utilities, water resources, noise, transportation, hazardous materials and solid waste, cultural resources, recreation, mining, wilderness, health and safety, and environmental justice are either insignificant or have been mitigated to less than significant.

Other required NEPA analysis includes an examination of short-term uses of the environment versus maintenance and enhancement of long-term productivity of the environment. The SFEIS concludes that a long-term impact will occur to maintenance and enhancement of the environment, but that the impact will be offset by the value added to the NTC's training mission. Additionally, the proposed mitigation measures should have a net increase in productivity of the region as a whole. An irreversible and irretrievable commitment of resources will occur in three resource areas: geology, land use, and energy resources. Unavoidable significant adverse impacts will occur from loss of federally listed threatened and/or endangered wildlife species and their habitat. These losses will be offset by the proposed mitigation measures, which may actually result in a long-term benefit to conservation of species and their habitat. There will be a loss of vegetative cover, loss and disruption of soil surfaces, loss of wilderness characteristics, and loss of mining resources. There are no impacts to Global Commons, pursuant to Executive Order 12114.

A summary of potential significant impacts by alternative, before proposed mitigation, is located in Table ES 1.1-1.

ES.5 Summary of Mitigation

Depending upon the choice of alternative and final project design, the Army has proposed a variety of mitigation measures to reduce, eliminate, or offset direct, indirect, and cumulative impacts of the proposed project, including:

- ❖ Creating off-limits conservation areas for desert tortoise and Lane Mountain milk-vetch on Fort Irwin.
- ❖ Monitoring and research on the desert tortoise.
- ❖ Translocating desert tortoises out of harm's way into areas recommended by desert tortoise biologists.
- ❖ limiting factor control, desert tortoise proof fencing, berms, signage, adaptive management, research, and land management assistance to BLM.
- ❖ Purchasing mitigation land, as identified in the Biological Opinion from USFWS. This will include private lands within desert tortoise critical habitat and within Lane Mountain milk-vetch habitat for permanent protection from private development.
- ❖ Purchasing of fee-owned ranch lands, with associated voluntary relinquishment of cattle grazing allotments within desert tortoise habitat within the West Mojave Desert.
- ❖ Contributing toward the BLM West Mojave Plan Route closure program, particularly in the proposed Lane Mountain milk-vetch Area of Critical Environmental Concern (ACEC) by purchasing lands within those areas.
- ❖ Fitting abandoned mines that are inhabited by bats with bat gates to allow bats to fly in and out. The bat gates also provide a safety element, protecting against entry into the abandoned mines.
- ❖ Using existing roads whenever possible.
- ❖ Placing all playas off-limits, with a 25 meter buffer zone set back from lake edges.
- ❖ Placing all perennial water sources off-limits.
- ❖ Establishing new air quality monitoring stations (at locations established by the Mojave Desert Air Quality Management District (MDAQMD)).
- ❖ Constructing "low-dust" roads to reduce air quality impacts.
- ❖ Protecting utilities and road surfaces at crossing points used from Army convoys going through Goldstone.

- ❖ Installing K-rails and/or tetrahedrons to protect vulnerable utility lines and/or sensitive off-limits areas.
- ❖ Constructing berms and fences along boundaries to keep the public from entering the installation, and to keep the soldiers from inadvertently straying from the training area.
- ❖ Installing aerial balls on utility lines in the Eastgate area, if determined to be necessary by joint LADWP/Army review.
- ❖ Installing of aerial warning lights on utility towers, if determined to be necessary by joint LADWP/Army review.

Specific proposed mitigation measures are detailed at the conclusion of each section within Chapter 4. The following three tables summarize the impacts before proposed mitigation, the proposed mitigation measures, and impacts after proposed mitigation.

Table ES1.1-1: Summary of Potential Significant Impacts, by Alternative, Before Proposed Mitigation

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-----------------|---|---|--------------------------------------|---|---|--------------------------------------|
| Geology | None | None | None | None | None | None |
| Soils | <ul style="list-style-type: none"> • Soil surface disturbance • Damage to soil crust and mycorrhizal relationships • Compaction of soil layers, rock outcrops, and disturbance of desert pavement • Wind erosion no longer localized, but regional • Increased dust generation | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Water Resources | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|----------------------|--|--|--|---|--|------------------------------|
| Biological Resources | <ul style="list-style-type: none"> • Loss of vegetation cover up to 52% in low use, 65% in medium use, and 100% in high use areas • Loss of up to 31% of known Lane Mountain milk-vetch habitat • Direct and indirect impacts on up to 1,000 desert tortoises (DT) • Impact of up to approximately 140,000 acres of DT and wildlife habitat and approximately 83,180 acres of DT critical habitat • Loss of cover and forage, resulting in direct and indirect impacts to wildlife species dependent upon the area as residents or transients | <ul style="list-style-type: none"> • Loss of vegetation cover up to 52% in low use, 65% in medium use, and 100% in high use areas • Direct and indirect impacts on up to 1,000 DT • Impact of up to approximately 147,000 acres of DT and wildlife habitat and approximately 89,440 acres of DT critical habitat • Loss of cover and forage, resulting in direct and indirect impacts to wildlife species dependent upon the area as residents or transients | <ul style="list-style-type: none"> • Loss of vegetation cover up to 52% in low use, 65% in medium use, and 100% in high use areas • Direct and indirect impacts on up to 1,000 DT • Impact of up to approximately 48,600 acres of DT and wildlife habitat and approximately 1,120 acres of DT critical habitat • Loss of cover and forage, resulting in direct and indirect impacts to wildlife species dependent upon the area as residents or transients | <ul style="list-style-type: none"> • Loss of vegetation cover up to 52% in low use, 65% in medium use, and 100% in high use areas • Loss of up to 31% of known Lane Mountain milk-vetch population habitat • Direct and indirect impacts on up to 1,000 DT • Impact of up to approximately 180,300 acres of DT and wildlife habitat and approximately 120,250 acres of DT critical habitat • Loss of cover and forage, resulting in direct and indirect impacts to wildlife species dependent upon the area as residents or transients | <ul style="list-style-type: none"> • Losses of vegetation cover of up to 52% in low use, 65% in medium use, and 100% in high use areas • Direct and indirect impacts on up to 1,000 DT • Impact of up to approximately 71,800 acres of DT and wildlife habitat and approximately 20,680 acres of DT critical habitat • Loss of cover and forage, resulting in direct and indirect impacts to wildlife species dependent upon the area as residents or transients | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|--------------------|--|---|---|--|---|------------------------------|
| Cultural Resources | <ul style="list-style-type: none"> • Impact to 31 of the 429 cultural sites • Loss of some paleontological resources • Impact to unidentified sites | <ul style="list-style-type: none"> • Impact to 8 of the 265 cultural sites • Loss of some paleontological resources • Impact to unidentified sites | <ul style="list-style-type: none"> • Impact to 8 of the 165 cultural sites • Loss of some paleontological resources • Impact to unidentified sites | <ul style="list-style-type: none"> • Impact to 31 of the 439 cultural sites • Loss of some paleontological resources • Impact to unidentified sites | <ul style="list-style-type: none"> • Impact to 8 of the 193 cultural sites • Loss of some paleontological resources • Impact to unidentified sites | None |
| Air Quality | None | <ul style="list-style-type: none"> • Probable PM-10 levels in excess of Fort Irwin's current generation | None | Same as Alternative II | None | None |
| Noise | None | None | None | None | None | None |
| Land Use | <ul style="list-style-type: none"> • Direct and indirect impacts to surrounding land and management due to the purchase of mitigation land (identified by the USFWS Biological Opinion) | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Recreation | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-----------|---|--|---|---|---|---|
| Mining | None | None | None | None | None | <ul style="list-style-type: none"> Lands within Alternative I, East/West, are withdrawn from mineral entry under the Fort Irwin Military Land Withdrawal Act of 2001 |
| Utilities | <ul style="list-style-type: none"> Military vehicle and aircraft accidents | <ul style="list-style-type: none"> Military vehicle and aircraft accidents Restricted access to a DC grounding station and power lines | <ul style="list-style-type: none"> Military vehicle and aircraft accidents | <ul style="list-style-type: none"> Military vehicle and aircraft accidents | <ul style="list-style-type: none"> Military vehicle and aircraft accidents | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|----------------|---|---|---|---|---|------------------------------|
| Transportation | <ul style="list-style-type: none"> • Impact to level of service on State Highway 127 from dust clouds produced during training • Closure of Copper City Road, restricting access to Inscription Canyon and Black Mountain Area • Closure of portions of Silver Lake Road • Harm to NASA Goldstone facilities and conservation areas due to Army vehicles used in the Superior Valley for training | <ul style="list-style-type: none"> • Impact to level of service on State Highway 127 from dust clouds produced during training | <ul style="list-style-type: none"> • Impact to level of service on State Highway 127 from dust clouds produced during training | <ul style="list-style-type: none"> • Impact to level of service on State Highway 127 from dust clouds produced during training • Closure of Copper City Road will restrict access to Inscription Canyon and Black Mountain Area | <ul style="list-style-type: none"> • Impact to level of service on State Highway 127 from dust clouds produced during training | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|------------------|---|--|--|--|--|---|
| Socioeconomics | <ul style="list-style-type: none"> • Conversion of private land to federal ownership, thereby restricting future private and commercial development • Purchase of lands for mitigation thereby restricting future private and commercial development • Relocation of one resident • Restricted access to Silver Lake Mine | <ul style="list-style-type: none"> • Conversion of private land to federal ownership due to purchase of lands within the alternative and purchase of lands for mitigation, thereby restricting future private and commercial development • Relocation of up to 150 full and part-time residents • Possible purchase and closure of one operating mining operation and an operational cement batch plant • Potentially significant impact to private property owners within the boundaries of the alternative | Same as Alternative I | Same as Alternative II | Same as Alternative I | None |
| Wilderness Areas | Possible disturbance to wilderness characteristics | Possible disturbance to wilderness characteristics | Possible disturbance to wilderness characteristics | Possible disturbance to wilderness characteristics | Possible disturbance to wilderness characteristics | Continued disturbance to wilderness characteristics |
| Airspace | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-------------------------------------|--|-----------------------------------|------------------------------|--|-----------------------------------|------------------------------|
| Hazardous Materials and Solid Waste | None | None | None | None | None | None |
| Health and Safety | <ul style="list-style-type: none"> • Impacts from geologic, hydrologic, biologic, and climatic hazards • Potential increase in equipment and vehicle accidents, due to the larger and more dispersed land area | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Environmental Justice | None | None | None | None | None | None |

Table ES1.1-2: Summary of Proposed Mitigation, by Alternative

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-----------------|--|---|--------------------------------------|---|---|--------------------------------------|
| Geology | None | None | None | None | None | None |
| Soils | <ul style="list-style-type: none"> • No driving off-road in designated conservation areas • Playas and lakebeds off-limits, with a 25 meter setback from playa edge • Use of dust palliatives where practical or required; ITAM restoration of some denuded areas • ITAM control of erosion processes through the placement of gabions and other soil stabilizing measures • Refill, cover, and compaction of all excavated areas upon completion of Army training, to add to stability | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Water Resources | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|----------------------|--|-----------------------------------|------------------------------|--|-----------------------------------|------------------------------|
| Biological Resources | <ul style="list-style-type: none"> • Creation of off-limits conservation areas for DT and LMMV on Fort Irwin • Translocation of DT to areas off of the training area • Purchase of mitigation lands within DT critical habitat and within LMMV habitat for permanent protection from private development • Establishing limiting factor control and adaptive management measures • Purchase of fee-owned ranch lands, with associated voluntary relinquishment of cattle grazing allotments within DT habitat in the West Mojave Desert • Contribution towards the BLM West Mojave Plan Route closure program, particularly in the proposed LMMV ACEC • Fitting abandoned mines that are inhabited by bats with bat gates to allow bats to fly in and out | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|--------------------------------|---|-----------------------------------|------------------------------|--|-----------------------------------|------------------------------|
| Biological Resources Continued | <ul style="list-style-type: none"> • Use of existing roads whenever possible • All perennial water sources off-limits. • All playas and lakebeds off-limits, with a 25-meter buffer zone set back from lake edges • Establishing new air quality monitoring stations (at locations established by MDAQMD) • Installing K-rails and or tetrahedrons around sensitive off-limits areas • Construction of berms and fences along boundaries as necessary to keep the public from entering the base boundaries, and to keep soldiers from inadvertently straying from the training area | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|--------------------|--|-----------------------------------|------------------------------|--|-----------------------------------|------------------------------|
| Cultural Resources | <ul style="list-style-type: none"> • Identification and mitigation of identified sites by clearing the sites and/or setting areas off-limits to training until such time as sites can be cleared • Reduction/elimination of illegal collection and vandalism, since the land set aside for military use will be off-limits to the general public. Note: This would result in a positive impact within the ROI (which has been subject to little restriction and is only sporadically policed), as potential sites will be protected from such activities | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-------------|--|-----------------------------------|------------------------------|--|-----------------------------------|------------------------------|
| Air Quality | <ul style="list-style-type: none"> • Implementation of dust control measures, whenever possible, including re-vegetation of some areas and other ITAM actions, enforcement of speed limits on dirt roads, chemical treatment, and asphalt chip sealer • Playas off-limits to travel, with a 25 meter setback for military activities, thereby reducing the possibility of disruption of the fine clay surfaces | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Noise | None | None | None | None | None | None |
| Land Use | <ul style="list-style-type: none"> • Purchase of all private, State and County lands within this alternative • Purchase of residences and operating businesses • Just compensation for all mitigation land purchases • Use of dust palliatives and erosion control techniques to reduce the amount of dust that would impair scenic vistas. | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|------------|---|--|------------------------------|--|-----------------------------------|------------------------------|
| Recreation | <ul style="list-style-type: none"> • Potential to allow limited use of certain areas for recreational purposes if actions do not conflict with military mission. • Possible continuance of land sailing events on Superior Dry Lake if the events do not conflict with military training rotations. | <ul style="list-style-type: none"> • Potential to allow limited use of certain areas for recreational purposes if actions do not conflict with military mission | Same as Alternative II | Same as Alternative I | Same as Alternative II | None |
| Mining | <ul style="list-style-type: none"> • Purchase of mining operations and patented mining claims, for just compensation • Continued limited mining activities, if there is no conflict with rotational training activities | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Utilities | <ul style="list-style-type: none"> • Construction of a berm and fence 500 meters to the inside of the utility corridor , to delineate the buffer between training activities and utilities • Aircraft warning markers placed on power lines and utility towers as determined by LADWP and DA | <ul style="list-style-type: none"> • Measures laid out in Alternative I • Construction of a berm and fence to surround the DC Grounding Facility • Relocation of the SCE power line parallel to Fort Irwin Road | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-------------------------------------|--|---|---|--|---|------------------------------|
| Transportation | <ul style="list-style-type: none"> • Use of dust palliatives and re-vegetation to reduce dust impacts from training to Hwy 127 • Construction of a bypass road around closed portion of Copper City Road • Construction of three under-crossings to allow for the crossing of traffic from the east to the west side of Fort Irwin Road | <ul style="list-style-type: none"> • Use of dust palliatives and re-vegetation to reduce dust impacts from training to Hwy 127 and Fort Irwin Road | <ul style="list-style-type: none"> • Use of dust palliatives and re-vegetation to reduce dust impacts from training to Hwy 127 | <ul style="list-style-type: none"> • Use of dust palliatives and re-vegetation to reduce dust impacts from training to Hwy 127 • Construction of under-crossings at three locations on Fort Irwin Road | <ul style="list-style-type: none"> • Use of dust palliatives and re-vegetation to reduce dust impacts from training to Hwy 127 | None |
| Socioeconomics | <ul style="list-style-type: none"> • Just compensation paid to resident and mine owner and to all owners of private property purchased | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Wilderness Areas | None | None | None | None | None | None |
| Airspace | None | None | None | None | None | None |
| Hazardous Materials and Solid Waste | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|-----------------------|---|-----------------------------------|------------------------------|---|-----------------------------------|------------------------------|
| Health and Safety | <ul style="list-style-type: none"> Continued training for soldiers on hazard areas, desert maneuvering, survival, geologic, hydrologic, and biological hazards Construction of gates on all abandoned mine shafts and openings to prevent entry | Same as Alternative I | Same as Alternative I | <ul style="list-style-type: none"> Continued training for soldiers on hazard areas, desert maneuvering, survival, geologic, hydrologic, and biological hazards Construction of gates on all abandoned mine shafts and openings to prevent entry Construction of up to 3 under-crossings on Fort Irwin Road for military vehicles to cross without impeding traffic | Same as Alternative I | None |
| Environmental Justice | None | None | None | None | None | None |

Table ES1.1-3: Summary of Significant Impacts, by Alternative After Proposed Mitigation

| RESOURCE | ALTERNATIVE I: EAST/WEST | ALTERNATIVE II: EASTGATE/SOUTH | ALTERNATIVE III: EASTGATE | ALTERNATIVE IV: SOUTHWEST/ EASTGATE/UTM 90 | ALTERNATIVE V: EASTGATE/UTM 90 | ALTERNATIVE VI: NO ACTION |
|----------------------|---|---|--------------------------------------|---|---|--------------------------------------|
| Geology | None | None | None | None | None | None |
| Soils | <ul style="list-style-type: none"> • Reduction to some impacts to soils; however, significant impacts that are non-mitigable will remain | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Water Resources | None | None | None | None | None | None |
| Biological Resources | <ul style="list-style-type: none"> • Impacts to vegetation and wildlife | Same as Alternative I | Same as Alternative I | Same as Alternative I | Same as Alternative I | None |
| Cultural Resources | None | None | None | None | None | None |
| Air Quality | None | None | None | None | None | None |
| Noise | None | None | None | None | None | None |
| Land Use | None | Impacts to the WMP | None | Impacts to the WMP | None | None |
| Recreation | None | None | None | None | None | None |

| RESOURCE | ALTERNATIVE I | ALTERNATIVE II | ALTERNATIVE III | ALTERNATIVE IV | ALTERNATIVE V | ALTERNATIVE VI |
|-------------------------------------|--|--|--|--|--|---|
| Mining | None | None | None | None | None | <ul style="list-style-type: none"> Lands within Alt I, East/West, are withdrawn from mineral entry under the Fort Irwin Military Land Withdrawal Act of 2001 |
| Utilities | None | None | None | None | None | None. |
| Transportation | None | None | None | None | None | None |
| Socioeconomics | Impacts from purchase of privately held lands | Impacts to residents and business | Impact to one business | Same as Alternative II | Same as Alternative I | None |
| Wilderness Areas | Possible disturbance to wilderness characteristics |
| Airspace | None | None | None | None. | None | None |
| Hazardous Materials and Solid Waste | None | None | None | None | None | None |
| Health and Safety | None | None | None | None | None | None |
| Environmental Justice | None | None | None | None | None | None |