

## EXECUTIVE SUMMARY

This Environmental Impact Statement (EIS) evaluates the potential environmental impacts associated with the proposed establishment of a large-scale training range facility at the Marine Corps Air Ground Combat Center at Twentynine Palms, CA (hereafter called the “Combat Center”) that would accommodate sustained, combined-arms, live-fire, and maneuver training for all elements of a Marine Expeditionary Brigade (MEB), including large-scale MEB Exercises involving three battalion task forces and associated MEB Building Block training<sup>1</sup> for participating units up to a single battalion task force. To implement the proposed action, the Marine Corps would acquire additional land adjacent to the existing Combat Center, establish and modify military Special Use Airspace (SUA) above the proposed MEB-sized training range, and conduct the specified MEB training. This EIS has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [USC] §§ 4321-4370h); the Council on Environmental Quality (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508); and Marine Corps procedures for implementing NEPA, as described in Marine Corps Order (MCO) P5090.2A, Change 2, Dated 21 May 2009, *Environmental Compliance and Protection Manual*.

### PURPOSE AND NEED

The purpose of the proposed action is to fulfill the Marine Corps’ requirement to provide sustained, combined-arms, live-fire, and maneuver field training for MEB-sized Marine Air Ground Task Forces (MAGTFs), each consisting of three battalion task forces and associated command, aviation, and combat logistics support elements. This training requirement, drawn from a November 2006 Marine Requirements Oversight Council decision that validated the need to establish a large-scale MAGTF training area, stems from the *Marine Corps Strategy 21* commitment to increasingly employ MEBs as the primary contingency response force. Marine Expeditionary Brigades must be capable of performing a variety of missions throughout the spectrum of conflict because they will encounter complex situations containing asymmetric threats, nonlinear battlefields, and unclear delineation between combatants and noncombatants. To overcome these challenges and operate effectively, MEBs must be able to conduct maneuver-intensive operations over extended distances, supported by closely coordinated precision fires, aviation-delivered ordnance, and sustained, focused logistical support. Large-scale MAGTF training currently relies on classroom instruction, command post exercises, and simulation to accomplish staff training requirements. These methods offer limited practical experience and cannot provide realistic training opportunities that enhance the capability to rapidly and effectively integrate all elements of the large-scale MAGTF into a single cohesive force. The task of successfully integrating all elements of a MEB to produce an effective, joint interoperable war-fighting organization can most effectively be accomplished through realistic training that replicates operating conditions these units are likely to encounter.

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<sup>1</sup> Marine Corps Order 3502.6, *Marine Corps Force Generation Process*, signed 29 April 2010, requires that pre-deployment training be executed in accordance with a standardized system of four “Building Blocks”: Block 1 supports individual training and unit instructor development; Block 2 supports collective training in core capabilities and theater-specific training at the Company level and below; Block 3 supports advanced collective training at the Battalion level; and Block 4 is a graduation predeployment training exercise and assessment. The MEB Exercise represents Block 4 in this system and the MEB Building Block training represents Blocks 1, 2, and 3.

The Marine Corps needs the proposed action because existing facilities, ranges, and live-fire ground and air maneuver areas are inadequate to support the requirement for MEB-sized training exercises. An effective MEB-sized Block 4 assessment exercise requires live-fire and maneuver training space (and associated airspace) for three battalion task forces, while the Marine Corps' largest training site (the Combat Center) can only accommodate live-fire and maneuver training for up to two battalion task forces. In addition, because most of the training areas aboard the Combat Center are fully committed during traditional combined arms training (which occurs over 250 days per year), Block 1-3 training for home station and external units are sometimes diminished in scope, forcing units to add remediation events to combat predeployment training to satisfy prerequisites for combat certification. The proposed action is needed to resolve training range deficiencies so that MEB training can be accommodated in accordance with the 2006 Marine Requirements Oversight Council decision and the pre-deployment readiness directives of MCO 3502.6, and so that Marines are able to train as they will fight.

### **PROPOSED ACTION AND ALTERNATIVES**

The proposed action includes three fundamental and interrelated components:

- **Acquisition of Land** contiguous to the existing Combat Center to provide a sufficient area for realistic MEB-sized sustained, combined-arms, live-fire, and maneuver training that meets at least a minimum threshold level of MEB training requirements within appropriate margins of safety.
- **Modification and Establishment of SUA** to enable full integration of MEB-sized Aviation Combat Element operations and both air- and ground-delivered live-fire ordnance use within appropriate margins of safety.
- **Expanded Training** implemented as a full-scale MEB Exercise conducted twice per year for 24 continuous days each. Current levels of proficiency training (Building Block training) that may be conducted by individual home station and external units (up to a single battalion in size) when MEB Exercises are not being conducted are also analyzed in this EIS.

Alternatives for implementing the proposed action must be considered in accordance with NEPA, CEQ regulations for implementing NEPA, and MCO P5090.2A. However, only those alternatives determined to be reasonable relative to their ability to fulfill/meet the purpose of and need for the proposed action require detailed analysis.

This EIS examines six action alternatives and the No-Action Alternative. Each of the six action alternatives features integrated land acquisition, airspace modification/establishment, and operational components. Some of these components would be the same across different alternatives. Three of the alternatives include a Restricted Public Access Area (RPAA) to allow civilian recreational use when military training activities are not being conducted. Under all alternatives, established airspace would be returned to Federal Aviation Administration (FAA) control to be made available for commercial and general aviation when not being used by the Marine Corps. Land acquisition under each action alternative would involve up to two "acquisition study areas" out of three such areas (titled in this EIS as "west study area", "east study area", and "south study area") identified for potential acquisition. One alternative (Alternative 5) would involve land acquisition in only one of the three acquisition study areas. None of the action alternatives would involve land acquisition in all three acquisition study areas.

Table ES-1 summarizes each of the action alternatives. Other action alternatives were considered but were not carried forward for analysis in this EIS because they failed to satisfy the alternatives screening criteria and, therefore, do not meet the purpose and need. The No-Action Alternative is not a viable alternative since it does not meet the purpose and need; however it serves as the baseline for comparison of impacts evaluated in this EIS.

**Table ES-1. Summary of Action Alternatives**

<b>Proposed Land Acquisition (Acres)<sup>1</sup> by Acquisition Study Area</b>	<b>Proposed Airspace Establishment and Modification</b>	<b>Proposed Expansion of Training</b>
<b>Alternative 1</b>		
West (180,353) South (21,304)  Total (201,657)	<u>Establish New Airspace:</u> <ul style="list-style-type: none"> <li>• Restricted Area R-XXXX</li> <li>• Johnson Valley MOA/ATCAA</li> <li>• Sundance ATCAA</li> <li>• CAX MOA/ATCAA</li> </ul> <u>Modify Existing Airspace:</u> <ul style="list-style-type: none"> <li>• Sundance MOA: expand laterally and vertically</li> <li>• Bristol ATCAA: expand vertically</li> <li>• Turtle MOA/ATCAA: expand vertically</li> </ul>	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each.</li> <li>• MEB Work-up: focused on western half of Combat Center and west study area.</li> <li>• MEB Final Exercise:                             <ul style="list-style-type: none"> <li>- East-to-west direction of maneuver;</li> <li>- Two task forces assemble east side of Combat Center; one in south study area; all three converge on single MEB objective in west study area.</li> </ul> </li> <li>• MEB Building Block training: 4-day evolutions in west study area up to 40 weeks/year and only unit marshalling and maneuver in south study area.</li> <li>• Installation of three communications towers.</li> <li>• Increase of 70 personnel.</li> </ul>
<b>Alternative 2</b>		
Partial West (113,558) South (21,304)  Total (134,863)	<u>Establish New Airspace:</u> <ul style="list-style-type: none"> <li>• Restricted Area R-XXXX (reduced)</li> <li>• Johnson Valley MOA/ATCAA (reduced)</li> <li>• Sundance ATCAA</li> <li>• CAX MOA/ATCAA</li> </ul> <u>Modify Existing Airspace:</u> <ul style="list-style-type: none"> <li>• Sundance MOA: expand laterally and vertically</li> <li>• Bristol ATCAA: expand vertically</li> <li>• Turtle MOA/ATCAA: expand vertically</li> </ul>	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each.</li> <li>• MEB Work-up: focused on western half of Combat Center and reduced west study area.</li> <li>• MEB Final Exercise:                             <ul style="list-style-type: none"> <li>- East-to-west direction of maneuver;</li> <li>- Two task forces assemble east side of Combat Center; one in south study area; all three converge on single MEB objective in reduced west study area.</li> </ul> </li> <li>• MEB Building Block training: 4-day evolutions in reduced west study area up to 40 weeks/year and only unit marshalling and maneuver in south study area.</li> <li>• Installation of three communications towers.</li> <li>• Increase of 65 personnel.</li> </ul>
<b>Alternative 3</b>		
East (177,276) South (21,304)  Total (198,580)	<u>Establish New Airspace:</u> <ul style="list-style-type: none"> <li>• Sundance ATCAA</li> <li>• CAX Restricted Area</li> </ul> <u>Modify Existing Airspace:</u> <ul style="list-style-type: none"> <li>• Sundance MOA: expand laterally and vertically</li> <li>• Bristol MOA/ATCAA: reclassify as Restricted Area to 40,000 feet MSL</li> <li>• Turtle MOA/ATCAA: expand vertically</li> </ul>	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each.</li> <li>• MEB Work-up: focused on eastern half of Combat Center.</li> <li>• MEB Final Exercise:                             <ul style="list-style-type: none"> <li>- East-to-west direction of maneuver;</li> <li>- Two task forces assemble in east study area; one in south study area; all three converge on single MEB objective in northwest corner of Combat Center.</li> </ul> </li> <li>• MEB Building Block training: 4-day evolutions in east study area up to 40 weeks/year and only unit marshalling and maneuver in south study area.</li> <li>• Installation of two communications towers; construction of four tank crossings on Amboy Road.</li> <li>• Increase of 59 personnel.</li> </ul>

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**Table ES-1. Summary of Action Alternatives**

<b>Proposed Land Acquisition (Acres)<sup>1</sup> by Acquisition Study Area</b>	<b>Proposed Airspace Establishment and Modification</b>	<b>Proposed Expansion of Training</b>
<b>Alternative 4</b>		
West (180,353) South (21,304)  Total (201,657)	Airspace configuration identical to Alternative 1	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each. Only non-dud producing ordnance in west study area. Restricted public access to Johnson Valley (except for two 984 x 984-foot [300 x 300-meter] Company Objective areas) permitted approximately 10 months/year.</li> <li>• MEB Work-up: focused on western half of Combat Center.</li> <li>• MEB Final Exercise:                         <ul style="list-style-type: none"> <li>- West-to-east direction of maneuver;</li> <li>- Three task forces assemble in west study area; two converge on single MEB objective on east side of Combat Center; one terminates the exercise in the south study area.</li> </ul> </li> <li>• MEB Building Block training would occur only within existing Combat Center boundaries (except maneuver/marshalling in south study area).</li> <li>• Installation of three communications towers.</li> <li>• Increase of 77 personnel.</li> </ul>
<b>Alternative 5</b>		
West only (180,353)	Airspace configuration identical to Alternative 1	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each. Only non-dud producing ordnance in west study area. Restricted public access to Johnson Valley (except for two 984 x 984-foot [300 x 300-meter] Company Objective areas) permitted approximately 10 months/year.</li> <li>• MEB Work-up: focused on western half of Combat Center.</li> <li>• MEB Final Exercise:                         <ul style="list-style-type: none"> <li>- West-to-east direction of maneuver;</li> <li>- Three task forces assemble in west study area; two converge on single MEB objective on east side of Combat Center; one terminates the exercise with training at the existing lands.</li> </ul> </li> <li>• MEB Building Block training would occur only within existing Combat Center boundaries.</li> <li>• Installation of three communications towers.</li> <li>• Increase of 77 personnel.</li> </ul>

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**Table ES-1. Summary of Action Alternatives**

Proposed Land Acquisition (Acres) <sup>1</sup> by Acquisition Study Area	Proposed Airspace Establishment and Modification	Proposed Expansion of Training
<b>Alternative 6 (Preferred Alternative)</b>		
West (146,667): - RPAA (38,137) - Exclusive Marine Corps Use (108,530) South (21,304)  Total (167,971)	Airspace configuration identical to Alternative 1	<ul style="list-style-type: none"> <li>• MEB Exercises: 2 per year for 24 days each. Only non-dud producing ordnance in southern portion of west study area. Restricted public access to southern portion of west study area (except for two 984 x 984-foot [300 x 300-meter] Company Objective areas) permitted approximately 10 months/year.</li> <li>• MEB Work-up: western half of Combat Center and part of west study area (exclusive military use area).</li> <li>• MEB Final Exercise:                         <ul style="list-style-type: none"> <li>- East-to-west direction of maneuver;</li> <li>- Two task forces assemble east side of Combat Center; one in south study area; all three converge on single MEB objective in west study area (exclusive use parcel).</li> </ul> </li> <li>• The RPAA would be used during MEB Exercises only and only non-dud producing ordnance would be used in that area.</li> <li>• MEB Building Block training: 4-day evolutions in the west study area (exclusive military use area only) up to 40 weeks/year and only unit marshalling/maneuver in south study area.</li> <li>• Installation of three communications towers.</li> <li>• Increase of 77 personnel.</li> </ul>

Note: <sup>1</sup> Acreage is approximate.

ATCAA = Air Traffic Control Assigned Airspace; CAX = Combined Arms Exercise; MAGTF = Marine Air Ground Task Force; MEB = Marine Expeditionary Brigade; MOA = Military Operations Area; MSL = Above mean sea level; RPAA = Restricted Public Access Area.

During the 90-day public scoping period (30 October 2008 through 31 January 2009), the Marine Corps utilized several methods to notify the public of opportunities for involvement and methods to comment during scoping. These methods included publishing a Notice of Intent (NOI), mailing scoping letters and postcards, issuing press releases and newspaper advertisements, and creating a public website for the EIS. In addition, three open-house public scoping meetings were held to provide the public the opportunity to review and learn about the Marine Corps’ proposal and to express their thoughts regarding the project and alternatives. A total of 19,244 comments were received through letters, emails, written comment sheets, speaker cards, and petitions.

Scoping comments were received from various groups, including regional and local governments, environmental groups, off-highway vehicle (OHV) users, lawyers, and private citizens. The majority of comments were received from OHV users (approximately 71%) and environmental groups (approximately 21%). The main issues of concern raised in comments included impacts to:

- Land Use (prevention of other development opportunities, impacts to other current land uses);
- Recreation (decrease in area available for OHV and other recreational activities);
- Socioeconomics and Environmental Justice (decrease in revenue/employment, loss of access to mining sites, devaluation of surrounding private property, increased costs for law enforcement, decrease in OHV-related sales);

- Visual Resources (loss of natural vistas, major visual resources, and open desert habitat; potential visual impacts resulting from equipment and support structures used during training exercises);
- Noise (increase from additional training exercises and military activities);
- Airspace Management (potential impacts to the SUA for private and commercial pilots);
- Air Quality (increased air emissions, greenhouse gas (GHG) emissions, carbon footprint, dust, and regional haze);
- Biological Resources (impacts to listed, rare, and sensitive species; habitat loss; loss of wildlife corridors/linkages, violation of existing plans and policies for biological resources management);
- Cultural Resources (impacts to artifacts, historic cabins, and historic mining/freighting sites; possible destruction or elimination of historic structures and/or districts; potential violation of tribal concerns and rights); and
- Water Resources (potential to overdraft the groundwater aquifer, changes to groundwater flow patterns, and impacts to groundwater recharge potential; concerns regarding surface water impacts, including erosion and sedimentation, contamination from fuel spills and leaks, contamination from ordnance, and reduction in riparian systems and ephemeral streams; potential increased water withdrawal and acquisition of adjudicated water rights associated with private lands acquired).

The Scoping Summary Report describes the scoping process and summarizes the comments received. The Scoping Summary Report and other EIS information are available on the public website for the EIS: <http://www.marines.mil/unit/29palms/las/pages/default.aspx>.

This EIS analyzes potential impacts on land use, recreation, socioeconomics and environmental justice, public health and safety, visual resources, transportation and circulation, airspace management, air quality, noise, biological resources, cultural resources, geological resources, and water resources. Cumulative effects of the proposed action in conjunction with other past, present, or reasonably foreseeable future actions are also analyzed.

### **SPECIAL CONSERVATION MEASURES**

As part of the proposed action (under any of the six action alternatives), the Marine Corps would implement a variety of special conservation measures (SCMs), as summarized below, to avoid or minimize potential impacts.

#### Recreation

- Develop an Educational Outreach Plan and distribute educational materials (via website, public meetings, OHV events, etc.) to promote awareness of environmentally sensitive areas, responsible OHV use, and law enforcement penalties for illegal OHV use.
- Assist local governments and community members with posting of appropriate signage (for restricted use/limited use areas) at key points of entry, areas of concern, or areas that have experienced frequent illegal OHV use.
- Coordinate with County of San Bernardino law enforcement officials, other local government officials, OHV community leaders, interested community members, and other interested parties to reduce the illegal OHV use within the communities surrounding the acquisition areas.

### Public Health and Safety

Additional focused measures for management of the RPAA's would be implemented under Alternatives 4, 5, or 6 (see Sections 2.5.2 through 2.5.4 of this EIS).

- The Marine Corps would initiate and maintain a persistent informational outreach program with local leaders, communities, and groups to ensure that members of the general public are aware of the change in land ownership or management and public use/access.
- Permanent signage would be staggered across the boundary lines of acquired lands (for any RPAA or exclusive military use areas) at an acceptable interval to make it difficult for anyone to enter the area without having seen a sign. Signage would be maintained.
- Barriers would be used to block access routes to reduce the possibility of unauthorized access (this would apply to both the RPAA and the exclusive military use area). Each exercise force would be required to establish manned roadblocks along all access routes, preventing any public access immediately before and throughout the training period. All barriers and roadblocks would be maintained.
- Increased military presence immediately preceding training would focus on enhancing public awareness. Military police and range personnel, along with other officials located aboard the installation, would increase presence patrols along major access routes and known assembly points in or close to acquired lands that were formerly used for public recreation.
- Before training, overflights would be conducted on two consecutive days to document any identifiable public presence in the acquired land areas, followed by efforts to contact anyone discovered by those overflights and help them to secure their removal from the training area.
- A range sweep would be required before any training events, live-fire or otherwise, and anyone discovered by a sweep would be escorted from the training area before initiation of the training event.
- As part of the permitting process for allowing public use of the RPAA on a case-by-case basis, the Marine Corps would prioritize safety as the primary consideration in permitting decisions; permits would potentially restrict the size, scope, type of activity, and location (relative to parts of the RPAA that are more intensively used during training) of any requested activity so as to minimize risks to the public.

### Air Quality

- Use water trucks to keep areas of vehicle movement damp enough to minimize the generation of fugitive dust.
- Minimize the amount of disturbed ground area at a given time.
- Minimize ground disturbing activities in proximity to the Combat Center boundary; and
- Discontinue proposed ground disturbing activities within 3 miles upwind of the Combat Center when boundary winds exceed 25 miles (40 kilometers [km]) per hour or when visible dust plumes emanate from the site and then stabilize all disturbed areas with water application.
- Designate personnel to monitor the dust control program and to increase dust suppression measures (e.g., watering), as necessary, to minimize the generation of dust.

### Biological Resources

- Upon issuance of the Biological Opinion for the proposed project, the Combat Center would amend its Integrated Natural Resources Management Plan (INRMP) to incorporate the conditions for use associated with the new training areas and new/modified airspace.
- The following measures from the 2007 Base-wide Biological Opinion (U.S. Fish and Wildlife Service [USFWS] 2007), the 2007 INRMP (MAGTF Training Command 2007), and the current Combat Center Order (MAGTF Training Command 2009), would be extended to any acquired lands:
  - Before the initiation of military training exercises or mission-related construction projects, a desert tortoise education program would be presented to all personnel who will be on-site. This program would contain information concerning the biology and distribution of the desert tortoise; its legal status and occurrence on the Combat Center; the definition of “take” and associated penalties; the measures designed to reduce the effects on the desert tortoise of training exercises and mission-related construction activities; the means by which Command employees, military personnel, and construction contractors can help facilitate this process; and the procedures to be implemented in case a desert tortoise is encountered.
  - Only biologists authorized by the USFWS would be allowed to survey for desert tortoises before proposed action activities, serve as a desert tortoise monitor during training exercises and other mission-related construction activities, and handle desert tortoises (except in circumstances in which the life of the desert tortoise is in immediate danger).
  - Desert tortoises would be moved only by an authorized biologist and solely for the purpose of moving the animals out of harm’s way, unless the animal is in imminent danger. In such instances, only units having direct radio or telephone communication with Range Control and appropriately briefed Marines would be authorized to move desert tortoises out of immediate danger. Desert tortoises would be moved the minimum distance to ensure their safety.
  - All handling of desert tortoises and their eggs and excavation of burrows would be conducted by an authorized biologist in accordance with protocols developed by the Desert Tortoise Council (1999), unless the animal was in imminent danger as noted above.
  - If the burrows of the desert tortoise cannot be avoided, they would be examined and excavated by hand, by or under the direct supervision of the authorized biologist. The authorized biologist would examine the burrow to determine whether it contains eggs of the desert tortoise.
  - All desert tortoises observed by military personnel or workers within or adjacent to training exercises or mission-related construction projects where they may be killed or injured would be reported immediately to an authorized biologist. The authorized biologist would move the desert tortoise offsite into adjacent undisturbed desert tortoise habitat if it is in imminent danger.
  - Any time a vehicle is parked in desert tortoise habitat, the ground around and underneath the vehicle would be inspected for desert tortoises before moving the vehicle. If a desert tortoise is observed beneath the vehicle, an authorized biologist would be contacted. If possible, the desert tortoise would be left to move on its own. Otherwise, the desert tortoise would be removed and relocated by the authorized biologist in accordance with the handling provisions of this Biological Opinion.

- Any excavations associated with construction and maintenance that would be left open in areas that are not being monitored would either be fenced temporarily to exclude desert tortoises, covered at the close of each work day, or provided with ramps so desert tortoises can escape. All excavations would be inspected for desert tortoises before filling.
- If maintenance or construction occurs during a time of year when desert tortoises are active, the authorized biologist would ensure that clearance surveys have been conducted in all work areas within appropriate habitat immediately before the onset of work. The Natural Resources and Environmental Affairs (NREA) staff would determine whether desert tortoises are likely to be active with consideration of the time of year and the weather conditions at the time and place where work is to be conducted. If desert tortoises are unlikely to be active, the clearance surveys may be conducted within 48 hours before ground disturbance. When desert tortoise burrows are found, they would be checked for desert tortoises; when desert tortoises are found, the burrows will be flagged. All unoccupied burrows would be flagged in a different manner than the occupied burrows. During the construction period, an authorized biologist would re-check the burrows and remove any desert tortoises that would be endangered by the mission-related construction activity following the Desert Tortoise Council protocols.
- For maintenance or construction activity in areas of suitable habitat that support desert tortoises, the Marine Corps would install temporary fencing around work sites to prevent entry of desert tortoises. Any desert tortoises within the fenced area would then be relocated to nearby suitable habitat, before the start of ground disturbing activities. The presence of authorized biologists on site may be substituted for temporary fencing; NREA staff would determine which protective measure is appropriate, depending on the specific circumstances.
- The NREA office would maintain a record of all observations of desert tortoises encountered at the Combat Center. The information gathered would include the date and time of observation; whether the desert tortoise was handled and whether it voided its bladder; general health of the desert tortoise; and, if it was moved, the locations from and to which the desert tortoise was moved.
- The Marine Corps would provide a written report to the USFWS by January 31 of each year, to document the numbers and locations of desert tortoises injured, killed, and handled; discuss the effectiveness of the Marine Corps' protective measures; and recommend other measures that allow for better protection of the desert tortoise or more workable implementation. The report would also include detailed information on the construction and maintenance projects that NREA personnel reviewed in the previous year; these projects include any actions that NREA staff determines are not likely to adversely affect the desert tortoise and those that are likely to adversely affect the desert tortoise and that are conducted under the auspices of a Biological Opinion.
- If the Marine Corps is required to prepare any additional written reports as a result of biological opinions for activities it conducts at the Combat Center, the information from these reports may be included in this annual report.
- Upon locating desert tortoises killed or injured by military training, construction, or maintenance activities, initial notification within 3 days of their finding must be made in writing to the USFWS's Division of Law Enforcement (370 Amapola Avenue, Suite 113, Torrance, California 90501), and by telephone and writing to the Barstow Suboffice (111 East Main Street, Barstow, California 92311, 760-255-8852). The report would include the

- date, time, location of the carcass, a photograph (if possible), cause of death, if known, and any other pertinent information.
- Care would be taken in handling injured animals to ensure effective treatment and care, and in handling dead specimens to preserve biological material in the best possible state. Injured animals would be transported to a qualified veterinarian or a rehabilitator licensed by the State of California. Should any treated desert tortoises survive, the USFWS would be contacted regarding the final disposition of the animals.
  - The Marine Corps would endeavor to place the remains of intact desert tortoises with educational or research institutions holding the appropriate state and federal permits per their instructions.
  - Manage the Tortoise Research and Captive Rearing Site (TRACRS) to protect nests and hatchling tortoises from predation.
  - Monitor tortoise growth and population changes over time to determine facility success.
  - Continue non-native predator management.
  - Minimize Main Supply Route (MSR) and road proliferation.
  - Continue tortoise awareness program.
  - Cooperate with other agencies and academic institutions on research conducted on the cause, transmission, testing, and treatment of Upper Respiratory Tract Disease.
  - Evaluate desert tortoise habitat condition and health.
  - Identify areas of desert tortoise habitat at risk for negative impacts.
  - Continue long-term tortoise density and trend-monitoring program using USFWS-approved protocols.
  - Maintain established study plots.
  - Monitor long-term study plots on a 2- to 4-year rotation.
  - Desert tortoises are not to be picked up unless it is necessary to save the animal's life. If a desert tortoise is impeding training, range control must be notified for additional instructions. If an emergency situation exists, and a tortoise must be moved out of immediate danger, the animal may be moved to an adjacent shaded area (normally plant cover) out of direct sunlight, then notify range control and NREA Division.
  - The possession of otherwise legal captive desert tortoises aboard the Combat Center, including base housing, is prohibited. Under no circumstances are legal captive or wild tortoises from off-base to be released into the Combat Center's population.
  - The feeding of wildlife on the Combat Center is prohibited. Unauthorized feeding of desert wildlife creates an imbalance in the food chain and reduces the animals' natural fear of humans, which places humans, wildlife, and domestic pets at risk.
  - Hunting is prohibited on the Combat Center.
  - Recreational use of the Combat Center's training areas is prohibited. Designated locations in the Mainside area are authorized for certain recreational purposes.
  - The introduction of any exotic plant life is prohibited on the Combat Center.
  - Open fires and the harvesting or cutting of any native vegetation are prohibited.
  - The "Cleghorn Lakes Wilderness Area," located to the south of the Cleghorn Pass, Bullion and America Mine Training Areas, is managed by the BLM. Accessing or departing the

- southeastern ranges through this area is strictly prohibited. No entry is allowed in this protected area. There is no authorized access to the Cleghorn Pass, Bullion or America Mine Training Ranges from a southerly direction.
- The “Ord-Rodman Critical Habitat” for desert tortoise and two associated wilderness areas are adjacent to the Sunshine Peak Training Area. No entry is allowed in these protected areas.
  - All training units should limit off-road activity to that which is absolutely necessary to directly support the mission. Off-road maneuver exercises will be planned to emphasize the use of already damaged sites.
  - “Neutral Steer” turns of tracked vehicles would be limited to emergency situations only. The Operations and Training Directorate will coordinate with NREA to identify authorized areas for practicing “Neutral Steer” turns. No unit would practice neutral steers in sensitive areas such as the Sand Hill Training Area.
  - Approval must be obtained from both the G-3 Directorate and NREA before clearing land (grading) or conducting any vegetation removal action in the training areas.
  - Trenches, defilades, “tank traps” and fighting positions must be filled to original grade and excess material leveled after each use.
  - Under Combat Center Order 5090.1D (MAGTF Training Command 2009), Special Use Areas would be designated as appropriate in which bivouacs, OHV use, or training involving vehicle activity, are either restricted (Category 1) or discouraged (Category 2).
  - The following conservation measures for non-protected biological resources would be included in the updated Combat Center INRMP, to be prepared subsequent to adoption of the Record of Decision (ROD), but before use of newly acquired areas for ground-training.
    - Conduct pre-surface-disturbance mapping surveys to identify noteworthy creosote ring Unusual Plant Assemblages (UPAs) occurring in the west study area. As practicable, fence noteworthy creosote ring UPAs and restrict vehicle access.
    - Although training exercise impacts to Yucca Ring UPAs are not anticipated, if the west study area is acquired, the existing Upper Johnson Valley Yucca Rings Area of Critical Environmental Concern (ACEC) designated in the west portion of the west study area will be managed in a manner consistent with UPA protection.
    - When conducting species surveys or inventories, consider documentation of intact cryptobiotic soils in the survey area. Based on this data, consider avoiding large expanses of intact cryptobiotic soils when designing primary routes of travel for task forces during MEB Exercises.
    - When conducting species surveys or inventories, consider wildlife movement corridors in the lands proposed for acquisition and on the existing Combat Center. Where practicable, route design for roadways constructed under the proposed action would take into consideration these wildlife corridors.
    - Place anti-roosting and anti-nesting devices, as appropriate, on the communications towers to be installed in the acquisition study areas.
    - Survey for potential bat roosting sites in the acquired lands before the initiation of training activities. Based on collected data, consider placement of gates over the entrances of mine

- sites that are currently occupied or which may provide potential roosting and/or hibernation habitat, especially if an alternative is adopted which includes public access to the mine site.
- The following conservation measures for non-protected biological resources are already in the 2007 Combat Center INRMP, and would be extended to any acquired lands during the INRMP update process along with all other measures in the INRMP.
    - Maintain healthy xeroriparian washes and canyons, which are used by resident and passerine migrant bird species and other wildlife, by minimizing vegetation loss in washes and canyons (i.e., Wood Canyon, southwestern Lavic Lake Training Area, Rainbow Canyon, Petroglyph Wash in Lava Training Area).
    - Expand the small mammal inventory emphasizing the pallid San Diego pocket mouse.
    - Monitor current bat gates to inspect for trespass and condition. Evaluate mine entrances for installation of bat gates to those mines which are exceptional bat habitat but not culturally significant. Evaluate modification of bighorn sheep guzzlers for use by bats and other wildlife.
    - Monitor burrowing owl populations and their habitat. Maintain a proactive management program to conserve the species.
    - Minimize Mojave fringe-toed lizard mortality and injury from military training. Continue to monitor Mojave fringe-toed lizard populations and the condition of their habitat. Maintain a proactive management program in case of federal listing.
    - Jointly monitor the Combat Center's bighorn sheep population and those within the lands proposed for acquisition with California Department of Fish and Game (CDFG) to determine status, distribution, and abundance.
    - Monitor the use of natural and artificial water sources by large mammals, including bighorn sheep, through the use of remote cameras. Cooperate with military unmanned aerial vehicle units to integrate biological work into their training missions.
    - Consider State-listed species in all Combat Center actions.

### Cultural Resources

- Cultural resources would be managed in accordance with the provisions of federal laws and regulations as well as Marine Corps policy. The Programmatic Agreement (PA), *Programmatic Agreement Between the United States Marine Corps and the California State Historic Preservation Officer Regarding Operation, Maintenance, Training and Construction at the United States Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California*, would be amended to include any lands acquired as a consequence of the proposed action alternative.
- As required by the PA, an Integrated Cultural Resources Management Plan (ICRMP) would be prepared and the historic preservation program prescribed in the ICRMP shall be implemented under the direct supervision of a person or persons, meeting at a minimum, the Secretary of Interior's Professional Qualifications Standards (48 *Federal Register* 44738-44739).
- The ICRMP shall detail the historic preservation program to inventory, manage, and treat any identified historic properties located on lands under the jurisdiction of the Marine Corps. The existing ICRMP for the Combat Center would be modified to include all newly acquired lands and cultural resources. The ICRMP would be modified and developed in consultation with the State Historic Preservation Officer (SHPO) and the Native American Tribes that have an interest

in lands under the jurisdiction of the Marine Corps. The SHPO would indicate acceptance of the ICRMP in writing and, upon written agreement by the SHPO, the ICRMP would be implemented under the authority of the amended PA.

- Additional measures would be developed in consultation with the California SHPO and affiliated Tribes.
- The Marine Corps would continue to provide training on the significance of cultural resources and the relevant federal laws that are intended to protect them.

#### Geological Resources

- A new INRMP for the Combat Center would be developed to include any acquired land areas and would establish policies and procedures for managing geological resources that may be present.
- The same programs and procedures that apply to current training activities to avoid and minimize impacts to soils at the Combat Center (which are outlined in the INRMP) would be extended to the MEB training, including but not limited to:
  - Designing tank traps and other modifications to maintain the natural flow of water during run-off events, to maintain the natural alluvial sediment transport processes.
  - Requiring vehicular traffic to stay on well-defined roads unless training scenarios require otherwise; and
  - Using previously disturbed sites as much as possible during off-road maneuvers to minimize damage to undisturbed sites (Naval Facilities Engineering Command [NAVFAC] Southwest Division 1996).

#### Water Resources

- The Combat Center would complete and implement the Installation Energy and Sustainability Strategy (IESS) that balances water demands (including those associated with the proposed action) with water supplies by increasing water conservation, using more recycled water, importing water, treating lower quality groundwater, and/or other methods deemed appropriate. The strategy would address sustainable water usage within the Combat Center, as well as regional water management, particularly if the strategy included groundwater extraction from other than the Surprise Springs aquifer.
- The Combat Center would review the Range Environmental Vulnerability Assessment (REVA) findings, including the activities associated with the MEB Exercises addressed by the proposed action, at a frequency of once every five years or sooner based on changes in training exercises that could potentially alter the risk by increasing or decreasing the loading factors, changing locations of where munitions are being used, or other factors that are different from current assumptions and model parameters.

## ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A summary of environmental impacts for all six action alternatives and the No-Action Alternative is presented below. A summary of environmental impacts is also presented in Table ES-2.

**Alternative 1:** This alternative would result in significant and unmitigable impacts to: land use, as a result of incompatibility with the Johnson Valley OHV Area Management Plan; recreation, as a result of loss of access to and the use of the majority of the Johnson Valley OHV Area; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route instrument flight rules (IFR) air traffic within or adjacent to the airspace; and air quality, as a result of nitrogen oxides (NO<sub>x</sub>), volatile organic compounds (VOCs), and particulate matter less than 10 microns in diameter (PM<sub>10</sub>) emissions. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises, including total potential take of between 162 and 725 federally threatened desert tortoises over the assumed 50-year life of the project (between 129 and 200 in the acquisition study areas). The definition of “take” includes to harass, harm, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct. Additionally, significant but mitigable impacts to biological resources would occur in association with this alternative. Beneficial impacts to public health and safety would occur as a result of physical closure of mines that would limit potential unauthorized access by the public.

**Alternative 2:** This alternative would result in significant and unmitigable impacts to: land use, as a result of incompatibility with the Johnson Valley OHV Area Management Plan; recreation, as a result of loss of access to and the use of approximately 60% of the Johnson Valley OHV Area; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route IFR air traffic within or adjacent to the airspace; and air quality, as a result of NO<sub>x</sub>, VOCs, and PM<sub>10</sub> emissions. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises, including total potential take of between 141 and 680 federally threatened desert tortoises over the life of the project (between 109 and 164 in the acquisition study areas). Additionally, significant but mitigable impacts to biological resources would occur in association with this alternative. Beneficial impacts to public health and safety would occur as a result of physical closure of mines that would limit potential unauthorized access by the public.

**Alternative 3:** This alternative would result in significant and unmitigable impacts to: land use, as a result of inconsistencies with California Desert Conservation Area (CDCA) Plan provisions for mining on public lands and San Bernardino County agricultural designations; transportation, as a result of loss of access to North Amboy Road for up to two days per year; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route IFR air traffic within or adjacent to the airspace; air quality, as a result of NO<sub>x</sub>, VOCs, and PM<sub>10</sub> emissions; and water resources, as a result of acquisition of Cadiz Inc. landholdings and eliminating or curtailing their agricultural operation and inhibiting Cadiz Inc. from instituting their Conservation and Storage Project. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises, including total potential take of between 36 and 535 federally threatened desert tortoises over the life of the project (between 19 and 45 in the acquisition study areas). Additionally, significant but mitigable impacts to biological resources would occur in association with this alternative. Beneficial impacts to public health and safety would occur as a result of physical closure of mines that would limit potential unauthorized access by the public.

**Alternative 4:** This alternative would result in significant and unmitigable impacts to: land use, as a result of incompatibility with the Johnson Valley OHV Area Management Plan; recreation, as a result of

loss of access to and the use of the Johnson Valley OHV Area for two months per year; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route IFR air traffic within or adjacent to the airspace; and air quality, as a result of NO<sub>x</sub>, VOCs, and PM<sub>10</sub> emissions. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises, including total potential take of between 90 and 646 federally threatened desert tortoises over the life of the project (between 59 and 98 in the acquisition study areas). Additionally, significant but mitigable impacts to recreation and biological resources would occur in association with this alternative.

**Alternative 5:** This alternative would result in significant and unmitigable impacts to: land use, as a result of incompatibility with the Johnson Valley OHV Area Management Plan; public health and safety as a result of the public potentially coming into contact with munitions constituents undetected during unexploded ordnance (UXO) and explosive ordnance disposal (EOD) clearance of the RPAA; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route IFR air traffic within or adjacent to the airspace; and air quality, as a result of NO<sub>x</sub> emissions. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises, including total potential take of between 88 and 573 federally threatened desert tortoises over the life of the project (between 55 and 93 in the acquisition study areas). Additionally, significant but mitigable impacts to recreation and biological resources would occur in association with this alternative.

**Alternative 6 (Preferred Alternative):** This alternative would result in significant, unmitigable impacts to: land use, as a result of incompatibility with the Johnson Valley OHV Area Management Plan; recreation, as a result of loss of access to and the use of 57% of the Johnson Valley OHV Area; airspace management, as a result of the adverse effects of the proposed new and modified SUA on Victor airway and jet route IFR air traffic within or adjacent to the airspace; and air quality, as a result of NO<sub>x</sub> emissions. This alternative would also result in significant and unmitigable impacts to biological resources as a result of the potential adverse effects of training activities on desert tortoises including total potential take of between 154 and 714 federally threatened desert tortoises over the life of the project (between 121 and 189 in the acquisition study areas). Additionally, significant but mitigable impacts to recreation and biological resources would occur in association with this alternative.

**No-Action Alternative:** The No-Action Alternative would result in less than significant impacts or no impacts for all resource areas.

**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Land Use	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>SI and inconsistent with the Johnson Valley OHV Area Management Plan because of loss of access to approximately 91% of the Johnson Valley OHV Area.</li> <li>SI for not furthering the purpose of EO 11644 to control OHV use to protect resources or minimize conflicts among the various uses of those lands.</li> </ul> <p><b>LSI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>LSI and inconsistent with other plans and policies including CDCA Plan grazing provisions and designated allotments, Upper Johnson Valley Yucca Ring ACEC, and San Bernardino County residential land use designations.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 201,657 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Mining</u></p> <ul style="list-style-type: none"> <li>No operating active mines.</li> <li>Mining claims, inactive mines, and abandoned mines are present.</li> <li>Acquisition of mining claims if not able to provide reasonable access to the claim.</li> </ul> <p><u>Grazing</u></p> <ul style="list-style-type: none"> <li>Loss of 16.3% of the active Ord Mountain Allotment, but grazing feasible on the remaining portion.</li> <li>Acquisition and loss of portions of the inactive Johnson Valley Allotment, but no grazing is allowed or planned.</li> </ul>	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>SI and inconsistent with the Johnson Valley OHV Area Management Plan because of loss of access to approximately 54% of the Johnson Valley OHV Area.</li> <li>SI for not furthering the purpose of EO 11644 to control OHV use to protect resources or minimize conflicts among the various uses of those lands.</li> </ul> <p><b>LSI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>LSI and inconsistent with other plans and policies including CDCA Plan grazing provisions and designated allotments, and San Bernardino County residential land use designations.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 134,863 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Mining</u></p> <ul style="list-style-type: none"> <li>No operating active mines.</li> <li>Mining claims, inactive mines, and abandoned mines are present.</li> <li>Acquisition of mining claims if not able to provide reasonable access to the claim.</li> </ul> <p><u>Grazing</u></p> <ul style="list-style-type: none"> <li>Loss of 7.5% of the active Ord Mountain Allotment, but grazing feasible on the remaining portion.</li> <li>Acquisition and loss of portions of the inactive Johnson Valley Allotment, but no grazing is allowed or planned.</li> </ul>	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>SI and inconsistent with CDCA Plan multiple use provisions, including access to two active mines, and with San Bernardino County agricultural land use designations on 1,600 acres under cultivation.</li> </ul> <p><u>Mining</u></p> <ul style="list-style-type: none"> <li>SI due to potential for a future case-by-case real estate analysis to find that two active mines would be incompatible with training activities and would require closure.</li> </ul> <p><b>LSI</b> <u>Mining</u></p> <ul style="list-style-type: none"> <li>SI due to potential for a future case-by-case real estate analysis to find that two active mines would be incompatible with training activities and would require closure.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 198,580 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Utilities</u></p> <ul style="list-style-type: none"> <li>Southern California Gas Company high pressure pipelines could remain in place and operate.</li> </ul>	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>SI and inconsistent with the Johnson Valley OHV Area Management Plan because of loss of open access to 91% of the Johnson Valley OHV Area; includes restricted public access of the west study area 10 months per year.</li> </ul> <p><b>LSI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>LSI and inconsistent with other plans and policies including CDCA Plan grazing provisions and designated allotments, Upper Johnson Valley Yucca Ring ACEC, and San Bernardino County residential land use designations.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 201,657 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Mining</u></p> <ul style="list-style-type: none"> <li>No operating active mines.</li> <li>Mining claims, inactive and abandoned mines are present.</li> <li>Acquisition of mining claims if not able to provide reasonable access to the claim.</li> </ul> <p><b>LSI</b> <u>Grazing</u></p> <ul style="list-style-type: none"> <li>Loss of 16.3% of the active Ord Mountain Allotment, but grazing feasible on the remaining portion.</li> <li>Acquisition and loss of portions of the inactive Johnson Valley Allotment, but no grazing is allowed or planned.</li> </ul> <p><u>Utilities</u></p> <ul style="list-style-type: none"> <li>43 miles of Southern California Edison transmission lines are located in the acquisition study area and could remain in place and operate.</li> </ul>	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 4.</li> </ul> <p><b>LSI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 4.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 180,353 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Grazing</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 4.</li> </ul> <p><u>Utilities</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 4.</li> </ul> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, most of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> </ul> <p><b>LSI/NI</b> <u>Mining</u></p> <ul style="list-style-type: none"> <li>No operating active mines.</li> <li>Mining claims, inactive and abandoned mines are present.</li> <li>LSI for acquisition of mining claims if not able to provide reasonable access to the claim.</li> </ul> <p><b>NI</b> <u>Mining</u></p> <ul style="list-style-type: none"> <li>NI if two iron mines are not operating or are not closed.</li> </ul> <p><b>NA</b> <u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul>	<p><b>SI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>Similar to Alternatives 4 and 5 except acreage of the RPAA is reduced; access to roughly 56% of the Johnson Valley OHV Area would be lost.</li> </ul> <p><b>LSI</b> <u>Plans and Policies</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 4.</li> </ul> <p><u>Land Status and Ownership</u></p> <ul style="list-style-type: none"> <li>Acquisition of 167,971 acres of federal, non-federal, and state lands.</li> <li>Minimal (i.e., less than 10) or no relocation of residential and non-residential properties.</li> </ul> <p><u>Mining</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul> <p><u>Grazing</u></p> <ul style="list-style-type: none"> <li>Loss of 7.4% of the active Ord Mountain Allotment, but grazing feasible on the remaining portion.</li> <li>Acquisition and loss of portions of the inactive Johnson Valley Allotment, but no grazing is allowed or planned.</li> </ul> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, all of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance activities, would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> </ul> <p><b>NI</b> <u>Utilities</u></p> <ul style="list-style-type: none"> <li>Avoids Southern California Edison transmission lines.</li> </ul> <p><b>NA</b> <u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul>	<p><b>NI</b></p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged, and no impacts to land use would occur.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative	
Land Use (continued)	<p>LSI</p> <p><u>Utilities</u></p> <ul style="list-style-type: none"> <li>43 miles of Southern California Edison transmission lines could remain in place and operate.</li> </ul> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, all of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance activities would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> <li>Wilderness areas in vicinity of the Combat Center were designed by the CDPA of 1994. The designation was not intended to limit military overflights. The current INRMP would be amended to address new management actions related to land acquisition and airspace utilization.</li> </ul> <p>NA</p> <p><u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>No additional land use findings are made for recreation other than those related to plans and policies above. See Recreation below.</li> </ul>	<p>LSI</p> <p><u>Utilities</u></p> <p>21 miles of Southern California Edison transmission lines are located in the west acquisition study area and could remain in place and operate.</p> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, most of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance activities, would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> </ul> <p>NA</p> <p><u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul>	<p>LSI</p> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, all of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance activities, would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> </ul> <p><u>Agriculture</u></p> <ul style="list-style-type: none"> <li>LSI and incompatible due to loss of 1,600 acres of cultivated agricultural lands; the 1,000 acres cultivated by Cadiz Inc. represents less than 2% of the agricultural acreage in San Bernardino County.</li> </ul> <p>NA</p> <p><u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul>	<p>LSI</p> <p><u>Sensitive Land Uses</u></p> <ul style="list-style-type: none"> <li>All of the 65 dB CNEL contour for airfield-related activities, all of the 65 dB CNEL<sub>mr</sub> contour for airspace-related activities, and most of the 62 dBC CNEL contour for ordnance activities, would be located within the proposed Combat Center boundaries. No sensitive noise receptors located in areas where CNEL contours extend outside of proposed boundaries.</li> </ul> <p>NA</p> <p><u>Recreation and OHV Use</u></p> <ul style="list-style-type: none"> <li>Same as Alternative 1.</li> </ul>				
Recreation	<p>SI</p> <ul style="list-style-type: none"> <li>Access to and use of the majority of the Johnson Valley OHV Area would be lost. This resource is unique to the region.</li> <li>Eliminating OHV use on lands to be acquired under Alternative 1 would not further the purpose of EO 11644 to control OHV use to protect resources or minimize conflicts among the various uses of those lands.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Access to and use of approximately 54% of the Johnson Valley OHV Area would be lost, representing a SI.</li> <li>Eliminating OHV use on lands to be acquired under Alternative 2 would not further the purpose of EO 11644 to control OHV use to protect resources or minimize conflicts among the various uses of those lands.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>The east study area is not unique to the region, comparable recreation opportunities are available in surrounding areas, and this area does not receive frequent recreational use.</li> <li>Illegal riding impacts and SCMs would be the same as Alternative 1.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Access to and use of the Johnson Valley OHV Area would be lost during approximately 2 months each year. This resource is unique to the region.</li> <li>Significant impacts would be somewhat offset and minimized through the proposed restricted public access of the Johnson Valley OHV Area during approximately 10 months of the year when not used for military training.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as under Alternative 4.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Illegal riding impacts and SCMs would be the same as Alternative 1 for the west study area.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Access to and use of approximately 56% of the Johnson Valley OHV Area would be lost. This resource is unique to the region.</li> <li>The remaining 44% of the Johnson Valley OHV Area would be available for public recreation 10 months per year (for the portion acquired as RPAA) or all of the year (for the area not acquired).</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged, and no impacts to recreation would occur.</li> </ul>	

Continued on next page

**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Recreation (continued)	<p>SI</p> <ul style="list-style-type: none"> <li>Although some alternative OHV areas exist, the acreages of all other regional OHV areas combined is approximately equal to the acreage of the Johnson Valley OHV Area alone.</li> <li>Displacement of users to the remaining portion of the Johnson Valley OHV Area and other recreation areas would impact recreational opportunities throughout the region.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Although implementation of SCMs would likely minimize the occurrence of illegal OHV use in public and private lands adjacent to the south study area, an increase in illegal riding would likely still occur. Indirect impacts to the County of San Bernardino Law Enforcement Division may also occur if additional resources are required to respond to the increase in illegal activity as a result of this action. However, implementation of SCMs 1-3, discussed under Section 4.2.2.1, would reduce these potentially significant impacts to a less than significant level.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Although not all of Johnson Valley OHV Area would be lost, approximately 30% of the acres available for open OHV recreation in the region would be lost.</li> <li>Displacement of recreational users to the remaining portion of the Johnson Valley OHV Area and other OHV areas would impact recreational opportunities throughout the region.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Illegal riding impacts and SCMs would be the same as Alternative 1.</li> </ul>	SI	<p>SI</p> <ul style="list-style-type: none"> <li>This alternative meets the purposes of EO 11644 to control OHV use to protect resources, promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.</li> <li>Displacement of users to other recreation areas would impact recreational opportunities throughout the region approximately 2 months per year.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Illegal riding impacts and SCMs would be the same as Alternative 1.</li> </ul>	SI	<ul style="list-style-type: none"> <li>This alternative meets the purposes of EO 11644 to control OHV use to protect resources, promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands.</li> <li>Displacement of users to other recreation areas would impact recreational opportunities throughout the region.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Illegal riding impacts and SCMs would be the same as Alternative 1.</li> </ul>	
Socioeconomics and Environmental Justice	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct impact from acquisition of 141 privately-owned parcels: includes one occupied residence, abandoned mines, vacant parcels, and no operating businesses. Land owners would be fairly compensated and provided relocation assistance as appropriate.</li> <li>Direct regional impact from lost sales and tax revenue (\$700,000 or -7.8% compared to baseline) related to reduced recreational and film industry spending.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct impact from acquisition of private property: same as Alternative 1 but fewer private properties would be acquired (81 parcels).</li> <li>Direct regional impact from lost sales and tax revenue (&lt;\$300,000 or -3.4% compared to baseline) related to reduced recreational and film industry spending.</li> <li>Direct local impact from lost sales and tax revenue (\$1.4 million or -24% compared to baseline) related to reduced recreational and film industry spending.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct impact from acquisition of private property (103 private parcels): includes two mining operations and one agricultural/water venture potentially purchased and displaced, resulting in a direct loss of an estimated 150 jobs. Land owners would be fairly compensated and provided relocation assistance as appropriate.</li> <li>Direct regional impact from lost sales and tax revenue (\$24,221 or -0.3% compared to baseline) related to reduced recreational and film industry spending.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct regional impact from lost sales and tax revenue (\$320,000 or -3.7% compared to baseline) related to reduced recreational and film industry spending.</li> <li>Direct local impact from lost sales and tax revenue (\$1 million or -16.4% compared to baseline) related to reduced recreational and film industry spending.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Socioeconomic impacts of Alternative 5 would be essentially the same as Alternative 4, with very minor changes in the size of specific dollar amounts.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct impact from acquisition of private property: same as Alternative 1 but fewer private properties would be acquired (105 parcels).</li> <li>Direct regional impact from lost sales and tax revenue (&lt;\$216,000 or -2.5% compared to baseline) related to reduced recreational and film industry spending.</li> <li>Direct local impact from lost sales and tax revenue (\$1.5 million or -24.7% compared to baseline) related to reduced recreational and film industry spending.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>NI with regard to local sources of business revenue and associated income and jobs from recreational visits and film industry use. NI to the economic vitality of small local businesses that rely on such spending, though such spending is not substantial at a regional economic scale.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Socioeconomics and Environmental Justice (continued)	<p>LSI</p> <ul style="list-style-type: none"> <li>• Direct local impact from lost sales and tax revenue (\$3.6 million or -60% compared to baseline) related to reduced recreational/film industry.</li> <li>• Beneficial combined impact (direct and indirect) from net gain in regional sales (\$4.5 million), income (\$3.1 million), and employment (90 jobs), as influence of Combat Center personnel increase would offset the loss in recreational and film industry spending. Sufficient capacity exists to absorb the added demand for housing and community services.</li> <li>• Direct impact on individual small businesses dependent on limited recreational visitor spending. Smaller firms may fail due to reduced revenue tied to reduced recreational opportunities in Johnson Valley.</li> <li>• Direct impact from reduction (\$34,435 or 0.006% of county total) in property tax revenues to local jurisdiction from the acquisition of private land.</li> <li>• Future indirect impact from acquisition of inactive Morris Lode Mine (and possibly other similar mines) in the west study area if acquisition prevents/ delays future development of a local source of iron ore.</li> <li>• Property values are not anticipated to decrease directly/ indirectly from increased noise.</li> <li>• Indirect impact (higher fuel costs) related to civil aviation impacts are expected to occur.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>• No impact associated with cost of providing community services to the project area.</li> <li>• No impact on regional or statewide sales of OHVs.</li> <li>• No Environmental Justice impacts.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>• Beneficial combined impact (direct and indirect) from net gain in regional sales (\$5.2 million), income (\$3 million), and employment (87 jobs), as influence of Combat Center personnel increase would offset the loss in recreational and film industry spending. Sufficient capacity exists to absorb the added demand for housing and community services.</li> <li>• Direct impact on individual small businesses that are dependent on limited recreational visitor spending. May cause some smaller firms to fail as a result of reduced revenues tied to reduced recreational opportunities in Johnson Valley.</li> <li>• Direct impact from reduction (\$25,677 or 0.004% of county total) in property tax revenues to local jurisdiction from the acquisition of private land.</li> <li>• Impacts to mining, property values, and civilian impacts are the same as Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>• Same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>• Direct local impact from lost sales and tax revenue (\$48,458 or -0.8% compared to baseline) related to reduced recreational and film industry spending.</li> <li>• Direct local impact from lost sales and tax revenue (\$48,458 or -0.8% compared to baseline) related to reduced recreational and film industry spending.</li> <li>• Combined impact (direct and indirect) from net loss in regional sales (\$10 million), income (\$4.4 million), and employment (-135 jobs) as a result of displaced businesses (lost jobs only partially offset by new Combat Center jobs) and reduced recreational spending.</li> <li>• Direct impact from reduction (\$161,000 or 0.027% of county total) in property tax revenues to local jurisdiction from the acquisition of private land</li> <li>• Impacts to property values and civilian impacts are the same as Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>• No impact associated with cost of providing community services to the project area.</li> <li>• No Environmental Justice impacts.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>• Beneficial combined impact (direct and indirect) from net gain in regional sales (\$7.1 million), income (\$3.9 million), and employment (108 jobs), as influence of Combat Center personnel increase would offset the loss in recreational and film industry spending. Sufficient capacity exists to absorb the added demand for housing and community services.</li> <li>• Direct impact on individual small businesses that are dependent on recreational visitor spending. May cause some smaller firms to fail as a result of reduced revenues tied to reduced recreational opportunities in Johnson Valley.</li> <li>• Impacts to mining, property values, and civilian impacts are the same as Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>• Same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>• Beneficial combined impact (direct and indirect) from net gain in regional sales (\$7.5 million), income (\$4 million), and employment (110 jobs), as influence of Combat Center personnel increase would offset the loss in recreational and film industry spending. Sufficient capacity exists to absorb the added demand for housing and community services.</li> <li>• Direct impact on individual small businesses that are dependent on limited recreational visitor spending. May cause some smaller firms to fail as a result of reduced revenues tied to reduced recreational opportunities in Johnson Valley.</li> <li>• Small direct reduction (\$28,456 or 0.005% of county total) in property tax revenues to local jurisdiction from the acquisition of private land.</li> <li>• Impacts to mining, property values, and civilian impacts are the same as Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>• Same as Alternative 1.</li> </ul>		

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Public Health and Safety	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Activities – Current procedures regarding prevention/response to aircraft-related accidents would continue. Existing plans and procedures related to aircraft-delivered ordnance would be updated to include the new training areas. No off-base receptors would be exposed to noise greater than or equal to 65 dB CNEL.</li> <li>Ground Training Activities – Range clearance procedures associated with ordnance use would be updated to include the new training areas. Vehicle accidents associated with training operations would be minor.</li> <li>Emergency Response – Sufficient capacity is present.</li> <li>Hazardous Materials and Hazardous/Solid Waste – No change to permits, hazardous waste generator status would occur. Adequate solid waste capacity is present. Public access to contaminated sites would be restricted due to the exclusive military use resulting in a positive impact.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Ground Training (Energy Hazards), Other Safety Issues (Protection of Children) – NI due to energy hazards or protection of children.</li> </ul> <p>BI</p> <ul style="list-style-type: none"> <li>Other Safety Issues (Mines/Contaminated Sites) – Physical closure of mines would limit potential unauthorized access by the public. Public access to contaminated sites would be reduced or eliminated.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Activities, Ground Training Activities, Other Safety Issues, Emergency Response, and Hazardous Materials and Hazardous/Solid Waste - Impacts would be the same as for Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Ground Training (Energy Hazards), Other Safety Issues (Protection of Children) – Impacts would be the same as for Alternative 1.</li> </ul> <p>BI</p> <ul style="list-style-type: none"> <li>Other Safety Issues (Mines/Contaminated Sites) – Impacts would be the same as for Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Activities, Ground Training Activities, Other Safety Issues, Emergency Response, and Hazardous Materials and Hazardous/Solid Waste - Impacts would be the same as for Alternative 1.</li> <li>Avoidance procedures for railroad lines, utility lines, and an active mine would be updated in the Combat Center Order P3500.4G.</li> <li>Mapping and avoiding high-pressure natural gas pipelines would be performed as part of the ground training activities.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Ground Training (Energy Hazards), Other Safety Issues (Protection of Children) – Impacts would be the same as for Alternative 1.</li> </ul> <p>BI</p> <ul style="list-style-type: none"> <li>Other Safety Issues (Contaminated Sites) – Impacts would be the same as for Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Accidents – Current procedures regarding prevention/response to aircraft-related accidents would continue. Existing plans and procedures related to aircraft-delivered ordnance would be updated to include the new training areas; exclusive military use would result in no significant impacts.</li> <li>Emergency Response – Sufficient capacity is present.</li> <li>Hazardous Materials and Hazardous/Solid Waste – Impacts would be the same as for Alternative 1.</li> <li>Other Safety Issues – Physical closure of mines would limit potential unauthorized access by the public. Contaminated sites would be clearly marked and mapped to minimize public access. No known environmental health or safety risk occur that may disproportionately affect children. No SI associated with other safety issues.</li> <li>Aircraft and Ground-delivered Ordnance – During recreational activity in the RPAA, the public could potentially come in contact with remaining munitions undetected during UXO and EOD clearance operations. Implementation of project SCMs related to public health and safety (e.g., range sweeps, public education and permitting) would reduce risk to public health and safety to a less than significant level in the RPAA.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Accidents, Emergency Response, Other Safety Issues, Hazardous Materials and Hazardous/Solid Waste – Impacts would be the same as Alternative 4.</li> <li>Aircraft and Ground-delivered Ordnance – Impacts would be the same as Alternative 4 for aircraft and ground-delivered ordnance.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Aircraft Accidents, Emergency Response, Other Safety Issues, Hazardous Materials and Hazardous/Solid Waste – Impacts would be the same as Alternative 1 (exclusive military use areas) and Alternative 4 (RPAA).</li> <li>Aircraft and Ground-delivered Ordnance – Impacts would be the same as Alternative 4.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Regular training activities (vehicle use, aircraft use, firing of ammunition, UXO and munitions, generation of hazardous and non-hazardous wastes, and resource use) within the boundaries of the Combat Center would remain the same.</li> <li>Existing safety risks from pursuit of recreational activities in the acquisition study areas would remain the same.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Visual Resources	<p>LSI</p> <ul style="list-style-type: none"> <li>No visual impacts at KVPs.</li> <li>Impacts would be short-term and specific timeframe.</li> <li>Proposed acquisition study areas would be used exclusively by the military; any land disturbance would not be visible.</li> <li>Less than significant loss of scenic/unique vistas in Johnson Valley.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>No or LSI visual impacts at KVPs.</li> <li>Impacts would be short-term and specific timeframe.</li> <li>Proposed acquisition study areas would be used exclusively by the military; any land disturbance would not be visible.</li> <li>Less than significant loss of scenic/unique vistas in Johnson Valley.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>No or LSI visual impacts at KVPs.</li> <li>Impacts would be short-term and specific timeframe.</li> <li>Proposed acquisition study areas would be used exclusively by the military; any land disturbance would not be visible.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>No or LSI visual impacts at KVPs.</li> <li>Impacts would be short-term and specific timeframe.</li> <li>Less than significant loss of scenic/unique vistas in Johnson Valley.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>LSI visual impacts at KVPs.</li> <li>Impacts would be short-term and specified timeframe.</li> <li>Visual impacts to soils in RPAA.</li> <li>Less than significant loss of scenic/unique vistas in Johnson Valley.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>LSI visual impacts at KVPs.</li> <li>Impacts would be short-term.</li> <li>Visual impacts to soils in RPAA, smaller RPAA than Alternative 5.</li> <li>Less than significant loss of scenic/unique vistas in Johnson Valley.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged, and no impacts to visual resources would occur.</li> </ul>
Transportation & Circulation	<p>LSI</p> <ul style="list-style-type: none"> <li>No major public roads would be impacted.</li> <li>Traffic volume(s) could increase by 84 vehicle trips per day during MEB training.</li> <li>The marginal temporary traffic increase due to MEB mobilization would not create significant impacts.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as under Alternative 1 (though a smaller portion of the west study area would be acquired).</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Public access to North Amboy Road would be lost during initial phases of MEB training.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Installations of tank crossings on North Amboy Road would be short-term and minimal.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be nearly identical to Alternative 1, but would allow for public access to the west study area 10 months per year.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be identical to Alternative 4 with the exception that the south study area would not be acquired under this alternative.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be nearly identical to Alternative 1, but would allow for public access to the southern portion of the west study area 10 months per year.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged, and NI to transportation and circulation would occur.</li> </ul>
Airspace Management	<p>SI</p> <ul style="list-style-type: none"> <li>Minimal to moderate impacts on Victor airway and moderate to significant impacts on jet route IFR air traffic within or adjacent to new and modified SUA.</li> <li>Minimal to moderate impacts on routes used by general aviation VFR aircraft.</li> <li>Minimal to moderate impacts on public airports and instrument approach procedures within close proximity to SUA.</li> <li>Minimal to moderate impacts on private airfields within, beneath, or bordering SUA.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts for the reduced airspace configuration proposed for this alternative would be generally the same as Alternative 1.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts for the airspace configuration proposed for this alternative would be generally the same as Alternative 1 with the impacts occurring in the eastern areas where MOA/ATCAAs would be converted to restricted airspace.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Current measures would continue to be used to mitigate any impacts on civil aviation.</li> </ul>
Air Quality	<p>LSI</p> <ul style="list-style-type: none"> <li>The increase in VOC, CO, NO<sub>x</sub>, SO<sub>2</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions from proposed activities would produce LSI.</li> <li>Air emissions would produce LSI to 1) air quality values, and 2) visibility impairment within the Joshua Tree National Park pristine Class I area.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>SI</p> <ul style="list-style-type: none"> <li>The increase in operational emissions of PM<sub>10</sub> would produce SI due to exceeding NAAQS levels.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>All other impacts would be the same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>No new impacts compared to existing conditions.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Noise	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL and CNEL<sub>mr</sub> contours for the airfield and airspace operations, respectively, would be contained within the range boundary and no populations would be exposed to CNEL ≥ 65 dBA. However, one POI (the residentially zoned west study area site) would have a CNEL<sub>mr</sub> of 73 dBA.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary to encompass 7,391 acres (2,991 hectares) and would potentially affect one POI (west study area site).</li> <li>• Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL contours for the airfield operations would be contained within the range boundary and no populations or POIs would be exposed to CNEL ≥ 65 dBA. The 65-70 dB CNEL<sub>mr</sub> contour band would overlap almost 400 acres (162 hectares) outside the range boundary, but with no affected population or POIs.</li> <li>• Ordnance Noise – The 62-70, 70-75 and 75 dBC CNEL contour bands would extend beyond the range boundary by 9,947 acres (4,025 hectares), 2,113 acres (855 hectares), and 1,101 acres (446 hectares), respectively, but would not affect any of the 52 POIs.</li> <li>• Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL and CNEL<sub>mr</sub> contours for the airfield and airspace operations, respectively, would be contained within the range boundary and no populations or POIs would be exposed to CNEL ≥ 65 dBA.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary on 10,855 acres (4,393 hectares) but would not affect any of the 52 POIs.</li> <li>• Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL and CNEL<sub>mr</sub> contours for the airfield and airspace operations, respectively, would be contained within the range boundary and no populations or POIs would be exposed to CNEL ≥ 65 dBA.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary on 4,572 acres (1,850 hectares) but would not affect any of the 52 POIs.</li> <li>• Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL contours for the airfield operations would be contained within the range boundary and no populations or POIs would be exposed to CNEL ≥ 65 dBA. The 65-70 dB CNEL<sub>mr</sub> contour band for airspace would extend approximately 100 acres (40 hectares) beyond the range boundary with none of the 52 POIs exposed to CNEL<sub>mr</sub> ≥ 65 dBA.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary on 5,150 acres (2,084 hectares) but would not affect any of the 52 POIs.</li> <li>• Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL and CNEL<sub>mr</sub> contours for the airfield and airspace operations, respectively, would be contained within the range boundary and no populations would be exposed to CNEL ≥ 65 dBA. The residentially-zoned west study area site would be exposed to CNEL<sub>mr</sub> of 73 dB.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary on 2,150 acres (870 hectares; 364 acres less than the No Action Alternative) and would potentially affect 1 POI.Noise-related impacts would be less than significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Noise – Overflights would increase and occur at lower altitudes than baseline conditions. The 65 dBA CNEL contours for the airfield operations would be contained within the range boundary and no populations or POIs would be exposed to CNEL ≥ 65 dBA.</li> <li>• The 65 dBA CNEL<sub>mr</sub> contour for airspace operations would extend 327 acres (132 hectares) beyond the range boundary but would include no affected populations or POIs.</li> <li>• Ordnance Noise – The 62-70 dBC CNEL contour would extend beyond the range boundary on 2,514 acres (1,017 hectares) but would not affect any of the 52 POIs.</li> <li>• Noise-related impacts would be less than significant.</li> </ul>

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Table ES-2. Comparison of Environmental Impacts

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Biological Resources	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to and potential take of 162 to 725 (129 to 200 in the acquisition study areas) federally threatened adult desert tortoises from military training. Indirect impacts to tortoises in regional OHV areas from displaced users.</li> </ul> <p>SI-M <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations in Blacktop, Emerson Lake, and southern Lavic Lake Training Areas as a result of crushing or ordnance explosion. Mitigated through implementation of the potential mitigation measure BIO-1 to avoid this population through exercise design, and/or protect it with fencing.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>129,542 acres of non-critical desert tortoise habitat may experience LSI.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards from Marine and vehicle movement and ordnance explosion.</li> <li>LSI to resident special status and migratory birds from loss of vegetation and physical disturbance or displacement.</li> <li>LSI to special status bat species from ordnance explosion and potential Marine movement in vicinity of current/potentially occupied mines and caves.</li> <li>LSI to Nelson's bighorn sheep on the Combat Center and on the lands underlying the proposed airspace establishment.</li> <li>LSI to whitemargin beardtongue.</li> </ul> <p><u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>LSI to spectacle fruit populations.</li> </ul>	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to desert tortoises from military training similar to Alternative 1, but slightly reduced due to the smaller west study area. Potential take of 141 to 680 adult desert tortoises (109 to 164 in the acquisition study areas). Indirect impacts to tortoises outside the acquisition study areas from displacement and concentration of OHV users. Overall impact greater than for Alternative 1.</li> </ul> <p>SI-M <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations as described for Alternative 1. Mitigated through implementation of the potential mitigation measure BIO-1.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>116,748 acres of non-critical desert tortoise habitat may experience LSI.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards similar to Alternative 1. Less land would be acquired, but the land excluded from acquisition was not found to host any Mojave fringe-toed lizards during surveys.</li> <li>LSI to resident special status and migratory birds and other federal status species similar to Alternative 1.</li> <li>LSI to special status bat species, Nelson's bighorn sheep and whitemargin beardtongue similar to Alternative 1.</li> </ul> <p><u>Other Status Species</u></p> <p>LSI to spectacle fruit populations would be the same as described for Alternative 1.</p>	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to desert tortoises from military training; lower than other alternatives due to lower desert tortoise density in the east study area, estimated potential take of 36 to 535 adult desert tortoises (19 to 45 in the acquisition study areas). No indirect impacts from displacement of OHV users of Johnson Valley OHV Area. No beneficial offset from its closure. Overall impact somewhat lower than for Alternative 1.</li> </ul> <p>SI-M <u>Species with Other Federal Status</u></p> <ul style="list-style-type: none"> <li>SI-M to Nelson's bighorn sheep in the Ship Mountains from ordnance explosion during MEB final exercises and MEB Building Block training.</li> <li>SI-M to populations of Harwood's eriastrum in the east study area in Cadiz Dunes.</li> </ul> <p><u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations as described for Alternative 1. Mitigated through implementation of the potential mitigation measure BIO-1.</li> <li>SI-M to populations of Harwood's eriastrum in the east study area in Cadiz Dunes.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>98,571 acres of non-critical desert tortoise habitat may experience LSI.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards as routes of travel and ordnance explosion would be remote from known populations.</li> </ul>	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to desert tortoises from military training substantially reduced from Alternative 1 due to the lack of MEB Building Block training training in the west study area. Potential take of 90 to 646 adult desert tortoises (59 to 98 in the acquisition study areas). Public access to the west study area would eliminate beneficial offset to impacts from military activities, but would mostly eliminate indirect impacts to tortoises within other regional OHV areas. Overall, net impact to tortoises somewhat lower than Alternative 1.</li> </ul> <p>SI-M <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations as described for Alternative 1. Mitigated through implementation of the potential mitigation measure BIO-1.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>LSI to non-critical potential desert tortoise habitat from military exercises reduced from Alternative 1, as a result of differences in the maneuver design. 117,754 acres of non-critical desert tortoise habitat may experience LSI.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards similar to Alternative 1. Adverse effects to this species' loose sand habitat would continue from public access and OHV recreation.</li> <li>Impacts to all other federal status species same as Alternative 1.</li> </ul>	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to desert tortoises from military training substantially reduced from Alternative 1 due to the lack of MEB Building Block training training in the west study area and not acquiring the south study area. Potential take of 88 to 573 adult desert tortoises (55 to 93 in the acquisition study areas). Public access to the west study area would eliminate the beneficial offset to impacts from military activities, but would mostly eliminate indirect impacts to tortoises within other regional OHV areas. Overall, net impact somewhat lower than Alternative 1 and the lowest of all action alternatives.</li> </ul> <p>SI-M <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations as described for Alternative 1. Mitigated through implementation of the potential mitigation measure BIO-1.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>LSI to non-critical potential desert tortoise habitat from military exercises reduced from Alternative 1, from differences in the maneuver design. 102,744 acres of desert tortoise habitat may experience LSI.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards similar to Alternative 1. Adverse effects to this species' loose sand habitat would continue from public access/OHV recreation.</li> <li>Impacts to all other federal status species same as Alternative 1.</li> </ul>	<p>SI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>SI to desert tortoises similar to Alternative 1. Potential take of 154 to 714 adult desert tortoises (121 to 189 in the acquisition study areas). Public access to the RPAA would reduce potential beneficial offset from cessation of OHV recreation. Overall, impact to tortoises greater than Alternative 1 and other action alternatives.</li> </ul> <p>SI-M <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>SI-M to small crucifixion thorn populations as described for Alternative 1. Mitigated through implementation of the potential mitigation measure BIO-1.</li> </ul> <p>LSI <u>Protected - Federally Threatened or Endangered Species</u></p> <ul style="list-style-type: none"> <li>Impacts to non-critical desert tortoise habitat reduced slightly from Alternative 1 due to differences in the maneuver design. 128,386 acres of desert tortoise habitat may experience LSI. Public access to the RPAA would reduce potential beneficial offset from cessation of OHV recreation.</li> </ul> <p><u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to Mojave fringe-toed lizards, but greater than Alternative 1 because the area currently occupied by Mojave fringe-toed lizards in the west study area would remain open to OHV recreation for much of the year.</li> <li>Impacts to all other species with other federal status similar to Alternative 1.</li> </ul> <p><u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>LSI to spectacle fruit populations same as Alternative 1.</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>No impacts to biological resources would occur; however, adverse effects from public access and OHV activity in the west study area would continue.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Biological Resources (continued)	<p><b>LSI</b> <u>Vegetation</u></p> <ul style="list-style-type: none"> <li>LSI to vegetation and creosote ring UPAs from physical damage and destruction from training.</li> <li>LSI to native plant communities from proliferation of non-native plant species due to anthropogenic dispersal and increased risk of fire.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to plant community ecosystems from increased risk of fire, changes in fire frequency regime, and wildlife mortality.</li> <li>LSI to cryptobiotic soils from Marine and vehicle movement, ordnance explosion, and helicopter landings.</li> <li>LSI to caves and mines, aquatic habitats, and playas.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI to non-special status wildlife species, including mammals, amphibians, reptiles, and birds from training activities.</li> </ul>	<p><b>LSI</b> <u>Vegetation</u></p> <ul style="list-style-type: none"> <li>LSI similar to Alternative 1 and would be further reduced due to the smaller acreage.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to cryptobiotic soils similar Alternative 1 and would be further reduced due to the smaller acreage.</li> <li>LSI to caves and mines, aquatic habitats, and playas similar to Alternative 1.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI to wildlife similar to Alternative 1.</li> </ul>	<p><b>LSI</b> <u>Species With Other Federal Status</u></p> <ul style="list-style-type: none"> <li>LSI to resident special status and migratory birds similar to Alternative 1.</li> <li>LSI to other species with other federal status less than Alternative 1, due to lower density of these species.</li> </ul> <p><u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>LSI to spectacle fruit populations would be the same as described for Alternative 1.</li> </ul> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> <li>LSI to plant communities from physical disturbance, but less than Alternative 1, due to less sensitive vegetation in the east study area. This area does not experience high level of OHV activity, change in disturbance from existing conditions greater.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to plant community ecosystems similar to Alternative 1. Lower densities of creosote bush scrub are present, area does not experience high level of OHV activity, disturbance to vegetation greater than in the west study area.</li> <li>LSI to cryptobiotic soils similar to Alternative 1. Lower levels of soil disturbance compared to the west study area, so impacts to cryptobiotic soils greater than for the other alternatives.</li> <li>LSI to playas, since vehicles would not likely enter Bristol Dry Lake for risk of stranding.</li> <li>LSI to caves and mines and aquatic habitats similar to Alternative 1.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI similar to Alternative 1 and reduced due to the lower habitat diversity.</li> </ul>	<p><b>LSI</b> <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>LSI to spectacle fruit populations same as Alternative 1.</li> </ul> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> <li>LSI to vegetation less than Alternative 1. Potential beneficial effects resulting from cessation of recreational OHV activity would not occur.</li> <li>LSI to creosote ring UPAs similar to Alternative 1. Adverse effects may continue to occur from public access in the west study area.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to ecosystems similar to Alternative 1. Impacts to sensitive ecosystems (playas, cryptobiotic soils, and caves) would not be offset as much as in Alternatives 1, 2, and 3 because of public use.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI to wildlife similar to Alternative 1.</li> </ul>	<p><b>LSI</b> <u>Other Status Species</u></p> <ul style="list-style-type: none"> <li>LSI to spectacle fruit populations same as Alternative 1.</li> </ul> <p><u>Vegetation</u></p> <ul style="list-style-type: none"> <li>LSI to vegetation less than Alternative 1. Potential beneficial effects resulting from cessation of recreational OHV activity would not occur.</li> <li>LSI to creosote ring UPAs similar to Alternative 1. Adverse effects may continue to occur from public access in the west study area.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to ecosystems similar to Alternative 1. Impacts to sensitive ecosystems (playas, cryptobiotic soils, and caves) would not be offset as much as in Alternatives 1, 2, and 3 because of public use.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI to wildlife similar to Alternative 1.</li> </ul>	<p><b>LSI</b> <u>Vegetation</u></p> <ul style="list-style-type: none"> <li>Impacts less than Alternative 1. Public access to RPAA would continue, beneficial offsets from cessation of recreational OHV activity less than Alternative 1.</li> <li>LSI to creosote ring UPAs similar to Alternative 1. Adverse effects would continue from public access and OHV recreation in the RPAA.</li> </ul> <p><u>Ecosystems</u></p> <ul style="list-style-type: none"> <li>LSI to ecosystems similar to Alternative 1. Impacts to sensitive ecosystems (playas, cryptobiotic soils, and caves) would not be offset as much as in Alternatives 1, 2, and 3 because of public use.</li> </ul> <p><u>Wildlife</u></p> <ul style="list-style-type: none"> <li>LSI to wildlife similar to Alternative 1.</li> </ul>	

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Cultural Resources	<p>LSI</p> <ul style="list-style-type: none"> <li>Direct and indirect impacts may result from weapons fire, MEB operations, group and individual traffic, battalion movements, aviation WDZ, and construction.</li> <li>SCMs and other measures would be implemented to avoid or reduce impacts to resources.</li> </ul> <p>NI</p> <p>No impact anticipated from airspace establishment.</p>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 1, with the addition of continued impacts from OHV use during the 10 months of allowed public use of Johnson Valley OHV area. OHV damage would be lessened during the other two months of the year.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 4.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts would be the same as Alternative 4.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged. Impacts from OHV use in the Johnson Valley OHV Area would continue for all 12 months in the year.</li> </ul>
Geological Resources	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct impacts from disturbance of soil crusts and soil compaction, dispersion of soil particles as dust due to explosive contact, and shearing/mixing of soil profiles, as a result of military vehicle operations, ordnance delivery, and infantry training.</li> <li>Soils: Direct impacts (surface disturbance, erosion, compaction) from continued OHV activity concentrated in smaller area.</li> <li>Soils: Direct impacts (potential loss of soil from excavation/erosion) due to continuation of mines if active and/or mine closure.</li> <li>Soils: Indirect impacts to water and air quality from military activities on acquired land and OHV use concentrated in smaller area on land not acquired.</li> <li>Mineral resources: Direct impact and indirect impacts due to loss of ore production if there are active iron mines in the west study area that are purchased and closed.</li> <li>Mineral resources: Direct impact if alluvial sand and gravel on BLM lands are no longer available for potential sale as a construction aggregate.</li> </ul> <p>NI</p>	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct and indirect impacts from military activities would be the same as for Alternative 1, except they would occur over a smaller portion of the west study area. Direct and indirect impacts from mining operations/closure would be the same as for Alternative 1.</li> <li>Soils: Direct impacts (surface disturbance, erosion, compaction) from continued OHV activity concentrated in smaller area.</li> <li>Soils: Indirect impacts to water and air quality from military activities on acquired land and OHV use concentrated in smaller area on land not acquired.</li> <li>Mineral resources: Direct and indirect impacts would be the same as for Alternative 1.</li> <li>Paleontological resources: Direct impact would be the same as for Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Mineral resources: Direct and indirect impacts would be the same as for Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: The impacts due to military activities would be the same as for Alternative 1, except that they would occur in the east study area.</li> <li>Soils: The impacts from continuation of active mining operations and/or mine closure would be the same as for Alternative 1, except they would occur in the east study area.</li> <li>Soils: Direct impacts to access of agricultural soils in the east study area, due to overlap of planned direct and indirect fire SDZs with existing agricultural operations.</li> <li>Indirect impacts to water and air quality associated with military activities would be the same as for Alternative 1, except they would occur in the east study area.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Mineral resources: Direct impact and indirect impacts if two currently operating calcium chloride mining facilities in the east study area are purchased and closed.</li> <li>Mineral resources: Direct impact if alluvial sand and gravel on BLM lands are no longer available for potential sale as construction aggregate.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct and indirect impacts to soils from military activities and continuation of mining activities/closure would be the same as under Alternative 1, except that the impacts from military activities would occur for approximately only 2 months per year as opposed to up to 46 weeks per year under Alternative 1.</li> <li>Soils: Direct impacts associated with OHV use (surface disturbance, compaction, erosion) would occur during 10 months of restricted public access.</li> <li>Soils: Indirect impacts to water and air quality due to transport of soil material mobilized by water and air, resulting from both military activities and OHV use.</li> <li>Mineral resources: Direct and indirect impacts would be the same as for Alternative 1.</li> <li>Paleontological resources: Direct impact would be the same as for Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Mineral resources: The impacts to mineral resources would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct and indirect impacts to soils from military activities and potential mining activities/closure would be the same as for Alternative 4.</li> <li>Soils: Direct and impacts associated with OHV use would be the same as for Alternative 4.</li> </ul> <p>LSI</p> <ul style="list-style-type: none"> <li>Mineral resources: Direct and indirect impacts would be the same as for Alternative 4.</li> <li>Paleontological resources: Direct impacts would be the same as for Alternative 1.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Mineral resources: The impacts to mineral resources would be the same as for Alternative 4.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct and indirect impacts from military activities would be the same as for Alternative 1, except they would occur over a smaller portion of the west study area. For up to 46 weeks, there would be impacts from military activities on (108,530 acres [43,921 hectares]) as opposed to 180,353 acres [72,987 hectares] under Alternative 1. Impacts from military activities would occur for 2 months within the RPAA (38,137 acres [15,434 hectares]).</li> <li>Soils: Direct impacts from OHV use (surface disturbance, compaction, erosion) would increase within the RPAA area available for use (44% of existing Johnson Valley OHV area open 10 months per year, 24% of existing area open year round).</li> <li>Soils: Indirect impacts from OHV use (impacts to water and air quality due to transport of soil material mobilized by water and air) would increase within the area available for use (44% of existing Johnson Valley OHV area open 10 months per year, 24% of existing area open year round).</li> </ul>	<p>NI</p> <ul style="list-style-type: none"> <li>Existing conditions would remain unchanged. Direct impacts to soils from continued OHV activity in the Johnson Valley OHV Area would continue.</li> </ul>

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**Table ES-2. Comparison of Environmental Impacts**

Resource	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6 (Preferred Alternative)	No-Action Alternative
Geological Resources (continued)	<p>LSI</p> <ul style="list-style-type: none"> <li>Paleontological resources: Direct impact (damage/destruction from ordnance/vehicle traffic, digging infantry positions) to fossils if present in training areas in alluvial soils.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Mineral resources: No direct or indirect impacts to mineral resources if there are no active iron mines in the west study area, or if there are active mines that continue operations. No direct or indirect impacts from purchase of unworked mining claims and/or closure of inactive mines. No direct or indirect impacts to mineral resources in the Combat Center and the south study area.</li> </ul>	LSI	<ul style="list-style-type: none"> <li>Paleontological resources: Direct impact (damage/destruction from ordnance/vehicle traffic, digging infantry positions) to fossils if present in training areas in alluvial soils.</li> </ul> <p>NI</p> <ul style="list-style-type: none"> <li>Mineral resources: No direct or indirect impacts to mineral resources if existing calcium chloride mines in the east study area continue operations. No direct or indirect impacts from purchase of unworked mining claims and/or closure of inactive mines. No direct or indirect impacts to mineral resources in the Combat Center and the south study area.</li> </ul>			<p>LSI</p> <ul style="list-style-type: none"> <li>Soils: Direct and indirect impacts from potential mining operations/closure would be the same as for Alternative 1.</li> <li>Mineral resources: Direct and indirect impacts would be the same as for Alternative 1.</li> <li>Paleontological resources: Direct impacts would be the same as for Alternative 1.</li> </ul>	
Water Resources	<p>LSI</p> <ul style="list-style-type: none"> <li>Water demands associated with the proposed action, as well as the long-term needs for potable water supply at the Combat Center, would be addressed by implementation of the IESS, which is an SCM for this project. With implementation of the SCM, Alternative 1 would have NI to groundwater recharge and LSI to groundwater quality and groundwater flow patterns.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts and mitigation measures would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts and mitigation measures would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts and mitigation measures would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts and mitigation measures would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>Impacts and mitigation measures would be the same as under Alternative 1.</li> </ul>	<p>LSI</p> <ul style="list-style-type: none"> <li>With implementation of the IESS, continued water usage at current rates would result in LSI to the long-term water supply.</li> </ul>

*Legend:* ACEC = Area of Critical Environmental Concern; ATCAA = Air Traffic Control Assigned Airspace; BI = Beneficial impact; CDCA = California Desert Conservation Area; CNEL = Community Noise Equivalent Level; CNEL<sub>mr</sub> = Onset-Rate Adjusted Monthly Community Equivalent Noise Level; CNPS = California Native Plant Society; CO = carbon monoxide; dB = decibel; dBC = C-weighted decibel; EO = Executive Order; EOD = explosive ordnance disposal; IESS = Installation Energy and Sustainability Strategy; IFR = Instrument Flight Rules; KVP = Key viewpoint; LSI = Less than significant impact; MAGTF = Marine Air Ground Task Force; MOA = Military Operations Area; NA = Not Applicable; NAAQS = National Ambient Air Quality Standards; NI = No impact; NO<sub>x</sub> = nitrogen oxides; OHV=Off-highway vehicle; PM<sub>10</sub> = particulate matter less than 10 microns in diameter; PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter; RPAA= Restricted Public Access Area; SCM = special conservation measure; SI = Significant impact; SI-M = Significant impact mitigable to less than significant; SO<sub>2</sub> = sulfur dioxide; SUA = Special Use Airspace; UPA = Unusual Plant Assemblage; UXO = unexploded ordnance; VFR = Visual Flight Rules; VOC = volatile organic compound; WDZ = Weapons Danger Zone; MEB = Marine Expeditionary Brigade.