FINAL ENVIRONMENTAL ASSESSMENT

for

Permanent Special Use Airspace Establishment and Modifications at

Marine Corps Air Ground Combat Center,
Twentynine Palms, CA

March 2026

FINDING OF NO SIGNIFICANT IMPACT

Permanent Special Use Airspace Establishment and Modifications at Marine Corps Air Ground Combat Center, Twentynine Palms, California

INTRODUCTION

In accordance with the National Environmental Policy Act (NEPA) (42 United States [U.S.] Code [USC] §§ 4321–4370h); the Fiscal Responsibility Act of 2023, Public Law 118-5 (2023); Department of Defense (DoD) NEPA Implementing Procedures (June 30, 2025); and Marine Corps Order (MCO) 5090.2, *Environmental Compliance and Protection Program* (2018), the Marine Air Ground Task Force Training Command has prepared a Final Environmental Assessment (EA) for *Permanent Special Use Airspace Establishment and Modifications at Marine Corps Air Ground Combat Center, Twentynine Palms, California*. The Final EA is incorporated by reference into this Finding of No Significant Impact (FONSI).

The Marine Corps, serving as lead agency, prepared the EA. The Federal Aviation Administration (FAA) served as a cooperating agency and provided applicable guidance in its preparation. As a result of the FAA's status as a cooperating agency, the Final EA incorporates the FAA NEPA criteria as contained in FAA Joint Order 7400.2R and FAA Order 1050.1G. The FAA proposes to adopt the Final EA in support of their NEPA decisions.

Based on the analysis provided in the Final EA, the Marine Corps has selected Alternative 2 (Preferred Alternative) and finds that it will not have a significant impact on the human environment, and therefore, an Environmental Impact Statement (EIS) is not required.

(Final EA, Chapters 1, 2, 3 and 4)

PROPOSED ACTION AND ALTERNATIVES

The EA analyzed the establishment of new permanent Special Use Airspace (SUA) areas and modifications to the lateral boundaries, component sectors, and altitude limits within existing SUA areas to support future and daily training activities at the Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center"). The Marine Corps is proposing to establish new permanent SUA to the west and east of existing Combat Center SUA and modify existing Combat Center SUA along the southern and eastern boundaries of the Combat Center.

Under the Proposed Action, current aircraft operations at the Combat Center would expand into the newly established/modified Restricted Areas (RAs), Military Operations Areas (MOAs), and Air Traffic Control Assigned Airspace (ATCAAs). The current number of annual sorties flown at the Combat Center would increase by 120 sorties of KC-130, 20 sorties of Joint Aerial Refueling, and 1,599 sorties of Unmanned Aerial Systems; 320 of the existing FA-18 sorties would be replaced with 320 F-35 sorties. There would be no other changes to the annual sorties that currently train in existing Combat Center airspace. Additionally, there is no proposed change to live-fire training, use of ordnance, and ground-based training activities at the Combat Center.

There would be no change to the public's access to the Johnson Valley Shared Use Area, which currently allows for full public access except when the area would be closed to the public for up to two 30-day periods each year. To ensure public safety and access, the Marine Corps would manage the R-2509 airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public. When the Johnson Valley Shared Use Area is open to the

public and the RA is activated, the RA "floor" would be established at 1,500 feet above ground level. This vertical separation ensures that ground-based activities like off-roading, camping, hiking, recreational rocketry and drones, etc. can continue on the ground without interruption or interference from military aircraft overhead. This would be codified in the FAA/Marine Corps Letter of Procedure for the proposed new RA.

The Final EA analyzed two action alternatives (Alternatives 1 and 2) and the No-Action Alternative.

Alternative 2 (Preferred Alternative) would establish new permanent SUA (R-2509, Johnson Valley MOA, CAX MOA, and Turtle Low MOA) and modify existing SUA (Bristol MOA/ATCAA and Sundance MOA/ATCAA). The establishment of R-2509 and Johnson Valley MOA would require a minor amendment to the existing R-2501 to avoid infringement on R-2501D. Through coordination between the Marine Corps and FAA, the proposed airspace configuration under Alternative 2 was modified in the following ways through application of the Screening Criteria (Section 2.1): (1) limiting activation of R-2509 and Johnson Valley MOA to up to 60 days per calendar year and CAX MOA and Turtle Low MOA to up to 40 days per calendar year; (2) limiting altitudes in R-2509C and the Johnson Valley MOA to 16,000 feet above mean sea level; (3) not creating a Johnson Valley ATCAA or CAX ATCAA; (4) limiting altitudes in Bristol ATCAA to FL220 (same as existing airspace); and (5) adjusting the eastern section of the southern boundary of Sundance ATCAA.

(Final EA, Chapter 2)

SUMMARY OF ENVIRONMENTAL EFFECTS

The EA focused analysis on the potential resources most affected by the Proposed Action (Final EA, Chapter 3), considering the context and intensity of the impacts potentially associated with the action. The EA did not identify any significant impacts on the environment, or on any resource resulting from the Proposed Action (Final EA, Chapters 3 and 4). The following resources were considered but did not warrant detailed analysis based on negligible or non-existent effects under the Proposed Action: coastal resources, geological resources and farmlands, water resources, solid waste/hazardous materials and waste, utilities and infrastructure, ground transportation, visual resources, and public health and safety. Department of Transportation Act Section 4(f) is not applicable to military flight operations. As summarized below, the Proposed Action would result in no significant impacts to noise, airspace management, aviation emissions and air quality, biological resources, cultural resources, land use and recreation, and socioeconomics and children's health and safety risks.

- ***Noise*** – The largest increase in noise would be 11 to 16 decibel (dB) Community Noise Equivalent Level (CNEL) within the proposed R-2509 and Johnson Valley MOA areas. However, no noise sensitive areas would be exposed to noise greater than 65 dB CNEL, and this increase would not be considered significant under either Department of War (DOW) (formerly referred to as the Department of Defense) or FAA criteria. However, the residents under R-2509C, R-2509D, Sundance MOA, and Johnson Valley MOA would experience increases in noise ranging from 3 to 15 dB resulting in CNEL of 60 to 63 dB, which would be considered 'reportable' noise impacts but not significant impacts as determined by FAA criteria. The single event noise levels and possibility of structure vibrations could also result in additional annoyance, but not significant impacts. Therefore, implementation of Alternative 2 would result in no significant impacts on the noise

environment but no significant 'reportable' increases to noise would occur in multiple areas.

- ***Airspace Management*** – Alternative 2 would not be expected to result in significant impacts on airspace management or air traffic. As a part of the FAA's approval process, potential impacts on the National Airspace System are evaluated during the FAA aeronautical study process, which would identify any additional conditions or measures specific to the new permanent SUA/airspace under Alternative 2. When Instrument Flight Rule approach or departure out of Big Bear Airport (west of the proposed Johnson Valley MOA/ATCAA) is required due to weather, the airspace would be released to Los Angeles Air Route Traffic Control Center to minimize impacts to arrivals utilizing the Big Bear Airport Runway 26 RNAV (GPS) approach. Therefore, implementation of Alternative 2 would have no significant impacts on airspace management.
- ***Aviation Emissions and Air Quality*** – Emissions of volatile organic compounds, nitrogen oxides, and particulate matter less than or equal to 10 microns in size (PM_{10}) were analyzed against the total training emissions developed in the 2012 Final EIS, which serves as the envelope for current and future training emissions. The analysis indicates no exceedance of the envelope, and the conclusion is that no significant impacts will result from implementing the proposed action. For the remaining pollutants (carbon monoxide [CO], sulfur dioxide [SO2], or suspended particulate matter less than or equal to 2.5 microns in size [$PM_{2.5}$]), emissions for Alternative 2 would fall below the comparative threshold. These emissions would not result in significant impacts (CO, SO2, or $PM_{2.5}$ in the Mojave Desert Air Basin). Implementation of Alternative 2 would result in an increase in annual greenhouse gas emissions as compared to emissions from the No-Action Alternative, which would be at least partially offset by Marine Corps initiatives to reduce greenhouse gas emissions at the Combat Center. Therefore, implementation of Alternative 2 would have no significant impacts on air quality.
- ***Biological Resources*** – There is a slight potential for increased exposure of wildlife, including special status species, to noise from aircraft overflights, as well as aircraft collisions (birds and bats); however, increased exposure would be minimal/limited due to the small increase in the number of annual sorties. Under Executive Order 13186, because Alternative 2 has, or may have, a measurable negative effect on migratory bird populations, the Marine Corps has developed and implemented a Memorandum of Understanding with the U.S. Fish and Wildlife Service that would promote the conservation of migratory bird populations. There would be no impact on the desert tortoise because there would be no ground disturbance and previous studies concluded that aircraft noise is not known to significantly affect the desert tortoise. Therefore, implementation of Alternative 2 would have no significant impacts on biological resources.
- ***Cultural Resources*** – Any potential noise and/or noise generated vibrations, any visual impact of military overflights within the affected and proposed airspace, and any increase in air pollutants would be minimal and would not cause adverse effects to cultural resources. Additionally, any cultural resources within the Region of Influence would not be directly disturbed because there would be no ground disturbing activities associated with Alternative 2. The Marine Corps conducted National Historic Preservation Act, Section 106 consultation with the California State Historic Preservation Office, Tribal Nations, and

Tribal Historic Preservation Office in 2019. The California State Historic Preservation Office concurred with the Marine Corps' determination of no adverse effect to historic properties. Therefore, implementation of Alternative 2 would have no significant impacts on cultural resources.

- ***Land Use and Recreation*** – There would be a minor impact on land use and recreation due to an increase in noise exposure. As discussed above in Noise, such increases represent a less than significant change according to both DOW and FAA criteria, all existing land use would remain compatible with noise levels that would occur under Alternative 2, and no noise sensitive land uses would be exposed to 65 dB CNELmr/CNEL. There would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers) in Johnson Valley. Therefore, implementation of Alternative 2 would have no significant impacts on land use or recreation.
- ***Socioeconomics and Children's Health and Safety Risks*** – Populated areas located within the Johnson Valley MOA and portions of R-2509C and R-2509D would experience additional aircraft noise due to the establishment of the SUA. CNEL would increase to between 60 and 63 dB. However, schools would not be exposed to CNEL greater than 65 dB so there would be no significant change to children's health impacts, specifically classroom learning. Minor impacts would occur to the civilian aviation industry with the new airspace; however, coordination between the Combat Center and civilian aviation would minimize impacts so that there would be no significant economic impacts. There would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers), resulting in negligible impacts on economic activity generated in the Region of Influence for recreational activities and to organized events in Johnson Valley. Therefore, implementation of Alternative 2 would have no significant impact on socioeconomics or children's health and safety.
- ***Cumulative Impacts*** – The 12 past, present, and reasonably foreseeable projects identified in the Final EA represent land use management actions, recreation, military training, airspace actions, and construction. The Combat Center's 2023 Ongoing Training Supplemental EA acknowledged continued adverse effects from the ongoing training actions within the boundaries of the Combat Center resulting in a Mitigated FONSI. Impacts and any mitigations associated with past actions are existing conditions found in Chapter 3, *Affected Environment* for the Final EA and are being mitigated per past NEPA Records of Decision for the 2012 Final EIS and 2017 Supplemental EIS. No significant cumulative impacts were identified for Alternative 2.

(Final EA, Chapters 2, 3 and 4)

AGENCY, TRIBAL, AND PUBLIC PARTICIPATION

The Marine Corps conducted National Historic Preservation Act, Section 106 consultation with the California State Historic Preservation Office, Tribal Nations, and Tribal Historic Preservation Offices; and the California State Historic Preservation Office concurred with the Marine Corps' determination of no adverse effect to historic properties. The Marine Corps has determined that there would be no effect on Endangered Species Act-listed species; therefore, consultation with the U.S. Fish and Wildlife Service is not required.

The Description of Proposed Action and Alternatives was provided for a 30-day public review from March 6 to April 7, 2019. All Description of Proposed Action and Alternatives public comments received were considered in the development of alternatives and in the preparation of the Draft EA. Advance agency and Tribal Nations coordination was also conducted during the development of the Draft EA.

The Draft EA was provided for a 45-day public review from August 1 to September 15, 2025. The public's comments on the Draft EA and feedback from applicable agencies were considered in the development of the Final EA.

FINDING

After careful review of the Final EA and all comments, the Marine Corps concludes that Alternative 2 would result in no significant impacts to the quality of the human environment. This FONSI is based on the analysis contained in the attached Final EA.

Implementation of Alternative 2 is conditional on FAA issuance of a separate Decision Notice/FONSI and rulemaking for Alternative 2.

4 March 2026

M. H. CLINGAN
Major General, U.S. Marine Corps
Commanding General
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center

Date

FINAL
ENVIRONMENTAL ASSESSMENT

for

Permanent Special Use Airspace Establishment and Modifications
at
Marine Corps Air Ground Combat Center
Twentynine Palms, CA

EAXX-007-17-XMC-1730226032

March 2026

ABSTRACT

NEPA Unique ID:	EAXX-007-17-XMC-1730226032
Lead Agency:	United States Marine Corps, Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center at Twentynine Palms (Combat Center)
Cooperating Agency:	Federal Aviation Administration
Title of Proposed Action:	Permanent Special Use Airspace Establishment and Modifications at Marine Corps Air Ground Combat Center, Twentynine Palms, California
Affected Region:	San Bernardino County, California
Designation:	Environmental Assessment

This Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States (U.S.) Code sections 4321–4370h, the Fiscal Responsibility Act of 2023, Public Law 118-5 (2023); Department of Defense (DoD) NEPA Implementing Procedures (June 30, 2025); and Marine Corps Order 5090.2. The Marine Corps operates the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center"). The Combat Center is the Marine Corps' only combined-arms live-fire and maneuver training range complex. The Marine Corps, serving as lead agency, prepared this EA. The Federal Aviation Administration is a cooperating agency and provided applicable guidance in its preparation. The Proposed Action is to establish new permanent Special Use Airspace (SUA) and to modify existing SUA associated with training at the Combat Center. The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future combined-arms training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting the training operations conducted in accordance with Marine Corps Order 3502.6, *Marine Corps Force Generation Process;* U.S. Marine Corps' *Force Design 2030* (March 2020, with annual updates); and Combat Center Order 3500.16A, *Service Level Training Exercise Order* (May 14, 2020). This EA analyzes the potential environmental consequences associated with two action alternatives and a No-Action Alternative. The following resource areas were evaluated for environmental impacts: noise, airspace management, aviation emissions and air quality, biological resources, cultural resources, land use and recreation, and socioeconomics and children's health and safety risks.

Points of Contact: Department of the Navy
Naval Facilities Engineering Systems Command Southwest
Attn: Ryan Maynard, Project Manager
750 Pacific Highway
San Diego, California 92132
Email: ryan.m.maynard4.civ@us.navy.mil
Telephone: (619) 705-5556

CERTIFICATIONS

In accordance with the Department of Defense National Environmental Policy Act (NEPA) Implementing Procedures (June 30, 2025), certifications associated with page limits (Section 1.5(d)(4)) and deadlines (Section 1.5(f)) follow.

Certification Related to Page Limits

The Marine Corps tailored the breadth and depth of analysis in this Environmental Assessment (EA) to ensure that the environmental analysis did not exceed the congressionally-mandated page limit. In this regard, I certify that the Marine Corps considered the factors mandated by NEPA, the EA represents the Marine Corps' good-faith effort to prioritize documentation of the most important considerations required by the statute within the congressionally-mandated page limits, and that this prioritization reflects Marine Corps' expert judgement. Any considerations addressed briefly or left unaddressed were comparatively not of a substantive nature that meaningfully informed the consideration of environmental effects and the resulting decision on how to proceed, or were comparatively unimportant or frivolous.

Certification Related to Deadlines

I certify that the EA represents the Marine Corps' good-faith effort to fulfill NEPA's requirements within the congressionally-mandated timeline. However, the Marine Corps received a 6-month timeline extension, approved by Marine Corps Installation Command, to ensure that the factors mandated by NEPA were thoroughly considered and that the analysis contained herein is adequate to inform and reasonably explain the final decision regarding the proposed federal action. Additionally, the project was paused during the United States federal government shutdown that occurred from October 1 to November 12, 2025, resulting in an additional 1.5-month extension to the timeline.

4 March 2026

M. H. CLINGAN
Major General, United States Marine Corps
Commanding General
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center

Date

TABLE OF CONTENTS

ABSTRACT ..... **A-i**

CERTIFICATIONS ..... **C-i**

CHAPTER 1 Purpose of and Need for the Proposed Action **1-1**

1.1 Introduction 1-1
1.2 Purpose of and Need for the Proposed Action 1-1
1.3 Project Location 1-1
1.4 Background 1-1
1.5 Scope of Environmental Analysis 1-7
1.6 National Environmental Policy Act Public Involvement and Agency Coordination 1-8
1.7 Regulatory Setting 1-8

CHAPTER 2 Proposed Action and Alternatives **2-1**

2.1 Screening Criteria and Alternatives Development 2-1
2.2 No-Action Alternative 2-3
2.3 Alternative 1 2-4
2.4 Alternative 2 (Preferred Alternative) 2-11
2.5 Comparison of Alternatives 2-14

CHAPTER 3 Affected Environment and Environmental Consequences **3-1**

3.1 Noise 3-5
3.2 Airspace Management 3-11
3.3 Aviation Emissions and Air Quality 3-16
3.4 Biological Resources 3-22
3.5 Cultural Resources 3-28
3.6 Land Use and Recreation 3-34
3.7 Socioeconomics and Children's Health and Safety Risks 3-42

CHAPTER 4 Cumulative Impact Analysis **4-1**

4.1 Definition of Cumulative Impacts 4-1
4.2 Cumulative Impacts 4-1

LIST OF APPENDICES

Appendix A 2012 Final EIS Details and Comparison A-1
Appendix B Agency Correspondence B-1
Appendix C Overview of Public Involvement Process C-1
Appendix D Regulatory Framework D-1
Appendix E Proposed Airspace Descriptions E-1
Appendix F Final Noise Study F-1
Appendix G Airspace Management G-1
Appendix H Air Quality H-1

Appendix I Biological Resources I-1
Appendix J Land Use and Recreation J-1
Appendix K Relevant Past, Present, and/or Reasonably Foreseeable Future Actions K-1
Appendix L List of Preparers, Contributors, and Agencies Contacted L-1
Appendix M References M-1

LIST OF FIGURES

Figure 1-1 Regional Location of the Combat Center 1-2
Figure 1-2 Existing Airspace Used to Support the Combat Center 1-5
Figure 2-1 Special Use Airspace Under Alternative 1 2-5
Figure 2-2 Amendment to Existing R-2501D 2-6
Figure 2-3 Special Use Airspace Under Alternative 2 2-12
Figure 3.4-1 Special Status Wildlife in the Proposed Action ROI 3-25
Figure 3.6-1 County General Plan Land Use in the ROI 3-36
Figure 3.6-2 Special Use and Land Ownership in the ROI 3-37

LIST OF TABLES

Table 1-1 Airspace Used to Support the Combat Center 1-6
Table 1-2 Existing (2024) Annual Sorties in Combat Center Associated Airspace 1-7
Table 2-1 Combat Center SUA Sorties - Existing (2024) Versus No-Action Alternative (2028) 2-4
Table 2-2 Annual Airspace Sorties Under the Proposed Alternative 1 2-10
Table 2-3 Annual Airspace Sorties Under the Proposed Alternative 2 2-15
Table 3.0-1 Summary of Anticipated Environmental Impacts 3-2
Table 3.1-1 Combat Center SUA Existing (2024) Noise Levels 3-7
Table 3.1-2 Combat Center Permanent SUA Noise Levels Under No-Action Alternative 3-8
Table 3.1-3 Combat Center Permanent SUA Noise Levels Under Alternative 1 3-9
Table 3.1-4 Aircraft Overflight Noise Levels 3-10
Table 3.2-1 Potential Number of VFR Flights Transiting Through Proposed SUA Under Alternative 1 3-15
Table 3.3-1 No-Action Alternative Versus Existing Condition Emissions (Tons/Year) 3-19
Table 3.3-2 No-Action Alternative Versus 2012 Final EIS Emissions Envelope (Tons/Year) 3-20
Table 3.3-3 Alternative 1 Versus No-Action Alternative Emissions (Tons/Year) 3-21
Table 3.3-4 Alternative 1 Versus 2012 Final EIS Emissions Envelope (Tons/Year) 3-21
Table 3.3-5 Alternative 1 Versus No-Action Alternative GHG Emissions (Metric Tons/Year) 3-22
Table 3.4-1 Special Status Terrestrial Wildlife Species Reported or Likely to Occur Within the ROI 3-24
Table 3.6-1 Land Use and Recreation Conditions Under the SUA Areas 3-38

Table 3.6-1 Potential Impacts to Recreation in the Johnson Valley Shared Use Area..... 3-41
Table 3.7-1 Population and Income in the ROI 3-43
Table 4-1 Cumulative Impacts of No-Action Alternative and Proposed Action 4-1

ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AGL	above ground level
ARTCC	Air Route Traffic Control Center
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
ATS	Air Traffic Services
BASH	Bird/Wildlife Aircraft Strike Hazard
BLM	Bureau of Land Management
BO	Biological Opinion
CDFW	California Department of Fish and Wildlife
CFA	Controlled Firing Area
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
$CNEL_{mr}$	Onset-Rate Adjusted Monthly Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Combat Center	Marine Corps Air Ground Combat Center
dB	decibel
dBA	A-weighted decibel
DNL	Day-Night Average Sound Level
DoD	Department of Defense
DON	Department of the Navy
DOPAA	Description of Proposed Action and Alternatives
DOW	Department of War
EA	Environmental Assessment
EAF	Expeditionary Airfield
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FAA	Federal Aviation Administration
FL	Flight Level
FY	Fiscal Year
GHG	greenhouse gas
GPS	Global Positioning System
HAP	Hazardous Air Pollutant
IFR	Instrument Flight Rules
L_{max}	Maximum Sound Level
LOP	Letter of Procedure
LSE	Large-Scale Exercise

Acronym	Definition
MAGTFTC	Marine Air Ground Task Force Training Command
MBTA	Migratory Bird Treaty Act
MCO	Marine Corps Order
MDAB	Mojave Desert Air Basin
MDAQMD	Mojave Desert Air Quality Management District
MEB	Marine Expeditionary Brigade
MOA	Military Operations Area
MSL	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NOA	Notice of Availability
NOTAM	Notice to Airmen
NPS	National Park Service
NRHP	National Register of Historic Places
O_3	ozone
OHV	off highway vehicle
PM_{10}	particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$	particulate matter less than or equal to 2.5 microns in diameter
RA	Restricted Area
RNAV	Area Navigation
ROD	Record of Decision
ROI	Region of Influence
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SO_x	sulfur oxides
SUA	Special Use Airspace
TFR	Temporary Flight Restriction
U.S.	United States
UAS	Unmanned Aerial Systems
USFWS	U.S. Fish and Wildlife Service
VFR	Visual Flight Rules
VOC	Volatile Organic Compound

CHAPTER 1
PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

This Environmental Assessment (EA) evaluates the potential environmental impacts associated with establishing new permanent Special Use Airspace (SUA) and modifying existing SUA at the Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center" or the "installation").

The Marine Corps, serving as lead agency, prepared this document in accordance with the requirements of the National Environmental Policy Act (NEPA) of 1969 (42 United States [U.S.] Code sections 4321–4370h); the Fiscal Responsibility Act of 2023, Public Law 118-5 (2023); Department of Defense (DoD) NEPA Implementing Procedures (June 30, 2025); and Marine Corps Order (MCO) 5090.2 (2018), *Environmental Compliance and Protection Program*; and all applicable federal environmental planning laws and agency guidance. The Federal Aviation Administration (FAA) served as a cooperating agency and provided applicable guidance in the preparation of this EA. The FAA is the agency with jurisdiction by law and special expertise with respect to changes in the configuration of the National Airspace System. This EA incorporates the FAA NEPA criteria as contained in FAA Joint Order 7400.2R (FAA 2025a) and FAA Order 1050.1G (FAA 2025b). See Section 1.7, *Regulatory Setting* for details.

1.2 Purpose of and Need for the Proposed Action

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future combined-arms training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting the training operations conducted in accordance with MCO 3502.6, *Marine Corps Force Generation Process;* U.S. Marine Corps' *Force Design 2030* (March 2020, with annual updates); and Combat Center Order 3500.16A, *Service Level Training Exercise Order* (May 14, 2020).

1.3 Project Location

The Combat Center is located in the Mojave Desert approximately 130 miles east of Los Angeles and 54 miles northeast of Palm Springs in San Bernardino County, California (Figure 1-1) with Interstate 40 to the north and Highway 62 and the city of Twentynine Palms to the south. The project area includes airspace above, adjacent to, and to the east of the Combat Center. The Combat Center encompasses approximately 761,000 acres composed of the "Mainside" cantonment area and multiple training ranges, including the Camp Wilson expeditionary training area.

1.4 Background

1.4.1 Training at the Combat Center

The Combat Center is the Marine Corps' largest combined-arms, live-fire training range complex that affords units the opportunity to practice tactics in a realistic and challenging environment. Combined-arms exercises consist of integrating different combat arms (e.g., infantry, artillery, aviation) and operating together in a coordinated manner to maximize effectiveness on the battlefield. These exercises, often complex, generate combat readiness and lethality across the Marine Air Ground Task Force through simulated real combat situations.

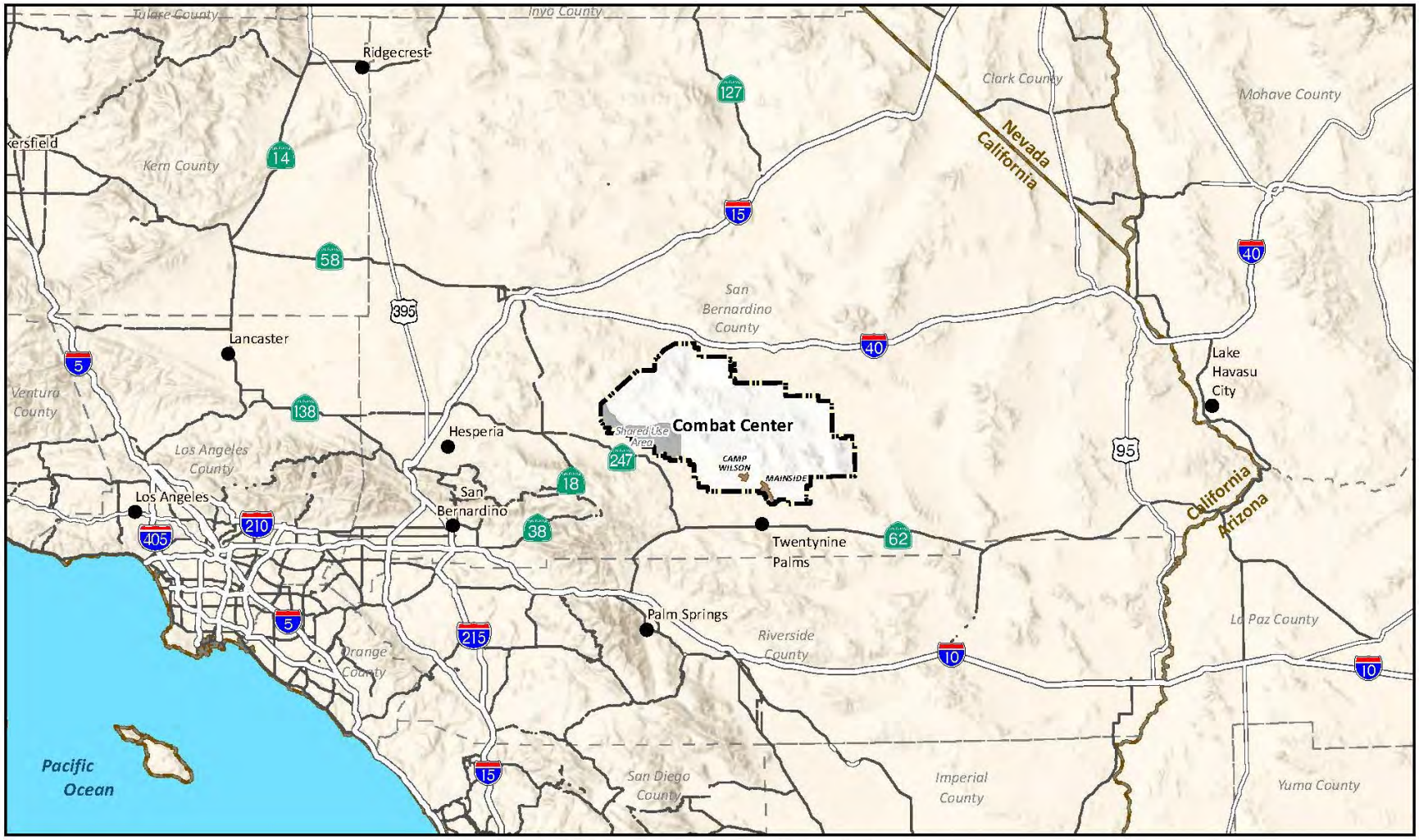


Figure 1-1. Regional Location of the Combat Center

Combined-arms, live-fire exercises often incorporate the use of high-angle weapon systems, ordnance, and aircraft. As weapon systems and aircraft platforms have evolved, additional vertical and lateral separation is required to provide adequate training in a safe manner. As such, a three-dimensional training environment that has adequate airspace is crucial to conduct the full scope of training exercises prescribed by Congress. This type of training, utilizing the unique combination of land and airspace, cannot be replicated at other installations in the region, which lack the specific ranges, terrain, and controlled airspace environment necessary for large-scale, integrated training. Establishment of permanent airspace over and adjacent to the Combat Center is essential to the Marine Corps' mission.

1.4.2 Airspace Classification

The National Airspace System is the airspace, navigation facilities, and airports of the U.S., along with their associated information, services, rules, regulations, policies, procedures, personnel, and equipment. It includes airspace that is shared jointly with the military, such as SUA and Air Traffic Control Assigned Airspace (ATCAA). SUA and ATCAA are established to deconflict military and civil flights in the interest of national defense, security, and/or welfare to support safe training at military facilities like the Combat Center.

According to Federal Aviation Regulations, SUA is "airspace of defined dimensions, wherein activities must be confined because of their nature or wherein limitations may be imposed upon aircraft operations that are not part of those activities" (14 Code of Federal Regulations [CFR] section 73.3). The FAA designates SUA to identify areas where military activity or unusual flight conditions may occur and alert nonparticipating aircraft (civilian or military) to the possible presence of hazardous activities and excludes them from those activities. SUA is designed to ensure the safety of all users of the airspace. As detailed in Table 1-1, the types of SUA airspace classifications are (FAA 2025c): Restricted Areas (RAs), Military Operations Areas (MOAs), Warning Areas, Prohibited Areas, Alert Areas, Controlled Firing Areas (CFAs), and National Security Areas. In addition to SUA, there is ATCAA, which has a defined volume of airspace laterally and vertically and is established by Air Traffic Control (ATC) to segregate air traffic between the specified activities being conducted within the ATCAA and other Instrument Flight Rules (IFR) traffic (FAA 2023). Because the FAA regulates and oversees aviation in the U.S., the Department of War (DOW) (formerly referred to as the Department of Defense [DoD]) requests airspace from the FAA and schedules and uses airspace in accordance with the processes and procedures detailed in DoD Directive 5030.19, *DoD Responsibilities on Federal Aviation*, and FAA regulations. Specific rules and regulations concerning airspace designation and management are listed in FAA Joint Order 7400.2R, *Procedures for Handling Airspace Matters* (FAA 2025a). SUA proposals are subject to both NEPA and aeronautical processing requirements. The FAA requirements include preparing an aeronautical study, conducting public involvement, preparing a safety risk management evaluation, and rulemaking for the RAs and non-rulemaking actions for MOAs.

1.4.3 NEPA History for Training Operations and Airspace Establishment/Modification

The type of training conducted at the Combat Center has evolved over the decades to accommodate the current warfighting doctrine. Current and anticipated ongoing training operations were previously described and analyzed in the 2012 *Final Land Acquisition/Airspace Establishment Environmental Impact Statement* (EIS) (hereinafter the "2012 Final EIS") (Department of the Navy [DON] 2012) and then revalidated in the 2023 *Ongoing Training Supplemental EA* (MAGTFTC 2023). The 2012 Final EIS, associated 2013 Record of Decision (ROD), and the 2023

Ongoing Training Supplemental EA can be found here: https://www.29palms.marines.mil/Staff-Offices/G-4-Installation-Support-Directorate/Environmental-Affairs/#documents

The 2012 Final EIS examined the environmental effects associated with expansion of the Combat Center that would accommodate combined-arms, live-fire training for all elements of a Marine Expeditionary Brigade (MEB), including both large- and small-scale exercises (DON 2012). The 2012 proposed action consisted of three interrelated components that were essential to support the proposed MEB-sized exercises: (1) acquisition of land adjacent to the Combat Center, (2) modification and establishment of permanent SUA, and (3) expansion of training operations. The 2013 ROD selected Alternative 6 as the preferred alternative.

As a result of the National Defense Authorization Act of 2014, the land expansion assessed in the 2012 Final EIS was implemented. However, the DON deferred the decision on establishing additional permanent SUA and, instead, reopened coordination with the FAA to redesign the proposed SUA and make the modifications necessary to reduce the effects on the National Airspace System (DON 2013). During the lengthy coordination process, the Combat Center sought temporary SUA to support ongoing training operations until an agreement could be reached on permanent SUA. Despite this, permanent SUA was still needed to adequately support and implement the MEB-sized exercises proposed in the 2012 Final EIS. Permanent SUA would provide greater training flexibility for the Combat Center as well as predictability and consistency for pilots, both military and commercial, thereby enhancing safety (MAGTFTC 2023). The proposed permanent SUA analyzed in this EA is the result of the ongoing coordination with the FAA and is the subsequent analysis anticipated in the 2013 ROD.

Due to a lack of permanent airspace, the proposed MEB exercises described in the 2012 Final EIS have not been implemented in the manner evaluated. Instead, elements of the MEB construct have been implemented into various exercises and training has incrementally evolved since the 2013 ROD. In 2023, the Combat Center analyzed incremental adjustments to ongoing training operations and found that, despite incremental changes in training operations, the nature of military training and the associated impacts remain within scope of what was previously analyzed in the 2012 Final EIS (MAGTFTC 2023).

1.4.4 Existing Airspace and Aircraft Operations

Currently, four different categories of airspace are used at the Combat Center to support military training activities, including RA, MOA, ATCAA, and CFA. Existing airspace over and adjacent to the Combat Center is shown in Figure 1-2. Airspace located between Bristol ATCAA and the Turtle ATCAA is internally known as the "CAX Corridor" (Figure 1-2) and has been established by the FAA as temporary SUA in the past to facilitate transit of exercise aircraft between blocks of airspace to accommodate refueling and other tactical operations. Table 1-1 provides details on the local airspace associated with the Combat Center, such as altitude ranges and hours of operation.

Over the years, airspace associated with the Combat Center has become increasingly congested, primarily due to training requiring more lateral separation, but also due to non-military flight activities. Specifically, two actions have affected use and management of airspace in the vicinity of the Combat Center: (1) the FAA began switching to a more precise satellite-enabled navigation system which enables additional operations in the same volume of airspace (FAA 2016), and (2) the FAA's redesign of the Southern California Metroplex, which encompasses SUA like R-2501, added the availability of global positioning system flight routes, resulting in the ability to use additional flight paths and increasing the volume of air traffic (FAA 2017).

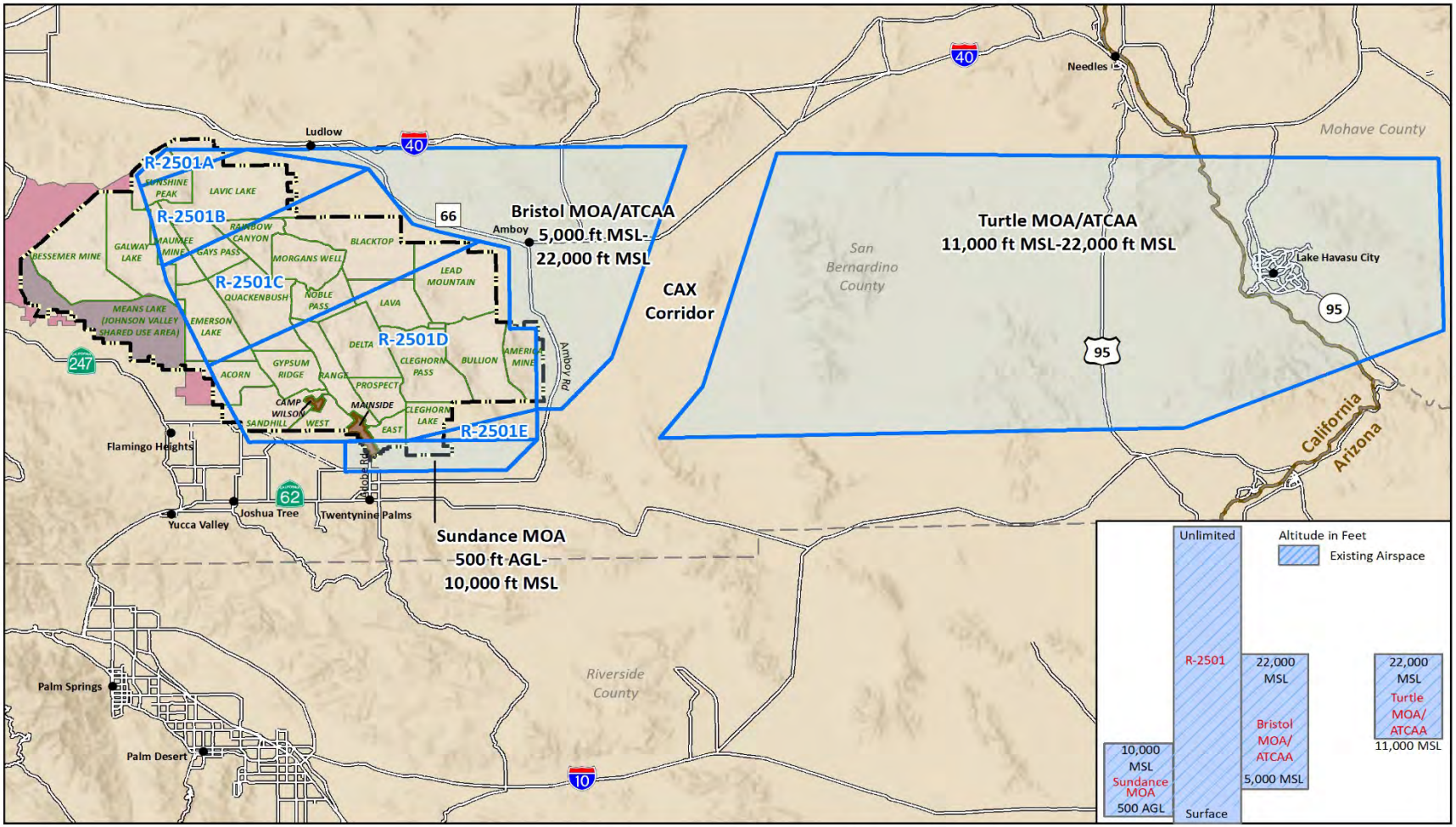


Figure 1-2. Existing Airspace Used to Support the Combat Center

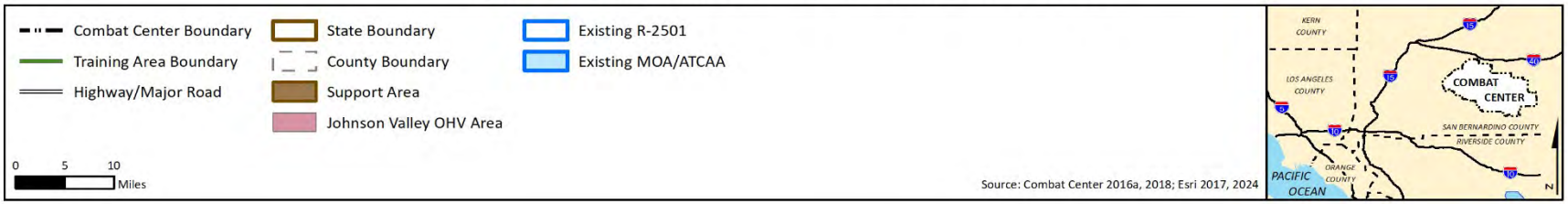


Table 1-1 Airspace Used to Support the Combat Center

Airspace Type	Definition	Existing Airspace Used to Support the Combat Center
RA	Designated SUA used to confine hazardous air- and ground-based activities such as weapons and artillery firing, aerial gunnery, live and inert practice bomb drops, and guided missile testing. RAs, defined by mapped boundaries, have minimum and maximum altitudes. Civilian pilots must confirm the RA has been returned to the National Airspace System for general use before flying through, or the pilot must secure permission from Range Control when the Combat Center retains use of the RA for military training. Entering an RA without authorization and during military training puts civilian aircraft in danger from munitions fired by ground and airborne weapon systems. Additionally, unauthorized civilian overflights result in a halt to live-fire training, causing the loss of critical military training opportunities.	R-2501 is part of the airspace associated with the Combat Center and is divided into five subparts (R-2501A, R-2501B, R-2501C, R-2501D, and R-2501E). The altitudes published for R-2501 are unlimited, meaning from ground level to the upper altitude that is required for the activity. Published times of use are "continuous," meaning the SUA remains active in support of training 24 hours per day, 7 days per week, unless the SUA is released by the Combat Center to the FAA Los Angeles ARTCC for its use (Note: Los Angeles ARTCC is also known as L.A. Center). Normal use can include a lower maximum altitude, depending on Marine Corps needs and agreement with the FAA Los Angeles ARTCC.
MOA	Designated SUA used to conduct nonhazardous flight activities, such as acrobatic or abrupt flight maneuvers, intercepts, air combat maneuvering missions, and aerial refueling. MOAs have defined minimum and maximum altitudes that can range from ground level to but not including FL180. A MOA separates or segregates certain nonhazardous military activities from IFR traffic, and identifies where these activities are conducted for VFR traffic.	Bristol MOA is part of the Combat Center airspace and abuts the R-2501 eastern boundary. The Bristol MOA extends from 5,000 feet MSL to but not including FL180. Bristol MOA is available for training Monday-Friday from 7:00 a.m. to 3:00 p.m. local time, and other times by NOTAM. Sundance MOA is part of the Combat Center airspace and abuts the southern boundary of R-2501 from 500 feet AGL to 10,000 feet MSL and is available when scheduled via NOTAM. Turtle MOA is not part of the Combat Center airspace but is located east of (but not adjacent to) the Bristol MOA and is associated with the Yuma Training Range Complex. Turtle MOA extends from an altitude of 11,000 feet MSL to but not including FL180. The Turtle MOA is available for training Monday-Friday from 6:00 a.m. to 4:00 p.m. local time, and other times by NOTAM.
ATCAA	Airspace of defined vertical/lateral limits, assigned by ATC for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.	Bristol ATCAA overlies Bristol MOA from FL180 to FL220. Bristol ATCAA is available for training Monday-Friday from 7:00 a.m. to 3:00 p.m. local time, and other times by NOTAM. Turtle ATCAA is associated with the Yuma Training Range Complex and overlies Turtle MOA from FL180 to FL220. The Turtle MOA is available for training Monday-Friday from 6:00 a.m. to 4:00 p.m. local time, and other times by NOTAM.
CFA	Designated SUA used to contain activities that would be hazardous to nonparticipating aircraft if not contained. CFAs are an auxiliary tool to meet certain training requirements without impact on general aviation. When nonparticipating aircraft approach a CFA, the user (e.g., Range Control) immediately terminates any hazardous activity. CFAs are not depicted on aeronautical charts to avoid impacts on	The Combat Center utilizes CFA, as needed, to support training within the Bessimer Mine, Galway Lake, and Means Lake (Shared Use Area) training areas (Figure 1-2).

Airspace Type	Definition	Existing Airspace Used to Support the Combat Center
	other aviation. For this reason, they are also not required to be published to NOTAMs.	

Legend: AGL = above ground level; ARTCC = Air Route Traffic Control Center; ATC = Air Traffic Control; ATCAA = Air Traffic Control Assigned Airspace; CFA = Controlled Firing Area; FL = Flight Level; IFR = Instrument Flight Rule; MOA = Military Operations Area; MSL = mean sea level; NOTAM = Notice to Airmen; RA = Restricted Area; VFR = Visual Flight Rule

Below is a summary of changes that have occurred since the action was initially analyzed in the 2012 Final EIS (see Appendix A for detailed comparison). These changes are accounted for in the existing conditions which form the basis of the No-Action Alternative as described in Section 2.2:

- Modification of R-2501 internal boundaries (FAA 2018).
- Incremental replacement of the F/A-18 and AV-8B with the F-35B/C (DON 2010).
- Addition of the MQ-9, a type of Unmanned Aerial Systems (UAS) (Marine Corps 2022).
- Replacement of the KC-130 R and T models with the J models (Marine Corps 2022).
- Replacement of the AH-1 and UH-1 with newer models.
- Increase in use of the MV-22 (DON 2009).

To account for aircraft platform and use changes that have occurred since 2012, MAGTFTC gathered input from the Tactical Training and Exercise Control Group and the Special Activity Utilization Reports for fiscal year (FY) 2022 and FY2023 (MAGTFTC 2024a). MAGTFTC also reviewed historic sorties and flight operations occurring at the Twentynine Palms Strategic Expeditionary Landing Field from FY2022 through the first half of FY2024 (MAGTFTC 2024b, 2024c). Table 1-2 provides the resulting existing annual sorties by types of aircraft that currently use airspace associated with the Combat Center. For context, a sortie consists of a single aircraft from a takeoff through a landing, which may include one or more training operations in between.

Table 1-2 Existing (2024) Annual Sorties in Combat Center Associated Airspace

Aircraft	R-2501A/B/C/D/E and Sundance MOA		Bristol MOA/ATCAA		Turtle MOA/ATCAA[(1)]	
	Total	> FL270[(2)]	Total	> FL180[(2)]	Total	> FL180[(2)]
AV-8B	608	87	426	43	400	40
FA-18	1,001	203	701	98	1,200	120
F-35	321	145	225	26	400	40
AH-UH-1	2,241	-	456	-	-	-
CH-53	682	-	43	-	-	-
MV-22	637	-	71	-	-	-
KC-130	100	-	256	256	400	-
Joint Aerial Refueling	-	-	71	-	-	-
UAS Group 1[(3)]	360	18	-	-	-	-
UAS Groups 2-4[(3)]	41	2	-	-	-	-
Total	**5,991**	**455**	**2,249**	**423**	**2,400**	**200**

Legend: > = greater than; ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aerial Systems

Notes: [(1)]Sorties scheduled by MCAS Yuma; sorties estimated from 2018 airspace activation hours and most frequent units
[(2)]> FL270 and >FL180 are subsets of sorties; > FL270 would not apply to Sundance MOA.
[(3)]Operate in R-2501 but may transit through other areas as allowed by FAA.

Source: MAGTFTC 2024.

1.5 Scope of Environmental Analysis

This EA focuses on impacts associated with the proposed changes to airspace and aircraft operations, as previously analyzed in the 2012 Final EIS. With no proposed changes to other elements of

ongoing training (i.e., ground-based or use of ordnance), impacts from ongoing training operations are addressed in this EA as part of the cumulative impact analysis in Chapter 4.

Resource areas examined in this EA include: noise, airspace management, aviation emissions and air quality, biological resources, cultural resources, land use and recreation, and socioeconomics and children's health and safety risks. Resources not evaluated in detail in this EA, because the potential for impacts were considered negligible or non-existent, are discussed in Chapter 3.

1.6 National Environmental Policy Act Public Involvement and Agency Coordination

In addition to evaluation under NEPA, the Proposed Action is subject to other federal laws and regulatory requirements. Therefore, the Marine Corps has consulted with the California State Historic Preservation Office (SHPO), the U.S. Fish and Wildlife Service (USFWS), and 11 federally recognized Tribal Nations. Refer to Appendix B for details on agency coordination.

1.6.1 Public Involvement

The Notice of Intent to Prepare an EA and Notice of Availability (NOA) of the Description of Proposed Action and Alternatives (DOPAA), published in 2019, provided an opportunity for the public to review and comment on the Proposed Action. The development of alternatives and preparation of the Draft EA considered comments received, as detailed in Appendix C.

A NOA for the Draft EA announcing the review period was mailed to federal, state, and local agencies, and interested members of the public and published in nine local newspapers. The Draft EA was available for a 45-day public review period from August 1 to September 15, 2025. During the Draft EA public comment period, 30,280 comments were received from California and federal government agencies, elected officials, business and commercial entities, interest groups, non-governmental organizations, and individual citizens. Appendix C provides a summary of public comment topics, a response to comment topic summaries, and a summary of revisions made to the Final EA in response to comments.

1.6.2 Cooperating Agency

The Marine Corps requested, and the FAA agreed to be a cooperating agency for development of this EA due to its expertise and regulatory authority over the National Airspace System, as outlined in Joint Order 7400.2R (FAA 2025a). The FAA may adopt the EA prepared by the Marine Corps (FAA 2023). Copies of the cooperating agency correspondence are included in Appendix B.

1.7 Regulatory Setting

The Marine Corps prepared this EA based upon federal and state laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action (see Appendix D).

CHAPTER 2
PROPOSED ACTION AND ALTERNATIVES

The Marine Corps is proposing to establish new permanent Special Use Airspace (SUA) areas to the west and east of existing Combat Center SUA and to modify the lateral boundaries, component sectors, and altitude limits within existing SUA areas along the southern and eastern boundaries of the Combat Center to support ongoing and future daily training activities. Restricted Areas (RAs), Military Operations Areas (MOAs), and Air Traffic Control Assigned Airspace (ATCAAs) are the only types of airspace under the Proposed Action. The proposed permanent SUA would accommodate the Marine Expeditionary Brigade (MEB)-sized exercises that were proposed and evaluated in the 2012 Final Environmental Impact Statement (EIS) (hereinafter the "2012 Final EIS"). Elements of the MEB construct have been implemented into various exercises and training but only currently occur within Controlled Firing Area (CFA).

The SUA would be activated either by itself or in conjunction with the existing and/or proposed RAs, MOAs, and ATCAAs. There would be no change to the public's access to the Johnson Valley Shared Use Area, which currently allows for full public access except when the area is closed to the public for up to two 30-day periods each year.

Under the Proposed Action, current aircraft operations at the Combat Center would spread out across existing SUA and expand into the newly established/modified RAs, MOAs, and ATCAAs. Overall, the types of training would be the same as analyzed in the 2012 Final EIS. Additionally, the Proposed Action accounts for changes in aircraft use that includes the transition from the FA-18 to the F-35 (with no change in sorties for these groups); and additional KC-130, Joint Aerial Refueling, and Unmanned Aerial Systems (UAS) sorties (Marine Air Ground Task Force Training Command [MAGTFTC] 2024a, 2024b, 2024c). There would be no change to the remaining number of annual sorties that currently occur in existing Combat Center airspace, that is, aircraft would continue to train but would now spread out to use the existing and newly established/modified airspace under the Proposed Action.

2.1 Screening Criteria and Alternatives Development

2.1.1 Screening Criteria

The Marine Corps, in coordination with the Federal Aviation Administration (FAA), developed a set of screening criteria to help identify and evaluate potential feasible alternatives for implementing the Proposed Action that would satisfy the purpose and need (Section 1.2). The proposed permanent SUA was designed to minimize impacts on air traffic managed by the FAA Los Angeles Air Route Traffic Control Center (ARTCC) while also meeting the Combat Center's training requirements. To be considered a viable and reasonable alternative, proposed SUA establishment/modification must:

1. Be permanent so the use of the new or modified airspace can be predictable and controllable by the Combat Center.
2. Be sufficiently sized to support current and future ground-based and airborne live-fire training activities in and around the Combat Center, from individual and unit training through various levels of MEB building block training activities, to at least two large-scale pre-deployment exercises involving at least one battalion.
3. Be compatible with or potentially enhance current ongoing training activities conducted in existing training ranges and SUA associated with the Combat Center.

4. Maintain and enhance the contiguity of and continuity between new and existing airspace areas to support improved maneuverability, while also enhancing containment and administrative control of training operations.
5. Provide sufficient lateral and vertical separation between proposed and current airspace areas to support simultaneous training activities in different areas of the Combat Center.
6. Provide SUA over the acquired land area to support combined-arms training for 365 days per year.
7. Minimize impacts on National Airspace System structure and commercial aviation routes.

These screening criteria were used to identify the range of reasonable alternatives that would be carried forward for analysis in the Environmental Assessment (EA). Some of these criteria were exclusionary in nature, representing conditions that must be true for an alternative to be considered reasonable. Other criteria were qualitatively evaluated relative to the Combat Center's training requirements.

2.1.2 Alternatives Development

The Combat Center initially identified various contiguous blocks of airspace that would meet the Screening Criteria 1–6. MAGTFTC submitted initial aeronautical proposals to the FAA for review and processing in 2018. MAGTFTC and FAA coordinated to adjust the shape, location, altitude designations, and level of restrictions for the various blocks of airspace based on application of Screening Criterion 7. This allowed for the development of alternative airspace configurations that would satisfy both the Combat Center's training requirements and the FAA's requirements for maintaining safe use of the nation's airways. With the exception of the No-Action Alternative (as described in Section 2.2), only alternatives that would satisfy these criteria were considered reasonable and were carried forward for detailed evaluation in this EA.

Initially, this alternative development process yielded two such alternatives, which were presented in the Description of Proposed Action and Alternatives (DOPAA), released for public review in March 2019. However, Alternative 2 identified in the March 2019 DOPAA has been replaced with a new Alternative 2 following additional coordination between MAGTFTC and FAA, application of Screening Criterion 7 (i.e., 2021 Working Group Meetings), and review by the FAA (i.e., 2021 Aeronautical Study and 2023 Safety Risk Management Panel). MAGTFTC submitted revised aeronautical proposals to the FAA for review and processing in 2021 based on the Working Group Meetings. Alternatives 1 and 2 are presented in Sections 2.3 and 2.4, respectively. Alternatives that were identified but eliminated from further consideration in this EA based on these Screening Criteria are described below.

2.1.3 Alternatives Considered but Eliminated from Further Analysis

During the planning process, the Marine Corps identified and then eliminated the following potential alternatives because they would not meet the screening criteria.

2.1.3.1 Use of Airspace 200 Days a Year

The 2012 Final EIS proposed 200 days per year to support large-scale MEB-sized exercises. This proposed airspace configuration was determined to meet the needs of the Combat Center at the time. However, since the 2013 Record of Decision (ROD), training requirements have continued to incrementally evolve and new weapons systems and platforms have been developed that require a larger volume of airspace. Airspace associated with the Combat Center has become increasingly congested, with up to 30 training exercises occurring at the same time requiring additional lateral separation for MOA/ATCAA to enhance training flexibility and safety. As a result, the need

identified in the 2012 Final EIS for new SUA for only 200 days per year is no longer sufficient and permanent SUA over the acquired land area is now required for 365 days per year. Therefore, the 2012 Final EIS airspace configuration was eliminated from further consideration in the EA because it would not satisfy Screening Criterion 6 for the Proposed Action.

2.1.3.2 Temporary Special Use Airspace Proposals

The Combat Center has sought temporary SUA to support training in 2016, 2017, and 2019/2020 while continuing to coordinate with the FAA on permanent SUA. Only the 2017 temporary SUA proposal was approved by the FAA. Although these SUA proposals were designed to *temporarily* support ongoing training, they did not provide a permanent solution for the Combat Center's current, ongoing, and future airspace requirements. Additionally, temporary SUA proposals do not provide the same level of awareness to pilots as charted SUA, and FAA prefers a permanent solution over the 2012 Final EIS land expansion area. Establishing permanent SUA would improve safety for military and civilian pilots by providing charted, predictable boundaries in compliance with FAA Joint Order 7400.2R, Section 21-1-15(a) (FAA 2025a), which allows pilots to more effectively plan their flights when SUA is active in accordance with published NOTAMs. This clear delineation minimizes uncertainty and improves situational awareness for all airspace users. Therefore, the ongoing submittal of temporary SUA requests for specific training events was eliminated from further consideration in the EA because it would not satisfy Screening Criteria 1 or 6 for the Proposed Action.

Temporary Flight Restrictions (TFRs) were deemed unsuitable to meet the Marine Corps' training requirements because FAA Regulations (14 Code of Federal Regulations [CFR] 91.137 and 91.145) specifically limit TFR usage to unplanned hazardous events such as natural disasters, aircraft accidents, aerial demonstrations, sporting events, national security (e.g., presidential movements), or short-term emergency situations that create ground or air hazards.

2.2 No-Action Alternative

The No-Action Alternative provides a baseline condition against which the impacts of the Proposed Action can be compared. It represents the existing conditions, described in Section 1.4.4, but projected out 5 years. Under the No-Action Alternative, there would be no change to the existing SUA at the Combat Center (refer to Figure 1-2 and to Section 1.4.4 for descriptions of existing SUA associated with the Combat Center). The No-Action Alternative captures anticipated changes to aircraft platforms, including the replacement of AV-8B and FA-18 with the F-35 across the Department of War (DOW) (formerly referred to as the Department of Defense [DoD]), as analyzed in the F-35 West Coast Basing Final EIS from 2010 (Department of the Navy [DON] 2010). This action is still being implemented and the anticipated progress over the following years is captured under the No-Action Alternative, as detailed in Table 2-1. Overall, there would be no change to the total number of annual sorties at the Combat Center, just a redistribution of sorties to account for aircraft platforms replacements.

Under the No-Action Alternative, there would be no improvement to existing airspace management, coordination, and flight safety at the Combat Center. While the existing airspace would continue to support ongoing training (MAGTFTC 2023), it would not be able to support MEB-sized exercises described in the 2012 Final EIS. Because the existing airspace associated with the Combat Center would not sufficiently support current and emerging training requirements, the No-Action Alternative would, therefore, not satisfy the purpose of and need for the Proposed Action and is not considered a reasonable alternative. Despite this, the No-Action Alternative will be carried forward in this EA.

Table 2-1 Combat Center SUA Sorties - Existing (2024) Versus No-Action Alternative (2028)

Aircraft	Existing (2024) (Total / Above FL270[1])			No-Action Alternative (Total / Above FL270[1])		
	R-2501 A/B/C/D/E and Sundance MOA	Bristol MOA/ ATCAA	Turtle MOA/ ATCAA[2]	R-2501 A/B/C/D/E and Sundance MOA	Bristol MOA/ ATCAA	Turtle MOA/ ATCAA[2]
AV-8B	608/87	426/43	400/40	0/0	0/0	0/0
FA-18[3]	1,001/203	701/98	1,200/120	1,001/203	701/98	200/20
F-35	321/145	225/26	400/40	929/232	651/69	1,800/180
AH/UH-1	2,241/0	456/0	0/0	2,241/0	456/0	0/0
CH-53	682/0	43/0	0/0	682/0	43/0	0/0
MV-22	637/0	71/0	0/0	637/0	71/0	0/0
KC-130[4]	100/0	256/256	400/0	100/0	256/256	400/0
Joint AR	0/0	71/0	0/0	0/0	71/0	0/0
UAS Group 1[5]	360/18	0/0	0/0	360/18	0/0	0/0
UAS Group 2-4[5]	41/2	0/0	0/0	41/2	0/0	0/0
Total	**5,991/455**	**2,249/423**	**2,400/200**	**5,991/455**	**2,249/423**	**2,400/200**

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aerial Systems

Notes: [1]Above FL270 is a subset of sorties; Above FL270 would not apply to Sundance MOA.
[2]Not originating at the Combat Center. Turtle MOA/ATCAA sorties initially estimated from 2018 airspace activation hours and types of aircraft based on most frequent units utilizing the airspace, then assumed AV-8B to fully transition to F-35 and most FA-18 transition to F-35 resulting in 90 percent of fighter aircraft soties to be F-35.
[3]Turtle MOA fighter jet sorties include F-15, F-16, and Navy FA-18 modeled as FA-18.
[4]Modeled as C-130H; 14 sorties in R-2501 / Sundance MOA combined and remaining 84 in R-2501 exclusively.
[5]UAS primarily Group 1 type (90%) and the rest Group 2 to 4 (10%); UAS only operate in R-2501 but may transit through other airspace as allowed by FAA. UAS not modeled as described in 3.1.3.1.

2.3 Alternative 1

2.3.1 Airspace Configuration

Similar to what was proposed in the 2012 Final EIS, Alternative 1 would establish new permanent SUA (R-2509, Johnson Valley MOA/ATCAA, Sundance ATCAA, CAX MOA/ATCAA, and Turtle Low MOA) within the footprint presented in the 2012 Final EIS and modify existing SUA (Bristol MOA/ATCAA and Sundance MOA) in the airspace located above, adjacent to, and to the east of the Combat Center (Figure 2-1). The establishment of R-2509 and Johnson Valley MOA/ATCAA would require a minor amendment to the existing R-2501 to avoid infringement on R-2501D (Figure 2-2).

This establishment of new SUA and modification of existing SUA under Alternative 1 would meet Screening Criteria 1–6 by providing permanent, predictable, and controllable airspace of sufficient size to fully support MEB-sized combined-arms live-fire training (DON 2012; MAGTFTC 2023). Simultaneously, it is consistent with Screening Criterion 7, in that it would enhance safe control of civilian flights, thus minimizing impact to the National Airspace System. The proposed R-2509 would provide safe separation between military training activities and nonparticipating aircraft, which would not be allowed into the RA when it is activated.

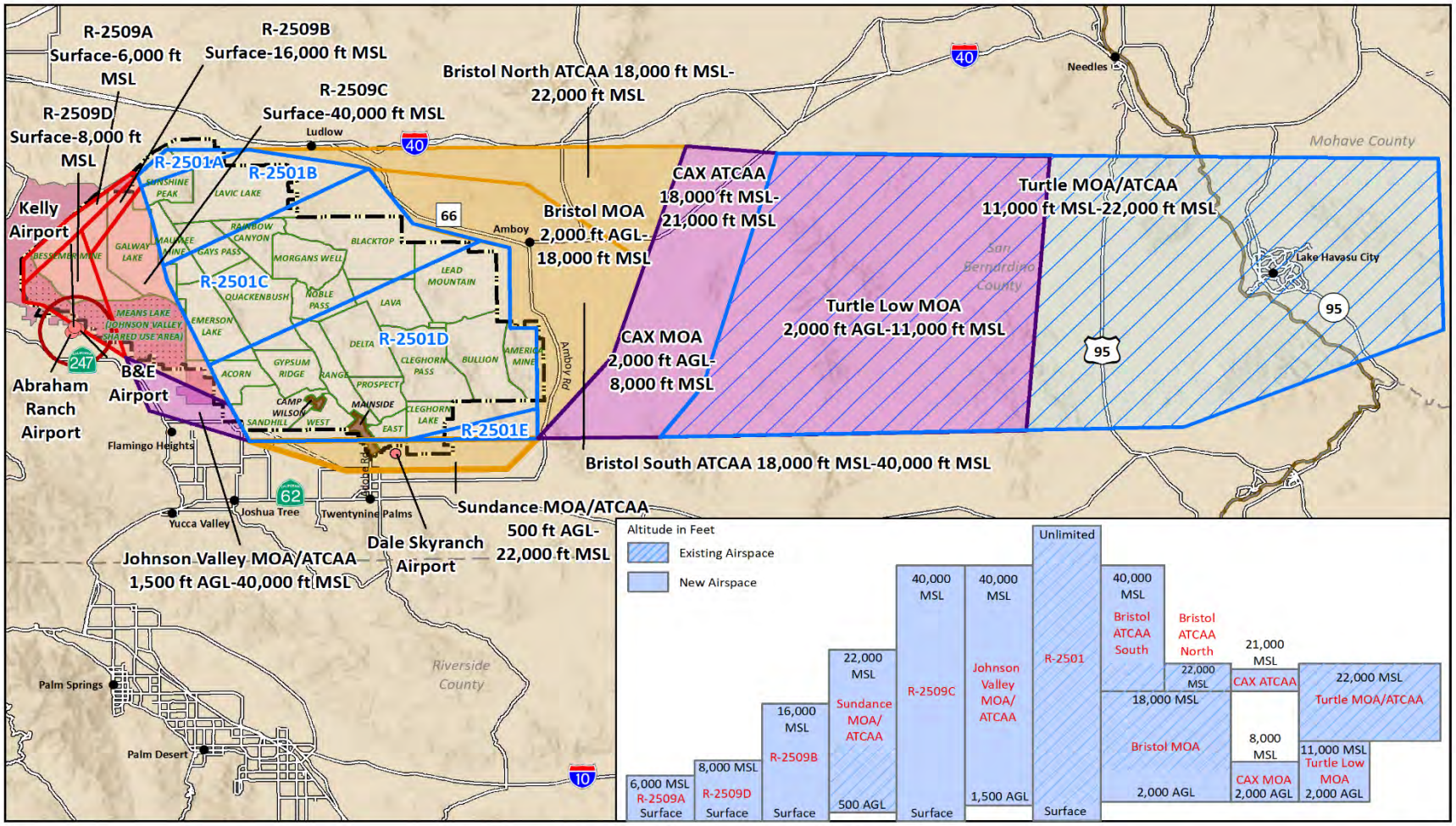


Figure 2-1. Special Use Airspace Under Alternative 1

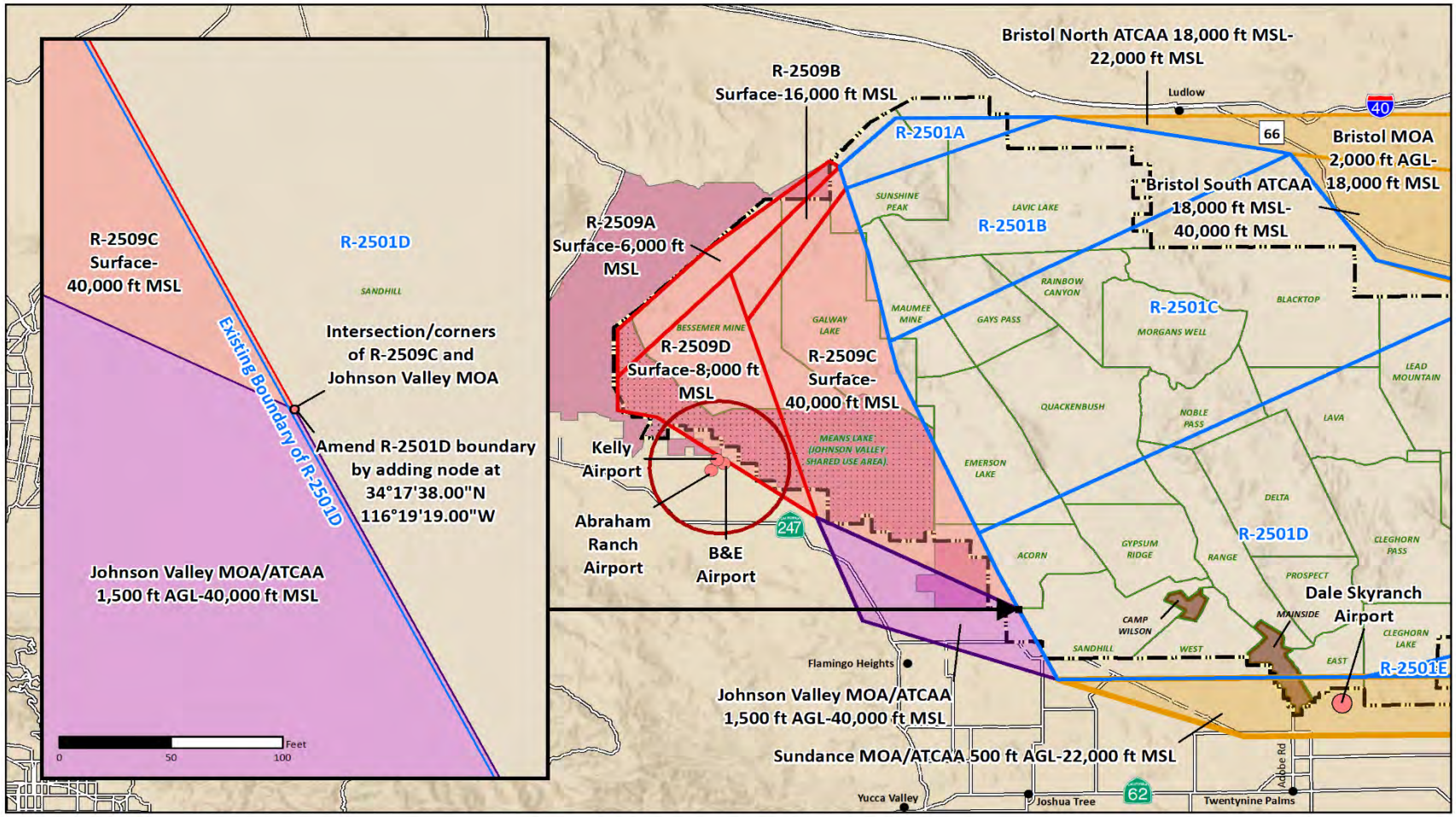


Figure 2-2. Amendment to Existing R-2501D

The new and modified MOAs would be less restrictive than the RA and would not prohibit access by other aircraft. Non-military aircraft operating in the local area could continue to be able to operate under Visual Flight Rules (VFR), even when the proposed MOAs were active; however, extreme caution would be advised when such aircraft transit the area during military activities. Aircraft operating under Instrument Flight Rules (IFR) would experience no change when the proposed MOAs are inactive and would be routed around or over the MOA when it is active to ensure flight safety for all aircraft. The proposed new and modified ATCAAs would be located above the underlying MOAs and would provide participating military aircraft the freedom to maneuver and train in the airspace above and in conjunction with the MOAs below them. The IFR traffic would be routed around active ATCAAs by FAA Los Angeles ARTCC controllers, providing safe separation between military training activities and nonparticipating traffic.

Descriptions of the proposed airspace under Alternative 1 are provided below; additional details are provided in Appendix E.

The FAA Los Angeles ARTCC would continue to be the controlling agency, while the Combat Center would be the using agency. Use of the SUA would be scheduled and managed by the Combat Center Range Scheduling and Control Facility per published orders, directives, and letters of procedure/agreement. Real-time communications currently in place between on-site range safety personnel, range users, and the Combat Center Range Control Facility would continue to be followed at all times during training activities.

2.3.1.1 Restricted Area 2501(R-2501)

Modify the existing R-2501 footprint to change the R-2501D boundary by adding a node, which will avoid infringement with the proposed eastern boundary of R-2509 as depicted in Figure 2-2.

2.3.1.2 Restricted Area 2509 (R-2509)

Establish a new RA (R-2509) adjacent to R-2501. R-2509 would be subdivided into four blocks of airspace: R-2509A (Surface to 6,000 feet mean sea level [MSL]), R-2509B (Surface to 16,000 feet MSL), R-2509C (Surface to Flight Level [FL] 400), and R-2509D (Surface to 8,000 feet MSL) (see Figure 2-1). The proposed R-2509 would be activated Notice to Airmen (NOTAM) either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be continuous, but the Marine Corps would return R-2509 to the Los Angeles ARTCC when not needed for military training in compliance with FAA Joint Order 7400.2R, Section 21-1-8 (FAA 2025a) so it would be available to other users.

To ensure public safety and access, the Marine Corps would manage the R-2509 airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public. In compliance with FAA Joint Order 7400.2R, Section 23-1-4 (FAA 2025a), the proposed new R-2509 "floor" would be established from ground surface only when the Marine Corps closes the Johnson Valley Shared Use Area to the public for military training. Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at 1,500 feet above ground level (AGL). This vertical separation ensures that ground-based activities like off-roading, camping, hiking, recreational rocketry and drones, etc. can continue on the ground without interruption or interference from military aircraft overhead. This would be codified in the FAA/Marine Corps Letter of Procedure (LOP) for R-2509.

The Marine Corps would coordinate with the event proponents for activities in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support the organized events covered under a Bureau of Land Management (BLM) Special Use Permit. If an event requires airspace access to an altitude higher than the proposed R-

2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponents on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements.

For public land (BLM and state land) and private land located outside of the Combat Center and below the proposed new R-2509 with a "floor" below 1,200 feet AGL, the Marine Corps would provide civilian pilots with reasonable and timely aerial access to such lands in compliance with FAA Joint Order 7400.2R, Section 21-3-3(f.2) (FAA 2025a). This would also be codified in the FAA/Marine Corps LOP for R-2509.

2.3.1.3 Johnson Valley Military Operations Area/Air Traffic Control Assigned Airspace

Johnson Valley MOA

Establish a new MOA (1,500 feet AGL to, but not including, FL180) adjacent to the west of R-2501 and south of proposed R-2509C. The proposed MOA would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be intermittent by NOTAM.

Johnson Valley ATCAA

Establish a new ATCAA to overlie and support operation of the newly established Johnson Valley MOA. The proposed Johnson Valley ATCAA (FL180 to FL400) would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be anticipated to be 0600–1600 Monday to Friday; other times by NOTAM.

2.3.1.4 Bristol Military Operations Area/Air Traffic Control Assigned Airspace

Bristol MOA

Modify the existing Bristol MOA by expanding existing altitudes (5,000 feet AGL to, but not including, FL180) to 2,000 feet AGL to, but not including, FL180 (see Figure 2-1). The proposed Bristol MOA would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be 0800–2200 daily; other times by NOTAM.

Bristol ATCAA

Modify the existing Bristol ATCAA by subdividing it into Bristol North ATCAA and Bristol South ATCAA, each with different designated altitudes. The entire block of airspace for both Bristol North ATCAA (FL180 to FL220) and Bristol South ATCAA (FL180 to FL400) would only be used for Large-Scale Exercises (LSEs); Bristol North ATCAA and the lower block of airspace for Bristol South ATCAA (FL180 to FL270) would be used for all other training. The two proposed ATCAAs would continue to overlie and support operation in the modified Bristol MOA and would be activated either by themselves or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be anticipated to be 0800–2200 daily; other times by NOTAM.

2.3.1.5 Sundance Military Operations Area/Air Traffic Control Assigned Airspace

Sundance MOA

Modify the existing Sundance MOA by expanding the boundary to the west and existing altitudes (500 feet AGL to 10,000 feet MSL) to 500 feet AGL to, but not including, FL180 (see Figure 2-1). The proposed Sundance MOA would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be intermittent by NOTAM.

Sundance ATCAA

Establish a new ATCAA to overlie and support operation in the modified Sundance MOA. The proposed Sundance ATCAA (FL180 to FL220) would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be anticipated to be 0600–1600 Monday to Friday; other times by NOTAM.

2.3.1.6 CAX Military Operations Area/Air Traffic Control Assigned Airspace

Establish a new MOA/ATCAA in the gapped area between Bristol MOA/ATCAA and Turtle MOA/ATCAA, providing connecting airspace between Bristol MOA/ATCAA and existing Turtle MOA/ATCAA and proposed new Turtle Low MOA (see Figure 2-1).

CAX MOA

The proposed CAX MOA (2,000 feet AGL to 8,000 feet MSL) would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be intermittent by NOTAM.

CAX ATCAA

The proposed CAX ATCAA (FL180 to FL210) would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be anticipated to be 0800–2200 daily; other times by NOTAM.

2.3.1.7 Turtle Low Military Operations Area

Establish a new MOA below the western half of the existing Turtle MOA/ATCAA (see Figure 2-1). The proposed MOA (2,000 feet AGL to, but not including, 11,000 feet MSL) would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be intermittent by NOTAM.

2.3.2 Aircraft Operations

Under Alternative 1, existing aircraft operations at the Combat Center would spread out beyond existing SUA and expand into the newly established/modified RAs, MOAs, and ATCAAs. In addition, the Proposed Action accounts for the following anticipated changes in aircraft use (MAGTFTC 2024a):

- 320 of the FA-18 sorties would be replaced with 320 F-35 sorties
- KC-130 sorties would increase by 120 and Joint Aerial Refueling sorties would increase by 20, both due to an increase in high altitude aerial refueling tanker training
- UAS sorties would increase by 1,599, 90 percent of which would be Group 1 UAS (small, handheld, remotely piloted aircraft that would fly between the surface and 2,000 feet AGL)

Most of the additional sorties would occur in R-2501, R-2509, Sundance MOA/ATCAA, and Johnson Valley MOA/ATCAA. The total sorties in Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA would remain the same as the No-Action Alternative; however, a portion of F-35 sorties that would operate above FL270 would increase. Consistent with the existing conditions, no supersonic flights would occur at the Combat Center. Table 2-2 provides a summary of estimated numbers and types of aircraft that would regularly use the proposed airspace.

Appendix A presents additional details comparing the Proposed Action alternatives to the No-Action Alternative and to the 2012 Final EIS Alternative 6 (Preferred Alternative). As described in Appendix A, the 2012 Final EIS airspace training tables presented airspace operations, not sorties, so the operations presented in the 2012 Final EIS may appear substantially greater in

number due to this difference in methodology. However, the resultant proposed airspace activity in the 2012 Final EIS that would originate at the Combat Center is roughly 10,000 sorties, which is comparable to this EA's proposed alternatives when presented as sorties. Therefore, while the Proposed Action presents an increase in sorties, it is still within scope of the Preferred Alternative that was analyzed in the 2012 Final EIS.

Table 2-2 Annual Airspace Sorties Under the Proposed Alternative 1

Aircraft	R-2501A/B/C/D/E R-2509A/B/C/D Sundance MOA/ATCAA Johnson Valley MOA/ATCAA		Bristol MOA/ATCAA CAX MOA/ATCAA Turtle Low MOA		Turtle MOA/ATCAA[6] (Not Originating at the Combat Center)	
	Total	Above FL270 [1]	Total	Above FL270	Total	Above FL270
AV-8B	-	-	-	-	-	-
FA-18[2]	681	33	285	57	200	20
F-35	1,249	402	1,067	358	1,800	180
AH/UH-1	2,241	-	456	-	-	-
CH-53	682	-	43	-	-	-
MV-22	637	-	71	-	-	-
KC-130[3]	220	-	256	256	400	-
Joint Aerial Refueling[4]	20	-	71	-	-	-
UAS Group 1[5]	1800	-	-	-	-	-
UAS Groups 2-4[5]	200	200	-	-	-	-
Total	**7,730**	**635**	**2,249**	**671**	**2,400**	**200**
Change From No-Action Alternative	**+1,739**	**+180**	**0**	**+248**	**0**	**0**

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aerial Systems

Notes: [1]Above FL270 is a subset of sorties and would not apply to Sundance MOA/ATCAA.
[2]Turtle MOA/ATCAA fighter jet sorties include F-15, F-16, and Navy FA-18.
[3]Modeled as C-130H; 14 sorties in R-2501 / Sundance MOA combined and remaining 84 in R-2501 exclusively.
[4]Joint Aerial Refueling would only occur in Johnson Valley MOA/ATCAA, Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle MOA/ATCAA.
[5]UAS are primarily Group 1 type (90%) and the rest are Group 2 to 4 (10%); Groups 2-4 UAS only operate in R-2501 and R-2509 but may transit through other airspace as allowed by FAA.
[6]Turtle MOA/ATCAA sorties initially estimated from 2018 airspace activation hours and types of aircraft based on most frequent units utilizing the airspace, then assumed AV-8B to fully transition to F-35 and most FA-18 would transition to F-35 resulting in 90 percent of fighter aircraft soties to be F-35.

Source: MAGTFTC 2024

2.3.3 Training Operations

The proposed changes to airspace and aircraft operations would not affect other elements of ongoing training operations, such as the use of existing impact areas, aircraft integration with ground training, and use of ordnance—including air-to-ground delivered ordnance. Therefore, the impacts from all ongoing training operations will be considered in this EA as part of the cumulative impact analysis in Chapter 4. Despite this, it is important to understand what types of activities would occur within RAs, MOAs, and ATCAAs; therefore, a description of the types of training activities is provided below.

2.3.3.1 Training in Restricted Areas

Training activities conducted within RAs (existing R-2501 and proposed R-2509) would continue to include live-fire from pistols, rifles, machine guns, anti-tank weapons, mortars, artillery; and fixed-wing, rotary-wing, and unmanned aircraft training activities, including close air support and live-fire ordnance delivery (as described in Appendix E). Aviation ordnance delivery would

continue to include the use of rockets, live and non-live bombs, including precision guided bombs and strafing ordnance. Surface-to-surface weapons that would continue to be fired within the proposed R-2509 include pistols, rifles, and machine guns (up to 0.50 caliber), flares, smoke, hand grenades, demolitions, grenade launchers, rocket launchers, missile launchers, mortars, all classes of lasers, mines, mine clearing line charges, 155-millimeter Howitzers, and High Mobility Artillery Rocket Systems. The maximum altitude for weapons that would continue to be fired vary from 1,500 feet AGL to FL400. Specific firing locations and impact points for all weapons systems would not change from the current conditions (MAGTFTC 2023). Firing of dud-producing ordnance into the Johnson Valley Shared Use Area would continue to be prohibited (in accordance with current regulations).

2.3.3.2 Training in MOAs/ATCAAs

Training in existing, modified, and proposed MOAs/ATCAAs would continue to support specific aircraft operations and nonhazardous activities as described in Appendix E. Live-fire and live ordnance delivery would not occur in MOAs/ATCAAs.

2.4 Alternative 2 (Preferred Alternative)

2.4.1 Airspace Configuration

Alternative 2 would establish new permanent SUA (R-2509, Johnson Valley MOA, Sundance ATCAA, CAX MOA, and Turtle Low MOA) and modify existing SUA (Bristol MOA/ATCAA and Sundance MOA) in the airspace located above, adjacent to, and to the east of the Combat Center (Figure 2-3). The establishment of R-2509 and Johnson Valley MOA would require the same minor amendment to the existing R-2501 to avoid infringement on R-2501D as described under Alternative 1 (see Figure 2-2).

Alternative 2 airspace configurations (above) would differ from Alternative 1 in the following ways:

- Limiting activation of (1) R-2509 and Johnson Valley MOA to up to 60 days per calendar year and (2) CAX MOA and Turtle Low MOA to up to 40 days per calendar year.
- Limiting altitudes to 16,000 feet MSL in R-2509C and Johnson Valley MOA.
- Not creating a Johnson Valley ATCAA or CAX ATCAA.
- Limiting altitudes in Bristol ATCAA to FL220 (same as existing airspace) and not dividing into Bristol North ATCAA and Bristol South ATCAA.
- Modifying the southern boundary of Sundance ATCAA.

Same as Alternative 1, the establishment of new SUA and modification of existing SUA under Alternative 2 would meet Screening Criteria 1–6 by providing permanent, predictable, and controllable airspace of sufficient size to fully support MEB-sized combined-arms live-fire training (DON 2012; MAGTFTC 2023). Screening Criterion 6 would be met through established and modified airspace (Bristol MOA/ATCAA and Sundance MOA/ATCAA) being available for up to 365 days per year to support combined-arms training. Consistent with Screening Criterion 7, Alternative 2 also includes changes that reduce the potential National Airspace System impacts. The Combat Center would not need to rely on requesting airspace for each specific use, and the airspace would be released for civilian and commercial use when not needed by the Combat Center. Alternative 2 is the preferred alternative because it would result in a reduced impact to the National Airspace System and Air Traffic Services (ATS) routes when compared to Alternative 1.

Descriptions of the proposed airspace under Alternative 2 are provided below; additional details, such as boundaries, are provided in Appendix E.

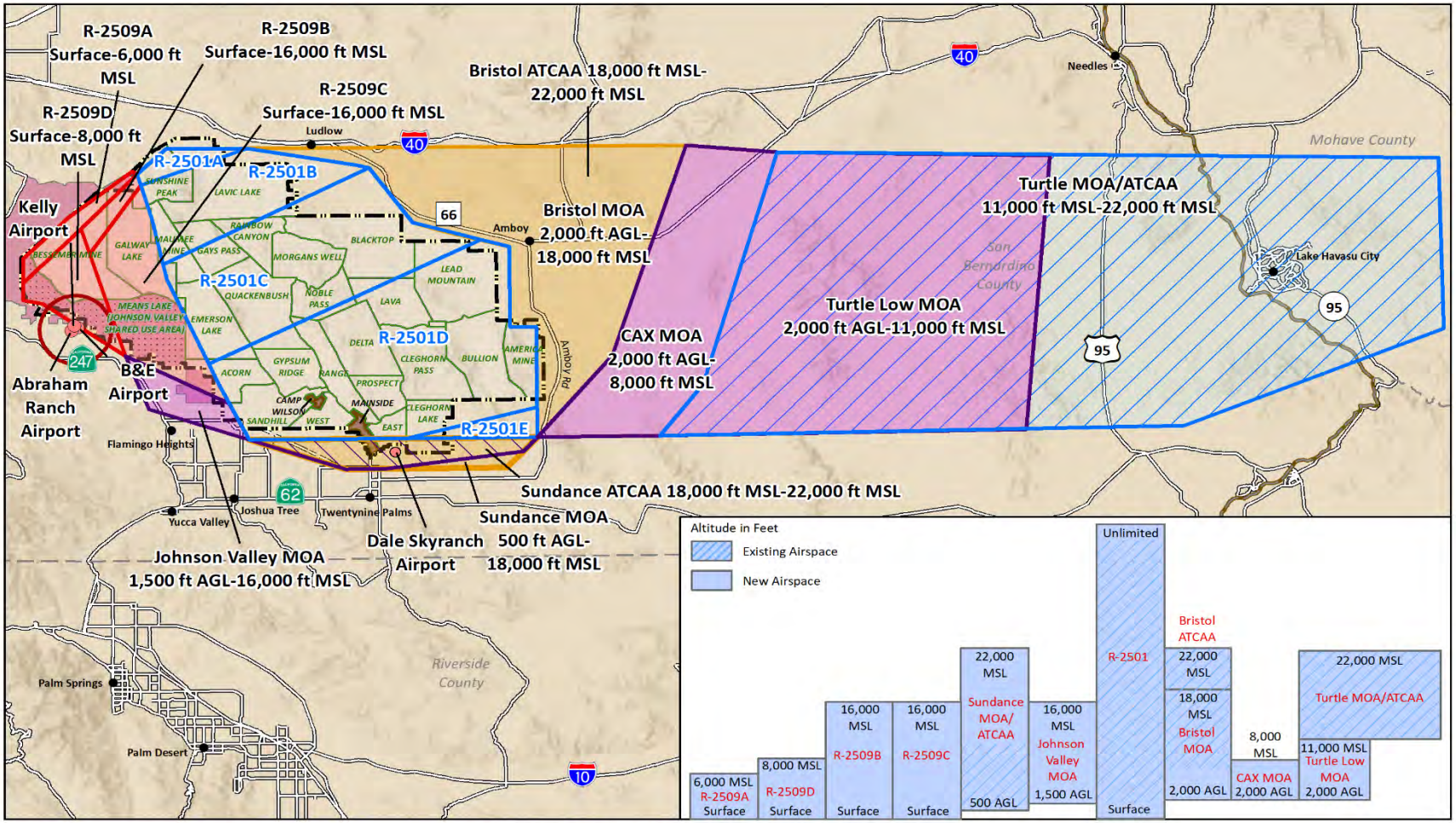


Figure 2-3. Special Use Airspace Under Alternative 2

Same as Alternative 1, FAA Los Angeles ARTCC would remain the controlling agency while the Combat Center would be the using agency. Use of the SUA would be scheduled and managed in the same fashion.

2.4.1.1 Restricted Area 2501(R-2501)

Modify the existing R-2501 footprint to change the R-2501D boundary by adding a node, which will avoid infringement with the proposed eastern boundary of R-2509 as depicted in Figure 2-2. This would be the same as under Alternative 1.

2.4.1.2 Restricted Area 2509 (R-2509)

Similar to Alternative 1, establish a new RA (R-2509) adjacent to R-2501. R-2509 would be subdivided into four blocks of airspace (see Figure 2-3). However, altitudes in R-2509C would be limited to 16,000 feet MSL under Alternative 2, compared to FL400 under Alternative 1. Proposed R-2509 would be activated either by itself or in conjunction with existing and/or proposed RAs, MOAs, and ATCAAs. Times of use would be by NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year. The Marine Corps would return R-2509 to Los Angeles ARTCC when not needed for military training in compliance with FAA Joint Order 7400.2R, Section 21-1-8 (FAA 2025a) so it would be available to other users.

To ensure public safety and access, the Marine Corps would manage the R-2509 airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public as described under Alternative 1 (Section 2.3.1.2). Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at 1,500 feet AGL and may be adjusted to support organized events covered under a BLM Special Use Permit on a case-by-case basis. For public land and private land located outside of the Combat Center and below R-2509, the Marine Corps would provide civilian pilots with reasonable and timely aerial access to such land. This would be codified in the FAA/Marine Corps LOP for R-2509.

2.4.1.3 Johnson Valley Military Operations Area

Similar to Alternative 1, establish a new MOA adjacent to the west of R-2501 and south of proposed R-2509C. However, altitudes would be limited to 16,000 feet MSL under Alternative 2, compared to less than FL180 under Alternative 1. Activate the ATCAA the same as described under Alternative 1. Compared to Alternative 1, there would be no establishment of a Johnson Valley ATCAA under Alternative 2. Times of use would be by NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year.

2.4.1.4 Bristol Military Operations Area/Air Traffic Control Assigned Airspace

<u>Bristol MOA</u>

Modify the existing Bristol MOA the same as described under Alternative 1. Times of use would be intermittent by NOTAM.

<u>Bristol ATCAA</u>

There would be no change to the existing Bristol ATCAA under Alternative 2; the ATCAA would not be divided into Bristol North ATCAA and Bristol South ATCAA and altitude would be limited to FL220. The ATCAA (FL180 to FL220) would continue to overlie and support operation in the modified Bristol MOA and would be activated in the same way. Times of use would be anticipated to be 0800–2200 daily; other times by NOTAM.

2.4.1.5 Sundance Military Operations Area/Air Traffic Control Assigned Airspace

Sundance MOA

Modify and activate the existing Sundance MOA the same as described under Alternative 1.

Sundance ATCAA

Similar to Alternative 1, establish a new ATCAA (FL180 to FL220) to overlie and support operation in the modified Sundance MOA. However, modify the eastern section of the southern boundary of Sundance ATCAA to accommodate commercial and civilian air traffic in the vicinity (see Figure 2-3). Activate the ATCAA the same as described under Alternative 1.

2.4.1.6 CAX Military Operations Area

Establish the new CAX MOA the same as described under Alternative 1. Times of use would be by NOTAM at least 6 hours in advance, not to exceed 40 days per calendar year. Compared to Alternative 1, there would be no establishment of a CAX ATCAA under Alternative 2.

2.4.1.7 Turtle Low Military Operations Area

Establish the new Turtle Low MOA the same as described under Alternative 1. Times of use would be by NOTAM at least 6 hours in advance, not to exceed 40 days per calendar year.

2.4.2 Aircraft Operations

Proposed aircraft sorties under Alternative 2 are provided in Table 2-3. Under Alternative 2, the change in aircraft operations would be the same as Alternative 1. However, the distribution of aircraft sorties at higher altitudes above FL270 would differ due to the limitations in altitudes in R-2509 and Bristol ATCAA and by not establishing Johnson Valley ATCAA or CAX ATCAA.

2.4.3 Training Operations

Same as Alternative 2, the proposed changes to airspace and aircraft operations would not affect other elements of ongoing training operations. As such, the impacts from all ongoing training operations will be considered in this EA as part of the cumulative impact analysis in Chapter 4.

2.5 Comparison of Alternatives

Appendix A provides a comparison of the No-Action Alternative, Alternative 1, Alternative 2, and the 2012 Final EIS Preferred Alternative 6.

Table 2-3 Annual Airspace Sorties Under the Proposed Alternative 2

Aircraft	R-2501A/B/C/D/E R-2509A/B/C/D Sundance MOA/ATCAA Johnson Valley MOA		Bristol MOA/ATCAA CAX MOA Turtle Low MOA		Turtle MOA/ATCAA[1] (Not Originating at the Combat Center)	
	Total	Above FL270[2]	Total	Above FL270[3]	Total	Above FL270
AV-8B	-	-	-	-	-	-
FA-18[4]	681	33	285	57	200	20
F-35	1,249	402	1,067	358	1,800	180
AH/UH-1	2,241	-	456	-	-	-
CH-53	682	-	43	-	-	-
MV-22	637	-	71	-	-	-
KC-130[5]	220	-	256	256	400	-
Joint Aerial Refueling[6]	20	-	71	-	-	-
UAS Group 1[7]	1800	-	-	-	-	-
UAS Groups 2-4[7]	200	200	-	-	-	-
Total	**7,730**	**635**	**2,249**	**671**	**2,400**	**200**
Change From No-Action Alternative	**+1,739**	**+180**	**0**	**+248**	**0**	**0**

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aerial Systems

Notes: [1]Turtle MOA/ATCAA sorties initially estimated from 2018 airspace activation hours and types of aircraft based on most frequent units utilizing the airspace, then assumed AV-8B to fully transition to F-35 and most FA-18 would transition to F-35 resulting in 90 percent of fighter aircraft soties to be F-35.
[2]Above FL270 is a subset of sorties and would not apply to Sundance MOA/ATCAA.
[3]Sorties Above FL270 would only occur within the Bristol ATCAA because CAX ATCAA would not be created under Alternative 2.
[4]Turtle MOA/ATCAA fighter jet sorties include F-15, F-16, and Navy FA-18.
[5]Modeled as C-130H; 14 sorties in R-2501 / Sundance MOA combined and remaining 84 in R-2501 exclusively.
[6]Joint Aerial Refueling would only occur in Johnson Valley MOA/ATCAA, Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle MOA/ATCAA.
[7]UAS are primarily Group 1 type (90%) and the rest are Group 2 to 4 (10%); Groups 2-4 UAS only operate in R-2501 and R-2509 but may transit through other airspace as allowed by FAA.

Source: MAGTFTC 2024

CHAPTER 3
AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter presents a description of the existing environment and an analysis of the potential direct and indirect effects of Alternative 1 (cumulative effects are presented in Chapter 4). The level of detail used in describing an environmental consequence is commensurate with the anticipated level of potential environmental impact. Each section in this chapter defines a Region of Influence (ROI) for each resource.

'Significant,' as used in National Environmental Policy Act (NEPA), requires considerations of both the degree of effects and the affected environment, the affected interests, and the locality. Significance varies with the setting of a proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than across the country. Both short- and long-term effects are relevant. Impacts are classified as significant or less than significant.

Environmental impacts analyzed in detail in this Environmental Assessment (EA) are noise, airspace management, aviation emissions and air quality, biological resources, cultural resources, land use and recreation, and socioeconomics and children's health and safety risks. The regulatory framework for each of these resources can be found in Appendix D. Table 3.0-1 provides a summary of anticipated environmental impacts for resource areas analyzed in detail.

Resources not Considered in Detail

The following NEPA resource areas were assessed and were considered to have potentially negligible or non-existent effects under the Proposed Action (i.e., Alternative 1 or Alternative 2 in this EA) and, therefore, are not analyzed in this EA:

Coastal Resources: The Proposed Action would not involve any activities near coastal resources. Therefore, there would be no impact on coastal resources as a result of the No-Action Alternative or Proposed Action.

Department of Transportation Act: Section 4(f): The 1988 Defense Authorization Act, Public Law 10585, 111 Statute 1916, Section 1079, codified that "no military flight operations (including military training flights), or designation of airspace for such operations, may be treated as a transportation program or project for purposes of section 303(c) of Title 49, United States Code" (i.e., Section 4(f)). The Defense Authorization Act is published annually, and Public Law 115-232, John S. McCain National Defense Authorization Act for Fiscal Year (FY) 2019, includes Statute 1916 as a statute at large (i.e., in its original version). Federal Aviation Administration (FAA) Order 1050.1G, notes this exclusion. Therefore, Department of Transportation Act: Section 4(f) analysis is not carried forward in this EA.

Geological Resources and Farmlands**:** The Proposed Action would be limited to establishing and modifying airspace only and would not include any effects that would disturb the topographic features, soils, or subgrade geological resources underlying the affected or proposed airspace areas. Regardless, there are no mapped Prime Farmland, Unique Farmland, or Farmland of Statewide Importance below the proposed airspace (California Department of Conservation 2014). Therefore, there would be no impact on geological resources associated with the No-Action Alternative or Proposed Action.

Table 3.0-1 Summary of Anticipated Environmental Impacts

Resource Areas	Alternative 1	Alternative 2	No-Action Alternative
Noise	The largest increase in noise of 11 to 16 dB $CNEL_{mr}$/CNEL would occur within the proposed R-2509 and Johnson Valley MOA areas. However, no noise sensitive areas would be exposed to 65 dB $CNEL_{mr}$/CNEL and this increase would not be considered significant under either DOW or FAA criteria. However, the residents under R-2509C, R-2509D, Sundance MOA, and Johnson Valley MOA would experience increases in noise ranging from 3 to 15 dB resulting in CNEL of 60 to 63 dB, which would be considered 'reportable' noise impacts but not significant impacts as determined by FAA criteria (see Table 3.1-3 in the EA). The single event noise levels and possibility of structure vibrations could also result in additional annoyance, but not significant impacts. *Conclusion:* **No significant impact.**	Impacts would be the same as Alternative 1. *Conclusion:* **No significant impact.**	Impacts would be similar to existing conditions and no noise sensitive areas would be exposed to $CNEL_{mr}$/ CNEL greater than 65 dB. *Conclusion:* **No significant impact.**
Airspace Management	Alternative 1 would not be expected to result in significant impacts on airspace management or air traffic. As a part of the FAA's approval process, potential impacts on the National Airspace System would also be evaluated during the FAA aeronautical study process, which would identify any additional conditions or measures specific to the new permanent SUA/airspace under Alternative 1. When Instrument Flight Rule approach or departure out of Big Bear Airport (west of the proposed Johnson Valley MOA/ATCAA) is required due to weather, the airspace would be released to Los Angeles Air Route Traffic Control Center to minimize impacts to arrivals utilizing the Big Bear Airport Runway 26 RNAV (GPS) approach. *Conclusion:* **No significant impact.**	Impacts would be similar to Alternative 1. Alternative 2 is the basis of the FAA's 2021 Aeronautical Study. Implementation of Alternative 2 would have no significant impacts. *Conclusion:* **No significant impact.**	Would not result in a change to existing conditions and, with continuation of existing monitoring by the Combat Center, would not have a significant impact on airspace management. *Conclusion:* **No significant impact.**
Aviation Emissions and Air Quality	Emissions of VOCs, NO_x and PM_{10} were analyzed against the total training emissions developed in the 2012 Final EIS, which serves as the envelope for current and future training emissions. The analysis indicates no exceedance of the envelope, and the conclusion is that no significant impacts will result from implementing the proposed action. For the remaining pollutants (SO_2, $PM_{2.5}$, and CO), emissions for any of the Alternatives would fall below the comparative threshold. These emissions would not result in significant impacts (CO, SO_2, or $PM_{2.5}$ in MDAB) (Table 3.3-3 in the EA). Implementation of the Proposed Action would result in an increase in annual GHG emissions as compared to emissions from the No-Action Alternative, which would be at least partially offset by Marine Corps initiatives to reduce GHG emissions at the Combat Center. *Conclusion:* **No significant impact.**	Same as Alternative 1. *Conclusion:* **No significant impact.**	All criteria emissions would decrease compared to the 2012 conformity determination EIS. GHG emissions would increase due to the replacement of the AV-8B with the F-35B. *Conclusion:* **No significant impact.**
Biological Resources	There is a slight potential for increased exposure of wildlife, including special status species, to noise from aircraft overflights, as well as aircraft collisions (birds and bats); however, increased exposure would be minimal/limited due to the small increase in the number of annual sorties. Under EO 13186, because the Proposed Action has, or may have, a measurable negative effect on migratory bird populations, the Marine Corps has developed and implemented a MOU with the USFWS that would promote the	Similar to Alternative 1. *Conclusion:* **No significant impact.**	No impact on biological resources beyond existing conditions. *Conclusion:* **No significant impact.**

Resource Areas	Alternative 1	Alternative 2	No-Action Alternative
	conservation of migratory bird populations. There would be no impact on the desert tortoise because there would be no ground disturbance and previous studies concluded that aircraft noise is not known to significantly affect the desert tortoise. *Conclusion:* **No significant impact.**		
Cultural Resources	Any potential noise and/or noise generated vibrations, any visual impact of military overflights within the affected and proposed airspace, and any increase in air pollutants would be minimal and would not cause adverse effects to cultural resources. Additionally, any cultural resources within the ROI would not be directly disturbed because there would be no ground disturbing activities associated with Alternative 1. The Combat Center conducted National Historic Preservation Act, Section 106 consultation with the California SHPO, Tribal Nations, and Tribal THPOs in 2019. The California SHPO concurred with the Marine Corps' determination of no adverse effect to historic properties. *Conclusion:* **No significant impact.**	Similar to Alternative 1. *Conclusion:* **No significant impact.**	No impact on cultural resources beyond existing conditions. *Conclusion:* **No significant impact.**
Land Use and Recreation	There would be a minor impact on land use and recreation due to an increase in noise exposure. As discussed above in Noise, such increases represent a less than significant change according to both DOW and FAA criteria, all existing land use would remain compatible with noise levels that would occur under Alternative 1, and no noise sensitive land uses would be exposed to 65 dB $CNEL_{mr}$/CNEL. There would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers) in Johnson Valley. *Conclusion:* **No significant impact.**	Same as Alternative 1. *Conclusion:* **No significant impact.**	No impact on land use and recreation beyond existing conditions. *Conclusion:* **No significant impact.**
Socioeconomics and Children's Health and Safety Risks	Populated areas located within the Johnson Valley MOA/ATCAA and portions of R-2509C and R-2509D would experience additional aircraft noise due to the establishment of the SUA. CNEL would increase to between 60 and 63 dB. However, schools would not be exposed to CNEL greater than 65 dB so there would be no significant change to children's health impacts, specifically classroom learning. Minor impacts would occur to the civilian aviation industry with the new airspace; however, coordination between the Combat Center and civilian aviation would minimize impacts so that there would be no significant economic impacts. There would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers), resulting in negligible impacts on economic activity generated in the ROI from recreational activities and to organized events in Johnson Valley. Therefore, implementation of Alternative 1 would have no significant impact on socioeconomics or children's health and safety. *Conclusion:* **No significant impact.**	Same as Alternative 1. *Conclusion:* **No significant impact.**	No impact on socioeconomics or children's health and safety beyond existing conditions. *Conclusion:* **No significant impact.**

Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset-Rate Adjusted Monthly Community Noise Equivalent Level; CO = carbon monoxide; dB = decibel; DOW = Department of War; EIS = Environmental Impact Statement; EO = Executive Order; FAA = Federal Aviation Administration; GHG = greenhouse gas; GPS = Global Positioning System; MDAB = Mojave Desert Air Basin; MOA = Military Operations Area; MOU = Memorandum of Understanding; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; RNAV = Area Navigation; ROI = Region of Influence; SHPO = State Historic Preservation Office; SO_2 = sulfur dioxide; SUA = Special Use Airspace; THPO = Tribal Historic Preservation Office; VOC = volatile organic compounds; USFWS = U.S. Fish and Wildlife Service

Water Resources: The Proposed Action would be limited to establishing and modifying airspace only and would not include any effects on the quantity, flows, percolation rate, or accessibility of regional surface water or groundwater resources. There are no existing or proposed wild and scenic rivers located below or near the proposed airspace. Therefore, there would be no impact on water resources as a result of the No-Action Alternative or Proposed Action.

Solid Waste/Hazardous Materials and Waste: The Proposed Action accounts for incremental changes to aircraft operations as well as the establishment and modification of airspace. Aircraft, which are owned and maintained by visiting units would utilize existing facilities while conducting exercises at the installation. The vast majority of maintenance-related activities would take place at the visiting unit's home facility and not at the Combat Center. While the proposed increase in aircraft use would likely result in a small increase in the use of hazardous materials and the disposal of solid/hazardous waste while visiting units are conducting exercises, there would be no change to the management of hazardous materials and waste. Therefore, there would be minimal to no impacts associated with hazardous materials and wastes as a result of the No-Action Alternative or Proposed Action.

Utilities and Infrastructure: The incremental changes in aircraft operations under the Proposed Action would not require construction of new air traffic control towers or other support facilities. If expansion is required in the future to support ongoing operations, this effort would be subject to separate NEPA review. The Proposed Action would not impact access by utility companies to perform necessary repair and maintenance to facilities located on the Combat Center and/or below the proposed Special Use Airspace (SUA). Utility companies would continue to coordinate with the Combat Center to obtain access to utility rights-of-way. Therefore, no additional utility services or modification of existing utility services would be needed and there would be no impact on utilities and infrastructure associated with the No-Action Alternative or Proposed Action.

Ground Transportation: The Proposed Action would be limited to establishing and modifying airspace only and would not include any project components that would involve or otherwise directly affect the ground surface or existing transportation networks. Local and regional road networks and transportation infrastructure would remain unchanged from their current conditions. Additionally, there would be no short- or long-term change in the volume of traffic experienced on these transportation networks as a result of the Proposed Action. Therefore, there would be no impact on ground transportation networks, carrying capacities, or other important transportation-related metrics associated with No-Action Alternative or Proposed Action.

Visual Resources: The Proposed Action would be limited to establishing and modifying airspace only and would not affect any visual receptors. The 2012 Final Environmental Impact Statement (EIS) assessed possible visual changes resulting from the project. This analysis considered the contrasts of the project in relation to the existing landscape including an assessment of visual contrast, project dominance, and view blockage for each of the key viewpoints affected by the preferred alternative selected in the 2013 Record of Decision (ROD) (refer to Section 1.4.3). The analysis in the 2012 Final EIS also considered aircraft overflights but determined that aircraft would not be considered a visual intrusion to any potential cultural landscapes or visitor. There would be the same impacts with the airspace proposed under the Proposed Action in this EA. Therefore, there would be no significant impacts on visual resources associated with the No-Action Alternative or Proposed Action.

Public Health and Safety: Under the Proposed Action, rigorous aircraft maintenance procedures, flight safety protocols, and airspace management (which is coordinated with the Federal Aviation

Administration [FAA] as described in more detail in Section 3.2, *Airspace Management*) would continue to be followed. A Bird/Wildlife Aircraft Strike Hazard (BASH) Plan for the Combat Center was completed in 2003. The goal of a BASH Plan is to minimize the risk of bird/wildlife strikes that may cause injuries to aircrews and damage to or loss of aircraft. The 2003 BASH Plan determined that the Combat Center and the Expeditionary Airfield have a low risk of airstrikes due to the remoteness of the airfield from any source of water (Combat Center 2024). Emergency aircraft such as medical evacuation (MEDEVAC), air ambulance, county Sherrif, and firefighting flights retain priority under standard FAA air traffic control procedures in compliance with FAA Joint Order 7110.65BB (FAA 2025d), and this would not change under the Proposed Action. Therefore, the potential risk of aircraft-related accidents with implementation of the Proposed Action would not change appreciably from the No-Action Alternative conditions. Therefore, there would be no significant impact on public health and safety as a result of the No-Action Alternative or Proposed Action.

3.1 Noise

This section discusses noise analysis focused on human impacts. Section 3.4, *Biological Resources* analyzes the effects on potentially noise sensitive wildlife species and Section 3.7, *Socioeconomics and Children's Health and Safety Risks* provides a detailed analysis of the potential for impacts on minority and low-income communities.

3.1.1 Definition of Resource

Noise is unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. Noise may be intermittent or continuous, steady or impulsive, and stationary or transient. Stationary sources are normally related to specific land uses (e.g., an industrial plant). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, and aircraft flight tracks around airports) or randomly. Responses to noise vary according to the type of noise and the characteristics of the sound source, the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal).

The physical characteristics of noise (unwanted sound) include its intensity, frequency, and duration. The unit used to measure the intensity of sound is the decibel (dB). Sound intensity varies widely (from a soft whisper to a jet engine). Human hearing ranges up to 120 dB, at which point sound causes physical discomfort. The frequency of sound is measured in cycles per second, or hertz. Low frequency sounds are heard as rumbles or roars, and high frequency sounds are heard as screeches. The human ear is most sensitive to frequencies in the 1,000 to 4,000 hertz range. Sound meters calibrated to emphasize frequencies in this range are termed "A-weighted," and sound is identified in terms of A-weighted decibels (dBA). Unless otherwise stated in the EA, dB units refer to dBA-weighted sound levels. The duration of a noise event and the number of times it occurs are also important considerations in assessing noise impacts. The primary metrics used to describe noise exposure include:

1. Day-Night Average Sound Level (DNL): A cumulative measure of aircraft noise exposure over a 24-hour period, with adjustments to account for increased impact of noise at night.
2. Community Noise Equivalent Level (CNEL): Similar to DNL, but with the addition of an evening period adjustment. Both the Department of War (DOW) (formerly referred to as the Department of Defense [DoD]) and FAA may utilize CNEL for projects occurring within the State of California (Defense Noise Working Group 2009; FAA 2020).

3. Onset-Rate Adjusted Monthly CNEL ($CNEL_{mr}$): Similar to CNEL regarding periods of the day but average day based upon a busy month of operations rather than an average annual day to account for the more intermittent nature of airspace activity. Includes an additional adjustment to account for the startle effect from quick increases in sound level created by aircraft operating at low altitudes and high rates of speed (typically over 400 knots).
4. Sound Exposure Level (SEL): A composite metric that represents both the intensity of a single event's sound and its duration.
5. Maximum Sound Level (L_{max}): A measure of the greatest sound level from a single event.

Appendix F contains the Noise Study developed for this EA that contains detailed technical information on the noise modeling software, operational data inputs, and noise modeling results.

3.1.2 Affected Environment

The noise analysis in this EA focuses on the potential for impacts from noise due to aircraft operations in the Special Use Airspace (SUA)/airspace associated with the Combat Center. There will not be any new ground disturbance (i.e., construction or demolition) nor changes to ground-based training, live-fire, or ordnance activity as part of the Proposed Action. Because of this and the fact that there have not been any significant changes to training operations (Marine Air Ground Task Force Training Command [MAGTFTC] 2023), the ordnance noise analysis from the 2012 Final EIS remains valid and no additional ordnance noise analysis is required. Refer to Chapter 4 for analysis of cumulative impacts associated with live-fire training, use of ordnance, and all ground-based training activities.

The existing conditions consider aircraft operations within existing SUA and Air Traffic Control Assigned Airspace (ATCAAs) associated with the Combat Center. The airspace is defined by a floor and ceiling described either in feet above ground level (AGL), mean sea level (MSL), or Flight Level (FL). Figure 1-2 depicts the Combat Center boundary along with currently utilized airspace with the floors and ceilings as described in Section 1.4.4. All SUA and ATCAAs are part of the existing Combat Center airspace complex except Turtle Military Operations Area (MOA)/ATCAA, which is scheduled by the Yuma Range Complex. Analysis of Turtle MOA/ATCAA are included in the noise study because the Proposed Action would expand Combat Center airspace and training eastward underlying these areas.

3.1.2.1 Aircraft Operations

Table 1-2 details existing annual sorties in the airspace associated with the Combat Center. Each sortie occurs in multiple SUA because each are often activated together as a larger contiguous volume of airspace. For instance, sorties listed in the R-2501A/B/C/D/E and Sundance MOA column of Table 1-2 can operate in any of those areas. The Unmanned Aerial Systems (UAS) sorties listed in Table 1-2 include various types with approximately 90 percent being Group 1 that are small enough to be launched and recovered by hand. The remaining 10 percent of UAS are classified as Groups 2 through 4 with a large proportion either powered by electric motors or piston engines smaller than household lawnmowers. Although these UAS could be annoying at short distances (i.e., at a few hundred feet away or less), at the Combat Center that situation generally does not apply to typical operations because UAS will often fly above 2,000 feet (and often much higher) when near populated areas. In fact, most of the time these UAS will probably not be audible so would negligibly contribute to the noise environment at the Combat Center that is dominated by jet and helicopter aircraft. Therefore, the UAS sorties have not been modeled for noise analysis.

The aircraft profiles (altitudes, speeds, and power settings) used for the analysis as well as details on UAS platforms are presented in the Noise Study in Appendix F.

3.1.2.2 Noise Exposure

Table 3.1-1 presents the calculated $CNEL_{mr}$ and CNEL of the dominant noise source rounded to whole decibels. The greatest aircraft noise levels currently occur in R-2501, while the lowest occurs in Bristol MOA and Turtle MOA/ATCAA. Ambient noise levels in rural areas due to non-military noise sources are estimated at 49 dB CNEL. Therefore, military aircraft is likely not the primary source of noise in Lake Havasu City, which is located below the eastern portion of Turtle MOA/ATCAA. Additionally, the CNEL due to aircraft would be similar to the estimated level of non-aircraft noise sources in Bristol MOA. Of note, there are no noise sensitive receptors currently exposed to $CNEL_{mr}$ or CNEL of 65 dB or greater, therefore, there would be no significant impact.

Table 3.1-1 Combat Center SUA Existing (2024) Noise Levels

Area	Noise Sensitive Receptors(1)	$CNEL_{mr}$	CNEL
R-2501	Yes	61	58
Sundance MOA	Yes	58	57
Bristol MOA/ATCAA	Yes	50	49(2)
Turtle MOA/ATCAA	Yes	45(2)	45(2)

Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset-Rate Adjusted Monthly Community Noise Equivalent Level; MOA = Military Operations Area

Note: (1)A noise sensitive receptor is a location that may experience interference from noise, such as residential dwellings, hospitals, nursing homes, educational facilities, and libraries.
(2)Typical ambient noise levels in rural areas of 49 dB may be greater than the military noise (ANSI 2013).

3.1.3 Environmental Consequences

Analysis of potential noise impacts includes estimating likely noise levels from the Proposed Action and determining potential effects to noise sensitive locations.

3.1.3.1 No-Action Alternative

Aircraft Operations

Under the No-Action Alternative, the airspace would be the same as existing as depicted in Figure 1-2. Aside from replacing the AV-8B with the F-35, the Combat Center does not anticipate substantial changes to operational levels of airspace/aircraft use within the next 5 years and the flight profiles would be the same as existing, as described in Section 3.1.2.1.

Noise Exposure

Table 3.1-2 presents the calculated average $CNEL_{mr}$ and CNEL on the ground within each airspace under No-Action Alternative rounded to whole decibels. The greatest aircraft noise levels currently occur in R-2501 and Sundance MOA while the lowest aircraft noise occurs in Bristol MOA and Turtle MOA/ATCAA. Overall, CNEL/$CNEL_{mr}$ would increase 2 to 4 dB from existing conditions due to the replacement of AV-8B with F-35. As stated in Section 3.1.2.2, ambient noise levels in rural areas due to non-military noise sources are estimated at 49 dB CNEL; therefore, military aircraft are likely not the primary source of noise in Lake Havasu City. Additionally, no noise sensitive receptors would be exposed to either $CNEL_{mr}$ or CNEL at or above 65 dB. The residences under Sundance MOA would experience an increase in noise that would result in CNEL of 60 to less than 65 dB. Therefore, there would be no significant noise impacts according to DOW or FAA criteria under the No-Action Alternative.

Table 3.1-2 Combat Center Permanent SUA Noise Levels Under No-Action Alternative

Area	Noise Sensitive Receptors	Existing (2024)		No-Action Alternative		Change Relative to Existing	
		$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL
R-2501	Yes	61	58	63	62	+2	+4
Sundance MOA	Yes	58	57	61	60	+3	+3
Bristol MOA/ATCAA	Yes	50	49(1)	53	52	+3	+3
Turtle MOA/ATCAA	Yes	45(1)	45(1)	45(1)	45(1)	0	0

Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset-Rate Adjusted Monthly Community Noise Equivalent Level; MOA = Military Operations Area

Note: (1)Typical ambient noise levels in rural areas of 49 dB may be greater than the military calculated noise at these locations (ANSI 2013).

3.1.3.2 Alternative 1

Aircraft Operations

Under Alternative 1, the airspace is depicted in Figure 2-1 and Table 2-2 details annual sorties, which would remain the same as the No-Action Alternative except the following:

- F-35 sorties would increase by replacing a corresponding 320 FA-18 sorties (i.e., no net change in these sorties)
- KC-130 sorties would increase by 120
- Joint Aerial Refueling would increase by 20
- UAS sorties would increase by 1,599

Aircraft operations currently occurring in R-2501 and Sundance MOA would spread out across those SUA and the newly established/modified R-2509, Sundance ATCAA, and Johnson Valley MOA/ATCAA. Existing operations in Bristol MOA/ATCAA would expand into newly established CAX MOA/ATCAA and Turtle Low MOA. Current training in the existing Turtle MOA/ATCAA may also utilize the new Turtle Low MOA.

The additional UAS sorties would comprise primarily small and quiet engines that would generally operate above 2,000 feet AGL (often substantially above 2,000 feet AGL) near populated areas. Most of the time, these UAS would not be audible at the ground and the relatively low numbers of sorties would negligibly contribute to the noise environment that is dominated by jet and helicopter aircraft. Consistent with existing conditions, the UAS sorties were not modeled for noise analysis. Aircraft profiles would be similar to the existing scenario except upper and lower altitudes are adjusted to fit within the SUA and ATCAA floors and ceilings, as detailed in Appendix F.

Noise Exposure

Table 3.1-3 presents the calculated average $CNEL_{mr}$ and CNEL on the ground within each airspace under Alternative 1 rounded to whole decibels. The greatest noise levels under Alternative 1 would occur in R-2501, R-2509, and Sundance MOA and range from 62 to 65 dB $CNEL_{mr}$ and 61 to 64 dB CNEL. Military aircraft noise levels under the newly established CAX MOA/ATCAA and Turtle Low MOA, as well as Lake Havasu City, would be between 46 and 50 dB for both $CNEL_{mr}$ and CNEL. The estimated ambient non-military noise for rural areas (49 dB DNL) may exceed the CNEL that would occur in CAX and Turtle MOA from military aircraft under the Proposed Action.

Table 3.1-3 Combat Center Permanent SUA Noise Levels Under Alternative 1

Area	Noise Sensitive Receptors	No-Action Alternative		Alternative 1		Change Relative to No-Action Alternative	
		$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL
R-2501[(1)]	Yes	63	62	64	63	+1	+1
R-2509A	No	49[(2)]	49[(2)]	65	64	+16	+15
R-2509B	No	49[(2)]	49[(2)]	64	63	+15	+14
R-2509C	Yes	49[(2)]	49[(2)]	64	63	+15	+14
R-2509D	Yes	49[(2)]	49[(2)]	62	61	+13	+12
Sundance MOA/ATCAA	Yes	61	60	64	63	+3	+3
Johnson Valley MOA/ATCAA	Yes	49[(2)]	49[(2)]	61	60	+12	+11
Bristol MOA/ATCAA	Yes	53	52	56	55	+3	+3
CAX MOA/ATCAA	Yes	49[(2)]	49[(2)]	50[(2)]	50[(2)]	+1	+1
Turtle MOA/ATCAA	Yes	45	45	48[(2)]	47[(2)]	+3	+2
Turtle Low MOA	No	45	45	50	50	+5	+5

Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset-Rate Adjusted Monthly Community Noise Equivalent Level; MOA = Military Operations Area

Notes: [(1)]R-2501 has been included in this table because flight operations would change but there would not be any changes to the R-2501 airspace dimensions.
[(2)]Existing ambient non-military aircraft noise estimated at 49 dB DNL, which may exceed the military noise under the Proposed Action (American National Standards Institute 2013).

No noise sensitive receptors would be exposed to either $CNEL_{mr}$ or CNEL at or above 65 dB. The land underneath R-2509A, the only location that would exceed 65 dB $CNEL_{mr}$/CNEL, is open space not containing any noise sensitive receptors. Additional details depicting land use is presented in the Noise Study in Appendix F. Therefore, there would be no significant noise impacts according to DOW standards. Similarly, according to FAA noise significance criteria described in FAA Order 1050.1G, there would be no significant noise impacts because no noise sensitive areas would be exposed to CNEL at or above 65 dB while experiencing a 1.5 dB or more increase.[1] FAA Order 1050.1G defines a less than significant change as a 'reportable' increase to be disclosed to the public if certain criteria apply. One of the two reportable criteria applicable to air traffic airspace and procedure actions is at least a 3 dB increase to a noise sensitive area that would be exposed to CNEL from 60 dB to less than 65 dB.

The residences under R-2509C, R-2509D, Sundance MOA, and Johnson Valley MOA would experience reportable increases in noise ranging from 3 to 15 dB resulting in CNEL of 60 to 63 dB. The FAA Order prescribes a second criteria for 'reportable' changes defined as a 5 dB increase in CNEL for noise sensitive areas that would be exposed to CNEL of 45 to less than 60 dB. Although the proposed Turtle Low MOA would experience a reportable increase under Alternative 1, no noise sensitive receptors would be affected because this area is undeveloped without residences or schools.

Table 3.1-4 presents single event noise levels of aircraft overflights to supplement the $CNEL_{mr}$ and CNEL analysis. The greatest noise levels occur when aircraft operate at very low altitude and high power. Less than 5 percent of fighter jet (AV-8B, F-18, and F-35) training is conducted at these low altitudes. Over 90 percent of training would occur above 5,000 feet AGL generating SEL and L_{max} ranging from 60 to 94 dB (see Appendix F for details). These most frequent levels would be typical of road traffic noise with the upper limit consistent with passing trucks or motorcycles.

[1]The CNEL may be used in lieu of DNL for FAA actions needing approval in California (FAA Order 1050.1G).

Table 3.1-4 Aircraft Overflight Noise Levels

Aircraft	Speed	Power	500 feet AGL[1]		2,000 feet AGL[1]		5,000 feet AGL[1]	
			L_{max}	SEL	L_{max}	SEL	L_{max}	SEL
AV-8B[2]	300	85% RPM	100	102	83	89	69	77
F-18A/C	400	88% NC	102	104	86	91	73	80
F-35B	400	90% ETR	114	117	98	105	86	94
CH-53	150	NA	95	99	81	88	71	79
AH-1	100	NA	85	97	71	87	60	78
MV-22	220	NA	90	94	75	82	64	72

Legend: % = percent; AGL = above ground level; ETR = Engine thrust request; L_{max} = maximum A-weighted sound level; NC = Compressor speed; RPM = Revolutions per minute; SEL = Sound Exposure Level

Notes: [1]Modeled weather conditions: 77°F, 20 percent Relative Humidity, 29.71 inches of Mercury.
[2]AV-8B modeled with F402-RR-408 engine.

Contrary to fighter jets, helicopter aircraft (CH-53 and AH-1) primarily operate between the ground and 1,000 feet AGL, generating SEL and L_{max} ranging from 85 to 99 dB while at 500 feet AGL. The MV-22 flies at similar altitudes as helicopters for training purposes but more frequently operates at altitudes above 2,000 feet AGL during transit with SEL of 82 dB and L_{max} of 75 dB.

Noise-induced structural vibration may cause annoyance to dwelling occupants because of induced secondary vibrations, or "rattle," of objects (e.g., hanging pictures, dishes, plaques) within the dwelling. Loose windowpanes may also vibrate noticeably when exposed to high levels of airborne noise, causing homeowners to fear breakage. In general, rattling occurs at unweighted sound levels that last for several seconds at greater than 110 dB. Community annoyance due to noise-induced vibration and rattle resulting from aircraft ground operations was studied by Fidell et al. (1999) and summarized in the Minneapolis-St. Paul International Airport Low Frequency Noise (LFN) Expert Panel Report (Sutherland et al., 2000). These field surveys of operations in the vicinity of a major international airport indicated that low frequency aircraft noise can lead to secondary vibration and rattle in residential structures, which may significantly increase annoyance. These studies, however, have been criticized (Federal Interagency Committee on Aviation Noise 2002) due to the absence of direct measurements of vibration in support of the findings on the presence of perceptible vibration and rattle. These issues were further addressed by Hodgdon et al. (2007). It was confirmed that the highest levels of noise near the runway during start-of-takeoff-roll and acceleration and during thrust reversal are at lower frequencies. It was also found that aircraft noise exposures that contained audible rattling were not the most annoying, likely because the rattle content was audible but not loud compared to the overall noise content. This result is consistent with an earlier study of human response to aircraft noise and induced building vibration (Powell and Shepherd, 1989).

The exact conditions under which windows would vibrate or rattle depends upon many factors that include the condition and nature of the windowpanes so it can be difficult to predict the likelihood to occur in the context of the proposed training at the Combat Center. Given that over 95 percent of military jet operations would continue to occur at greater than 2,000 feet AGL with 90 percent of these also greater than 5,000 feet AGL, nearly all of the proposed aircraft operations at the combat center would produce noise levels unlikely to cause vibration or rattle of windows at residences. However, the remaining portion of roughly 1 in 20 jet aircraft flights would operate at or below 2,000 feet. If these flights occur in the vicinity of residential areas (i.e. in portions of R-2501, R-2509C, R-2509D, Sundance MOA, and Johnson Valley MOA), there is the possibility that under a limited set of circumstances some residences could experience brief periods of windowpanes vibrating or rattling. Under Alternative 1, noise levels would remain substantially below the thresholds for risks to structural damage, which begins at L_{max} of 137 dB and above (Defense Noise Working Group 2018). Therefore, while the noise generated by activities under

Alternative 1 represents the primary source of annoyance, vibration of structures could also contribute additional annoyance under a limited set of circumstances but would not cause a risk of damage to structures.

The majority of changes to CNELmr/CNEL and single event levels would occur over land without noise sensitive receptors. The changes occurring at noise sensitive locations, primarily residences, may be noticeable but would not constitute a significant or dramatic change from existing conditions and would be compatible with residential use; therefore, implementation of Alternative 1 would have no significant impacts on the noise environment.

3.1.3.3 Alternative 2

Aircraft Operations

Under Alternative 2, the airspace is depicted in Figure 2-1 while sorties are detailed in Table 2-3. The sorties would be the same as Alternative 1; however, Alternative 2 would not establish the CAX ATCAA over the CAX MOA so no sorties would occur in a CAX ATCAA. Aircraft would still transit between Turtle MOA/ATCAA and Bristol MOA/ ATCAA within the same general location as CAX ATCAA but instead with FAA control under Alternative 2, so this would not constitute an appreciable change to the noise modeling.

As described in Section 2.4, the proposed airspace floors under Alternative 2 would share the same minimum altitudes as Alternative 1, but the ceiling of R-2509C would be reduced from 40,000 feet MSL to 16,000 feet MSL and the Johnson Valley ATCAA would not be created over the Johnson Valley MOA. Military aircraft training and modeled flight profiles, as detailed in the Noise Study in Appendix F, would be the same as Alternative 1 below 16,000 feet MSL. However, under Alternative 2, no training would occur above 16,000 feet MSL in the areas above R-2509C and Johnson Valley MOA.

Noise Exposure

$CNEL_{mr}$ and CNEL would be the same as Alternative 1 presented in Table 3.1-3. The effect of the different proposed airspace ceilings of the two alternatives would result in a negligible difference to $CNEL_{mr}$ and CNEL (less than 0.2 dB, which rounded up to the same whole decibels) because operations below 16,000 feet MSL would remain the same for both alternatives, which generate a far greater influence on ground level noise levels than operations at high altitude. The single event noise levels and possibility of structure vibrations under Alternative 2 would be the same as Alternative 1, as presented in Table 3.1-4. No noise sensitive areas would be exposed to $CNEL_{mr}$/CNEL of 65 dB or greater under Alternative 2 and there would be no significant impacts under either FAA or DOW criteria.

3.2 Airspace Management

3.2.1 Definition of Resource

The FAA manages all airspace within the United States (U.S.) and the U.S. territories. Airspace, which is defined in vertical and horizontal dimensions and by time, is considered to be a finite resource that must be managed for the benefit of all aviation sectors including commercial, general, and military aviation.

Airspace is a three-dimensional resource defined by latitude, longitude, and altitude. The FAA has the responsibility for developing plans and policies for the use of all navigable airspace and for assigning (by regulation or order) the use of the airspace necessary to ensure both the safety and efficient use of all airspace (49 U.S. Code section 40103[b]). FAA Joint Order 7400.2R,

Procedures for Handling Airspace Matters, describes specific rules and regulations concerning airspace designation and management (FAA 2025a). The DOW requests airspace from the FAA and schedules and uses airspace in accordance with processes and procedures detailed in DoD Directive 5030.19, *DoD Responsibilities of Federal Aviation,* and FAA regulations.

The ROI for this resource section includes the airspace and aircraft operational areas (e.g., Combat Center training areas, public and private civilian airports, and Air Traffic Services [ATS] routes) underlying or near the proposed RAs, MOAs, and ATCAAs. The existing published airspace, described in Section 1.4.4 and shown in Figure 1-2, is located above or within close proximity of the Combat Center. The airspace within the existing and proposed RAs and MOAs is classified as Class A, Class G, or Class E. The proposed ATCAAs lie in Class A airspace at and above FL180. The Los Angeles Air Route Traffic Control Center (ARTCC) controls the airspace associated with this Proposed Action.

3.2.2 Affected Environment

The published SUA and their overlying ATCAAs are used daily by the Marine Corps to conduct live-fire training (RA only), fixed-wing, tilt-rotor, rotary-wing, and UAS operations to support training programs. Existing training activities conducted within the MOAs and ATCAAs support the nonhazardous components of training, and RAs support the hazardous components of training (e.g., live and inert ordnance). Section 1.4.4 describes activities in the existing MOAs/ATCAAs and R-2501. Temporary SUA/ATCAA has previously been approved by the FAA to support Marine Expeditionary Brigade (MEB)-sized exercises during the 2017 Large-Scale Exercise (LSE).

There are five civilian airports (two public and three private) located directly beneath the existing and proposed MOAs in addition to a glider and parachute area outside of the MOAs lateral and vertical boundaries. There are no civilian airports located beneath the existing or proposed RA.

Visual Flight Rules (VFR) aircraft are permitted to transit the MOAs. Some of the more common VFR routes are those direct routes between busier destination areas such as Lake Havasu, Palm Springs, and Big Bear airports. When the SUA is inactive, it is returned to Los Angeles ARTCC in accordance with the 2017 Letter of Procedures establishing procedures for Joint Use of R-2501.

Several ATS routes run through and along the boundaries of the existing and proposed SUA. Jet and Q routes in the ROI are used extensively by Instrument Flight Rules (IFR) traffic transiting between the Los Angeles Basin and destinations in the east. An Area Navigation (RNAV) Standard Terminal Arrival Route (STAR) provides repeatable, predictable lateral flight paths and safe and efficient descent profiles into airports. ANJLL4 is a primary STAR used by aircraft approaching LAX from the east and is affected when R-2501 is active above FL190. Additionally, six Military Training Routes established near the Combat Center are shared across the military services. Appendix G discusses considerations of key features in the ROI for the proposed SUA.

3.2.3 Environmental Consequences

The analysis of airspace considers the potential impact to civilian aircraft users from the establishment of new SUA. Appendix G details the Airspace Impact Analysis describing impacts to (1) IFR and VFR enroute operations, (2) public and charted private airports, (3) Air Traffic Control (ATC) services, (4) other airspace proposals and cumulative impacts in the region, and (5) measures to mitigate or lessen any impacts. As summarized below, the impacts of the Proposed Action on other airspace uses in the region are qualified as either significant or not significant.

As described in Chapter 2, the action alternatives address the need to modify existing SUA/ATCAA and establish new SUA/ATCAA to fully meet exercise and training requirements for the Combat Center. The ROI is among the busiest in the nation for both civil and military aircraft. These operations have been reasonably compatible considering the airspace structure segregating these operations, effectiveness of the ATC system in managing the air traffic, and close cooperation between the military scheduling agencies and the FAA in coordinating airspace use (Department of the Navy [DON] 2012). See Appendix G for additional details on the airspace analysis methodology.

3.2.3.1 No-Action Alternative

Under the No-Action Alternative, the proposed establishment of new SUA and modifications to existing SUA would not occur at the Combat Center. No additional ATCAA would be requested. The Marine Corps would continue operating within the existing airspace, which would not support MEB-sized exercises and other LSEs planned for existing and recently acquired training lands at the Combat Center. To mitigate potential safety risks (e.g., midair collisions), the Combat Center's Range Control Office would continue to monitor training areas to determine whether nonparticipating aircraft are present and suspend military activities, if necessary, as a safety precaution. There would be no significant impact on airspace management under the No-Action Alternative.

3.2.3.2 Alternative 1

As identified in Section 2.1, *Screening Criteria and Alternatives Development*, the FAA and MAGTFTC coordinated to adjust the shape, location, altitude designations, and level of restrictions for the various blocks of airspace based on application of screening criterion.

Many of the public airports in the ROI would not be impacted by Alternative 1, such as Palm Springs Airport south of the proposed permanent SUA/ATCAA. The analysis annualized 30 days of departure data based on approximately eight departures monthly entering the proposed SUA; there would be an estimated 100 flights (0.2 percent of total flights) impacted annually due to the proposed R-2509A and R-2509D. Under Alternative 1, Big Bear Airport located west of the proposed Johnson Valley MOA/ATCAA may be impacted for arrivals utilizing the Runway 26 RNAV (Global Positioning System [GPS]) approach. As proposed, the airport would be limited to VFR operations when the proposed Johnson Valley MOA is active. When an IFR approach or departure out of Big Bear Airport is required, coordination may require Los Angeles ARTCC (also known as ZLA) to facilitate the operations out of the airport. Aircraft operating from private airports in the ROI typically fly under VFR and use of the MOAs would continue to be available to them.

As described in Chapter 2, the "floor" of R-2509 would be established at an altitude of 1,500 feet AGL whenever active while the Johnson Valley Shared Use Area is open to the public. Under these conditions, private pilots would continue to be able to use historical landing sites within the Johnson Valley Shared Use Area (e.g., Soggy Dry Lake, Giant Rock Airport). For use of private airstrips located on private land outside the Combat Center, the Marine Corps would provide civilian pilots with reasonable and timely aerial access to such land in compliance with FAA Joint Order 7400.2R, 23-1-4 (FAA 2025a). However, pilots using private airstrips located on private land may need to coordinate with the FAA to establish approaching and departing procedures. Design of R-2509 already includes exclusion of the airspace 1,500 feet AGL and below within a 3 nautical mile radius of airports available for public use (e.g., Kelly Airport, Abraham Ranch Airport, and B&E Airport; refer to Figure 2-2).

Impacts of Alternative 1 on the significant amount of IFR civil aviation air traffic on ATS routes to and from airports in the Southern California Metroplex and an undetermined amount of VFR general aviation aircraft would vary due to the SUA altitudes and the times of day in which military flight activities are scheduled.

Portions of Victor routes would interact with the proposed SUA requiring deconfliction by ATC to provide the appropriate safety buffer. For example, V386 lays in an airspace corridor between existing R-2501 and the San Bernardino Mountains that would interact with the proposed R-2509A and R-2509D. Based on the available data detailed in Appendix G, approximately 336 flights would be impacted annually under the Proposed Action. Specific impacts depend on the specific aircraft operation. In the case of V386, when the proposed SUA is active, impacts to aircraft flying above 8,000 feet MSL are not expected. Overall, the proposed structure of the SUA/ATCAA (area and altitudes) under Alternative 1 would be expected to have no significant impacts on Victor routes transiting near or within the proposed Alternative 1.

As described in Appendix G, jet routes potentially affected by the proposed RA and ATCAAs are heavily used by IFR traffic transiting between the major airports serving the Los Angeles area and other airports across the country. The need to conduct military flight activities above FL180 would potentially impact jet route traffic. For example, J128 currently transits the existing R-2501C and Bristol ATCAA and would transit the proposed R-2509C and the modified Bristol North and South ATCAAs. Air traffic utilizing this jet route during times when the SUA is active may require altitude assignments above 22,000 feet MSL. A portion of this SUA (Bristol South ATCAA) would only be used for LSEs up to 40,000 feet MSL and altitude blocks up to 22,000 feet MSL would be used for all other training. Q73 transits through the proposed CAX ATCAA and flights on this route flying between FL180 and FL210 may be affected when the ATCAA is active. The data indicated that approximately 360 civil flights annually transit via Q73. The use of the CAX ATCAA would be implemented via Letter of Agreement with the FAA; that, coupled with its limited altitudes, would reduce the impacts to traffic on this route. Table 2-2 indicates that only 25 percent of the sorties would occur between 14,000 feet MSL and FL400, with less than 4 percent occurring above FL270. Seventy-five percent of military flight operations would occur below 14,000 feet MSL and not be a factor for the jet route traffic operating at those higher altitudes.

Under Alternative 1, the proposed Bristol South ATCAA and R-2509 would be located adjacent to R-2501 along the ANJLL4 STAR and could extend up to FL400. Because the Bristol South ATCAA and R-2509C would only be activated at times and altitudes consistent with R-2501, their operational effect on ANJLL4 STAR would be the same as current conditions when R-2501 is active above FL190. Therefore, Alternative 1 would not introduce any new impacts beyond those that currently occur due to existing R-2501 activation.

The proposed subdivision of the airspace into lateral and/or vertical sectors in conjunction with planning/scheduling SUA needs with the FAA provide the flexibility of how and which segments of SUA are utilized to facilitate air traffic operations when it is deemed necessary. Coordination and scheduling would avoid significant impacts to civilian air traffic under Alternative 1.

VFR general aviation aircraft operating in the region typically fly at altitudes below 10,000 feet MSL along routes most direct between airports/airfields while remaining clear of high terrain, obstacles, and congested air traffic areas. VFR flights are generally most prevalent north, west, and south of R-2501, within the existing corridor between Bristol and Turtle MOAs (i.e., CAX Corridor) and beneath the eastern portions of the existing Turtle MOA. Based on available VFR flight traffic analyzed in the FAA (2021) Aeronautical Study, the number of potentially affected

VFR flights through each block of proposed SUA varies throughout the year, as shown in Table 3.2-1.

Table 3.2-1 Potential Number of VFR Flights Transiting Through Proposed SUA Under Alternative 1

Area	Number of VFR Flights per Month	Average Number of VFR Flights per Day during the Busiest Month
R-2509A	3 to 10	<1
R-2509B	54 to 123	4
R-2509C	56 to 112	4
R-2509D	21 to 47	<2
Sundance MOA	41 to 108	4
Johnson Valley MOA	14 to 51	<2
Bristol MOA	23 to 60	2
CAX MOA	82 to 154	5
Turtle Low MOA	490 to 1,048	35

Legend: MOA = Military Operations Area; VFR = Visual Flight Rules; SUA = Special Use Airspace.
Source: FAA 2021.

When activated, the proposed R-2509 under Alternative 1 would limit the airspace in which VFR general aviation could operate in that region and depend upon the SUA activated. When R-2509 sectors are active, approximately four VFR aircraft may be affected per day (Table 3.2-1; FAA 2021). VFR aircraft would have to avoid this airspace when active and shift further to the west, reducing the existing VFR corridor from approximately 11 nautical miles down to 4 nautical miles (FAA 2021). This would compress VFR aircraft into an area that is already highly complex for ATC due to high terrain and the fact that this narrow airspace corridor is already busy (FAA 2021). This may also result in increased travel distances when R-2509 is active as VFR nonparticipating aircraft are not authorized to enter RA but may transit MOAs.

Under Alternative 1, the "floor" of the Turtle Low MOA would be 2,000 feet AGL which may impact low-level VFR traffic. This may result in increased travel distances when this SUA is active and pilots elect not to transit the MOAs (*Note*: VFR aircraft may choose to transit through an active MOA). For example, VFR aircraft arriving or departing Iron Mountain Airport traveling to or from the north that fly around the proposed Turtle Low MOA may add approximately 20 nautical miles of travel distance. When Turtle Low MOA is active, approximately 35 VFR aircraft may be affected per day (Table 3.2-1; FAA 2021). This could also create compression of traffic and increased congestion outside the southeast corner of Turtle Low MOA (FAA 2021). However, the Turtle Low MOA would only support MEB-sized exercises and LSEs (i.e., expected to be active less than 40 days per year) and it would not be activated continuously, thus minimizing the times of impact to VFR traffic.

Overall, Alternative 1 would be expected to have no significant direct impacts on general aviation pilots flying unrestricted through areas proposed for the newly established or modified SUA. General aviation pilots could also experience inconvenience from alteration of travel plans or need to cancel flights; increased travel time and fuel costs associated with avoiding active SUA; and any expended efforts in tracking the SUA status through available advisory services.

Based on the above information and continued coordination with the FAA to minimize any impact to civilian air traffic, implementation of Alternative 1 would have no significant impacts on airspace management.

3.2.3.3 Alternative 2

As identified in Section 2.1, *Screening Criteria and Alternatives Development*, the FAA and MAGTFTC coordinated to adjust the shape, location, altitude designations, and level of restrictions for the various blocks of airspace based on screening criteria. Additional coordination between the FAA and MAGTFTC (i.e., 2021 Working Group Meetings, 2023 Safety Risk Management Review) resulted in further changes to the Alternative 2 airspace. Compared to Alternative 1, the primary differences to Alternative 2 are limiting altitudes to 16,000 feet MSL in R-2509 and Johnson Valley MOA, not creating Johnson Valley ATCAA or CAX ATCAA or subdividing the Bristol North and South ATCAAs, and adjusting the eastern section of the southern boundary of Sundance ATCAA to accommodate nearby commercial and civilian air traffic. Impacts to public and private airports under Alternative 2 would be similar to Alternative 1.

Impacts to the proposed airspace resulting from the proposed establishment and/or modification of R-2509A, R-2509B, R-2509C, R-2509D, Sundance MOA, CAX MOA, Turtle Low MOA, and the Bristol MOA/ATCAA would be similar to those identified under Alternative 1. The primary differences under Alternative 2 (limiting altitudes to 16,000 feet MSL in the new R-2509C and Johnson Valley MOA, not creating a Johnson Valley ATCAA or CAX ATCAA, and adjusting the eastern section of the southern boundary of Sundance ATCAA) would result in reduced impacts to jet and Q routes that extend from FL180 to FL450 since these are above the proposed 16,000 feet MSL. Under Alternative 2, the Bristol ATCAA would remain unchanged, and the impacts would be as they exist today. Much of the commercial traffic in the ROI is climbing or descending through those altitudes while approaching or departing the Los Angeles area airports. With the lower altitudes of Bristol ATCAA (FL220) and R-2509C (16,000 feet MSL), there would be no impacts to civil aircraft using ANJLL4 into LAX. Together, the modifications to times of use proposed in the 2021 Aeronautical Study (FAA 2021) and the 2023 Safety Risk Management Panel Review would result in an overall reduced impact to airspace and ATS routes compared to Alternative 1.

Alternative 2 was the basis of the 2021 Aeronautical Study conducted by the FAA. As indicated above, FAA Los Angeles ARTCC approved the proposed Alternative 2 airspace with modifications to times of use for R-2509A/B/C/D, Johnson Valley MOA, and Turtle Low MOA. Although this restriction does not meet the purpose and need, MAGTFTC would accept these modifications with the request that impacts to the National Airspace System be evaluated during the first year of use and that additional days of use be considered. Modified times of use, expanded SUA use notification timelines, and the altitude restrictions in R-2509C and the Johnson Valley ATCAA reduce the overall impacts of Alternative 2 compared to Alternative 1. The specific modifications derived from the FAA's 2021 Aeronautical Study and the follow-on 2023 Safety Risk Management Review are detailed in Appendix G, Section 2.4.3. Through adoption of these modifications and continued coordination with the FAA to minimize any impact to civilian air traffic, implementation of Alternative 2 would have no significant impacts on airspace management. Implementation of Alternative 2 would result in better communication with the public by clearly designating airspace for its intended use (i.e., military training).

3.3 Aviation Emissions and Air Quality

3.3.1 Definition of Resource

Aviation emissions and air quality is defined by ambient air concentrations of specific pollutants that are of concern with respect to the health and welfare of the public by the U.S. Environmental Protection Agency (EPA). For this analysis, air quality impacts are assessed against national

standards for ambient air quality and hazardous air pollutants (HAPs) as well as greenhouse gas (GHG) emissions.

3.3.1.1 Criteria Pollutants and Hazardous Air Pollutants

Ambient air quality refers to the atmospheric concentration of a specific compound that occurs at a particular geographic location. The major pollutants of concern are known as criteria pollutants and consist of the following: carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than or equal to 10 (PM_{10}) and 2.5 ($PM_{2.5}$) microns in diameter, and lead. Criteria pollutants have national and state ambient air quality standards (see Table D-2 in Appendix D). The Proposed Action would result in changes to aircraft operations and jet engine emissions. Because lead is not a component of jet fuel, there would be no anticipated lead emissions associated with the Proposed Action.

HAPs are pollutants regulated under the federal Clean Air Act due to their potentially adverse effects on human health and the environment, but with no National Ambient Air Quality Standards (NAAQS). There are currently no federal regulations specifically pertaining to HAPs emissions from aircraft engines and assessment is not warranted unless emissions were to undergo a large increase; therefore, this air quality analysis does not include HAP emissions.

The ROI for the Proposed Action is San Bernardino County, which underlies the SUA and encompasses the Combat Center.

3.3.1.2 Greenhouse Gases

Gases that trap heat in the atmosphere are called GHGs. The most common GHG pollutants are carbon dioxide (CO_2), methane, and nitrous oxide, which primarily result from the combustion of fossil fuels. Each GHG has a different potential to contribute to global warming. Because the majority of GHG emissions are CO_2, the global warming potential of each GHG has been calculated in reference to CO_2 (EPA 2024a). The ROI for GHGs is global.

3.3.2 Affected Environment

The Proposed Action is located in the Mojave Desert Air Quality Management District (MDAQMD), which is within the Mojave Desert Air Basin (MDAB). The MDAB is one of the driest regions in the U.S. This arid condition produces low soil moisture and a high potential for fugitive dust emissions (PM_{10}), which is one of the main air pollution issues in the region. The annual average precipitation at Twentynine Palms is about 4 inches (Western Regional Climate Center 2019).

3.3.2.1 Criteria Pollutants

The MDAB is designated as Severe-15 nonattainment for O_3 and Moderate nonattainment for PM_{10}. The Combat Center is in an attainment area for all other federal and state standards: CO, nitrogen oxides (NO_x), sulfur oxides (SO_x), lead, and $PM_{2.5}$. However, it should be noted that on February 7, 2024, EPA strengthened the NAAQS for annual $PM_{2.5}$. As of 2023, annual $PM_{2.5}$ is at 100 percent of the NAAQS which indicates that the area will become nonattainment if ambient $PM_{2.5}$ concentrations do not improve. The remaining attainment pollutants are all present in the ambient air at levels well below the NAAQS threshold.

3.3.2.2 Greenhouse Gas Emissions

In 2020, Combat Center stationary and area source operations generated 72,063 metric tons of carbon dioxide equivalent (CO_2e) (Multi-MAC JV 2021). The total GHG emissions reported for San Bernardino County for the 2020 National Emission Inventory was 12,989,521 metric tons of

CO_2e (EPA 2025a). The GHG emissions from the Combat Center stationary and area source operations represent approximately 0.56 percent of the county GHG emissions total. The main contributors of reported GHG emissions at the Combat Center are stationary sources. While the Combat Center reports all criteria pollutant emissions for mobile sources, GHG emissions are excluded per MDAQMD guidance (MDAQMD 2023). This does not negate the fact that ongoing training operations contribute to GHG emissions—they are just not quantified on an annual basis.

3.3.3 Environmental Consequences

3.3.3.1 Approach to Analysis for Criteria Pollutant Emissions

Air emissions from the Proposed Action are attributed to the use of aircraft. The methodology used for estimating aircraft emissions involves evaluating the type of activity, the number of hours of operation, the type of engine, and the mode of operation for each type of aircraft. Additional details on the methodology used can be found in Appendix H, Air Quality.

This air quality analysis evaluates air emissions under both NEPA and the Clean Air Act. For the air quality NEPA analysis, the No-Action Alternative is compared to existing conditions and the action alternative emissions are compared to the No-Action Alternative emissions. The Clean Air Act analysis, on the other hand, compares the proposed emissions to an existing Clean Air Act Conformity Determination for ongoing training operations.

As explained in Section 1.4.3, effects from all training operations (use of military vehicles, equipment, ordnance, and aircraft), including the air quality effects, were previously analyzed in the 2012 Final EIS. Because the MDAB is classified by EPA as a nonattainment for O_3 and PM_{10}, a Clean Air Act conformity analysis was prepared and the installation determined that the proposed training operations would generate emissions that would exceed the *de minimis* threshold for PM_{10} and O_3. Therefore, a conformity determination was completed, and the State Implementation Plan was modified to comply with the Clean Air Act for PM_{10} and O_3. Overall, it was determined that the action would not result in an exceedance of the NAAQS (DON 2012). Appendix H captures the 2012 Final EIS emissions envelope for training operations. For this EA, the conformity applicability analysis was performed to determine if the existing conformity determination is still valid. The analysis evaluates whether the proposed changes to aircraft operations would push the overall training emissions outside of scope of the existing emissions envelope for all ongoing training operations; thereby determining if proposed operations would warrant a new conformity determination.

Implementation of the Proposed Action in this EA would only alter aircraft-related emissions; it is not anticipated to result in a change or increase to ground-based training operations and associated emission projections that were captured in the 2012 Final EIS emissions envelope. As indicated in the 2023 Ongoing Training Supplemental EA, emissions associated with existing training operations are currently well below the 2012 Final EIS emissions envelope. Therefore, the ground-based training activities (use of tactical vehicles, equipment, and ordnance) would remain within the scope of the 2012 emission envelope. While the focus of the air analysis is the change to aircraft operational emissions and whether or not those changes are also within scope of the 2012 emission envelope, Appendix H provides a comparison of all aspects of training operations (aircraft, tactical vehicles, equipment, and ordnance) to the 2012 Final EIS emissions envelope.

3.3.3.2 Approach to Analysis for Greenhouse Gas Emissions

Because GHG emissions cause predictable trends associated with natural hazards, changes in hazard risk resulting from the emission of GHGs to the atmosphere are considered in the

evaluation. However, the significance of an individual action alone is impossible to assess on a global scale beyond the overall need for global GHG emission reductions to avoid catastrophic global outcomes. Therefore, the analysis provided in this section of the EA is for disclosing the differences between Alternatives 1 and 2 and the No-Action Alternative emissions.

Air emissions from the Proposed Action are attributed to the use of aircraft. GHG emissions were quantified using the global warming potential of each gas, which is a measure of how much energy the emission of 1 ton of a gas will absorb over a given period of time relative to the emission of 1 ton of CO_2. GHG emissions are calculated by multiplying the appropriate global warming potential of a non-CO_2 GHG by the amount of that gas emitted (EPA 2025b). Further details on the GHG emissions methodology can be found in Appendix H, Air Quality.

3.3.3.3 No-Action Alternative

Under the No-Action Alternative, the proposed establishment of new SUAs and modifications to the existing SUAs would not occur at the Combat Center. Existing SUAs would remain in place. As outlined in Table 2-1, the AV-8B operations would be replaced by F-35 operations.

Criteria Pollutants

For the NEPA analysis, the criteria pollutants are evaluated by comparing the No-Action Alternative to the emissions generated under existing conditions (see Table 3.3-1). CO and Volatile Organic Compounds (VOCs) would decrease and there would be an increase in NO_x, SO_2, PM_{10}, and $PM_{2.5}$.

Table 3.3-1 No-Action Alternative Versus Existing Condition Emissions (Tons/Year)

	VOC	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
Existing Conditions EAF Operations[1]	3.64	24.57	20.98	2.25	5.82	5.76
Existing Conditions Airspace Operations[2]	1.7	19.48	69.19	2.98	20.68	20.68
Annual Aircraft Operations – Existing Conditions	**5.34**	**44.05**	**90.17**	**5.23**	**26.5**	**26.44**
No-Action Alternative EAF Operations[1]	3.61	24.48	20.97	2.25	5.82	5.75
No-Action Alternative Airspace Operations[2]	1.53	18.42	79.47	3.73	20.72	20.72
Annual Aircraft Operations - No-Action Alternative	**5.14**	**42.90**	**100.44**	**5.98**	**26.54**	**26.47**
Net Change From Existing Conditions	**-0.20**	**-1.15**	**+10.27**	**0.75**	**+0.04**	**+0.02**

Legend: CO = carbon monoxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compounds

Sources: [1]MAGTFTC 2024b, 2024c; [2]MAGTFTC 2024a

For the Clean Air Act analysis, the No-Action Alternative emissions were compared to the 2012 Final EIS emission envelope. As summarized in Table 3.3-2, air quality impacts from aircraft operations under the No-Action Alternative are within scope of the 2012 Final EIS emissions envelope. The primary reason for this is because the Combat Center has not reached the level of training that was anticipated and analyzed in the 2012 Final EIS. Because this activity is not a new action and the emissions are within scope of an existing conformity determination, it does not require a redetermination and is, therefore, exempt from further general conformity analysis.

Greenhouse Gas Emissions

The No-Action Alternative aircraft operations would generate approximately 175,758 metric tons of CO_2e per year. This would be an increase of 11,777 metric tons of CO_2e compared to the existing emissions of approximately 164,581 metric tons of CO_2e per year. The increase in emissions is primarily attributed to the replacement of the AV-8B with the F-35 (DON 2010).

Table 3.3-2 No-Action Alternative Versus 2012 Final EIS Emissions Envelope (Tons/Year)

	VOCs	NO_x	PM_{10}
2012 Final EIS Baseline Aircraft Operations[1]	59.05	152.88	60.40
2012 Final EIS Preferred Alternative Aircraft Operations[1]	25.55	39.77	17.25
Total Aircraft Emissions under the 2012 Final EIS Emissions Envelope	**84.60**	**192.65**	**77.65**
No-Action Alternative EAF Operations	3.61	20.97	5.82
No-Action Alternative Airspace Operations	1.53	79.47	20.72
Total No-Action Alternative Aircraft Operations	**5.14**	**100.44**	**26.54**
Exceeds 2012 Final EIS Emissions Envelope?	No	No	No

Legend: EAF = Expeditionary Airfield; EIS = Environmental Impact Statement; NO_x = nitrogen oxides, PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOCs = volatile organic compounds
Source: [1]DON 2012

3.3.3.4 Alternative 1

Under Alternative 1, the Combat Center would establish new permanent SUA and modify existing SUA. As detailed in Table 2-2, Alternative 1 would result in changes to sorties flown in the airspace, as well as at the Expeditionary Airfield (EAF). Consistent with No-Action, AV-8B operations would cease at both the airspace and the EAF and would be replaced by F-35 operations as the AV-8B aircraft is retired (DON 2010).

Criteria Pollutants

The analysis re-evaluates the EAF landing and takeoffs to account for the changes to emissions from airframe changes (as established by the No-Action Alternative) as well as changes to low altitude flying of the F-35B and FA-18 C/D. Total low altitude flight hours under Alternative 1 would increase by 76 percent for the F-35 as compared to the No-Action Alternative and decrease by 32 percent for the FA-18. The "floor" of Bristol MOA and CAX MOA would extend down to 2,000 feet AGL, and therefore a portion of the new sorties flown in these areas would now occur below the mixing height of 3,000 feet AGL. Additionally, some sorties occurring in the Turtle MOA/ATCAA would utilize the Turtle Low MOA. To be consistent with estimates of flight time at low altitude used in existing airspaces, Turtle MOA/ATCAA sorties were estimated to include 10 percent of their flight time in Turtle Low MOA. Additional details on the aircraft operations can be found in Appendix H, Air Quality.

For the NEPA analysis, Alternative 1 emissions are compared to the No-Action Alternative emissions. As detailed in Table 3.3-3, there is a decrease in VOC, CO, and $PM_{2.5}$ emissions and an increase in NO_x, SO_2, and PM_{10} emissions. Despite these increases, the net change in emissions would not exceed the comparative indicator limit of 100 tons per year. Therefore, implementation of Alternative 1 would not result in a significant impact to air quality for these pollutants.

For the Clean Air Act General Conformity analysis, Alternative 1 emissions are compared to the 2012 Final EIS emissions envelope to determine if emissions are with the scope of the 2012 Final EIS (Table 3.3-4). Appendix H, Air Quality details the anticipated changes to all aspects of training operations (aircraft, tactical vehicles, equipment, and ordnance) and compares the difference between Alternative 1 and the total emissions under the 2012 Final EIS emissions envelope.

Table 3.3-3 Alternative 1 Versus No-Action Alternative Emissions (Tons/Year)

	VOC	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
No-Action Alternative EAF Operations[1]	3.61	24.48	20.97	2.25	5.82	5.75
No-Action Alternative Airspace Operations[2]	1.53	18.42	79.47	3.73	20.72	20.72
Annual Aircraft Operations - No-Action Alternative	**5.14**	**42.90**	**100.44**	**5.98**	**26.54**	**26.47**
Alternative 1 EAF Operations[1]	3.22	23.16	21.65	3.05	6.10	5.99
Alternative 1 Airspace Operations[2]	1.53	18.17	79.47	4.33	20.72	19.93
Annual Aircraft Operations - Alternative 1	**4.75**	**41.33**	**101.12**	**7.38**	**26.82**	**25.92**
Net Change from No-Action Alternative	**-0.39**	**-1.57**	**+0.68**	**+1.40**	**+0.28**	**-0.55**
Comparative Indicator limits	100	100	100	100	100	100
Exceeds Comparative Indicator limits?	No	No	No	No	No	No

Legend: CO = carbon monoxide; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compounds

Sources: [1]MAGTFTC 2024b, 2024c; [2]MAGTFTC 2024a

Table 3.3-4 Alternative 1 Versus 2012 Final EIS Emissions Envelope (Tons/Year)

	VOCs	NO_x	PM_{10}
2012 Final EIS Baseline Aircraft Operations[1]	59.05	152.88	60.40
2012 Final EIS Preferred Alternative Aircraft Operations[1]	25.55	39.77	17.25
Total Aircraft Emissions under the 2012 Final EIS Emissions Envelope	**84.60**	**192.65**	**77.65**
Alternative 1 EAF Operations[2]	3.22	21.65	6.10
Alternative 1 Airspace Operations[3]	1.53	79.47	20.72
Total Alternative 1 Aircraft Operations	**4.75**	**101.12**	**26.82**
Exceeds 2012 emissions envelope?	No	No	No

Legend: EAF = Expeditionary Airfield; EIS = Environmental Impact Statement; NO_x = nitrogen oxides, PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compounds

Sources: [1]DON 2012; [2]MAGTFTC 2024b, 2024c; [3]MAGTFTC 2024a

As seen in Appendix H, the total emissions for all aspects of training operations (aircraft, tactical vehicles, equipment, and ordnance) were verified within the 2012 Final EIS emissions envelope. Because this activity is not a new action, a redetermination is not required as long as the emissions remain within the emissions envelope. The Combat Center would continue to monitor training operation emissions to ensure the 2012 Final EIS emissions envelope is not exceeded and the conformity determination would be updated if training operations change substantially.

Greenhouse Gas Emissions

To gauge the net change in GHG emissions, the Alternative 1 emissions were compared to the No-Action Alternative (see Table 3.3-5). The annual net change in GHG emissions under Alternative 1 would increase by approximately 39,886 metric tons of CO_2e per year compared to the No-Action Alternative emissions. This would be equivalent to 9,298 gasoline-powered passenger vehicles driving the national average of 10,917 miles per year (EPA 2024b).

Aircraft are difficult to decarbonize due to mission requirements and their long service life. As part of its ongoing plans (DON 2022), the DON strives to reduce GHG emissions to meet the nation's net-zero goal by 2050 by exploring alternative fuels, hybridization, and electrification. While Alternative 1 would contribute to increases in GHG emissions, reduction efforts at the DOW, DON, and Headquarters Marine Corps levels (e.g., procurement, master planning, modification of military vehicles and equipment, etc.) (U.S. Department of State and U.S. Executive Office of the President 2021; DoD 2022; DON 2022) would benefit the Combat Center and reduce emissions as these initiatives are implemented.

Table 3.3-5 Alternative 1 Versus No-Action Alternative GHG Emissions (Metric Tons/Year)

Project Alternative	CO_2e
No-Action Alternative - all aircraft operations	175,758
Proposed Action - all aircraft operations	215,644
Annual Net Change	**39,886**
20-Year Life cycle Net Change	**797,717**

Legend: CO_2e = carbon dioxide equivalent
Source: Appendix H, Air Emissions Calculations

3.3.3.5 Alternative 2

Under Alternative 2, low altitude flights would be the same as under Alternative 1, and the emissions for Alternative 2 are the same as those presented in Tables 3.3-3 through 3.3-5. As a result, impacts would be identical to those that would occur under Alternative 1.

3.4 Biological Resources

3.4.1 Definition of Resource

Biological resources include plant and animal species, and the habitats within which they occur. This analysis focuses on species that are important to the function of ecosystems, are of special societal importance, or are protected under federal or state law. These resources are commonly divided into the following categories: *Plant Communities*, *Wildlife*, and *Special Status Species*.

Biological resources are grouped and analyzed in this EA as follows:

- *Wildlife* includes the characteristic animal species that occur in the ROI. Special consideration is given to bird species protected under the Migratory Bird Treaty Act (MBTA) and Executive Order (EO) 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*.
- *Special Status Species* are those plant and animal species that are listed, have been proposed for listing, or are candidates for listing as threatened or endangered under the federal Endangered Species Act, the California Endangered Species Act, and other species of concern as recognized by state or federal agencies. Special status plant species would not be impacted by the Proposed Action; therefore, the analysis of special status species in this EA is confined to only special status wildlife species.

The ROI for biological resources includes all of the airspace and lands below the proposed new permanent SUA (R-2509, Johnson Valley MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA) and modified existing SUA (Bristol MOA/ATCAA and Sundance MOA/ATCAA).

3.4.2 Affected Environment

3.4.2.1 Wildlife

Numerous vertebrate and invertebrate species have been recorded or have the potential to occur in the ROI. Wildlife species at the Combat Center, and neighboring lands in the ROI, are typical of Mojave Desert fauna with the exception of a wide variety of species only found to occur at the golf course or sewage ponds at Mainside. Wildlife species found at the Combat Center include 2 amphibian, 28 reptile, 41 mammal, and 211 bird species (University of California, Riverside 1993; Fromer and Dodero 1982; Brown and Berry 1998; Cutler et al. 1999; Circle Mountain Biological Consultants 2010; LaRue 2013; Stepek et al. 2013). The most recent wildlife surveys at the Combat Center were conducted in 2013 at sites that were widely distributed in training areas across the Combat Center (LaRue 2013; Stepek et al. 2013). The majority of species that were identified in

the survey are commonly observed on the Combat Center. The results are representative of the areas within the ROI and Appendix I provides additional details on these species.

3.4.2.2 Special Status Species

Special status animal species known to occur within the ROI are listed in Table 3.4-1 while observation data is shown in Figure 3.4-1. Many of these species are migratory or seasonal residents that tend to occur at or near anthropogenically created water sources. The Proposed Action would not have any measurable impact on fish species, and they are not discussed in this EA. Under the Proposed Action, no ground disturbing activities would occur and plant communities would not be impacted by the project. Therefore, fish and plant communities are not discussed further in this EA.

Federally Listed Species

Desert Tortoise

The desert tortoise was listed as threatened by the State of California in 1989, and the Mojave Desert population (all tortoises north and west of the Colorado River in Arizona, Utah, Nevada, and California), now known as Agassiz's desert tortoise, was federally listed as threatened by the U.S. Fish and Wildlife Service (USFWS) in 1990. The decline in desert tortoise numbers is thought to be due to a number of causes, including loss of habitat, upper respiratory tract disease, predation by common ravens on young tortoises, off highway vehicle (OHV) use, livestock grazing, the spread of invasive plant species, and direct disturbance and collection by humans (MAGTFTC 2023; USFWS 2023).

Other Federally Listed Species

The western snowy plover (*Charadrius alexandrinus nivosus*), willow flycatcher (*Empidonax traillii*), and Bell's vireo (*Vireo bellii*) are uncommon migrants that have been observed at water sources and landscaped areas associated with Mainside and adjacent training areas (Cutler et al. 1999; Combat Center 2018b).

Other Special Status Species

As detailed in Appendix I, other special status species include the burrowing owl, golden eagle, prairie falcon, Mojave fringe-toed lizard, and desert bighorn sheep.

3.4.3 Environmental Consequences

3.4.3.1 Approach to Analysis

The significance of potential impacts on biological resources is based on:

- the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource;
- the proportion of the resource that would be affected relative to its occurrence in the region;
- the sensitivity of the resource to the proposed activities; and
- the duration or ecological ramifications of the impact(s).

Table 3.4-1 Special Status Terrestrial Wildlife Species Reported or Likely to Occur Within the ROI

Common Name	Scientific Name	Federal Status	State Status
Residents			
Mojave fringe-toed lizard	*Uma scoparia*	None	SSC
Agassiz's desert tortoise	*Gopherus agassizii*	T	E
Yuma Ridgway's rail[(1)]	*Rallus obsoletus yumanensis*	E	T
Loggerhead shrike	*Lanius ludovicianus*	MBTA	SSC
Le Conte's thrasher	*Toxostoma lecontei*	MBTA, BCC	SSC
Gila woodpecker	*Melanerpes uropygialis*	MBTA, BCC	E
Northern harrier	*Circus cyaneus*	MBTA	SSC, FP
Golden eagle	*Aquila chrysaetos*	BGEPA, MBTA, BCC	FP
Prairie falcon	*Falco mexicanus*	MBTA, BCC	FP
American peregrine falcon	*Falco peregrinus anatum*	MBTA, BCC	FP
Cooper's hawk	*Accipiter cooperii*	MBTA	WL
Burrowing owl	*Athene cunicularia*	MBTA, BCC	SSC, FP
Long-eared owl	*Asio otus*	MBTA	SSC, FP
American badger	*Taxidea taxus*	None	SSC
California leaf-nosed bat	*Macrotus californicus*	None	SSC
Western mastiff bat	*Eumops perotis californicus*	None	SSC
Pallid bat	*Antrozous pallidus*	None	SSC
Townsend's big-eared bat	*Corynorhinus townsendii*	None	C, SSC
Pocketed free-tailed bat	*Nyctinomops femorosaccus*	None	SSC
Cave myotis[(1)]	*Myotis velifer*	None	SSC
Pallid San Diego pocket mouse	*Chaetodipus fallax pallidus*	None	SSC
Desert bighorn sheep	*Ovis canadensis nelsoni*	None	FP
Non-residents			
Willow flycatcher[(2)]	*Empidonax traillii extimus*	E, MBTA	E
Least Bell's vireo[(3)]	*Vireo bellii pusillus*	E, MBTA	E
Arizona Bell's vireo	*Vireo bellii arizonae*	MBTA, BCC	E
Western snowy plover[(4)] (Pacific population)	*Charadrius alexandrinus nivosus*	T, MBTA	SSC
Bendire's thrasher	*Toxostoma bendirei*	MBTA, BCC	SSC
Gilded flicker	*Colaptes chrysoides*	MBTA, BCC	E
Bank swallow	*Riparia riparia*	MBTA	T
Short-eared owl	*Asio flammeus*	MBTA	SSC, FP
Yellow warbler	*Dendroica petechia*	MBTA, BCC	SSC
Yellow-breasted chat	*Icteria virens*	MBTA	SSC
Black tern	*Chlidonias niger*	MBTA	SSC
Vaux's swift	*Chaetura vauxi*	MBTA	SSC
Ferruginous hawk	*Buteo regalis*	MBTA	WL
Swainson's hawk	*Buteo swainsoni*	MBTA, BCC	T
Osprey	*Pandion haliaetus*	MBTA	WL

Legend: BCC = Bird of Conservation Concern (within the U.S. portion of the Sonoran & Mojave Deserts Bird Conservation Region); BGEPA = Bald and Golden Eagle Protection Act; C = candidate for listing; E = endangered; FP = Fully protected in accordance with the California Fish and Game Code; MBTA = Migratory Bird Treaty Act; SSC = Species of Special Concern; T = threatened; WL = Watch List

Notes: [(1)]Potential under the airspace only.
[(2)]All subspecies are state listed as endangered. It is not known what subspecies occurs at the Combat Center.
[(3)]It is not known what subspecies occur at the Combat Center.
[(4)]Only the Pacific coast population is federally listed as endangered. Both coastal and interior populations are SSC. It is not known what population migrates through the Combat Center.

Sources: Cutler et al. 1999; USFWS 2008; Circle Mountain Biological Consultants 2010; LaRue 2013; Stepek et al. 2013; Combat Center 2018b; CDFW 2019

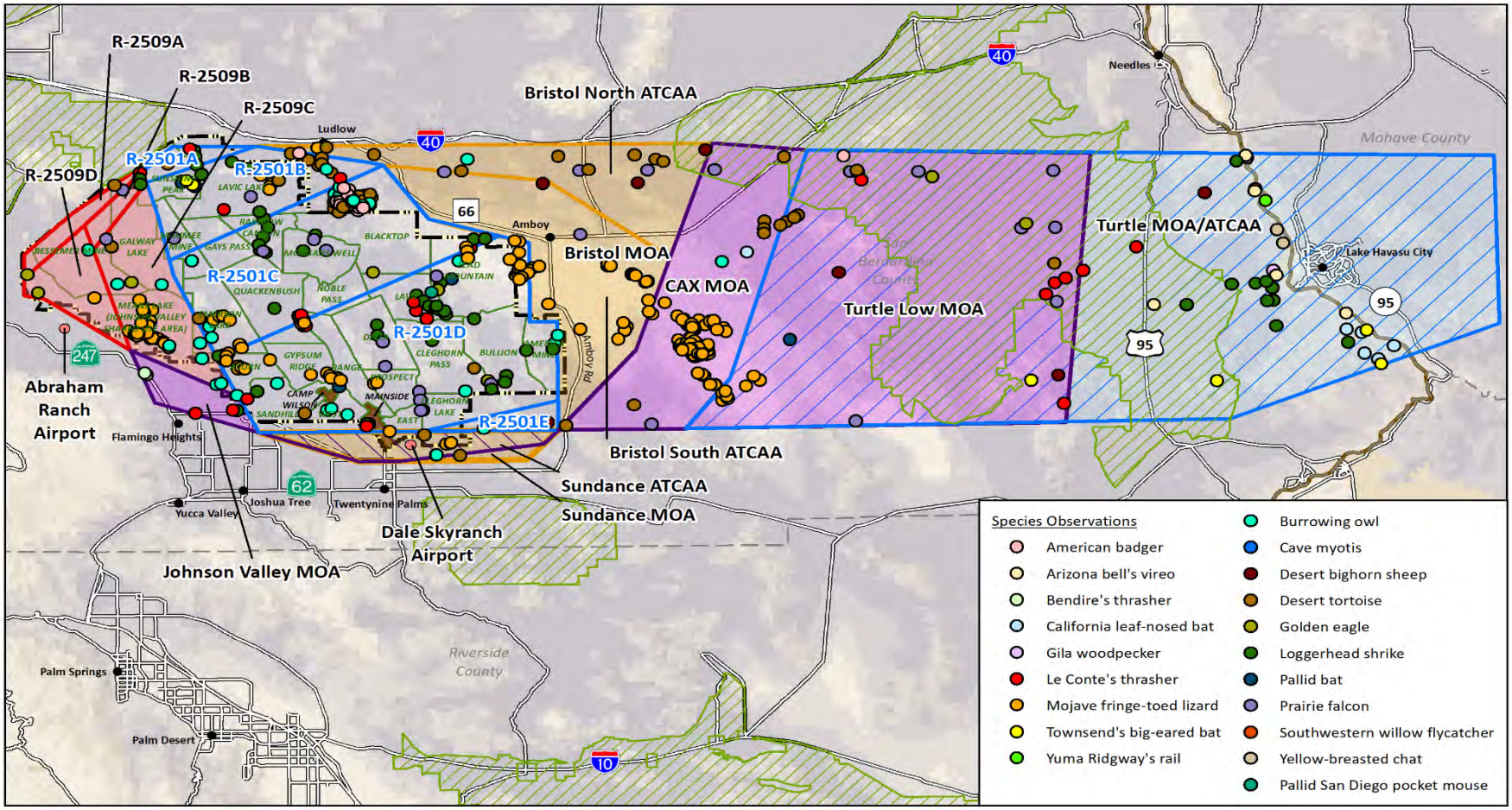


Figure 3.4-1. Special Status Wildlife

3.4.3.2 No-Action Alternative

Under the No-Action Alternative, the proposed establishment of new SUA and modifications to existing SUA would not occur at the Combat Center and annual sorties would be the same as existing conditions. The mix of aircraft utilizing the Combat Center would change to include a larger proportion of F-35 that would result in a not significant increase in noise levels, as detailed in Section 3.1.3.1. Therefore, the No-Action Alternative would result in no change to the existing conditions as described in Section 3.4.2, would have no significant impact to biological resources, and would be in compliance with the Endangered Species Act, the MBTA, and other regulations.

3.4.3.3 Alternative 1

Wildlife

The use of any aircraft near undeveloped areas has the potential to add noise and visual stressors to the natural environment and cause a response by wildlife, which include: "startle reflex" induced running or flight, increased expenditure of energy during critical periods, decreased time and energy spent on life functions such as seeking food or mates, increased susceptibility to predation, and interruption of breeding or nursing (Larkin 1996; Efroymson et al. 2000). Some species will habituate to such stressors, depending upon the location, frequency, timing, and species exposed.

The type of noise that can stimulate the startle reflex tends to vary among animal species. Studies indicate that sudden, loud noises associated with visual stimuli produce the most intense reactions (Bowles et al. 1999; Efroymson et al. 2000). Rotary-wing aircraft such as helicopters are believed to generally induce the startle reflex more frequently than fixed-wing aircraft (DON 2009). Some bird and mammal species habituate to repetitive noises, especially noise associated with overflight of fixed-wing aircraft, better than other species (Krausman et al. 1996; Conomy et al. 1998).

The number of annual sorties flown at the Combat Center under Alternative 1 would slightly increase and aircraft would use the existing and newly established/modified airspace, which would potentially result in displacement of a small number of sound- and vibration-sensitive animals (e.g., reptiles [Bowles 1995]) to areas less affected by noise. Such noise expansion would be incremental, to which wildlife in the vicinity are most likely accustomed to. Although Alternative 1 would expose a greater geographic area of wildlife to impacts, aircraft operations and their effects on wildlife would be more dispersed, as they would occur over a greater area. Given that the increase in sorties is relatively small (2.2 percent increase), the overall effect on species is considered negligible. However, specific locations may contribute more noise and visual stress if focused around active nests (e.g., golden eagle nests). MAGTFTC is resurveying golden eagle presence and nesting to gauge their status and potential nesting areas to ascertain their productivity. Golden Eagles have large ranges, and are relatively sparse in the desert ecosystem.

As described in Section 3.1.3.2, the noise levels within the proposed newly established/modified SUA would not vary significantly from existing SUA. Animal species can be significantly impacted by significant increases in noise. Bowles (1995) found that amphibians and reptiles exhibited short-term disturbance from noise (e.g., freezing) when exposed to sounds between 10 dB to 60 dB, especially if these sounds produce any vibration. In bird species, masking of mating vocalizations can impact breeding activities. However, sound production from several bird species has been measured to peaks of about 90–95 dB (Brackenbury 1979). Although noise levels would increase by approximately 16 dB and 12 dB in R-2509 and the Johnson Valley MOA, respectively, under Alternative 1, the CNEL would not be greater than 68 dB.

Waterfowl and raptors congregate at playa habitats during seasonal/ephemeral ponding. These congregations of birds can form a BASH risk. Low altitude aircraft activity, including both fixed-

and rotary-wing aircraft, could occur near playas and dry lakes throughout the project area. A BASH Plan for the Combat Center was completed in 2003. The goal of a BASH Plan is to minimize the risk of bird/wildlife strikes that may cause injuries to aircrews and damage to or loss of aircraft. The 2003 BASH Plan determined that the Combat Center and the Expeditionary Airfield have a low risk of airstrikes due to the remoteness of the airfield from any source of water (Combat Center 2024). In addition, the number of annual sorties would increase by 2.2 percent under Alternative 1, which would not pose a significant increase to BASH potential. Therefore, implementation of Alternative 1 would have no significant impacts on wildlife, including migratory birds, from bird/animal aircraft strikes.

Special Status Species

Federally Listed Species

Under Alternative 1, desert tortoises would continue to be exposed to noise generated by aircraft operations in existing SUA. Even though aircraft operations occur throughout the existing airspace, Alternative 1 would increase noise levels in new SUAs, resulting in a higher number of tortoises potentially being exposed to noise in new SUAs. Despite this, there is little potential for noise or visual stimuli to impact tortoises for the vast majority of the year for the following reasons:

1) Only 5 percent of a desert tortoise's life is spent above ground (Nagy and Medica 1986).
2) Tortoises do not appear to be heavily affected by noise (Bowles et al. 1999).
3) Aircraft operations in SUA would occur intermittently over the year, rather than continuous.
4) Disturbance would reduce or cease upon training event completion.
5) 2.2 percent increase in flights with 90 percent of fixed-wing flights above 3,000 feet AGL.

As such, the USFWS found that permanent SUA establishment would have no effect on the desert tortoise (USFWS 2023). Therefore, there would be no significant impacts on the desert tortoise under Alternative 1.

The endangered Yuma Ridgway's rail has only been documented in the ROI at the north end of Lake Havasu, below the Turtle MOA/ATCAA, which already supports Marine Corps flight training. As discussed in Section 3.1.3.2, changes to the noise environment in the Turtle MOA/ATCAA would be negligible. Therefore, Alternative 1 would have no effect on the Yuma Ridgway's rail.

Certain listed subspecies/populations of snowy plover, willow flycatcher, and Bell's vireo may be present but it is currently not known whether they occur in the project area. These species are not residents and have rarely been observed in developed areas of the Combat Center (e.g., golf course, landscaped areas, and water and sewage treatment ponds) and are only likely to occur intermittently in desert riparian habitats in the ROI. Due to the very rare and transient potential occurrence of these species/subspecies in the project area, any impacts from Alternative 1 would be negligible. Therefore, Alternative 1 would have no effect on federally listed bird species.

Other Special Status Species

Other special status species occurring in the ROI (see Table 3.4-1) would be impacted by Alternative 1 in the same manner as described for general wildlife above. Specific impacts on other special status species are provided below.

Other special status reptile species, such as the Mojave fringe-toed lizard, would rarely be exposed to noise disturbance, and individuals in the ROI are already exposed to aircraft overflight noise. Therefore, implementation of Alternative 1 would have no impacts on special status reptile species.

Other special status bird and bat species occurring in the ROI would be exposed to BASH risk and aircraft noise in the proposed airspace. As previously described under Wildlife, noise levels within the proposed newly established/modified SUA would not vary significantly from noise levels within the existing SUA. The number of annual sorties flown at the Combat Center under Alternative 1 would slightly increase compared to existing conditions; however, the increase in annual sorties associated with high altitude aerial refueling tankers (KC-130 and Joint Aerial Refueling) would result in negligible increase in BASH risk and aircraft noise due to their operations at altitudes far above bird and bat habitats. An estimated 90 percent of the additional UAS sorties would be categorized as Group 1, which are small battery-powered hand launchable system with no significant BASH risk. Therefore, implementation of Alternative 1 would have negligible impacts on other special status bird and bat species when compared to existing conditions.

Desert bighorn sheep in the ROI could potentially be affected by aircraft overflight noise within the proposed SUA; however, the sheep populations have remained in the ROI and have likely expanded during military flight operations that have previously occurred in the vicinity (Epps et al. 2004; Combat Center 2024), indicating habituation to noise from military exercises. Given the very small percentage increase in flights spread over the entire Combat Center, implementation of Alternative 1 would have negligible impacts on Desert bighorn sheep. Therefore, Alternative 1 would comply with the Endangered Species Act, the MBTA, and other regulations, and would have no significant impact to biological resources.

3.4.3.4 Alternative 2

Wildlife

The proposed airspace configuration under Alternative 2 would be similar to Alternative 1, with the primary modifications to Alternative 2 related to limiting altitudes to 16,000 feet MSL in R-2509C and Johnson Valley MOA and not creating a Johnson Valley ATCAA or CAX ATCAA. The current number of annual sorties flown at the Combat Center under Alternative 2 would slightly increase compared to existing conditions. Aircraft would now use the existing and newly established/modified airspace under Alternative 2. Therefore, impacts on wildlife would be nearly identical to Alternative 1 (Section 3.4.3.3) and implementation of Alternative 2 would have no significant impacts on wildlife.

Special Status Species

As described above for wildlife, the proposed airspace configuration under Alternative 2 would be similar to Alternative 1. Special status species would be exposed to similar overflight impacts as Alternative 1. As described for Alternative 1, the USFWS found that permanent SUA establishment would have no effect on the desert tortoise (USFWS 2023). Therefore, impacts on special status species would be similar to those for Alternative 1 and implementation of Alternative 2 would have no significant impacts on special status species. Therefore, Alternative 2 would comply with the Endangered Species Act, the MBTA, and other regulations, and would have no significant impact to biological resources.

3.5 Cultural Resources

3.5.1 Definition of Resource

Cultural resources include buildings, structures, archaeological sites, districts, historic landscapes, cemeteries resources of interest to Native American tribes, and objects of significance in history, architecture, archaeology, engineering, or culture (Secretary of the Navy Instruction 4000.35A, *Department of the Navy Cultural Resources Program*; Marine Corps Order [MCO] P5090.2, dated

June 11, 2018, *Environmental Compliance and Protection Program*, Volume 8 "Cultural Resource Management"). Cultural resources can be divided into three major categories: archaeological resources, architectural properties, and traditional cultural properties.

Archaeological resources are material remains of past human life that are capable of contributing to the understanding of past human behavior, cultural adaptation, and related topics. Often, archaeological resources can have components from prehistory and history, such as habitation sites, lithic scatters, roasting pits/hearths, milling features, rock art, burials, and inscriptions.

Architectural properties include real properties and built environment such as buildings, structures, bridges, and concentrations of similar structures or buildings called districts.

Traditional cultural resources are tangible places or objects that are important in maintaining the cultural identity of a community or group and can include archaeological sites, buildings, neighborhoods, prominent topographic or geographic features or places, habitats, plants, animals, and minerals. Traditional cultural resources are documented places that reinforce and promote the history and culture of a specific contemporary group or community.

3.5.2 Affected Environment

Information on cultural resources within the affected environment was derived from background research to identify National Register of Historic Places (NRHP)- and California State Register of Historic Places-listed properties beneath the affected airspace including National Historic Landmarks, National Historic Trails, California Historical Landmarks, California Point of Historical Interest, as well as Native American Reservations, sacred areas, and traditional use areas. Current cultural resources data from the Combat Center were provided for the airspace over the installation and areas directly west, north, and east of the installation.

3.5.2.1 Archaeological Resources

In general, specific locations of archaeological sites and traditional cultural resources are not revealed to the public because of the concern of vandalism, theft or cultural sensitivity. Consequently, this chapter does not include specific locations of archaeological sites.

The Marine Corps has inventoried 64 percent of the Combat Center, and more than 90 percent of the lands under the proposed airspace for R-2509. The Marine Corps has recorded more than 3,000 archaeological sites, including one NRHP-listed property, and more than 200 NRHP-eligible properties. The Marine Corps inventoried Bureau of Land Management (BLM)-administered lands south, east, and west of the installation for land expansion studies between 2009-2013. The Marine Corps recorded almost 90 archaeological sites from those expansion studies that remain BLM-administered lands. Of all resources recorded by the Marine Corps, 2,427 are prehistoric, 515 are historic and 64 are multicomponent (Combat Center 2020).

One NRHP-listed archaeological site is located under the existing R-2501 (National Park Service [NPS] 2023), Foxtrot Petroglyph Site (CA-SBR-161, Reference Number 95000044). This site is also listed in the California State Register of Historic Places. No California Historic Landmarks are located under the proposed permanent SUA (California Office of Historic Preservation 2024).

Historic-era mining towns are located on BLM lands south of Ludlow, California under R-2501. Stedman and Ragtown were established in the early 1900s for the Stedman-Bagdad Chase Mining District. The mines and towns were largely abandoned by the 1940s.

3.5.2.2 Architectural Properties

No NRHP-listed or eligible architectural properties exist under current SUA (NPS 2023). The Atchison, Topeka and Santa Fe Railway Company helped establish the Southern Pacific Railroad through the Mojave Desert in 1883. This railway is still in use today as a major commercial freight line. Two nationally recognized historic roads intersect with portions of the Bristol MOA. The National Trails Highway and Route 66 are located along the northern boundary of the Combat Center, within the Mojave Trails National Monument.

One NRHP-listed architectural property is located under the proposed Johnson Valley MOA (NPS 2023). This property is the Integratron (33-foot high, 43-foot diameter, all wood dome) in the community of Landers, California. The building was built in 1959 and listed in 2018 (Reference Number 100002317).

3.5.2.3 Traditional Cultural Resources

No known traditional cultural resources are located within the existing airspace or proposed SUA.

3.5.2.4 Indian Reservation Lands

One Native American reservation, the Chemehuevi Reservation, lies under the existing Turtle MOA/ATCAA on the west side of the Colorado River.

3.5.3 Environmental Consequences

3.5.3.1 Thresholds

A variety of laws and policies pertain to cultural resources and consultation with Tribal Nations and government, as Tribal resources often overlap with the consideration of cultural resources. Main sources of laws and policies include:

- Archaeological and Historic Preservation Act of 1974;
- Archaeological Resources Protection Act of 1979;
- National Historic Preservation Act (NHPA);
- Native American Graves Protection and Repatriation Act;
- EO 13007, Indian Sacred Sites; and
- EO 13175, Consultation and Coordination with Indian Tribal Governments.

The Proposed Action/undertaking location and resource type is most relevant to ensuring compliance with the various laws and policies. The thresholds listed below are relevant in developing this section and determining whether, based on the totality of the circumstances, there may be significant impacts under NEPA.

- Adverse effects to historic properties eligible for the NRHP.
- Adverse effects to unique cultural resources.
- Adverse effects to Tribal resources, access, or rights.

For clarification, adverse effects to historic properties under NHPA are not automatically significant impacts under NEPA. Adverse effects to historic properties can be a consideration in determining whether significant impacts exist under NEPA and the NHPA process for resolving adverse effects (e.g., avoidance or mitigation) can help avoid significant impacts under NEPA.

3.5.3.2 Approach to Analysis

Procedures for assessing potential impacts on cultural resources are discussed in regulation 36 Code of Federal Regulations (CFR) part 800 of the NHPA. An action results in impacts to a cultural

resource on or eligible for the NRHP when it alters the resource characteristics that qualify the resource for eligibility. Direct impacts may occur by: (1) physically altering, damaging, or destroying all or part of a resource; (2) altering characteristics of the surrounding environment that contribute to resource significance; (3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or (4) neglecting the resource to the extent that it deteriorates or is destroyed. Indirect impacts primarily differ from direct impacts in that the effects are caused at a later time or removed further from the immediate project area but are still reasonably foreseeable.

Combat Center staff conducted government-to-government consultation with federally recognized Tribal Nations (see Appendix B) for actions described in this EA under Section 106 of the NHPA.

The Marine Corps recognizes that hundreds of eligible and unevaluated archaeological sites, some documented and some not yet discovered, exist under the permanent SUA that includes architectural resources, archaeological resources with standing structures (such as rock art sites), American Indian settlements, and traditional cultural resources. Impacts to cultural resources from the Proposed Action may include:

- Visual (overflights) effects to setting and feeling
- Air pollutant degradation and effects to workmanship, materials and association
- Noise pollution and vibration effects to materials, workmanship, setting and feeling

These three impacts have an indirect effect to cultural resources and to those resources with standing elements, such as rock art or historic structures with significance generated from setting and feeling under the guidelines for integrity of the NRHP. Precontact and post-contact archaeological sites lacking standing structures are not included because those resources are generally located on the ground surface, or underground, and would not be affected by the Proposed Action. There is no ground disturbance associated with either of the Proposed Action or the No-Action Alternative.

Visual impacts to archaeological, historic, and traditional cultural resources would affect setting and feeling, such as aircraft operating at lower altitudes that could obstruct the viewshed for a resource. This effect would generally not apply because most aircraft will not be visible either because of altitude, time of day, or speed of aircraft (see Section 3.7, *Socioeconomics and Children's Health and Safety Risks*). Visual effects from aircraft could affect traditional cultural resources related to ceremonies and other traditional activities at sacred sites. Undisturbed habitats, resources, and settings are considered to be critical to religious practices (NPS 1994). Potential impacts to these types of resources can be identified only through consultation with the affected groups.

Air pollution has the potential to impact archaeological and traditional cultural resources affecting workmanship, materials, and association of historic properties. Acid rain is caused by emissions of SO_2 and NO_2, which react with the water molecules in the atmosphere to produce acids (EPA 2023). Oxidants can degrade organic compounds and affect acidic deposition on statues, buildings, and other mineral-based structures (Peterson et al. 1992; Laver and Wainwright 1995; McGee 2018). Petroglyphs are formed by breaking through the natural patina of the rock surface into the softer and lighter colored, partially weathered rock. Petroglyphs rarely penetrate the unaltered parent rock and are visible because of the color and contour contrast. Eventually, rock varnish forms over these engravings. Rock varnish in desert environments is slow forming due to low rainfall and arid conditions. Rock varnish is composed of primarily of clay minerals, manganese and iron (Black et al. 2017). According to rock art studies in western Australia, air pollutants and

acid rain can degrade pictographs and petroglyphs through degradation of pigments and dissolution of the rocks where these are located (Black et al. 2017). The acids in the rain dissolve the manganese and iron compounds in the rock varnish, causing the varnish and color to change. Varnish erosion from the acids occurs quicker than the formation of the varnish (Black et al. 2017). There are not any documented impacts from air pollution or acid rain to prehistoric rock art in the Mojave Desert region.

Noise pollution and vibration may impact materials, workmanship, setting and feeling of historic properties. Experimental data and models (Battis 1988; Sutherland 1990; King 1985; King et al. 1988) show that damage to architectural resources, including adobe buildings, from subsonic noise and vibrations from aircraft overflights is unlikely. Subsonic, noise-related vibration damage to structures requires low frequency, high dB levels generated close to the structures (U.S. Forest Service 1992; Battis 1983, 1988). Aircraft must generate an L_{max} of at least 120 dB to potentially result in structural damage (Battis 1988). The probability of damage to a poorly constructed or poorly maintained wood frame building is less than 0.3 percent even when the building is directly under a large, high-speed aircraft flying only a few hundred feet AGL (Sutherland 1990). However, L_{max} levels for overflights do not exceed 120 dB (refer to Table 3.1-4).

Rock art is not affected by noise vibrations, such as sonic booms, compared to natural erosion, wind, or seismic activity (Battis 1983), but aircraft could be intrusive and disruptive at these locations. A setting is considered a quiet setting when it is a "generally recognized purpose and attribute, such as a historic village preserved specifically to convey the atmosphere of rural life in an earlier era or a traditional cultural property" (FAA 2025b). Aircraft operations may be likely to affect historic buildings, structures, and districts where setting is an important aspect of a property's significance.

Noise and startle effect could affect traditional cultural resources related to ceremonies and traditional activities at sacred sites. Undisturbed habitats, resources, and settings are considered critical to religious practices (NPS 1994). Potential impacts can be identified only through consultation with the affected groups.

3.5.3.3 No-Action Alternative

Under the No-Action Alternative, the proposed establishment of new SUA and modifications to existing SUA would not occur at the Combat Center. The Combat Center would continue to implement mitigation measures identified in 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, there would be no change from existing conditions on cultural resources as described in Section 3.5.2 and there would be no significant impact to cultural resources and no adverse effects to historic properties and the No-Action Alternative would comply with the NHPA and other regulations.

3.5.3.4 Alternative 1

There are 16 NRHP-eligible, 95 not-eligible, and 267 unevaluated archaeological resources under the proposed R-2509 (Combat Center 2020). One NRHP-listed architectural property is located under the proposed Johnson Valley MOA (NPS 2023). This property is the Integratron in the community of Landers, California. The building was built in 1959 and listed in 2018 (Reference Number 100002317). The Chemehuevi Reservation is located along the Colorado River under the existing Turtle MOA/ATCAA and not under the proposed Turtle Low MOA, which is located further west. Noise and visual impacts under Alternative 1 would not result in any changes to current airspace over the reservation. Alternative 1 would not sufficiently increase the number of flights over existing conditions to cause adverse effects to the Tribal Nation, their lands, or cultural

resources related to the reservation. Implementation of Alternative 1 would not include any project components that would directly or indirectly affect the ground surface, resulting in no effect on cultural resources within the Area of Potential Effects from ground disturbing activities.

The only potential for effects on cultural resources underlying the proposed and existing SUA would result from indirect effects such as noise and/or noise generated vibrations, visual impact of military overflights within the affected and proposed permanent SUA, or air pollutants. As detailed in Section 3.1.3.2 and presented in Table 3.1-3, areas in R-2509C, R-2509D, Sundance MOA, Johnson Valley MOA, and Turtle Low MOA would experience reportable increases in noise as defined by FAA criteria but there would be no significant impacts.

With only 120 additional annual sorties of KC-130, 20 additional annual sorties of Joint Aerial Refueling, and 1,599 additional annual sorties of UAS (90 percent of these would be Group 1 UAS), visual intrusions under Alternative 1 would be negligible over existing conditions thus there is no effect on cultural resource settings.

Activities within the airspace would be limited to short-term effects from aircraft overflights and would be consistent with existing conditions. There would be no adverse effects from changes to the noise or visual setting on the two NRHP-listed sites (i.e., Foxtrot Petroglyph Site, located under the modified Sundance MOA/ATCAA and the Integratron, located under the proposed Johnson Valley MOA) and over 200 NRHP-eligible properties within the Combat Center. Most of these resources are surface or subsurface sites and will not be affected by noise, air pollution or indirect visual impacts and the establishment of the SUA is not an impact. The Marine Corps recognizes that hundreds of eligible and unevaluated archaeological sites, some documented and some not yet discovered, exist under the proposed permanent SUA.

Implementation of Alternative 1 would result in increased emissions of NO_2, but below *de minimis* exceedance thresholds. The climate and weather of the Mojave Desert does not promote acid rain to a degree that would be detrimental to rock art or other fragile cultural resources. Therefore, the presence of acid rain and its impacts on rock art is negligible.

The Marine Corps conducted government-to-government Tribal consultation for the proposed alternative under Section 106 of the NHPA and determined "No Adverse Effect to Historic Properties" because no traditional cultural resources were identified within the Area of Potential Effects. Three Tribal Nations, Agua Caliente Band, Morongo Band, and Fort Mojave Indian Tribe concurred with the determination. One Tribal Nation, Yuhaaviatam of San Manuel Nation (formerly San Manuel Band of Mission Indians) requested additional information on the proposed project. The Combat Center met with members of the cultural resources program in December 2019 to discuss the concerns from the San Manuel Nation and provided NEPA studies to inform San Manuel Nation members about noise and pollution effects from large-scale aircraft projects. As a result of this meeting, the Marines committed to provide the San Manuel Nation a copy of the June 2019 EA for the Boeing Starliner Launch and Recovery, a copy of the July Final EIS for Land Acquisition and Establishment and committed to monitor the long-term cumulative effects of all training activities on cultural resources aboard the Combat Center. Based on the outcome of this consultation meeting, the San Manuel Nation had no objections to the proposed undertaking and did not report this undertaking would affect any Tribal ceremonies. In addition, Combat Center staff reiterated their commitment to monitoring and managing cultural resources for effects from training operations.

In 2021, the California State Historic Preservation Office (SHPO) responded to the Marine Corps' request for concurrence on the determination for no effect to historic properties and concurred with the determination and the conditions to avoid effect.

The status of cultural resources inventory and assessment of significant resources, the negligible impacts from noise and pollution, and Section 106 consultation efforts indicate that Alternative 1 will have a negligible effect on cultural resources. The Combat Center would continue to implement measures in the Integrated Cultural Resources Management Plan and implement mitigation measures identified in the 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, implementation of Alternative 1 would have no significant impacts on cultural resources and no adverse effects to historic properties and would comply with the NHPA and other regulations.

3.5.3.5 Alternative 2

The cultural resources intersecting with the proposed SUA for Alternative 2 do not change from Alternative 1 (see Section 3.5.3.4). Implementation of Alternative 2 would not result in an increase of effects to cultural resources than under Alternative 1. There will not be an increase in visual intrusions or impacts than under Alternative 1. Noise impacts would be the same as under Alternative 1. Implementation of Alternative 2 would result in increased emissions of NO_2 than under Alternative 1.

The status of cultural resources inventory and assessment of significant resources, the negligible impacts from noise and pollution, and Section 106 consultation efforts indicate that Alternative 2 will have a negligible effect on cultural resources. The Combat Center would continue to implement measures in the Integrated Cultural Resources Management Plan and implement mitigation measures identified in the 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, implementation of Alternative 2 would have no significant impacts on cultural resources and no adverse effects to historic properties and would comply with the NHPA and other regulations.

3.6 Land Use and Recreation

3.6.1 Definition of Resource

Land use refers to the various ways in which land might be used or developed (i.e., military training, parks and preserves, agriculture, commercial), the kinds of activities allowed (i.e., residences, hiking, OHV use), and the type and size of structures permitted (i.e., towers, single-family homes, multi-story office buildings). Land use is regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable and protect specially designated areas and environmentally sensitive resources, as described below.

Recreation refers to relaxation, rest, activity, education, or other opportunities for leisure services and community support that lead to an enhanced quality of life on public or private lands. Recreation includes any type of activity in which area residents, visitors, or tourists participate.

The ROI for the land use and recreation analysis includes land in and around the existing SUA (R-2501 and Turtle MOA/ATCAA) and proposed modified SUA (Bristol MOA/ATCAA and Sundance MOA) and newly established SUA (R-2509, Johnson Valley MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA). Much of this area is located outside of the Combat Center on public land defined by government data sources, for example California Desert Conservation Area resource management plans and associated EISs adopted by the BLM; the Combat Center Integrated Natural Resources Management Plan; Combat Center Master Plan; OHV area management plans; and the San Bernardino County General Plan.

3.6.2 Affected Environment

Land uses in the areas around the Combat Center and within the ROI include open space, residential, agricultural, recreation, commercial/industrial, and military uses (Figure 3.6-1). Lands are under ownership of federal, state, and private entities and include various conservation and special interest areas (Figure 3.6-2).

Most of the land in the ROI is federal land. Table 3.6-1 lists land ownership and land use and identifies special interest areas while Figure 3.6-2 presents a graphic depiction. The largest two managing agencies for land in the ROI are the BLM and the Marine Corps. Many of the BLM areas to the north and to the east of the Combat Center are also part of the Mojave Trails National Monument.

As listed in Table 3.6-1, there are several special interest areas within the ROI, including the Mojave Trails National Monument, Amboy Crater, the Johnson Valley OHV Area, and 10 wilderness areas (refer to Appendix J for details on these special interest areas).

The Johnson Valley Shared Use Area is open to the public for recreation most of the year when it is not in use for military training. The Combat Center is authorized to temporarily close the area to the public for up to two, 30-day periods each year. The closure periods include the time required to inspect the area and ensure it is clear of hazards prior to reopening for public use. The OHV area allows for low-level military aircraft along with training exercises (Marine Corps 2024). The adjacent Johnson Valley OHV Recreation Area is unaffected by closures to the Johnson Valley Shared Use Area and remains open to the public for recreation and off-roading.

The Johnson Valley OHV Area and adjacent Combat Center Training Areas (i.e., Means Lake [Johnson Valley Shared Use Area], Bessemer Mine, and Galway Lake) are utilized for various off-road events, including the annual King of the Hammers off-road race. This race is authorized through 2027 by a BLM Special Recreation Permit, Land Use Permit, and a DON license (BLM 2022).

3.6.3 Environmental Consequences

3.6.3.1 Approach to Analysis

The proposed actions would not result in changes to existing land use so effects would be limited to changes in airspace associated with the Combat Center and aircraft noise. The focus of the land use analysis is recreation impacts, consistency with plans and policies, and consideration of noise sensitive land uses. Details of the noise analysis are presented in Section 3.1, *Noise*.

Land use impacts would be evaluated for the potential for:

- inconsistency with the enforceable provisions of applicable land use plans, policies, and controls, including plans and policies for federally managed lands, state lands, and local jurisdictions; and
- incompatibility with existing land uses or preclusion of future land uses that support regional environmental and resource management goals.

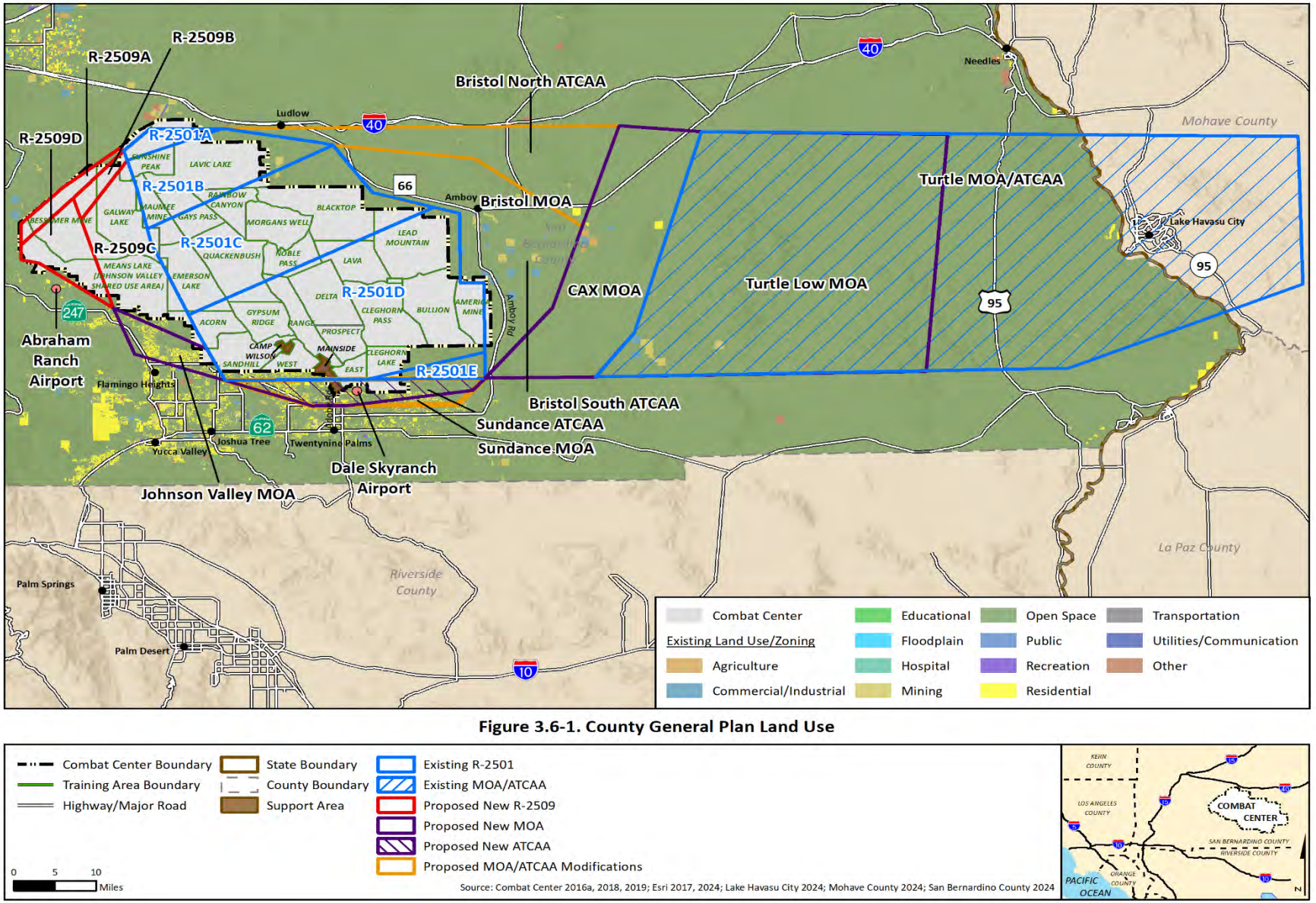


Figure 3.6-1. County General Plan Land Use

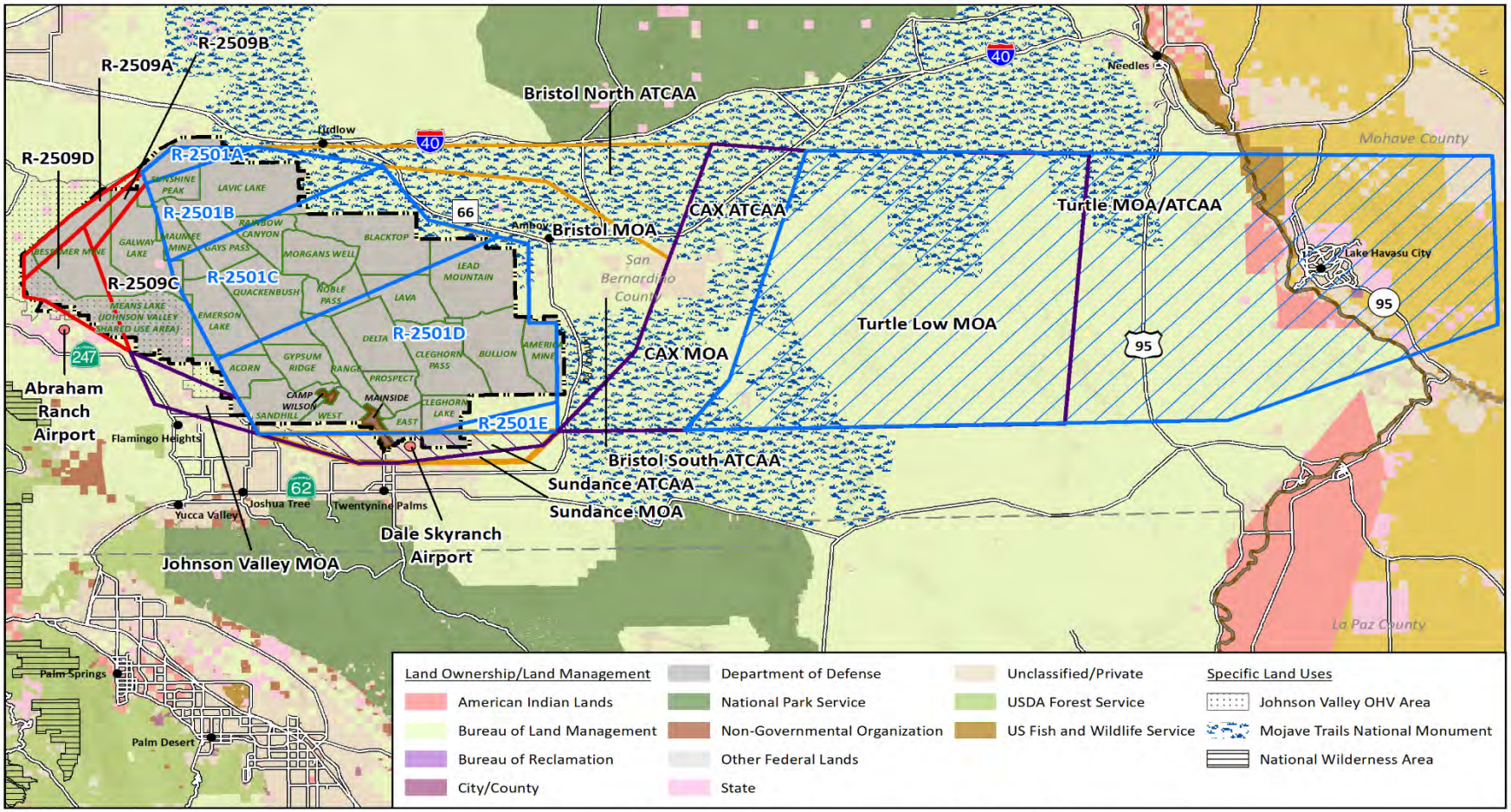


Figure 3.6-2. Special Use and Land Ownership/Land Management in Potential Impact Areas

Table 3.6-1 Land Use and Recreation Conditions Under the SUA Areas

SUA Area	Land Ownership	Special Interest Areas	Land Use
Existing SUA			
R-2501A	BLM = 750 acres Marine Corps = 12,595 acres	Mojave Trails National Monument Combat Center	Land use in the area is primarily designated for military use but the southwestern portion of R-2501 outside of the Combat Center boundary includes private land with several dozen residences.
R-2501B	BLM = 17,130 acres Marine Corps = 76,649 acres Private Land = 4,534 acres State Land = 1,274 acres	Mojave Trails National Monument Combat Center	
R-2501C	BLM = 28,220 acres Marine Corps = 188,460 acres Private Land = 4,407 acres State Land = 1,487 acres	Mojave Trails National Monument Combat Center	
R-2501D	BLM = 25,791 acres Marine Corps = 307,902 acres Private Land = 5,834 acres	Mojave Trails National Monument Cleghorn Lakes Wilderness Combat Center	
R-2501E	BLM = 12,731 acres Marine Corps = 1,281 acres Private Land = 1,722 acres	Cleghorn Lakes Wilderness Combat Center	
Turtle MOA/ATCAA	BIA = 30,360 acres BLM = 1,244,357 acres FWS = 21,246 acres Non-profit = 2,393 acres Local Government = 2,396 acres Private Land = 99,362 acres State Land = 54,759 acres	Mojave Trails National Monument Cadiz Dunes Wilderness; Chemehuevi Mountains Wilderness; Old Woman Mountains Wilderness; Piute Mountains Wilderness; Sheephole Valley Wilderness; Stepladder Mountains Wilderness; Turtle Mountains Wilderness; Whipple Mountains Wilderness; Havasu Wilderness Lake Havasu Havasu National Wildlife Refuge	Land uses in the area are primarily categorized as open space with a small portion of agricultural land. Recreation activities in the BLM-managed areas include hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking. Lake Havasu spans 54,332 acres and is home to approximately 53,000 residents. The city estimates an increase of 14,000 residents by 2040 (Lake Havasu City 2024).
Proposed New SUA			
R-2509A	BLM = 1,413 acres Marine Corps = 15,273 acres Private Land = 8 acres State Land = 131 acres	Johnson Valley OHV Area Combat Center (including the Johnson Valley Shared Use Area)	A portion of the Combat Center land is designated as a Shared Use Area between the Combat Center and the Johnson Valley OHV Area. Land use in the area is designated for military use with some open space and a portion along the southwestern side of R-2509 is currently residential land use. Recreation in the Johnson Valley OHV includes OHV riding, auto touring, biking, camping, hiking, horseback riding, hunting, recreational vehicles, wildlife
R-2509B	BLM = 75 acres Marine Corps = 9,975 acres Private Land = 5 acres State Land = 516 acres	Johnson Valley OHV Area Combat Center	

SUA Area	Land Ownership	Special Interest Areas	Land Use
R-2509C	BLM = 6,185 acres Marine Corps = 85,164 acres Private Land = 2,585 acres	Johnson Valley OHV Area Combat Center (including the Johnson Valley Shared Use Area)	viewing, and photography. There is no current SUA over the proposed R-2509 area.
R-2509D	BLM = 1,412 acres Marine Corps = 39,371 acres Private Land = 1,409 acres State Land = 795 acres	Johnson Valley OHV Area Combat Center (including the Johnson Valley Shared Use Area)	
Johnson Valley MOA/ATCAA	BLM = 10,841 acres Marine Corps = 1,885 acres Private Land = 16,690 acres State Land = 322 acres	Johnson Valley OHV Area Combat Center	Land uses in the area include residential land, open space, and military operations. There is no current SUA over the proposed Johnson Valley MOA/ATCAA area.
CAX MOA/ATCAA	BLM = 192,769 acres Private Land = 35,922 acres State Land = 5,543 acres	Mojave Trails National Monument Cadiz Dunes Wilderness; Cleghorn Lakes Wilderness; Clipper Mountain Wilderness; Old Woman Mountains Wilderness; Sheephole Valley Wilderness; Trilobite Wilderness	Land uses in the area are primarily categorized as open space with a small portion of agricultural land. Recreation activities in the BLM-managed areas include hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking. There is no current SUA over the proposed CAX MOA/ATCAA area.
Turtle Low MOA	BLM = 635,197 acres Non-profit = 2,393 acres Private Land = 31,325 acres State Land = 16,721 acres	Mojave Trails National Monument Cadiz Dunes Wilderness; Old Woman Mountains Wilderness; Piute Mountains Wilderness; Sheephole Valley Wilderness; Stepladder Mountains Wilderness; Turtle Mountains Wilderness	Areas are primarily open space and include outdoor recreation activities.
Proposed Modified SUA			
Bristol North ATCAA	BLM = 113,567 acres Private Land = 17,926 acres State Land = 5,568 acres	Mojave Trails National Monument Bristol Mountains Wilderness; Clipper Mountain Wilderness; Trilobite Wilderness	Areas are primarily open space and include the following recreation activities: hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking.
Bristol South ATCAA	BLM = 172,759 acres Marine Corps = 4,804 acres Private Land = 29,264 acres State Land = 2,576 acres	Mojave Trails National Monument Amboy Crater Bristol Mountains Wilderness; Clipper Mountain Wilderness; Trilobite Wilderness	Areas are primarily open space and include the following recreation activities: hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking.
Sundance MOA/ATCAA	BLM = 25,688 acres Marine Corps = 8,602 acres Private Land = 19,868 acres State Land = 275 acres	Cleghorn Lakes Wilderness Combat Center	Areas include open space and residential land uses and include the following recreation activities in the wilderness area: hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking

Legend: ATCAA = Air Traffic Control Assigned Airspace; BIA = Bureau of Indian Affairs; BLM = Bureau of Land Management; FWS = Fish and Wildlife Service; MOA = Military Operations Area; OHV = off highway vehicle; SUA = Special Use Airspace

3.6.3.2 No-Action Alternative

Under the No-Action Alternative, the proposed establishment and modifications to SUA would not occur at the Combat Center and current land use and recreation uses would continue. Although, noise levels would increase 2 to 4 dB CNEL/$CNEL_{mr}$, existing land use would remain compatible. The Combat Center would continue to implement mitigation measures identified in the 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, the No-Action Alternative would result in no significant impacts to land use and recreation.

3.6.3.3 Alternative 1

Under Alternative 1, modifications to airspace use at the Combat Center would result in changes in noise levels. Table 3.1-3 lists the noise level changes under Alternative 1, and are summarized below:

- R-2501 would experience $CNEL_{mr}$ of 64 dB and CNEL of 63 dB, both representing an increase of 1 dB from the No-Action Alternative (see Table 3.1-3). These changes in noise levels are reportable but would not meet the FAA's noise significance threshold and would not be significant.
- R-2509 would be newly established SUA. Noise levels would vary within R-2509A/B/C/D ranging from 61 to 65 dB $CNEL_{mr}$/CNEL (see Table 3.1-3). Although 65 dB would exceed the FAA's threshold for significance, that would only apply in a portion of R-2509A which has no noise sensitive receptors. Additional details provided in the noise study in Appendix F. As noted in Section 3.1, *Noise*, noise levels in rural areas typically are less than 49 dB. The increase in noise levels would be up to 16 dB from the No-Action Alternative and would be noticeable. However, residential land use would remain compatible because no residential land use would be exposed to 65 dB $CNEL_{mr}$/CNEL or greater, which is located along the southwestern portion of R-2509C/D. See the noise study in Appendix F for details. Land uses in the rest of R-2509 are primarily military use within the Combat Center and the OHV recreation that would remain comparable with the increase noise levels.
- There is no existing SUA for the Johnson Valley MOA/ATCAA but as noted in Section 3.1, *Noise*, current noise levels under the area are estimated to be typical rural area ambient $CNEL_{mr}$ less than 49 dB. Under Alternative 1, the noise levels would be 60 to 61 dB $CNEL_{mr}$/CNEL (see Table 3.1-3). The increase in noise levels of up to 12 dB would result in noticeable changes to residences, but all land uses would be compatible with these noise levels. While a 12 dB increase is considered reportable per the FAA's noise exposure changes, the FAA's noise significance threshold would not be met and these increases in noise would have minor impacts.
- Noise levels below the modified Bristol MOA/ATCAA would increase by 3 dB $CNEL_{mr}$/CNEL under Alternative 1 (see Table 3.1-3). These changes in noise levels would not impact land use and recreation in this area.
- Noise levels below the Sundance MOA/ATCAA would increase by 3 dB $CNEL_{mr}$/CNEL under Alternative 1 (see Table 3.1-3). Although this noise increase would not reach FAA's noise significant threshold, this is a reportable noise increase. Land uses potentially impacted include the residential areas and the wilderness area recreation in this area. The closest noise sensitive receptors located in and around Sundance MOA/ATCAA contain low density residential land uses and several places of worship that would be exposed to $CNEL_{mr}$/CNEL of 60 dB. However, as described in Section 3.1, *Noise*, training at the Combat Center is focused on the RAs where use of ordnance and munitions are permitted.

Therefore, the proportion of time each aircraft flight would spend in Sundance MOA/ATCAA would be less than has been modeled for this analysis.

- There is no existing SUA area for the CAX MOA/ATCAA and under Alternative 1, the noise levels would be 50 dB $CNEL_{mr}$/CNEL (see Table 3.1-3). These would represent a change of approximately 1 dB from existing conditions and would not impact the recreation at the Mojave Trails National Monument and the six wilderness areas.
- The existing Turtle MOA/ATCAA lies above the proposed new Turtle Low MOA. The existing conditions for the Turtle MOA/ATCAA show current noise of 45 dB $CNEL_{mr}$/CNEL (see Table 3.1-3). Noise levels below the Turtle Low MOA would increase to 50 dB $CNEL_{mr}$/CNEL under Alternative 1. This equates to an increase of 5 dB $CNEL_{mr}$/CNEL, which would be a 'reportable' increase in noise according to FAA criteria. Land uses potentially impacted include the recreation at the Mojave Trails National Monument and the six wilderness areas that would experience a less than significant change.

As summarized above and detailed in Section 3.1, *Noise*, no existing residential land use would be exposed to 65 dB $CNEL_{mr}$/CNEL or greater. In terms of wilderness areas, areas within Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA would experience increases in noise exposure.

Consistent with the FAA's Advisory Circular 91-36D, *Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas* (FAA 2004), the floor altitude in Bristol MOA, CAX MOA, and Turtle Low MOA would be established at 2,000 feet AGL to minimize noise impacts over designated wilderness areas and the Mojave Trails National Monument resulting in no significant impacts on land use or recreation in these areas.

Under Alternative 1, the Combat Center would continue to close the Johnson Valley Shared Use Area to the public for up to two, 30-day periods each year. The area would continue to be available for public recreation the balance of the year. Table 3.6-1 identifies three different scenarios and summarizes the potential impacts to recreation in the Johnson Valley Shared Use Area.

Table 3.6-1 Potential Impacts to Recreation in the Johnson Valley Shared Use Area

Scenario	Status of Johnson Valley Shared Use Area	Status of R-2509 Airspace	Availability for Public Use Activities and Potential Impacts to Recreation
1	Open to public (10 months per year)	Not activated	No change from existing condition
2		Activated (up to 365 days per year under Alternative 1 or up to 60 days per year under Alternative 2)	The "floor" of R-2509 would be established at 1,500 feet AGL and continue to accommodate all typical recreation activities – off-roading, drones, model rockets, and even low-flying helicopters for filming and events.
3	Closed to public (up to two 30-day periods each year)		All ground and airspace activities would be closed to the public.

To ensure public safety and access, the Marine Corps would manage the airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public. In compliance with FAA Joint Order 7400.2R, Section 23-1-4 (FAA 2025a), the proposed new R-2509 "floor" would be established from ground surface only when the Marine Corps closes the Johnson Valley Shared Use Area to the public for military training. Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at an altitude of 1,500 feet AGL. This vertical separation ensures that ground-based activities can continue without interruption or interference from military aircraft overhead. Therefore, when the

Johnson Valley Shared Use Area is open to the public, typical recreational activities (e.g., OHV use, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft) would not be restricted by the airspace designation under Alternative 1, but would continue to be subject to existing regulations, permit requirements, and closures. Ground level, and ground-related recreational activity would not be restricted and have minimal adverse impacts to the type, scope, or quality of recreational experiences currently available in the Johnson Valley Shared Use Area.

The King of the Hammers event would continue to operate under existing BLM permits and the DON license through 2027. The Marine Corps would coordinate with the event proponents for activities in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support the permitted events. If an event requires airspace access to an altitude higher than the proposed R-2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponents on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements. For the existing permitted/licensed King of the Hammers event, emergency operations (i.e., helicopter use to support rescue and air ambulance services, San Bernardino County Search and Rescue, San Bernardino Fire, and MAGTFTC [if emergency is within the Combat Center]) would be facilitated in coordination with MCAGCC Range Control, ensuring prompt access. Commercial filming via helicopter and unmanned drones (BLM 2022) would continue to be authorized within the scope of the DoN-issued land-use license and not be impacted under Alternative 1. Aerial operations associated with organized events will need to be consistent with FAA regulations (BLM 2022). Therefore, there would be minimal adverse impacts to organized events utilizing the Johnson Valley Shared Use Area (e.g., King of the Hammers) under Alternative 1.

The Combat Center would continue to implement mitigation measures identified in the 2003 Programmatic EA for Ongoing and Proposed Training Activities, 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, implementation of Alternative 1 would have no significant impacts on land use and recreation.

3.6.3.4 Alternative 2

Impacts under Alternative 2 would be the same as identified under Alternative 1 due to the similarity in proposed airspace primarily differing only at altitudes above 16,000 feet MSL, which results in a negligible difference in noise levels at ground level. Neither existing residential land use nor wilderness areas would be significantly impacted. As described under Alternative 1, there would be minimal adverse impacts to typical recreational activities Johnson Valley Shared Use Area and the Johson Valley OHV Area (e.g., OHV use, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft) and to organized events (e.g., King of the Hammers).

The Combat Center would continue to implement mitigation measures identified in the 2003 Programmatic EA for Ongoing and Proposed Training Activities, 2012 Final EIS, 2017 Supplemental EIS, and the 2023 Ongoing Training Supplemental EA. Therefore, implementation of Alternative 2 would have no significant impacts on land use and recreation.

3.7 Socioeconomics and Children's Health and Safety Risks

3.7.1 Definition of Resource

Socioeconomic analyses address changes to the local community demographics and business activity and economic output that would occur from activities in the proposed alternatives. Impacts

on these fundamental socioeconomic components can also influence other systemic issues such as the availability and affordability of housing, the provision of public services (e.g., emergency services, education, health services), and the general quality of life in a community.

The ROI for socioeconomic and children's health and safety risks impacts is defined as San Bernardino County to include, as appropriate, individual cities and unincorporated communities within the county that would potentially bear a disproportionate share of the impacts such as Twentynine Palms, Joshua Tree, Yucca Valley, Victorville, Apple Valley, and Lucerne Valley.

3.7.2 Affected Environment

3.7.2.1 Population and Income

Table 3.7-1 lists the population and median household income in the ROI. Populations for the State of California (39,538,223 people) and San Bernardino County (2,181,654 people) are listed for reference and comparison. Between 2010 and 2020, populations in California and San Bernardino County grew 6.1 percent and 7.2 percent, respectively. During the same decade, Joshua Tree and Lucerne Valley decreased in populations by 12.5 percent and 8.3 percent, respectively. San Bernardino County's median household income in 2021 was $70,287 and the State of California's is $84,097.

Table 3.7-1 Population and Income in the ROI

Location	Population (2010 Census)	Population (2020 Census)	Population Change (2010 - 2020)	Median Household Income (2017 - 2021 ACS)
United States	308,745,538	331,449,281	7.4%	$69,021
California	37,253,956	39,538,223	6.1%	$84,097
San Bernardino County	2,035,210	2,181,654	7.2%	$70,287
Joshua Tree	7,414	6,489	-12.5%	$47,944
Lucerne Valley	5,811	5,331	-8.3%	$38,096
Twentynine Palms	25,048	28,065	12.0%	$46,887
Needles City	4,835	4,931	2.0%	$38,368
Yucca Valley	20,700	21,738	5.0%	$51,978
Mohave County, AZ	200,186	213,267	6.6%	$54,778
Lake Havasu City, AZ	52,527	57,144	8.8%	$64,027

Legend: % = percent; ACS = American Community Survey; AZ = Arizona
Sources: U.S. Census Bureau 2010, 2020, 2021

3.7.2.2 Employment

In 2022, San Bernardino County had a labor force of about 1 million and an unemployment rate of 3.4 percent, which was lower than the State of California (4.9 percent). Mohave County, Arizona had a civilian labor force of 88,850 in 2022 and a higher unemployment rate (4.5 percent) than the state of Arizona (3.9 percent) (Bureau of Labor Statistics 2023).

3.7.2.3 Economic Activity

Recreation and OHV users and the film industry in the ROI contribute to the economic spending in the local area and broader economic region (DON 2012). Visitor spending in San Bernardino County in 2024 is estimated to be $6.69 billion (San Bernardino County 2025). The 2023 King of the Hammers off-road race is estimated to generate $24.9 million of direct spending, resulting in a total economic effect of $34.1 million to the local economy (Hammerking Productions 2023).

3.7.3 Environmental Consequences

3.7.3.1 Approach to Analysis

The socioeconomics analysis focuses on potential economic impacts related to civil aviation due to changes in access to and use of the airspace, as defined in Section 3.2, as well as impacts on other economic activities such as recreational activities, organized OHV events, film industry activity, and impacts to children. Existing economic conditions for the ROI are set by the economic development forecast in the most recent San Bernardino County Economic Forecast, which finds that "most of the pandemic-related jobs will be restored, and an estimated 30,800 jobs will be created, surpassing the pre-pandemic levels of total employment" (San Bernardino County 2023). San Bernardino County's population is expanding faster than the population of broader Southern California, and this trend will continue. Because of new job opportunities, affordable home prices, and new home building, net migration into the county will be positive from 2024–2028. An average annual growth rate of 1.9 percent is expected between 2024–2028 resulting in over 8,000 new jobs in the recreation and film sector.

3.7.3.2 No-Action Alternative

Under the No-Action Alternative, the proposed establishment of new SUA and modifications to existing SUA would not occur at the Combat Center and total annual sorties would be the same as existing conditions. The mix of aircraft utilizing the Combat Center would change to include a larger proportion of F-35, as detailed in Section 2.2. Table 3.1-2 presents the calculated average $CNEL_{mr}$ and CNEL under the No-Action Alternative, which would increase by 2 to 4 dB from existing conditions but remain within compatible levels for residential areas so no residences would be significantly impacted within the ROI. The Condor Elementary School located adjacent to the Combat Center under the Sundance MOA, would experience an increase of 3 dB CNEL but remain under 65 dB (Table 3.1-2). DoD guidance recommends an exterior Equivalent Continuous Sound Level of 60 dB as the screening threshold for assessment of noise impacts to classrooms, which would not be exceeded under Alternative 1 so the children attending Condor Elementary could experience a small but not significant impact to classroom disruptions (DNWG 2013). Therefore, the No-Action Alternative would result in no change to socioeconomic conditions in the ROI.

3.7.3.3 Alternative 1

<u>Socioeconomic</u>

A substantial amount of civilian aviation traffic utilizes airspace in and around the proposed SUA areas. Section 3.2 outlines the various forms of civilian aviation potentially impacted including public airports, private airports, ATS routes, jet routes, and general aviation VFR aircraft. Under Alternative 1, large areas would become more limited to use by civilian aviation, in particular to aircraft operating IFR beneath MOAs and ATCAAs and RAs. Impacts to aircraft rerouting to avoid active SUA may result in additional fuel costs, and expended effort related to tracking the airspace status through available advisory services. Because there is existing SUA in the ROI, the potential impacts to civilian aviation are expected to be minimal as rerouting already takes place.

Establishing the SUA areas as designated military use airspace along with subdivision of this airspace into lateral and/or vertical sectors would provide flexibility in scheduling the proposed SUA/ATCAA around those higher-density air traffic periods and airspace/altitude uses. Some economic impacts on civil aviation would occur; however, there are mechanisms in place to release SUA back to Air Traffic Control when it is not in use by the Combat Center or for the FAA to

recall the airspace in event of bad weather or other significant events in the ROI. These procedures would be outlined in a Letter of Procedures between the Combat Center, local and regional parties such as the Los Angeles ARTCC, and the FAA. These actions would be expected to minimize direct impacts so that implementation of Alternative 1 would have no measurable economic changes compared to the No-Action condition.

The reduction of access and use of lands related to ground training activities were fully analyzed in the 2012 Final EIS and included in the preferred alternative selected in the 2013 ROD (refer to Section 1.4.3); however, there may be additional impacts in the areas under the SUA due to an increase in the number of flights and an increase in noise levels. Some types of filming may be impacted by increased noise levels. Fewer visitors coming to the area for recreation or for work as part of a film or production crew would impact local businesses. Some of the displaced visitors and film crews would likely still utilize local areas that do not fall under the SUA areas, but some visitors would choose to travel to areas outside the local community or even outside the county. This loss in use is expected to have no measurable change to existing economic conditions because the physical access to the areas would not be limited and there are several substitute locations in the local area. For example, about one-quarter of the 155 film locations available in San Bernardino County would be affected by this action (San Bernardino County FLICS 2023). However, the ROI would only see a 2.2 percent increase in flights over an entire year, suggesting a negligible impact on impacted filming locations. Furthermore, while it is possible that a suitable substitute location would not be available in all cases, there are many alternative options for filming locations within the ROI.

As discussed in Section 3.6.3.3, there would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers). Because of this, Alternative 1 is expected to have negligible impacts on economic activity generated in the ROI from recreational activities and to organized events.

Children's Health and Safety Risks

This section also considered the potential environmental health or safety risks that may disproportionately affect children from environmental health and safety risks. Under Alternative 1 and detailed in Table 3.1-3, aircraft noise would not exceed 65 dB CNEL or 60 dB CDNL beneath the MOAs that make up the Combat Center that contain noise sensitive areas but would result in increases in noise to residential areas located under the affected area of concern where low overflights could occur. The disruption of speech in a classroom is a primary concern due to adverse effects on children's learning ability and may pose a disproportionate health and safety risk to children. However, the areas beneath the MOAs that would experience these noise increases are sparsely populated without schools, which are located beyond the MOAs at lower noise levels. The exception to this is the Condor Elementary School located adjacent to the Combat Center under the Sundance MOA, which would experience an increase of 3 dB CNEL but remain under 65 dB. DOD guidance recommends an exterior Equivalent Continuous Sound Level of 60 dB as the screening threshold for assessment of noise impacts to classrooms, which would be reached but not exceeded under Alternative 1; so, the children attending Condor Elementary could experience a small but not significant impact to classroom disruptions (DNWG 2013). Alternative 1 would not substantially change the altitudes or types of aircraft activities that would occur in the vicinity of Condor Elementary. The primary cause of the increase in CNEL would be due to the replacement of F-18 by F-35, and the F-35 generates greater noise. Therefore, the numbers of aircraft noise events experienced at Condor Elementary would be similar, but a portion of the noise

events would be louder because there would be a greater proportion flown by F-35, which may result in an increase in the duration of time that adversely affects classroom learning.

Therefore, Alternative 1 would have no significant impacts on socioeconomics or children's environmental health and safety risks when compared with the No-Action Alternative.

3.7.3.4 Alternative 2

Socioeconomic impacts and children's environmental health and safety risks under Alternative 2 would be the same as Alternative 1. Specifically, socioeconomic impacts related to civil aviation, recreation, and the film industry would result in no measurable adverse change to No-Action Alternative conditions in the socioeconomic ROI and no socioeconomic impacts under Alternative 2. Impacts to children's environmental health and safety risks, specifically childhood learning, are determined by CNEL noise levels and relative changes from No-Action Alternative. Noise effects at schools would be the same as under Alternative 1 and would not be significant. The Alternative 2 change to CNEL relative to No-Action Alternative would be 3 dB and is not considered significant. All schools not at the Combat Center are located beyond the existing and proposed airspace where noise levels are less and would continue to be less than 60 dB CNEL and would not be significantly impacted. There would be minimal adverse impacts to typical recreational activities and to organized events (e.g., King of the Hammers), resulting in negligible impacts on economic activity generated in the ROI from recreational activities and to organized events. Therefore, Alternative 2 would have no significant impacts on socioeconomics or children's environmental health and safety risks when compared with the No-Action Alternative.

CHAPTER 4
CUMULATIVE IMPACT ANALYSIS

This section defines cumulative impacts; identifies past, present, and reasonably foreseeable future actions; and analyzes the incremental effects the Proposed Action may have when combined with these past, present, and reasonably foreseeable actions.

4.1 Definition of Cumulative Impacts

Cumulative impacts assess the impact of the Proposed Action when viewed in context with other past, present, and reasonably foreseeable actions expected to occur in a similar location and/or during a similar time period.

- Past: A project has completed the National Environmental Policy Act (NEPA) process and was implemented. Past actions are considered part of the "baseline" analysis, unless they are incomplete or ongoing, and future actions are included where they are sufficiently certain to occur.
- Present: A project is either not fully implemented or ongoing
- Reasonably foreseeable: A project that is likely to occur in the future and whose potential effects could influence resources areas analyzed in this Environmental Assessment (EA) but have not yet completed an environmental review process or been implemented at this time. For the purposes of this analysis, public documents prepared by federal, state, and local government agencies form the primary sources of information regarding reasonably foreseeable actions. Documents used to identify other actions include notices of intent for Environmental Impact Statements (EISs) and EAs, management plans, land use plans, and other planning related studies.

Descriptions of the 12 projects representing past, present, and reasonably foreseeable future actions are provided in Appendix K.

4.2 Cumulative Impacts

This section addresses potential cumulative impacts of the No-Action Alternative or Proposed Action (Alternatives 1 or 2) in conjunction with the cumulative projects for each resource discussed in this EA. Table 4-1 provides a summary of anticipated cumulative impacts for resource areas analyzed in detail.

Even though there are no proposed changes to other elements of ongoing training operations (i.e., ground-based training or use of ordnance), the impacts from all ongoing training operations are considered in this EA as part of this section.

Table 4-1 Cumulative Impacts of No-Action Alternative and Proposed Action

Resource	No-Action Alternative Cumulative Impacts	Proposed Action Cumulative Impacts
Noise	No Significant Impact	No Significant Impact
Airspace Management	No Significant Impact	No Significant Impact
Aviation Emissions and Air Quality	No Significant Impact	No Significant Impact
Biological Resources	No Significant Impact	No Significant Impact
Cultural	No Significant Impact	No Significant Impact
Land Use and Recreation	No Significant Impact	No Significant Impact
Socioeconomics	No Significant Impact	No Significant Impact

4.2.1 Noise

Implementation of the No-Action Alternative or the Proposed Action would have no significant impact on noise. However, increases in aircraft noise under the Proposed Action would exceed the Federal Aviation Administration's (FAA's) significance criteria of 65 decibels (dB) Community Noise Equivalent Level (CNEL) within R-2509A, but because noise sensitive receptors are not present in R-2509A, there would be no significant impacts (see the noise study in Appendix F for details). Residential areas in R-2509C, R2509D, Johnson Valley Military Operations Area (MOA)/Air Traffic Control Assigned Airspace (ATCAA) and Sundance MOA/ATCAA area would experience noticeable but not significant noise increase under the Proposed Action.

Past/present NEPA projects include the 2012 Land Acquisition/Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training, which covered all ongoing training operations (ground, air, and ordnance) that would continue under both the No-Action Alternative and Proposed Action. The proposed permanent Special Use Airspace (SUA) would accommodate the Marine Expeditionary Brigade (MEB)-sized exercises that were proposed and evaluated in the 2012 Final EIS that were not fully implemented. As detailed in the 2012 Final EIS, the area exposed to 62–70 dB(C) CNEL due to ordnance activity extends beyond the range boundary on 2,106 acres but does not affect land use compatibility nor expose residential land use. The nearest residential areas are in R-2509C, R-2509D, Johnson Valley MOA/ATCAA, and Sundance MOA/ATCAA. The 2012 Final EIS increased the land area subject to a medium potential for noise complaints increased by 21 percent to encompass an estimated 1,478 additional people but did not subject any people or residential areas to ordnance noise levels with a high potential for noise complaints. The probability of damage from ordnance vibrations to structures was determined at less than 0.0001 percent. Due to the different weightings and thresholds used for aircraft noise (A-weighted CNEL with 65 dB threshold for noise sensitive land uses) and ordnance noise (C-weighted CNEL with 62 dB threshold for noise sensitive land uses) the ordnance results presented in the 2012 Final EIS cannot be directly combined with aircraft noise. In terms of greatest cumulative effects, the most northeasterly located residences within R-2509C would experience ordnance noise ranging from 57 to 60 dB(C) CNEL (approximately 0.5 mile outside of the 62 dB[C] CNEL ordnance contour) and also aircraft noise of up to 63 dB(A) CNEL or 64 dB(A) Onset-Rate Adjusted Monthly Community Noise Equivalent Level ($CNEL_{mr}$). Other noise sensitive areas (within R-2509D, Sundance MOA/ATCAA, and Johnson Valley) would experience ordnance noise less than 57 dB(C) CNEL (at least 2 miles outside of the 62 dB CNEL ordnance contour). The combined effects at these residences would result in annoyance from both aircraft and ordnance noise, but all would remain compatible for residential land use and would not experience a significant impact due to the combination of aircraft and ordnance noise.

Present NEPA projects include the temporary SUA proposals (Project 7), which would no longer be needed if the Proposed Action in this EA is implemented. Future development within the city of Twentynine Palms (Project 12) or adjacent private property could potentially add new residential and commercial structures south of the Combat Center property and within R-2509C, R-2509D, Sundance MOA/ATCAA, or Johnson Valley MOA/ATCAA. However, $CNEL_{mr}$ or CNEL would not exceed 64 dB(A) due to aircraft noise nor exceed 62 dB(C) due to ordnance noise under the Proposed Action. These levels are considered by both the Department of War (DOW) (formerly referred to as the Department of Defense [DoD]) and FAA to be compatible with residential and commercial land uses.

The only land that would be exposed to noise at incompatible levels for noise sensitive uses would be in and around R-2509A, which is owned by Bureau of Land Management (BLM) or the State

of California and currently part of the Johnson Valley off highway vehicle (OHV) Area. Marine Air Ground Task Force Training Command (MAGTFTC) actively coordinates with and implements an encroachment program to prevent incompatible development (Projects 8 and 12). Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to a cumulative impact on noise.

4.2.2 Airspace Management

Implementation of the No-Action Alternative as well as the Proposed Action would have no significant impact on airspace management. The FAA's Next Generation Air Transportation System program (Project 9) would be expected to continue to have a positive impact on air traffic and the National Airspace System and any additional changes in the vicinity of the proposed permanent SUA would be expected to result in positive impacts on local air traffic. Establishment or modifications to airspace in the region (Project 10) would go through the airspace designation process outlined in Section 1.4.2 and Appendix G to ensure no significant impacts on the National Airspace System. Use of airspace for military training in the region and at the Combat Center (Projects 1, 2, 3, 4, 5, 6, and 11) would continue to be coordinated through the appropriate scheduling authority (e.g., Twentynine Palms Range Scheduling and Control Facility). Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to a significant cumulative impact on airspace management.

4.2.3 Aviation Emissions and Air Quality

The past, present, and reasonably foreseeable future actions presented in Appendix K would result in an increase in localized and regional emissions in the Mojave Desert Air Basin (MDAB). As discussed in Section 3.3, the Proposed Action would have a net reduction for all criteria pollutant emissions when compared to the 2012 Final EIS emissions envelope. Most of the projects listed in Appendix K have (or are expected to have) a *de minimis* impact determination (Projects 5, 6, 7, 8, 9, and 10) or have ensured compliance with the State Implementation Plan via mitigation or amending the State Implementation Plan (Project 4); in addition, the effects of past actions (Projects 1–10) are already captured in existing air quality data. Some cumulative activities from projects would be short term and temporary in nature, such as construction activities, meaning pollutant increases would only last for the duration of temporary activities. Other activities would be long term, such as ongoing training activity and aircraft operations.

As discussed in Section 3.3, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and are all well below the National Ambient Air Quality Standards (NAAQS) and the combination of the Proposed Action with past, present, and reasonably foreseeable future actions presented in Appendix K would not cause an exceedance of these NAAQS. However, as noted in Section 3.3.2, on February 7, 2024, the United States (U.S.) Environmental Protection Agency (EPA) strengthened the NAAQS for annual particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$). In 2023, emissions of $PM_{2.5}$ represented 100 percent of the updated NAAQS. Therefore, the Proposed Action in combination with past, present, and reasonably foreseeable future actions would contribute to the MDAB exceeding the $PM_{2.5}$ NAAQS. The EPA will publish notification of nonattainment area designations for the new $PM_{2.5}$ annual NAAQS at some point in the future. Until then, MDAB remains classified as attainment for the $PM_{2.5}$ NAAQS.

Greenhouse gas (GHG) emissions impacts are cumulative and global in nature. As discussed in Section 3.3, implementation of the Proposed Action would result in an increase in annual GHG emissions as compared to the No-Action Alternative emissions. Projects listed in Appendix K would include short-term emissions such as those from construction activities, as well as long-

term emissions such as those from ongoing training activities and aircraft operations. Annual GHG emissions from the Proposed Action would combine with both short-term and long-term GHG emissions of the projects listed in Appendix K, increasing the overall GHG emissions footprint in San Bernardino County. Some projects would aim to reduce GHG emissions in new development, helping offset existing and future county GHG emissions (Project 12).

San Bernardino County Regional GHG Reduction Plan selected a goal to reduce its community GHG emissions to a level that is 40 percent below its 2020 GHG emissions level by 2030 (San Bernardino County 2021). The 2030 emissions target of 1,754,098 metric tons carbon dioxide equivalent (CO_2e) would be met under the 2030 Reduction Plan, which is projected to have a total of 1,752,437 metric tons CO_2e. The Proposed Action is projected to increase GHG emissions by 39,886 metric tons CO_2e annually (see Table 3.3-5). The 2030 Reduction Plan does not include emissions from military activities, which would include emissions from other installations in addition to the Combat Center. As a result, it is difficult to assess overall impacts on local reductions. However, the Marine Corps has specific targets to reduce emissions such as achieving a 65 percent reduction in GHGs department-wide by 2030, acquiring 100 percent zero-emission vehicles by 2035, including 100 percent zero-emission light-duty vehicle acquisitions by 2027, and achieving a 50 percent reduction in emissions from buildings by 2032 (DON 2022). Implementation of these targets at the Combat Center would help reduce the overall impact of the aircraft emission increases.

4.2.4 Biological Resources

Implementation of the No-Action Alternative or the Proposed Action would have no significant impact on biological resources. Implementation of the Proposed Action would result in increased exposure of wildlife, including special status species, to noise from aircraft overflights and the potential for aircraft collisions (birds and bats). However, there would be only a slight increase in the number of annual sorties. Under the Proposed Action, there would be no new construction activities, and vegetation would not be impacted.

The Combat Center Integrated Natural Resources Management Plan (Combat Center 2024), the Combat Center's Head Start program, and regional conservation and management plans (Project 8) would continue to be implemented to minimize potential cumulative impacts on regional natural resources. The full consideration of alternatives, and implementation of conservation measures, have been and would continue to be a component of projects affecting Mojave Desert biota (Projects 2, 3, 4, 5, 6, and 11).

While individual plants and animals, including special status species, may be affected by any particular project, the use of lower sensitivity habitats for training at the Combat Center coupled with the conservation of higher sensitivity habitats, assures that project alternatives would not contribute to cumulative effects on the overall distribution or abundance of populations, habitats, and ecosystem functions and values. The environmental consequences of past projects are reflected in existing biological conditions, including the identification of special status species by the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), the requirements identified in the 2002, 2012, and 2017 Biological Opinions (BOs) (USFWS 2002, 2012, 2017) (Project 4), and existing conditions identified in the Integrated Natural Resources Management Plan (Combat Center 2024) and other regional conservation plans such as the Desert Tortoise Recovery Plan (USFWS 2011).

Cumulative species-wide impacts are taken into account during NEPA analyses and Endangered Species Act section 7 consultations, and appropriate mitigation measures are applied to avoid,

minimize, or compensate for any potential impacts on biological resources (particularly special status species). The 2017 BO (USFWS 2017) accounted for species-wide impacts. Reasonably foreseeable projects that have not yet undergone environmental reviews under NEPA and Endangered Species Act section 7 consultation (Project 11) would continue to follow required procedures to ensure that significant biological resource impacts are avoided, minimized, and/or compensated to the extent practicable. Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to cumulative impacts on biological resources.

4.2.5 Cultural Resources

Implementation of the No-Action Alternative or the Proposed Action would have no significant impacts on cultural resources. The Combat Center Integrated Cultural Resources Management Plan (Combat Center 2020) would continue to be implemented to minimize potential cumulative impacts on regional cultural resources. Federal projects (Projects 2, 3, 4, 5, 6, 8, and 11) with potential for impacts on historic properties would undergo Section 106 review under the National Historic Preservation Act (NHPA) and any potentially significant impacts would be mitigated, usually through avoidance when possible, or data recovery per the Combat Center Integrated Cultural Resources Management Plan (Combat Center 2020). Implementation of the Proposed Action would result in increased emissions of nitrogen oxides (NO_x), but below *de minimis* exceedance thresholds. Therefore, the presence of acid rain and its impacts on rock art would be negligible and rock art would continue to be monitored for deterioration from cumulative impacts of air pollution (Combat Center 2020).

However, archaeological sites are a limited resource; therefore, any impact on an archaeological site that is eligible or potentially eligible for listing in the National Register of Historic Places (NRHP) and/or is of concern to the Native American community may contribute to a cumulative impact. In such cases, government-to-government consultation would occur for all federal projects to ensure Tribal Nation concerns are addressed. The Marine Corps conducted Section 106 consultation with the California State Historic Preservation Office (SHPO), Tribal Nations, and Tribal Historic Preservation Offices; and California SHPO concurred with the Marine Corps' determination of no adverse effect to historic properties.

The No-Action Alternative or the Proposed Action would have no significant impacts on cultural resources in the Area of Potential Effects. Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to a cumulative impact on cultural resources.

4.2.6 Land Use and Recreation

Implementation of the No-Action Alternative or the Proposed Action (Alternatives 1 or 2) would have no significant impacts on land use and recreation. Additional past, present, and foreseeable future projects identified in Appendix K are not expected to have significant impacts on recreation or special use areas. Recent projects, such as the designation of the Mojave Trails National Monument and development of a Management Plan (Project 8), have expanded preserved areas for recreation. These actions would have a net positive impact on the availability of recreation in wilderness and other protected areas of the California desert. Proposed use of airspace is consistent with the Presidential Proclamation that established the Mojave Trails National Monument (see Section 3.6 and Appendix J). The implementation of the 2012 Final EIS (Project 4) resulted in significant and unmitigable impacts on land use and recreation as a result of incompatibility with the Johnson Valley OHV Area Management Plan. However, the Proposed Action (Alternatives 1 or 2) would not result in additional closure of the Shared Use Area, which would continue to be

available for public recreation 10 months per year under the Proposed Action. Therefore, there would be no cumulative impacts to the Johnson Valley OHV Area.

As discussed in Sections 3.6, there would be no significant impacts on noise sensitive land uses and recreation under the Proposed Action. In addition, MAGTFTC actively coordinates with and implements an encroachment program to prevent incompatible development (Projects 8 and 12). Past, present, and foreseeable future projects do not identify significant noise impacts on residential areas, although construction projects (Project 12) may contribute to temporary noise disturbances. These temporary impacts would not be significant. Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to cumulative impacts on land use and recreation.

4.2.7 Socioeconomics and Children's Environmental Health and Safety Risks

Implementation of the No-Action Alternative or the Proposed Action would have no significant impacts on socioeconomic conditions or health impacts to children, such as classroom learning impacts. Many of the past, present, and foreseeable future projects identified in Appendix K would occur on or over public lands (Projects 4 and 8) and would not impact the private low-income residential areas potentially impacted under the Proposed Action. Potential future construction projects in the low-income communities could add temporary noise impacts, but these would not be expected to be significant.

Major recent and foreseeable actions have been combined to preserve additional natural areas and ensure continued recreational opportunities in the area (Projects 4 and 8). The continued flow of visitors will ensure the local tourism economy remains healthy into the future. Therefore, the No-Action Alternative or Proposed Action are not anticipated to contribute to cumulative impacts on socioeconomic conditions.

Appendix A
2012 Final EIS Details and Comparison

This page intentionally left blank.

Appendix A
2012 Final EIS Details and Comparison

Airspace establishment and modification and the associated ongoing training operations were previously analyzed via the 2012 Environmental Impact Statement (EIS) (hereinafter the "2012 Final EIS"). While certain aspects of the 2012 Final EIS Alternative 6 (preferred alternative) were implemented, the proposed airspace establishment and modification was deferred. The Permanent Special Use Airspace (PSUA) Environmental Assessment (EA) is the anticipated subsequent analysis. As such, this appendix presents analysis details from the 2012 Final EIS with a comparison to both existing conditions and the proposed action in the PSUA EA. Because the proposed airspace changes presented in the 2012 Final EIS were not implemented, the existing airspace conditions presented in 2012 remain consistent with those presented in the PSUA EA, unless noted otherwise.

1.0 Airspace Configurations and Activation Conditions

The 2012 Final EIS analyzed the modification and establishment of Special Use Airspace (SUA) to enable full integration of Marine Expeditionary Brigade (MEB)-sized Aviation Combat Element operations and both air- and ground-delivered live-fire ordnance use at the Combat Center. Table A-1 summarizes how the 2012 Final EIS Alternative 6 (preferred alternative) proposal would have changed the Combat Center airspace lateral footprint area compared to the current PSUA EA proposed changes in area. In all instances, both Alternative 1 and Alternative 2 of the PSUA EA proposed changes would result in a smaller airspace lateral footprint area than was analyzed in the 2012 Final EIS.

Table A-1 Comparison of Proposed Changes to Airspace Lateral Footprint (Area in mi^2)

Airspace	Existing[1]	2012 Final EIS	PSUA EA		
		Alternative 6[4]	No-Action Alternative	Alternative 1	Alternative 2
Modify Existing Airspace					
Sundance MOA/ATCAA	67	134	67	85	85
Create New Airspace					
R-2509[2]	N/A	356	N/A	256	256
Johnson Valley MOA/ATCAA	N/A	183	N/A	46	46
CAX Corridor MOA/ATCAA	N/A	372	N/A	365	365
Turtle Low MOA[3]	N/A	1,070	N/A	1,070	1,070
Existing Airspace With No Changes					
R-2501	1,076	1,076	1,076	1,076	1,076
Bristol MOA/ATCAA	534	534	534	534	534
Turtle MOA/ATCAA	2,275	2,275	2,275	2,275	2,275

Notes: [1.] The existing airspace and area from the 2012 Final EIS still apply for comparison in the PSUA EA because no permanent airspace changes have occurred since the 2012 Final EIS publications for these airspaces.
[2.] 2012 Final EIS defined the proposed new restricted airspace as "R-XXXX", which has subsequently been defined as R-2509 in the PSUA EA.
[3.] 2012 Final EIS defined this area as Turtle C MOA.
[4.] 2012 Final EIS reported Sundance MOA/ATCAA as 559 square miles, which may have included additional ATCAA from adjacent areas

Legend: ATCAA = Air Traffic Control Assigned Airspace; EA = Environmental Assessment; EIS = Environmental Impact Statement; mi^2 = square mile; MOA = Military Operations Area; N/A = not applicable; PSUA = Permanent Special Use Airspace

Source: DON 2012; MAGTFTC 2018, 2025.

Figure A-1 presents a graphical comparison of the 2012 Final EIS Alternative 6 footprint to the PSUA EA Alternatives 1 and 2, which both share the same lateral footprints differing only by altitudes and times of use. Overall, the PSUA EA alternatives would create a smaller footprint that would be contained within the footprint initially analyzed in the 2012 Final EIS.

Table A-2 compares the differences in airspace configuration with regard to vertical altitude ranges. Although the PSUA EA Alternatives 1 and 2 are similar to the 2012 Final EIS Alternative 6, the PSUA EA alternatives generally reduced the proposed airspace maximum altitudes from the conditions presented in the 2012 Final EIS. For instance, R-2509 areas would have been created from the ground surface up to Flight Level (FL) 400 (approximately equivalent to 40,000 feet above mean sea level [MSL]) under the 2012 Final EIS Alternative 6, but the PSUA EA alternatives would instead create airspace to only extend from the ground surface to altitudes ranging from 6,000 feet MSL to FL400 under Alternative 1 or from 6,000 to 16,000 feet MSL under Alternative 2.

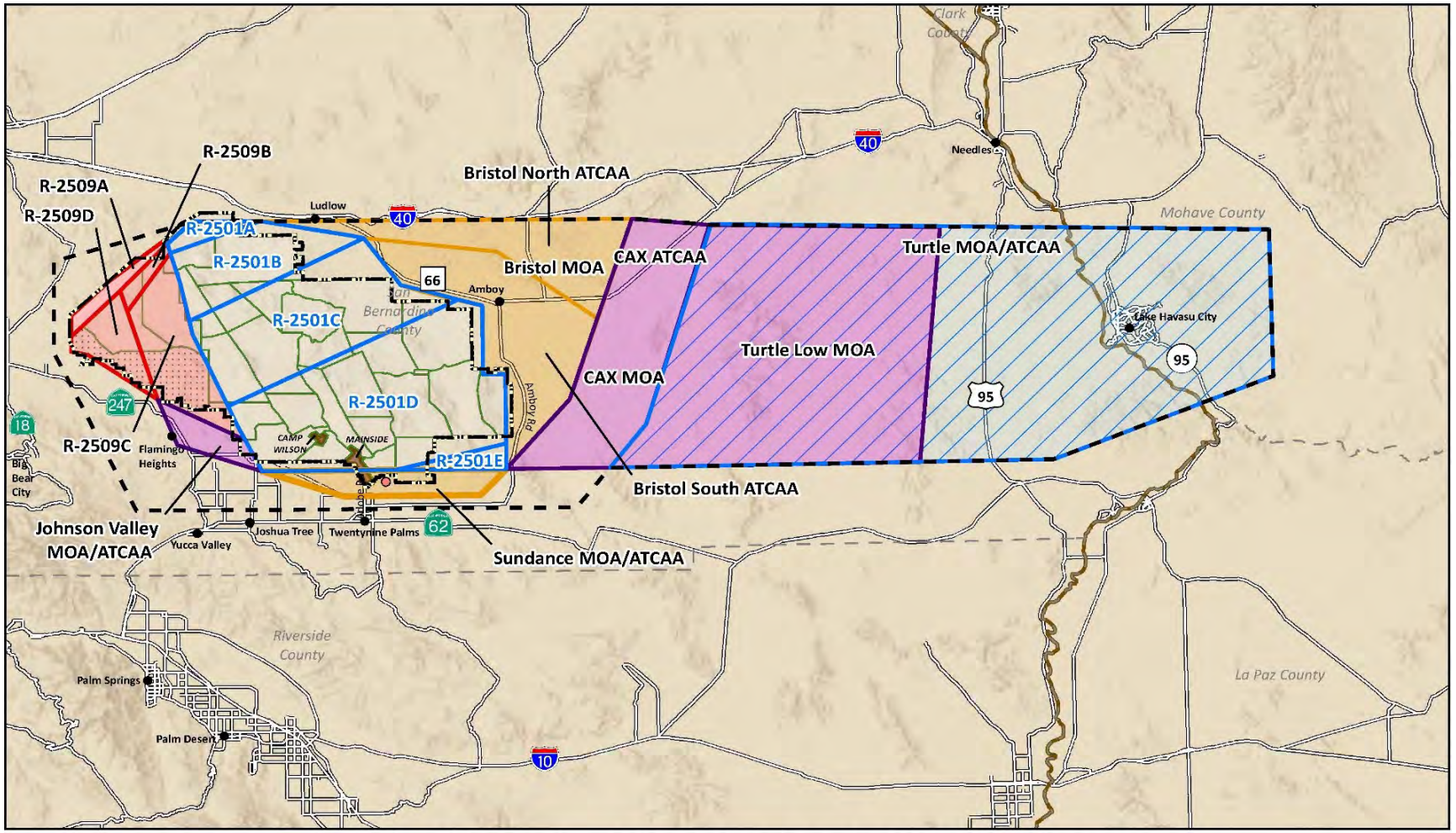


Figure H-1. Comparison of PSUA EA Alternative 1 to the 2012 EIS Alternative 6

1

Table A-2 Comparison of Special Use Airspace Configurations

Special Use Airspace	2012 Final EIS, Alternative 6	PSUA EA No-Action Alternative (Existing Airspace)	PSUA EA Alternative 1	PSUA EA Alternative 2
R-2501	No Change	Surface to Unlimited	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative
R-2509A	Surface to FL400	Does not currently exist	Surface to 6,000 feet MSL	Surface to 6,000 feet MSL
R-2509B	Surface to FL400	Does not currently exist	Surface to 16,000 feet MSL	Surface to 16,000 feet MSL
R-2509C	Surface to FL400	Does not currently exist	Same as 2012 Final EIS	Surface to 16,000 feet MSL
R-2509D	Surface to FL400	Does not currently exist	Surface to 8,000 feet MSL(1)	Surface to 8,000 feet MSL(1)
Johnson Valley MOA	3,000 feet AGL to FL180	Does not currently exist	1,500 feet AGL to but not including FL180	1,500 feet AGL to 16,000 feet MSL
Johnson Valley ATCAA	FL180 to FL400	Does not currently exist	Same as 2012 Final EIS	No change from PSUA No-Action Alternative
Bristol MOA	1,500 feet AGL to but not including FL180	5,000 feet MSL to but not including FL180	2,000 feet AGL to but not including FL180	2,000 feet AGL to but not including FL180
Bristol ATCAA	FL180 to FL400	FL180 to FL220	Subdivided into North/South ATCAAs (see below)	No change from PSUA No-Action Alternative
Bristol North ATCAA	No Change	Internal subdivision does not currently exist	FL180 to FL220	No change from PSUA No-Action Alternative
Bristol South ATCAA	No Change	Internal subdivision does not currently exist	FL180 to FL270; FL180 to FL400 for LSEs	No change from PSUA No-Action Alternative
Sundance MOA	1,500 feet AGL to FL180	500 feet AGL to 10,000 feet MSL	500 feet AGL to but not including FL180(2)	500 feet AGL to but not including FL180(2)
Sundance ATCAA	FL180 to FL400	ATCAA designation does not currently exist	FL180 to FL220	Same as Alternative 1, but with eastern section of southern boundary adjusted
CAX MOA	1,500 feet to 8,000 feet MSL	Does not currently exist	2,000 feet AGL to 8,000 feet MSL	2,000 feet AGL to 8,000 feet MSL
CAX ATCAA(3)	FL180 to FL400	Does not currently exist	FL180 to FL210	No change from PSUA No-Action Alternative
Turtle Low MOA	1,500 feet AGL to 11,000 feet MSL	Does not currently exist	2,000 feet AGL to but not including 11,000 feet MSL	2,000 feet AGL to but not including 11,000 feet MSL
Turtle MOA	11,000 feet MSL to FL220	11,000 to but not including FL180	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative

Special Use Airspace	2012 Final EIS, Alternative 6	PSUA EA No-Action Alternative (Existing Airspace)	PSUA EA Alternative 1	PSUA EA Alternative 2
Turtle ATCAA	FL220 to FL400	FL180 to FL220	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative

Notes: (1) For R-2509D, excluding airspace within a 3.4-nm radius of lat. 34°25'3.34"N., long. 116°36'52.12"W., which would be surface to 1,500 feet AGL to accommodate Abraham Ranch, Kelly, and B&E private airports.
(2) For Sundance MOA, excluding a 1-nm radius of the Dale Skyranch Airport surface to 1,500 feet AGL and a 1-mile-wide corridor, extending from the center of the airport on a straight line south to the edge of the Sundance MOA.
(3) ATCAA located in the same approximate area as the CAX Corridor under existing airspace.

Legend: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; EIS = Environmental Impact Statement; FL = Flight Level; MOA = Military Operations Area; MSL = mean sea level; PSUA = Permanent Special Use Airspace

Source: FAA 2018; DON 2012; MAGTFTC 2018, 2025.

Table A-3 provides a comparison of SUA times of use. A notable difference for the PSUA EA Alternative 1 is that the times of use would be specified as 'continuous' while the 2012 Final EIS Alternative 6 stated Intermittent by Notice to Airmen (NOTAM). The times of use for these airspace areas would be by NOTAM with required minimum notice of 6 hours and with a maximum activation ranging from 40 to 60 days per year under Alternative 2 of the PSUA EA.

1.1 Airspace Flight Activity

Table A-4 presents a reproduction of the 2012 Final EIS annual representative baseline aircraft operations. Note that since the 2012 Final EIS publication, the internal boundaries of the R-2501 sub areas (N/S/E/W) have since been restructured to A/B/C/D/E but retain the same overall R-2501 outer boundary.

At the time of the 2012 Final EIS modeling, the analysts used a unit labeled "Aircraft Sortie-Operations," which was defined in the EIS as a single use of a sub-part of the airspace complex that resulted in a total 21,670 annual operations. For example, on the top line of Table A-4, consider the F/A-18 aircraft. A single F/A-18 that uses the complex and touched the R-2501N, R-2501S, R-2501E, and R-2501W each one time were counted as four "operations," even if the time spent in any one of those sub-areas was for only a minute. This was done to attempt to provide more detail in the tables, showing use of each sub-area. However, that methodology is difficult to replicate without radar data to confirm the individual use of sub-areas or the amount of time spent in any sub-area. Instead, it is currently more accurate and practical to use the records of numbers and types of aircraft using the complex as a whole modeled over larger combined volumes of airspace. The PSUA EA analysis uses "sorties" as the total use of the combined range complex SUA by a single aircraft for one full period (vice trying to estimate 10 mins in one, 5 minutes in another, etc.) because this information is readily confirmable when a flight checks in and out with 29 Palms Range Control.

Table A-5 presents the total aircraft sorties as reported in the 2012 Final EIS that was detailed within the Noise Modeling appendix. Note that there is a slight difference in the totals that were presented in the 2012 Final EIS Table 3.7-3 and Appendix page H-105 due to minor differences in how MV-22 training was modeled and counted. Table A-5 converts the 2012 Final EIS Baseline 'sortie-operations' data to estimated annual sorties to provide a comparison of the 2012 Final EIS conditions to the current EA sorties,

The result is approximately 7,500 annually based upon the following assumptions:

- R-2501 North, South, East, and West sub areas nearly always activated together with aircraft often flying across two or more during a single sortie. Therefore, the greatest ops of any R-2501 equates to the total R-2501 sorties, and ops in other sub areas represent a subset of that sortie.
- Sundance MOA will nearly always be used in conjunction with the R-2501; so all Sundance MOA ops are considered part of R-2501 sorties and not counted separately.
- Bristol MOA is often used in conjunction with R-2501 but can be used separately. Therefore, half of Bristol MOA ops are counted as unique sorties in addition to R-2501.

Table A-3 Comparison of Special Use Airspace Times of Use

Special Use Airspace	2012 Final EIS Alternative 6	PSUA EA No-Action Alternative (Existing Airspace)	PSUA EA Alternative 1	PSUA EA Alternative 2
R-2501	No Change	Continuous	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative
R-2509A R-2509B R-2509C R-2509D	Intermittent by NOTAM	Does not currently exist	Continuous	By NOTAM at least 6 hours in advance, not to exceed 60-days per calendar year
Johnson Valley MOA	Intermittent by NOTAM	Does not currently exist	Intermittent by NOTAM	By NOTAM at least 6 hours in advance, not to exceed 60-days per calendar year.
Johnson Valley ATCAA	Determined via Letter of Agreement	Does not currently exist	Anticipated 0600–1600 Mon-Fri; other times by NOTAM	Not Applicable
Bristol MOA	No Change	0700–1500 Mon–Fri; other times by NOTAM	0800–2200 daily, other times by NOTAM	Intermittent by NOTAM
Bristol ATCAA	Determined via Letter of Agreement	0800–2200 daily, other times by NOTAM	Anticipated 0800–2200 daily, other times by NOTAM	Anticipated 0800–2200 daily, other times by NOTAM
Bristol North ATCAA	Determined via Letter of Agreement	Internal subdivision does not currently exist	Anticipated 0800–2200 daily, other times by NOTAM	Anticipated 0800–2200 daily, other times by NOTAM
Bristol South ATCAA	Determined via Letter of Agreement	Internal subdivision does not currently exist	Anticipated 0800–2200 daily, other times by NOTAM	Anticipated 0800–2200 daily, other times by NOTAM
Sundance MOA	Intermittent by NOTAM	0600–1600 Mon-Fri; other times by NOTAM	Intermittent by NOTAM	Intermittent by NOTAM
Sundance ATCAA	Determined via Letter of Agreement	ATCAA designation does not currently exist	Anticipated 0600–1600 Mon-Fri; other times by NOTAM	Anticipated 0600–1600 Mon-Fri; other times by NOTAM
CAX MOA	Intermittent by NOTAM	Does not currently exist	Intermittent by NOTAM	By NOTAM at least 6 hours in advance, not to exceed 40-days per calendar year.
CAX ATCAA[(3)]	Determined via Letter of Agreement	Does not currently exist	Anticipated 0800–2200 daily, other times by NOTAM	Anticipated 0800–2200 daily, other times by NOTAM
Turtle Low MOA	Intermittent by NOTAM	Does not currently exist	Intermittent by NOTAM	By NOTAM at least 6 hours in advance, not to exceed 40-days per calendar year
Turtle MOA	No Change	0600–1600 Mon–Fri; other times by NOTAM	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative

Special Use Airspace	2012 Final EIS Alternative 6	PSUA EA No-Action Alternative (Existing Airspace)	PSUA EA Alternative 1	PSUA EA Alternative 2
Turtle ATCAA	No Change	0600–1600 Mon–Fri; other times by NOTAM	No change from PSUA No-Action Alternative	No change from PSUA No-Action Alternative

Legend: ATCAA = Air Traffic Control Assigned Airspace; EA = Environmental Assessment; EIS = Environmental Impact Statement; MOA = Military Operations Area; NOTAM = Notice to Airmen; PSUA = Permanent Special Use Airspace
Source: FAA 2018; DON 2012; MAGTFTC 2018, 2025.

Table A-4 2012 Final EIS Representative Annual Baseline Airspace Use (Aircraft Sortie-Operations) *(from Table 3.7-3 of 2012 Final EIS)*

Aircraft Type	R-2501 North	R-2501 South	R-2501 East	R-2501 West	Sundance MOA	Bristol MOA/ ATCAA	Turtle MOA/ ATCAA	Total Operations
F/A-18	1093	1,394	1,079	1,033	102	237	See Note[1]	4938
F-5E	36	44	35	3	3	7	"	158
KC-130	358	456	352	339	34	80	"	1,619
AV-8B	895	1,140	883	848	83	194	"	4,043
AH-1	1,144	1,463	1,132	1,083	108	251	"	5,181
UH-1	359	458	354	339	34	79	"	1,623
CH-53E	555	707	547	525	52	121	"	2,507
MV-22[2]	64	8	69	126	12	12	"	8
UAS	286	366	282	270	27	63	"	1,294
Total	**4,790**	**6,036**	**4,733**	**4,596**	**455**	**1,044**	"	**21,670**

Notes: [1] Data not available because sortie-operations are not reported for Turtle MOA. Turtle MOA was active in 2009 for 1,129 hours over 232 days.
[2]MV-22s transit the airspace via perimeter routes to operate at Drop Zones (DZs) and other locations beneath the SUA shown in this table.
ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Area
Source: DoN 2009.

Table A-5 Modeled Airspace Operations and Estimated Sorties from 2012 Final EIS

Aircraft	2012 Final EIS Baseline Operations[3]	2012 Final EIS Baseline Sorties (Estimated)[1]	2012 Final EIS Proposed MEBEX Annual Sorties (to add to 2012 Baseline)	2012 Proposed Sortie Total (Estimated for Alternative 6)[1]	PSUA EA Proposed Sortie Total[1] Alternatives 1 or 2
F/A-18C/D	*4,690*	1,437	*462*	1,899	0
F/A-18E/F	*248*	76	*22*	98	823
F-35			*156*	156	1,783
F-5E	*158*	48		48	0
Joint FW			*40*	40	0
KC-130	*1,619*	496	*138*	634	348
AV-8B	*4,043*	1,237	*302*	1,539	0
AH-1	*5,181*	1,503	*1,092*	2,595	2,221
UH-1	*1,623*	519		519	247
CH-53E	*2,507*	261	*232*	493	704
CH-46E	*4,858*	1,370			
MV-22[2]	*178*	132	*268*	400	673
Joint RW			*320*	320	0
EA-6B			*74*	74	0
Joint AR			*36*	36	56
UAV	*1,294*	398	*240*	638	2,000
Total	***26,399***	**7,477**	***3,382***	**9,996**	**8,855**

Notes: (1) The sorties estimate assumes Sundance airspace used in conjunction with restricted areas and counts the highest ops of these areas, then adds half of the Bristol ops since some could occur independently. CH-46E operations would not occur under the 2012 EIS Proposed Action because that aircraft was in the process of retirement due to a prior action (DON 2009).
(2) Total operations of 178 obtained from detailed table on page H-105 of the 2012 EIS because Table 3.3-7 of the 2012 EIS contained a typographical error in MV-22 totals.
(3) Data from 2012 EIS Appendix H, page H-105 (DON. 2012)
Legend: EA = Environmental Assessment; EIS = Environmental Impact Statement; MEBEX = Marine Expeditionary Brigade Exercise; UAV = Unmanned Aerial Vehicle

Table A-5 also includes the 2012 Final EIS proposed addition of MEBEX training that was estimated to create an additional 3,382 annual sorties at the Combat Center after the proposed changes occur. The 2012 Total column of Table A-5 tabulates the estimated total sorties under the 2012 Final EIS Alternative 6, which is approximately 10,000 annually. Note that the CH-46E was in the process of retirement due to a prior action and not included in the proposed column (DON 2009). As detailed in Sections 2.3 and 2.4, the PSUA EA proposes a total of 7,730 sorties would occur within the larger volume of airspace defined by R-2501, R-2509, Sundance MOA/ATCAA, and Johnson Valley MOA/ATCAA and 2,249 sorties in the Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA areas. The 2,249 sorties listed in the second area were analyzed as separate full duration sorties for the purposes of impacts. However, a portion of these are actually a subset of the larger group of sorties. If the same assumption of counting half of the Bristol sorties is applied to the PSUA EA alternatives, then the total sorties at the Combat Center under the PSUA EA would be 8,855. Although a perfect like-for-like comparison is not possible between the two studies, Table A-5 reflects a similar level of flying activity that would occur under the PSUA EA action alternatives as was initially analyzed in the 2012 Final EIS Alternative 6.

Table A-6 provides the PSUA EA airspace sorties for both the No-Action Alternative and two action alternatives detailing how many sorties would occur within each airspace area. The 'Total Above FL270' refers to the subset of the airspace sorties that would spend at least a portion of their time above FL270, which equates to approximately 27,000 feet above mean sea level. Alternatives 1 and 2 would result in an increase of 1,739 sorties that would operate throughout R-2501, R-2509, Sundance MOA/ATCAA, and Johnson Valley MOA/ATCAA, and the portion of those that would exceed FL270 would increase by 180 annually. Because Johnson Valley ATCAA would not be created under Alternative 2, those sorties above FL270 would be limited to the existing R-2501 airspace. The total sorties that would occur under the Alternatives 1 and 2 within the Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle Low MOA would not change relative to the No-Action Alternative. However, the proportion of those sorties that would operate at least part of the time above FL270 would increase by 270 from the No-Action Alternative. Because Alternative 2 would not establish the CAX ATCAA, sorties above FL270 would be limited to only the Bristol ATCAA.

The additional Unmanned Aerial Systems (UAS) would account for the majority of increased sorties that would occur at the Combat Center under Alternatives 1 and 2, of which 90 percent would be Group 1 type (small hand launchable typically battery powered) and the remaining Group 2 to 4 (ranges from the size of a lawnmower up to small turbojet aircraft). The remaining increase in total sortie at the Combat Center would be additional tankers (KC-130 and Joint Aerial Refuelers).

Table A-6 Detailed Comparison of Airspace Sorties for PSUA EA Alternatives 1 and 2

Aircraft	No-Action Alternative (Total/Above FL270[1])			Alternatives 1 and 2 (Total/Above FL270[1])		
	R-2501 A/B/C/D/E and Sundance MOA	Bristol MOA/ ATCAA	Turtle MOA/ ATCAA[5]	R-2501 A/B/C/D/E, R-2509A/B/C/D, Sundance MOA/ATCAA, Johnson Valley MOA/ATCAA[6]	Bristol MOA/ ATCAA, CAX MOA/ATCAA, Turtle Low MOA[7]	Turtle MOA/ ATCAA[5]
AV-8B	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0	0 / 0
FA-18[2]	1,001 / 203	701 / 98	200 / 20	681 / 33	285 / 57	200 / 20
F-35	929 / 232	651 / 69	1,800 / 180	1,249 / 402	1,067 / 358	1,800 / 180
AH/UH-1	2,241 / 0	456 / 0	0 / 0	2,241 / 0	456 / 0	0 / 0
CH-53	682 / 0	43 / 0	0 / 0	682 / 0	43 / 0	0 / 0
MV-22	637 / 0	71 / 0	0 / 0	637 / 0	71 / 0	0 / 0

Aircraft	No-Action Alternative (Total/Above FL270[1])			Alternatives 1 and 2 (Total/Above FL270[1])		
	R-2501 A/B/C/D/E and Sundance MOA	Bristol MOA/ ATCAA	Turtle MOA/ ATCAA[5]	R-2501 A/B/C/D/E, R-2509A/B/C/D, Sundance MOA/ATCAA, Johnson Valley MOA/ATCAA[6]	Bristol MOA/ ATCAA, CAX MOA/ATCAA, Turtle Low MOA[7]	Turtle MOA/ ATCAA[5]
KC-130[3]	100 / 0	256 / 256	400 / 0	220 / 0	256 / 256	400 / 0
Joint AR	0 / 0	71 / 0	0 / 0	20 / 0	71 / 0	0 / 0
UAS Group 1[4]	360 / 18	0 / 0	0 / 0	1,800 / 0	0 / 0	0 / 0
UAS Group 2-4[4]	41 / 2	0 / 0	0 / 0	200 / 200	0 / 0	0 / 0
Total	**5,991 / 455**	**2,249 / 423**	**2,400/ 200**	**7,730 / 635**	**2,249 / 671**	**2,400 / 200**
Change From No-Action Alternative				**+1,739 / +180**	**+0 / +248**	**+0 / +0**

Legend: ATCAA = Air Traffic Control Assigned Airspace; EA = Environmental Assessment; FL = Flight Level; MOA = Military Operations Area; Permanent Special Use Airspace; UAS = Unmanned Aerial Systems

Notes:
[1] Above FL270 is a subset of sorties; Above FL270 would not apply to Sundance MOA.
[2] Turtle MOA fighter jet sorties include F-15, F-16, and Navy FA-18 modeled as FA-18.
[3] Modeled as C-130H; 14 sorties in R-2501 / Sundance MOA combined and remaining 84 in R-2501 exclusively.
[4] UAS primarily Group 1 type (90%) and the rest Group 2 to 4 (10%); UAS only operate in R-2501 but may transit through other airspace as allowed by FAA. UAS not modeled as described in 3.1.3.1.
[5] Not originating at the Combat Center. Turtle MOA/ATCAA sorties initially estimated from 2018 airspace activation hours and types of aircraft based on most frequent units utilizing the airspace, then assumed AV-8B to fully transition to F-35 and most FA-18 would transition to F-35 resulting in 90 percent of fighter aircraft soties to be F-35
[6] Johnson Valley ATCAA would only occur under Alternative 1. Under Alternative 2 the sorties listed above FL270 in this table would be limited to only occur within existing R-2501
[7] CAX ATCAA would only occur under Alternative 1. Under Alternative 2 the sorties listed above FL270 in this table would be limited to only occur within Bristol ATCAA

In addition to the aircraft sorties detailed in Table A-6, both the 2012 Final EIS and the PSUA EA analyzed the aircraft landing and takeoff operations at the Expeditionary Airfield (EAF). Table A-7 presents a comparison of the EAF operations between the two studies, which reflects a total of 10,466 operations for the 2012 Final EIS. Under the PSUA EA No Action Alternative total EAF operations drop to less than half of that at 4,380 due largely to fewer landing and takeoff operations by fighter aircraft (F/A-18, F-35, and AV-8B) and helicopters or tilt-rotor (CH-53, MV-22, AH-1, UH-1, etc.). Under both the Alternative 1 and 2 of the PSUA EA, EAF operations would increase by an estimated 3,478 annually while remaining within the 2012 EIS envelope of 10,466. Of the additional proposed operations for the PSUA EA the majority of the increase would be due to additional UAS aircraft with most of those by UAS models that are physically smaller and quieter than their manned counterparts.

Table A-7 Annual Operations at the 29 Palms Expeditionary Airfield (EAF)

Aircraft	2012 EIS Preferred Alternative			PSUA EA	
	Baseline	Projected MEB Exercise	Total	No Action	Alternative 1 and 2
FA-18	32	968	**1,000**	**34**	**23**
F-35	0	304	**304**	**10**	**25**
AV-8B	35	600	**635**	**4**	**0**
UC-35	43	0	**43**	**32**	**32**
C-20	43	0	**43**	**0**	**0**

Aircraft	2012 EIS Preferred Alternative			PSUA EA	
	Baseline	Projected MEB Exercise	Total	No Action	Alternative 1 and 2
C-17	12	0	**12**	**42**	**42**
C-12	341	0	**341**	**66**	**66**
UAS	0	480	**480**	**336**	**3,534**
E-2/C-2	10	0	**10**	**2**	**2**
C-130	10	0	**10**	**0**	**0**
CH-53E	432	464	**896**	**652**	**652**
MV-22B	1,742	536	**2,278**	**254**	**254**
AH-1	392	0	**392**	**2512**	**2,512**
UH-1	392	0	**392**	**20**	**20**
AH/UH-1	0	2,184	**2,184**	**0**	**0**
SAR	262	0	**262**	**56**	**56**
H-60	44	0	**44**	**38**	**38**
Joint Fixed-Wing	0	8	**8**	**92**	**92**
Joint Rotary-Wing	0	640	**640**	**72**	**72**
EA-6B	0	148	**148**	**0**	**0**
KC-130	0	272	**272**	**158**	**398**
Joint AR	0	72	**72**	**0**	**40**
Total	**3,790**	**6,676**	**10,466**	**4,380**	**7,858**

Source: DON 2012; MAGTFTC 2024

1.2 References

DON. 2009. Final Environmental Impact Statement for the West Coast Basing of the MV-22. 3 volumes. Prepared by Science Applications International Corporation for NAVFAC Southwest, San Diego, CA. October.

DON. 2012. Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. July 2012. Available at: https://www.29palms.marines.mil/Staff-offices/Environmental-Affairs/ (under "Environmental Impact Statements").

FAA. 2018. Modification to Restricted Areas R-2501E, R-2501N, R-2501W, and R-2501S; Bullion Mountains, CA. 14 CFR Part 73. March 20, 2018.

MAGTFTC. 2018. Twentynine Palms Permanent Special Use Airspace Proposal.

MAGTFTC. 2024. Data on the proposed number of sorties that would be flown in established/modified SUA. Provided via email on April 10, 2024, and August 8, 2024.

MAGTFTC. 2025. Twentynine Palms Permanent Special Use Airspace Proposal. March 14, 2025.

Appendix B
Agency Correspondence

This page intentionally left blank.

FAA Correspondence

This page intentionally left blank.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788100
TWENTYNINE PALMS, CALIFORNIA 92278-8100

5090
ISD 12H

NOV 02 2018

Maurice Hoffman
Director, Airspace Services, (AJV-1)
Federal Aviation Administration
800 Independence Ave SW, Room 400 East
Washington, DC 20591

Dear Mr. Hoffman:

The U.S. Marine Corps (USMC) is initiating the preparation of an Environmental Assessment (EA) for the proposed establishment of new permanent Special Use Airspace (SUA) in the region of the Marine Corps Air Ground Combat Center at Twentynine Palms, California (referred to herein as the Combat Center). In addition to establishing new permanent SUA, the proposed action would modify the lateral boundaries, component sectors, and/or altitude limits of the existing SUA to support ongoing daily training activities.

The USMC requests the Federal Aviation Administration's (FAA) formal participation as a cooperating agency in the preparation of the EA, as prescribed in the Council on Environmental Quality regulations for implementing the National Environmental Policy Act (NEPA), Title 40 Code of Federal Regulations 1501.6, Cooperating Agencies. The USMC is requesting FAA participation to capitalize upon your special expertise applicable to this EA.

As the lead agency, the USMC will prepare the EA, via the following tasks:

- Gathering all necessary background information supporting the EA
- Identifying the scope of the EA, including alternatives for evaluation
- Working with the FAA to evaluate potential impacts of alternative means of managing airspace resources
- Circulating the EA to the general public and any other interested parties
- Scheduling and conducting meetings held in support of the NEPA process and compiling any comments received
- Maintaining an administrative record for the EA

As a cooperating agency, the USMC requests the following FAA support:

- Working with the USMC to develop potential alternatives

5090
ISD 12H
NOV 02 2018

- Providing timely comments throughout the EA process, to include making staff support available to enhance EA interdisciplinary analysis and review
- Providing timely response to USMC requests for information
- Participating, as necessary, in meetings hosted by the USMC
- Developing information and the analysis of National Airspace System use potentially impacted by the EA

We look forward to forging a solid partnership with the FAA to produce a mutually beneficial EA. Should you or your staff have any questions regarding this request, please contact Mr. Scott Kerr at (760) 830-8190.

Sincerely,

R. MARTINEZ
Chief of Staff
U.S. Marine Corps

SHPO Correspondence

This page intentionally left blank.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0090
JUL 30 2019

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street, #100
Sacramento, CA 95816

Attention: T. Tozer

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0090
JUL 3 0 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Airspace designations proposed for change
3. Description of proposed airspace changes
4. Resulting airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

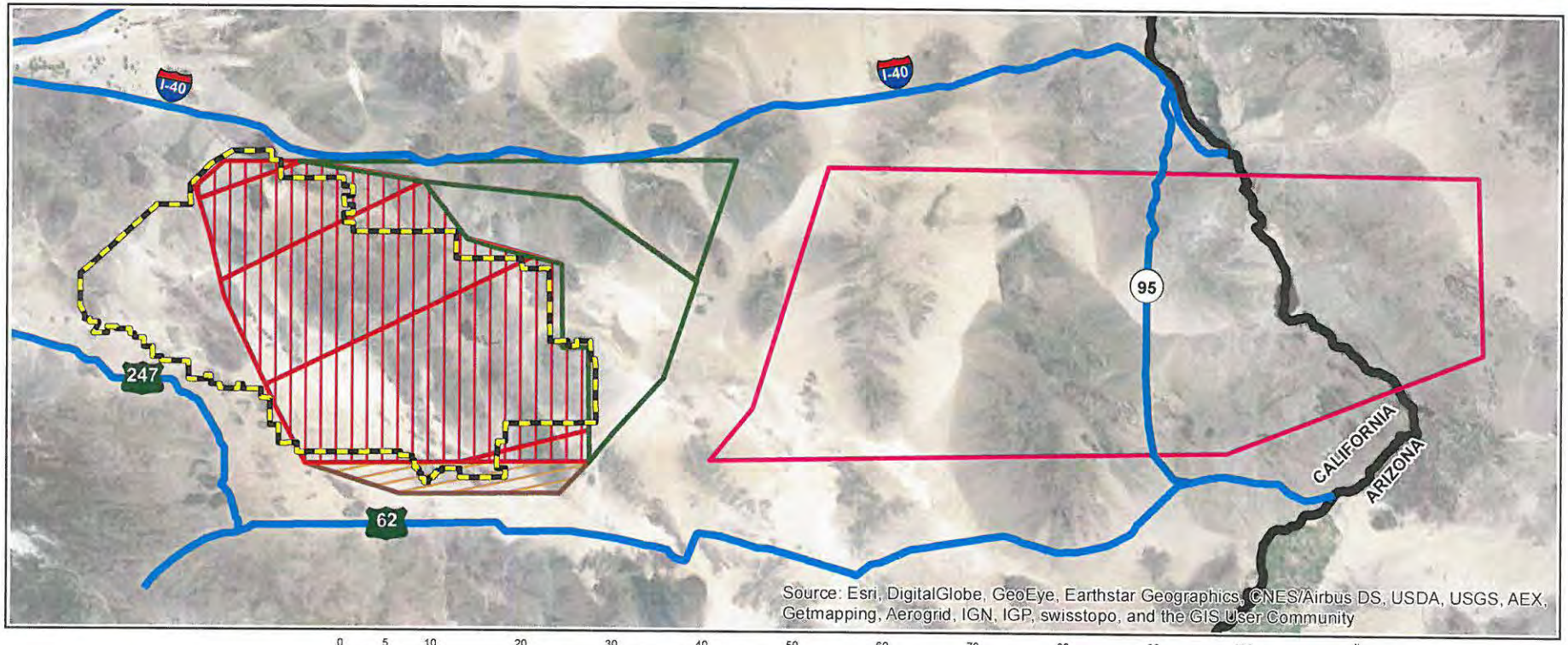


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

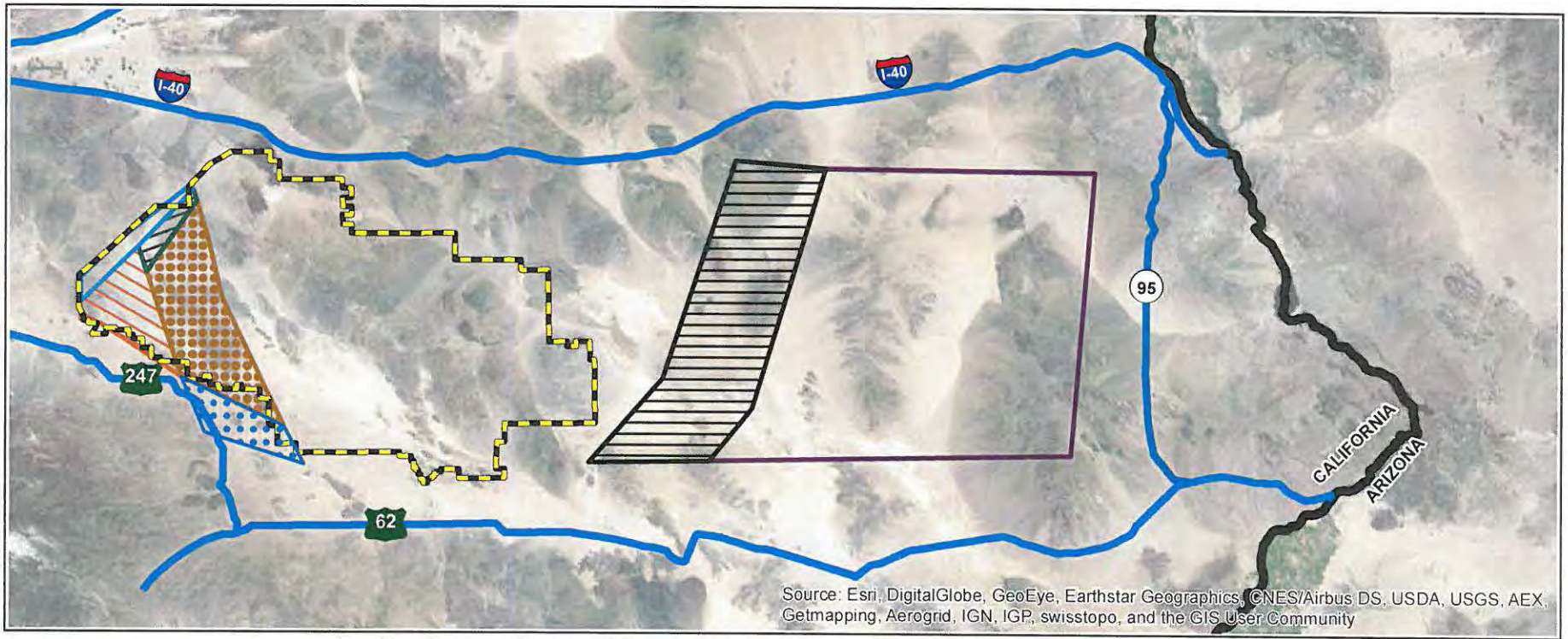


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

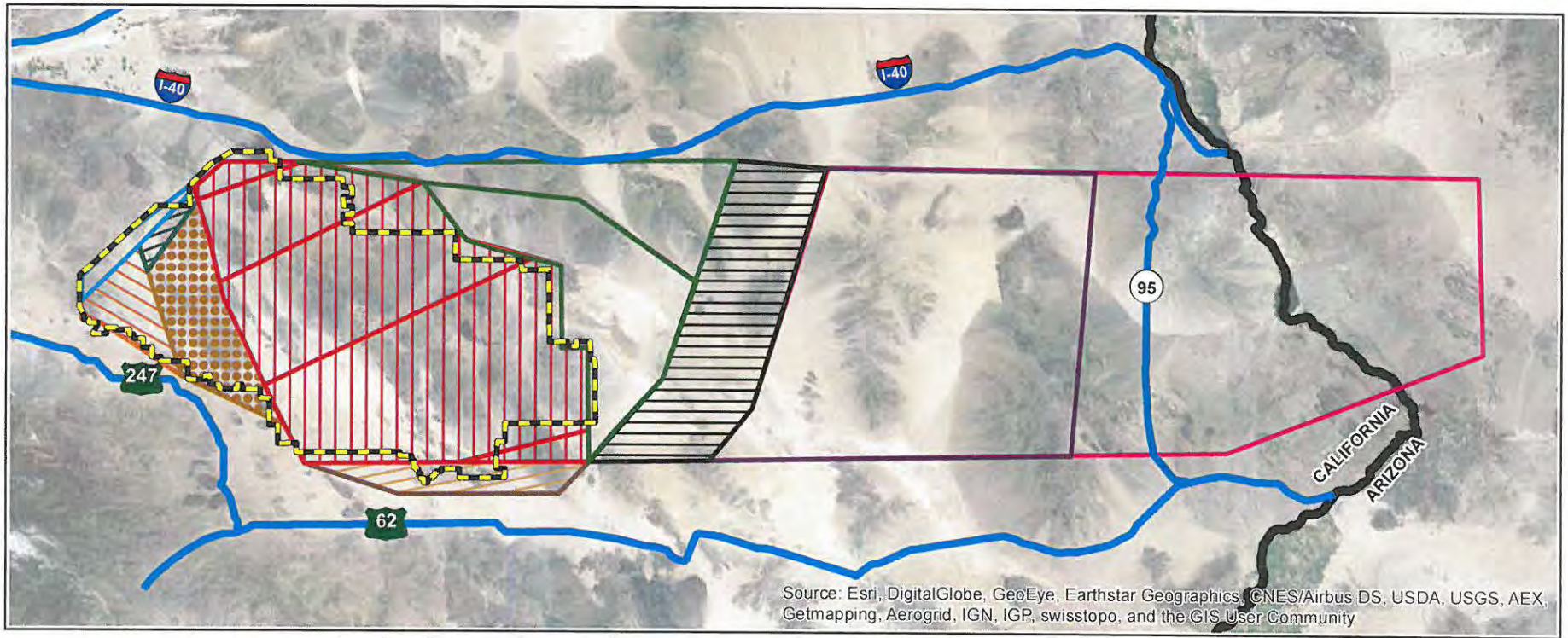


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

State of California • Natural Resources Agency Gavin Newsom, *Governor*

DEPARTMENT OF PARKS AND RECREATION Lisa Ann L. Mangat, *Director*
OFFICE OF HISTORIC PRESERVATION
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

August 23, 2019 Reference #: USMC_2019_0802_001

Major Peter A. Baker
Director, Environmental Affairs
Marine Corps Air Ground Combat Center
Box 788110
Twentynine Palms, CA 92278-8110

RE: Proposed Changes to Airspace Designations, Marine Corps Air Ground Combat Center, Twentynine Palms, California

Dear Major Baker:

The Marine Corps Air Combat Center (Marines) are consulting with the California State Historic Preservation Officer (SHPO) in order to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108), as amended. The Marines are requesting SHPO concurrence with a finding of no adverse effect to historic properties.

The Marines plan to change airspace designations above and around the installation with the Federal Aviation Administration. Some areas will be open to fly overs for the first time, while others will see altitude levels reduced or increased.

The Area of Potential Effects (APE) for this undertaking is described as the airspace from surface level to the top of each airspace designation proposed for change, plus a one-mile horizontal buffer.

According to the Marine's records, there is one known property listed on the National Register of Historic Places (NRHP) in the APE. Additionally, there are approximately 352 sites identified as potentially eligible for listing on the NRHP and approximately 1,768 sites that have not been evaluated.

Having reviewed your submittal, SHPO offers the following comments:

1) The APE appears adequate to account for direct and indirect effects to historic properties;

2) While air traffic has no potential to adversely affect archeological sites, SHPO recommends the Marines consult with Native American tribes in the area, as

flyovers could potentially disrupt tribal ceremonies. For a list of Native American tribal groups and entities that may have ancestral ties to project area, contact the California Native American Heritage Commission at 1550 Harbor Blvd, Suite 100, West Sacramento, CA 95619.

If the Marines have any questions or comments, please contact Staff Historian Tristan Tozer at (916) 445-7027 or at Tristan.Tozer@parks.ca.gov.

Sincerely,

Julianne Polanco
State Historic Preservation Officer

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/20-0050

APR 14 2020

Ms. Julianne Polanco
State Historic Preservation Officer
Office of Historic Preservation
Department of Parks and Recreation
1725 23rd Street #100
Sacramento, CA 95816

Attention: T. Tozer

SUBJECT: REFERENCE # USMC_2019_0802_001: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS, MARINE CORPS AIR GROUND COMBAT CENTER

UNDERTAKING

In July 2019 the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center (Combat Center) initiated Section 106 consultation with the California State Historic Preservation Officer (SHPO) and eleven federally recognized Native American tribes that the Combat Center consults with regularly on the proposed changes to airspace designations above and around the installation with the Federal Aviation Administration (FAA).

On 23 August 2019 SHPO replied to the Combat Centers submittal and offered the following comments:

a. The area of potential effect (APE) appears adequate to account for direct and indirect effects to historic properties;

b. While air traffic has no potential to adversely affect archaeological sites, SHPO recommends the Marines consult with Native American tribes in the area, as flyovers could potentially disrupt tribal ceremonies. For a list of Native American tribal groups and entities that may have ancestral ties to the project area, contact the California Native American Heritage Commission at 1550 Harbor Blvd. Suite 100, West Sacramento, CA 95619

NATIVE AMERICAN CONSULTATION RESULTS

Three of the consulting Native American tribes contacted in July 2019 regarding this proposed action responded with letters concurring with the Combat Centers finding of "no adverse effects" to historic properties, as depicted in enclosures (1) through (3).

On 6 September 2019 San Manuel Band of Mission Indians requested a copy of the draft environmental assessment (EA) for review plus a 30 day review period before responding to the Combat Centers consultation letter, as depicted in enclosure (4). The San Manuel Band of Mission Indians submitted comments for the EA to the Combat Centers Cultural Resources Manager on 4 November 2019, as depicted in enclosure (5). The Combat Center's Cultural Resources Manager (CRM) and Conservation Branch Head met in person with San Manuel's Cultural Resources Department Director to answer the questions and concerns presented in the November 4 2019 comments.

At the conclusion of this consultation meet, the Combat Center's CRM agreed to the following:

a. Provide San Manuel Band of Mission Indians a copy of the June 2019 Environmental Assessment for the Boeing Starliner Launch and recovery (see enclosure 6) to provide San Manuel with a recent study that addresses effects of sound vibrations on cultural resources.

b. Provide San Manuel Band of Mission Indians a copy the July 2012 Final Environmental Impact Statement for Land Acquisition and Airspace Establishment (enclosure 7) which discusses the Combat Center's current airspace usage.

c. To monitor the long-term cumulative effects of all training activities on cultural resources aboard the Combat Center

Based on the outcome of this consultation meeting, San Manuel Band of Mission Indians had no objections to the proposed undertaking and did not report that this undertaking would affect any Tribal ceremonies.

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at (760) 830-7641 or janelle.harrison@usmc.mil with any questions on this matter.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Agua Consultation Response Letter
2. Fort Mojave Consultation Response Letter
3. Morongo Consultation Response Letter
4. San Manuel Consultation Response Letter
5. Draft EA comment matrix from San Manuel
6. U.S. Army White Sands Missile Range EA
7. MCAGCC Final Environmental Assessment Land Acquisition

From: Harrison CIV Janelle L
To: "Marti, Duane@Parks"; "Tozer, Tristan@Parks"
Subject: MCAGCCs PSUA Consultation
Date: Monday, March 8, 2021 3:15:00 PM
Attachments: [redacted]

Good afternoon,

I'm reaching out today to request that the SHPO office review the information provided regarding a Sec 106 consultation that was began in 2019 regarding a Permanent SUA.

The combat Center conduction Sec 106 consultation with 11 federally recognized tribes and received the attached responses. While SMBMI did not concur with our determinations, it was based on unknown cumulative effects of sound and pollution to rock art sites. The establishment of the PSUA is unlikely to have cumulative environmental effects of the airspace in question because it is currently being used under the TSUA. Flights also have a minimum altitude hundreds of feet above any rock art sites for drones and thousands of feet for aircraft and there isn't a substantial increase in sorties. The consultation is only to change a temporary SUA to a permanent SUA; not to substantially increase current flight use.

The EA was put on hold to conduct additional air studies that the FAA requested. The studies are near completion and the Combat Center is moving forward with finalizing the PSUA with the FAA and we need to conclude the Sec. 106 Consultation.

Please contact me if you require further details.

Janelle Harrison, M.A., RPA
Cultural Resources Manager
MCAGCC
Installation Support Directorate (ISD)
Environmental Affairs (EA)
Bldg 1418 Brown Rd
Twentynine Palms, CA. 92278

Email: Janelle.harrison@usmc.mil
DSN: 760-830-7641
Cell: 760-662-3618

I am currently teleworking Wed-Fri. Please email or call my cell if you would like ot contact me immediately.

DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Armando Quintero, *Director*
Julianne Polanco, State Historic Preservation Officer
1725 23rd Street, Suite 100, Sacramento, CA 95816-7100
Telephone: (916) 445-7000 FAX: (916) 445-7053
calshpo.ohp@parks.ca.gov www.ohp.parks.ca.gov

May 6, 2021 Reference #: USMC_2019_0802_001

Submitted via electronic mail

Major Peter A. Baker
Director, Environmental Affairs
Marine Corps Air Ground Combat Center
Box 788110
Twentynine Palms, CA 92278-8110

RE: Finding of Effect for Proposed Changes to Airspace Designations, Marine Corps Air Ground Combat Center, Twentynine Palms, California

Dear Major Baker:

The Marine Corps Air Combat Center (Marines) are consulting with the California State Historic Preservation Officer (SHPO) in order to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. § 306108), as amended. The Marines are requesting SHPO concurrence with a finding of no adverse effect to historic properties for the above-referenced undertaking.

The Marines plan to change airspace designations above and around the installation with the Federal Aviation Administration. Some areas will be open to fly overs for the first time, while others will see altitude levels reduced or increased.

In previous consultation, agreed that the Area of Potential Effects (APE) for the undertaking was sufficiently delineated to account for indirect and indirect effects to historic properties. SHPO also recommended the Marines consult with Native American tribes on the undertaking.

In your April 14, 2020 letter, the Marines provided a summary of their consultation efforts, noting that the installation wrote to eleven federally recognized tribes with which the Marines regularly consult with on changes to airspace designations. The San Manuel Band of Mission Indians requested additional information about the undertaking. In response, the Combat Center's Cultural Resources Manager and Conservation Branch Head met in person with San Manuel's Cultural Resources Department Director to answer questions and concerns presented in the Tribe's November 4, 2019 comments.

As a result of this meeting, the Marines committed to provide the Tribe a copy of the June 2019 Environmental Assessment for the Boeing Starliner Launch and and recovery, a copy of the July 2012 Final

Environmental Impact Statement for Land Acquisition and Establishment, and committed to monitor the long-term cumulative effects of all training activities on cultural resources aboard the Combat Center. Based on the outcome of this consultation meeting, the San Manuel Band of Mission Indians had no objections to the proposed undertaking and did not report this undertaking would effect any Tribal ceremonies.

Having reviewed your submittal, SHPO concurs that the undertaking will not adversely affect historic properties.

If you have any questions, please contact State Historian Tristan Tozer at (916) 445-7027 or Tristan.Tozer@parks.ca.gov.
Sincerely,

Julianne Polanco
State Historic Preservation Officer

Tribal Correspondence

This page intentionally left blank.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0102

JUL 30 2019

Mr. Darrell Mike
Chairman
Twenty-Nine Palms Band of Mission Indians
46200 Harrison Place
Coachella, CA 92236

Attention: A. Madrigal, THPO

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0102
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

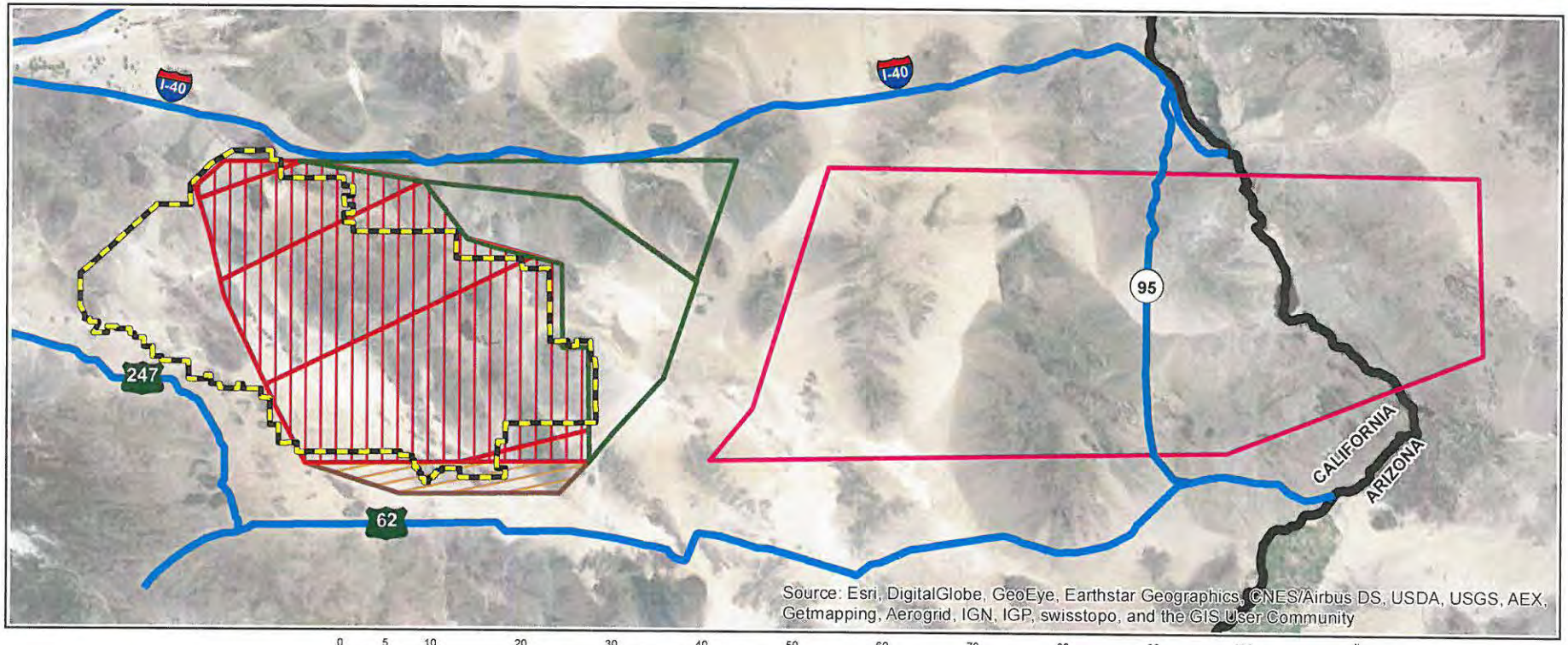


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

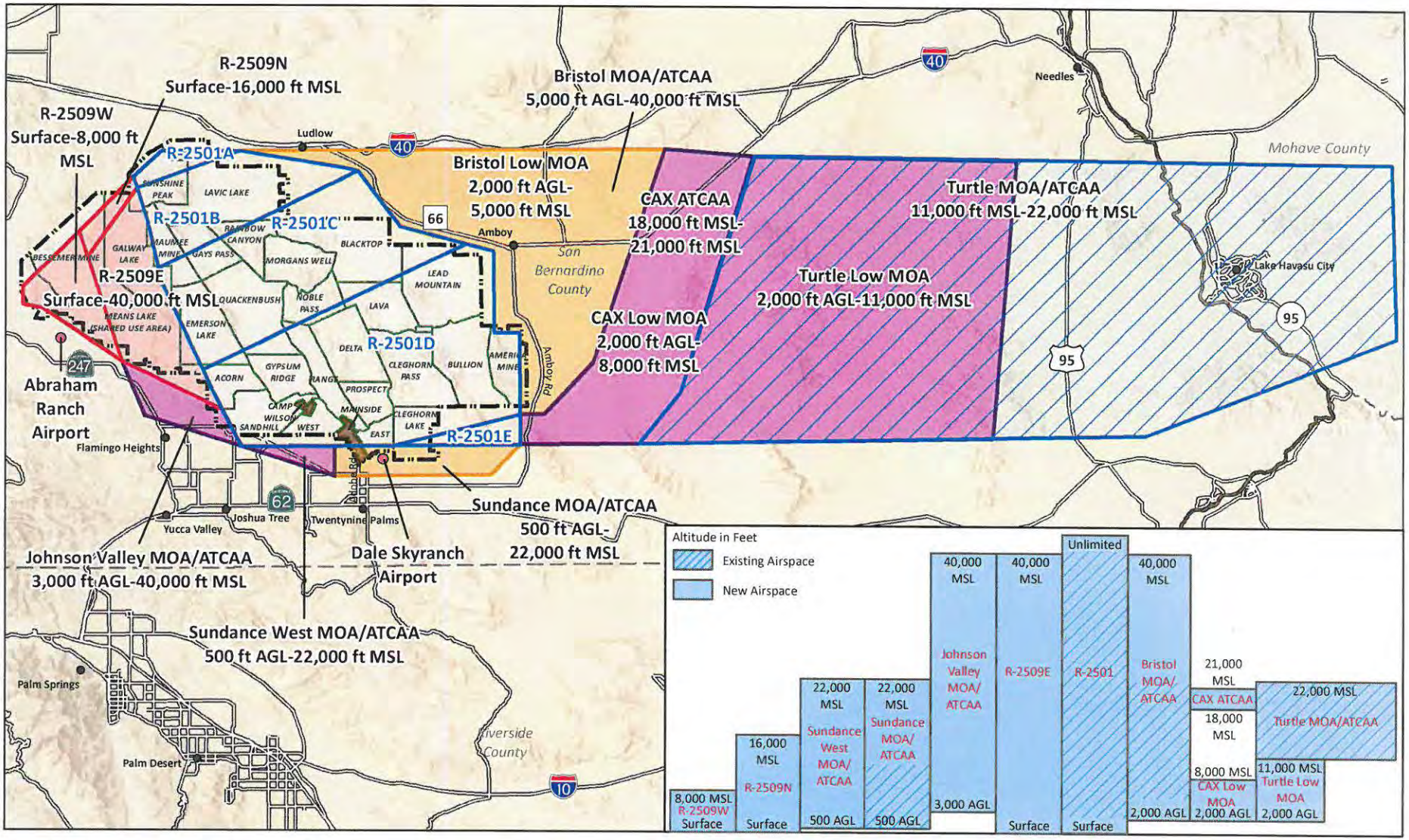
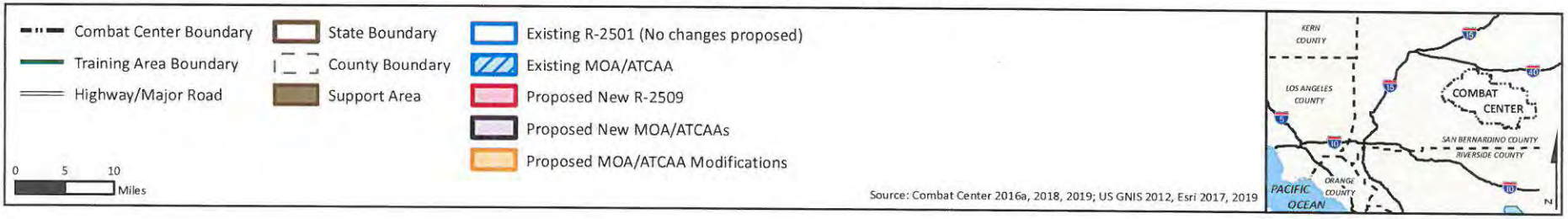


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

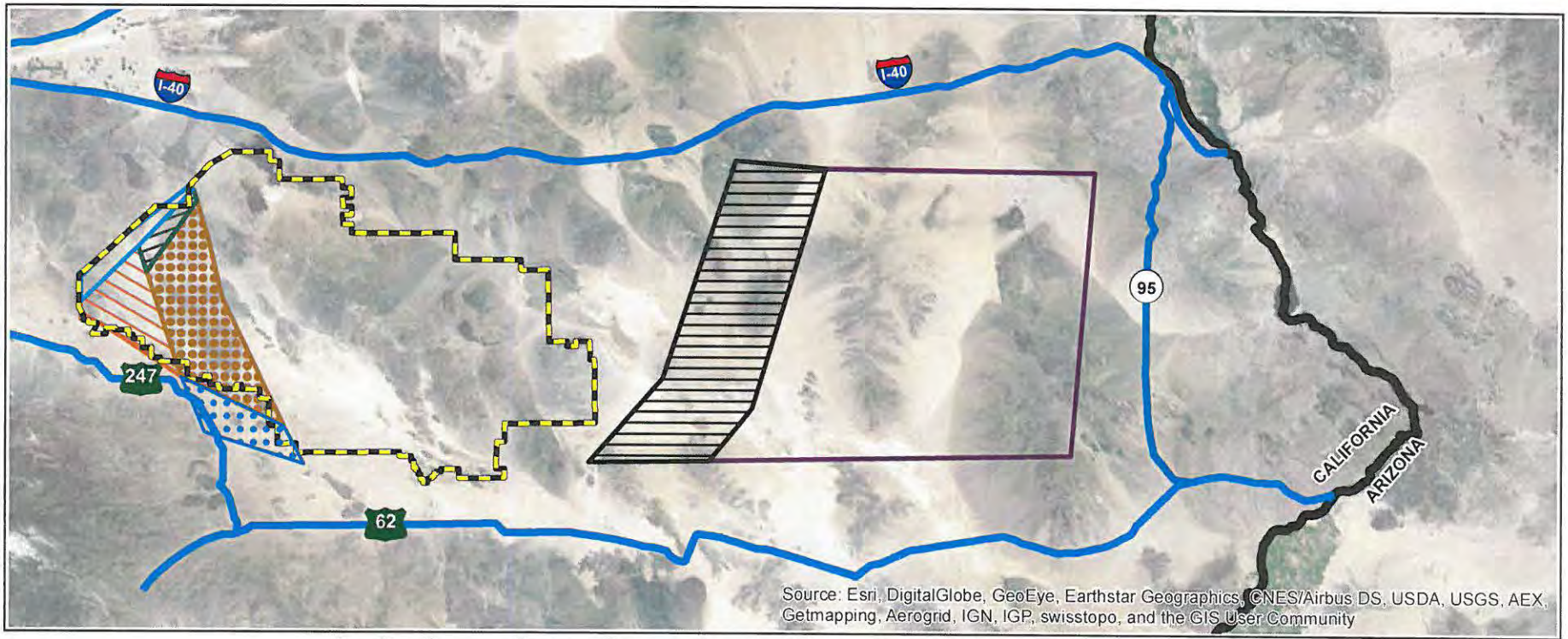


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

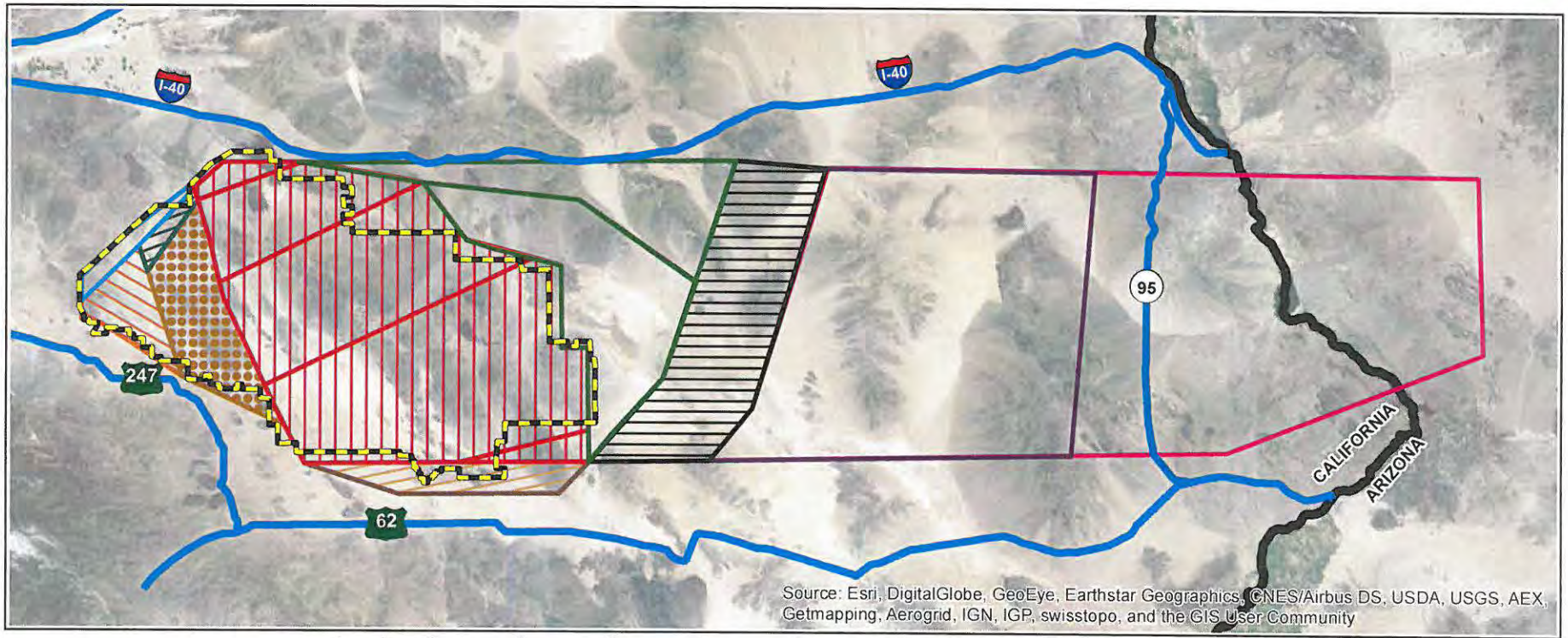


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0095
JUL 30 2019

Mr. Daniel Salgado
Chairman
Cahuilla Band of Mission Indians
Of the Cahuilla Reservation
52701 Highway 371
Anza, CA 92539

Attention: B. Esparza

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0095
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

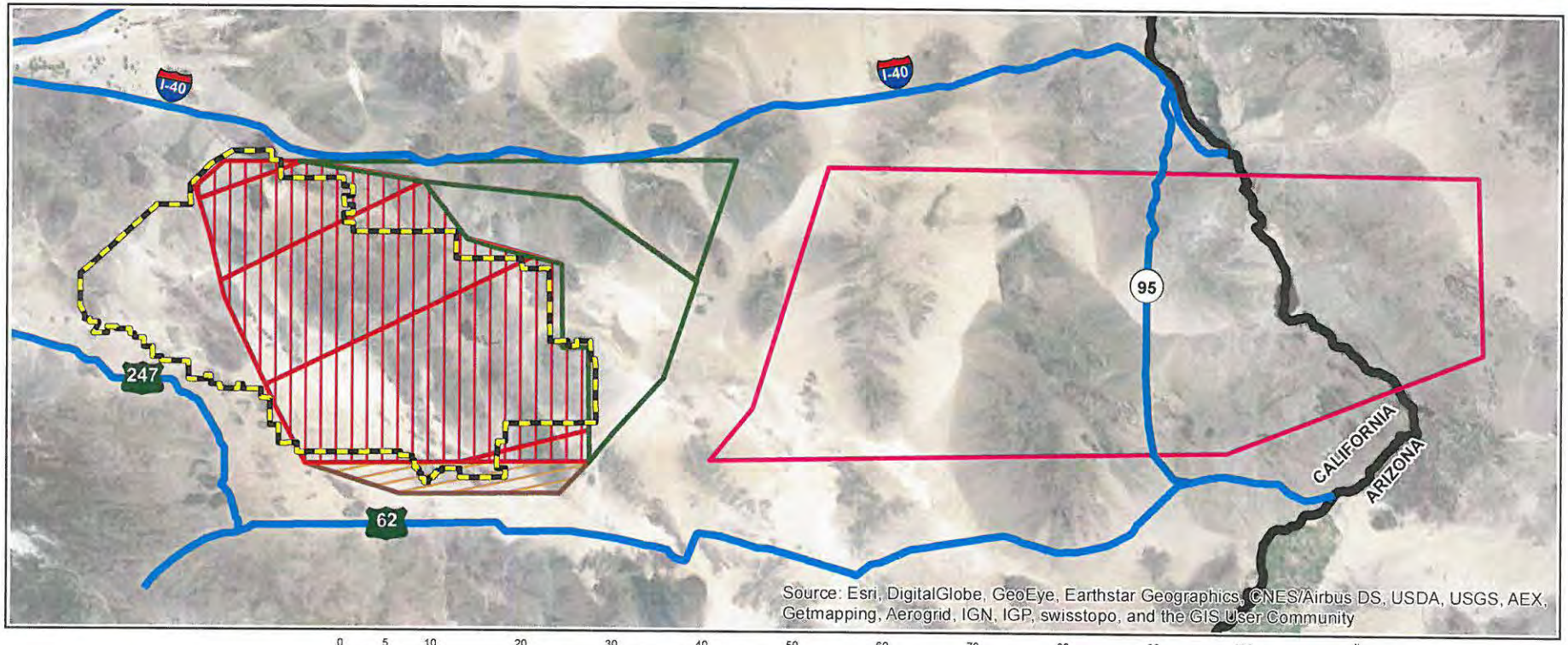


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

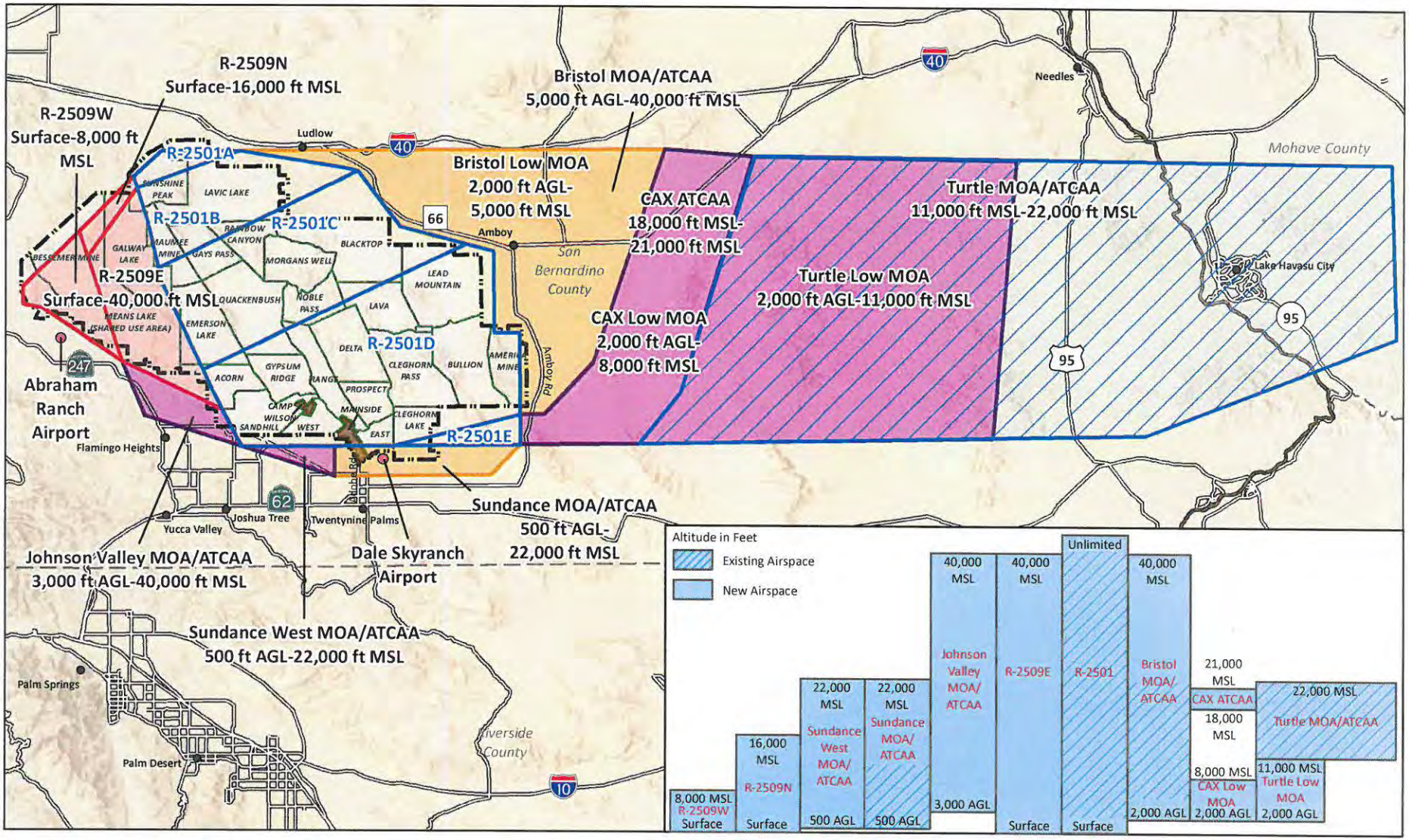
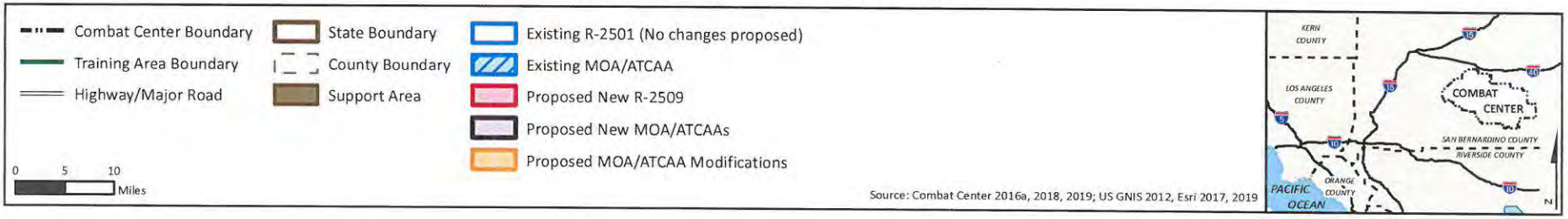


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

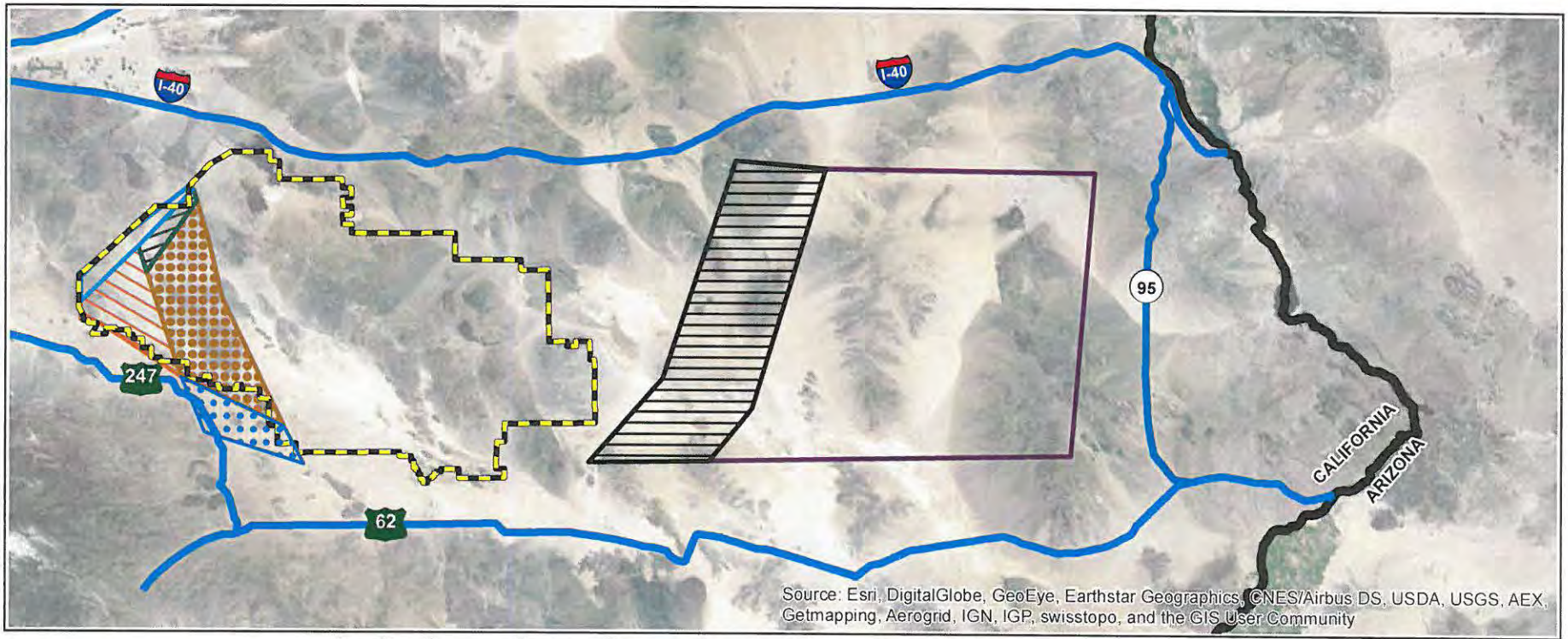


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

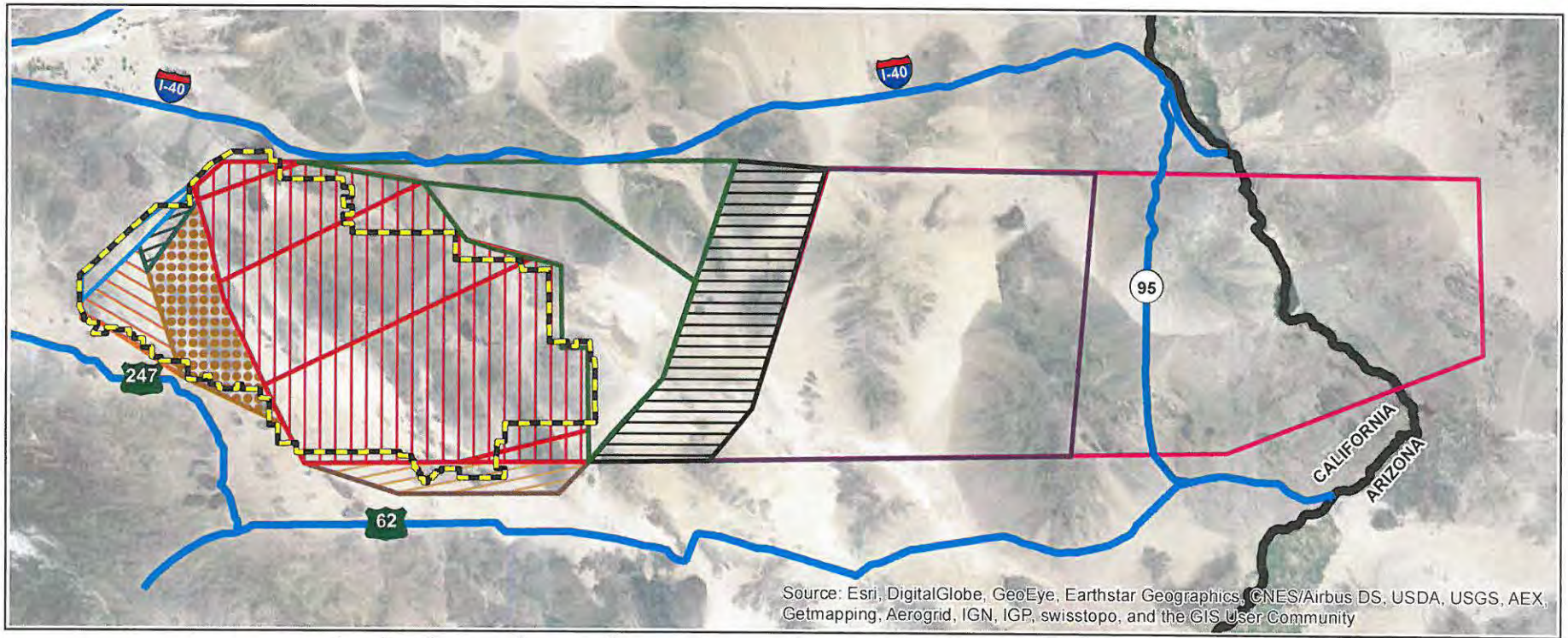


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0092

JUL 30 2019

Mr. Jeff L. Grubbe
Chairman
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, CA 92264

Attention: P. Garcia, THPO

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0092
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

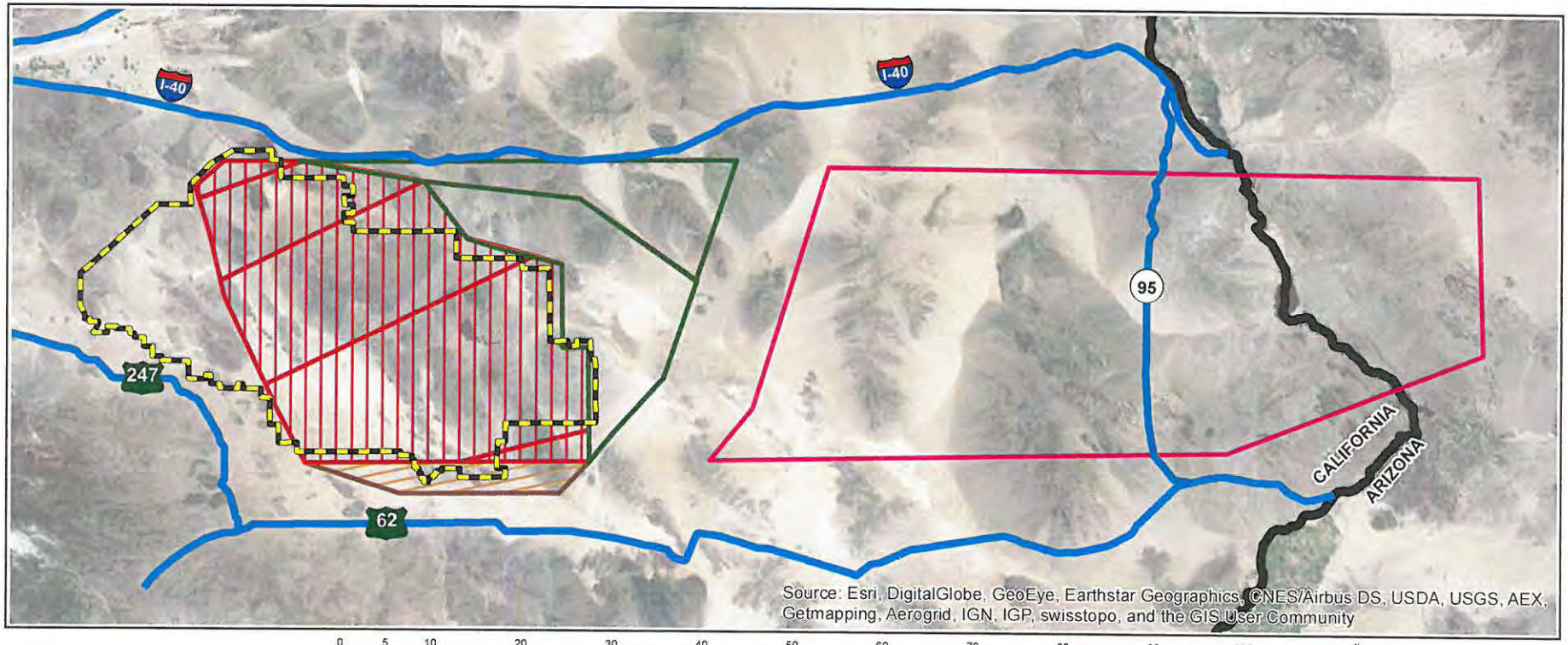


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

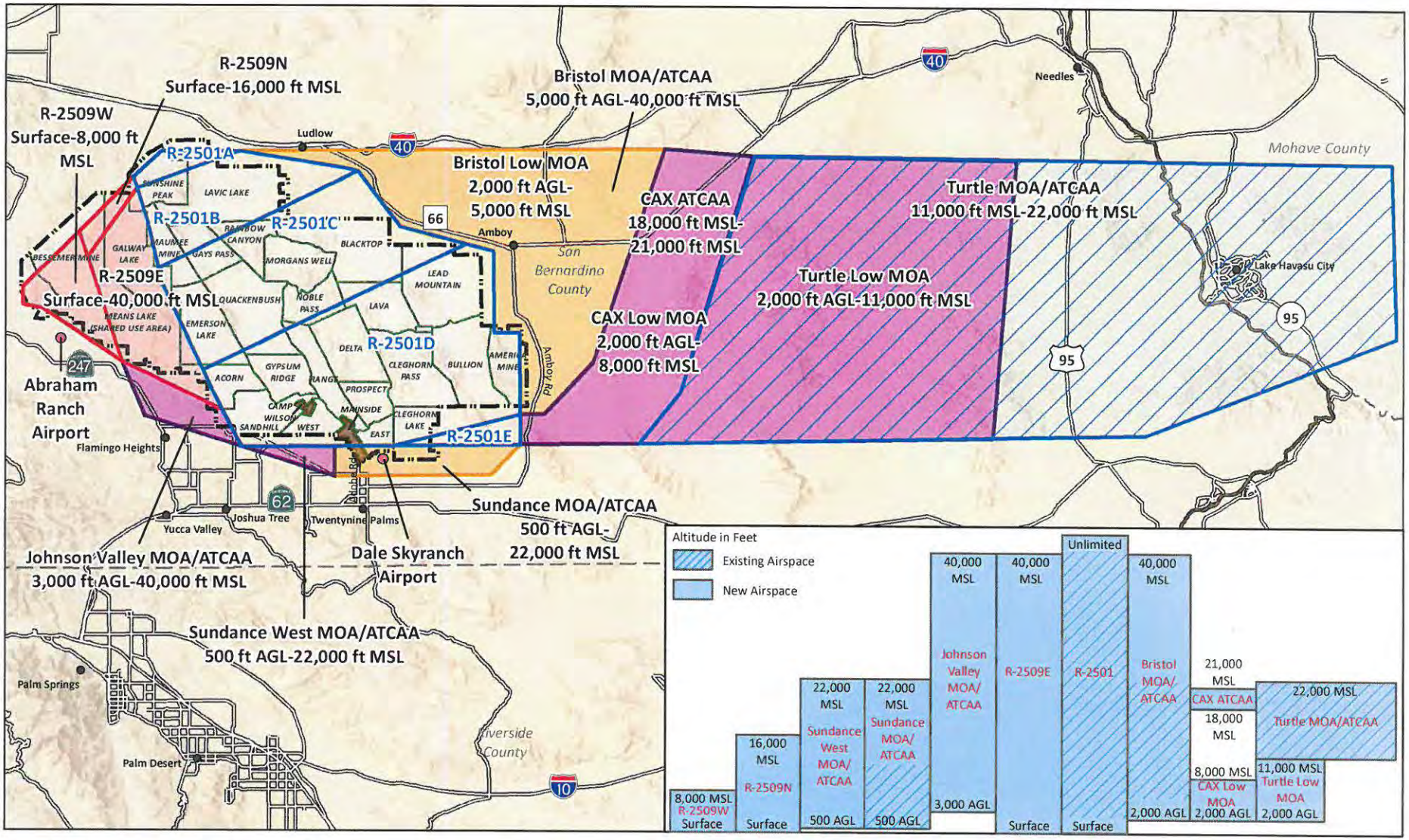
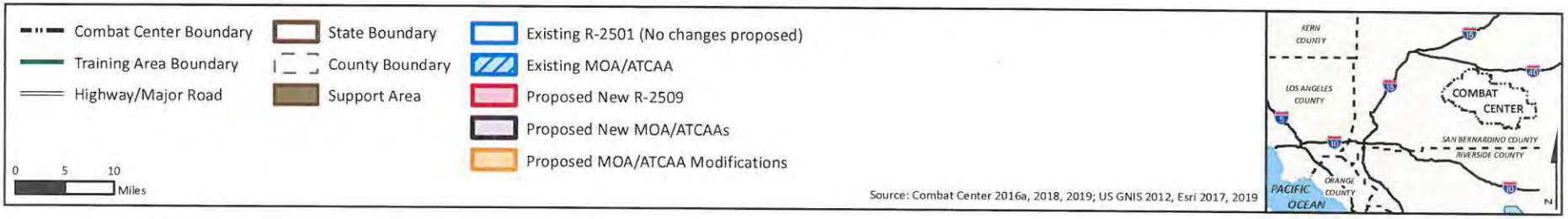


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

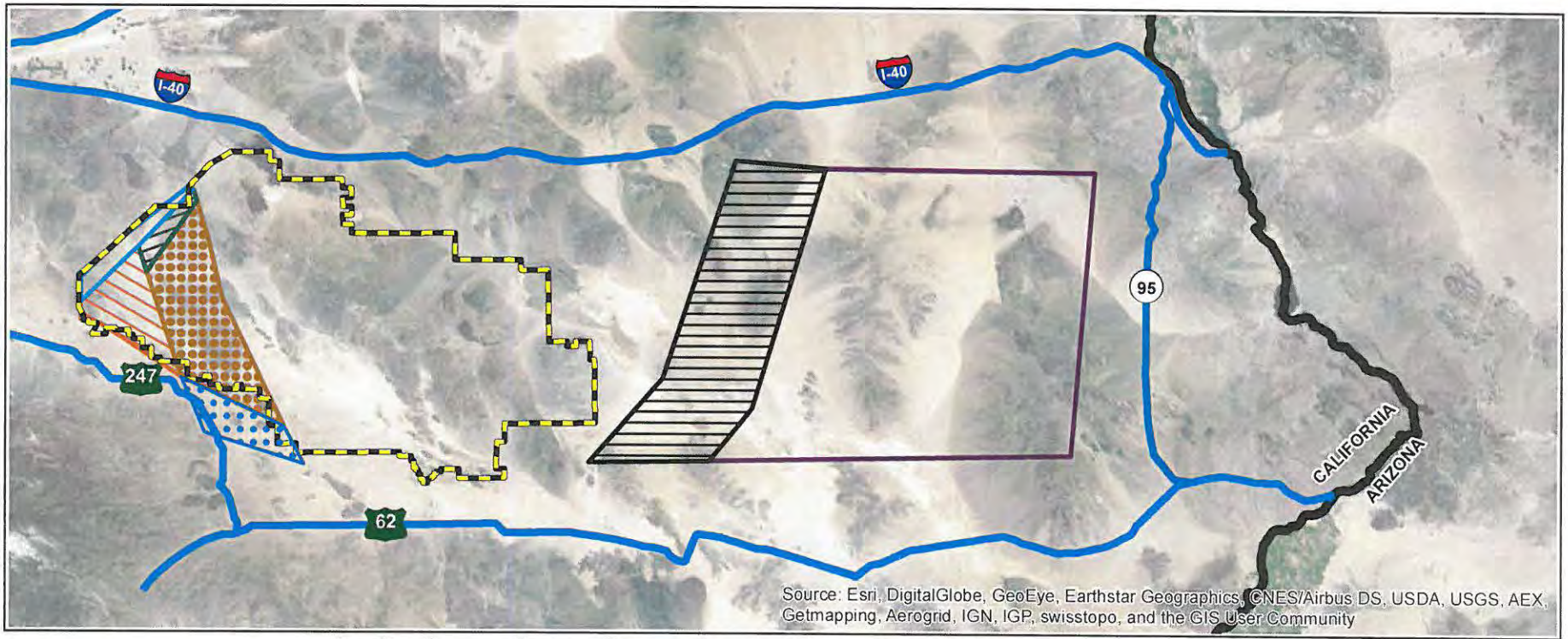


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

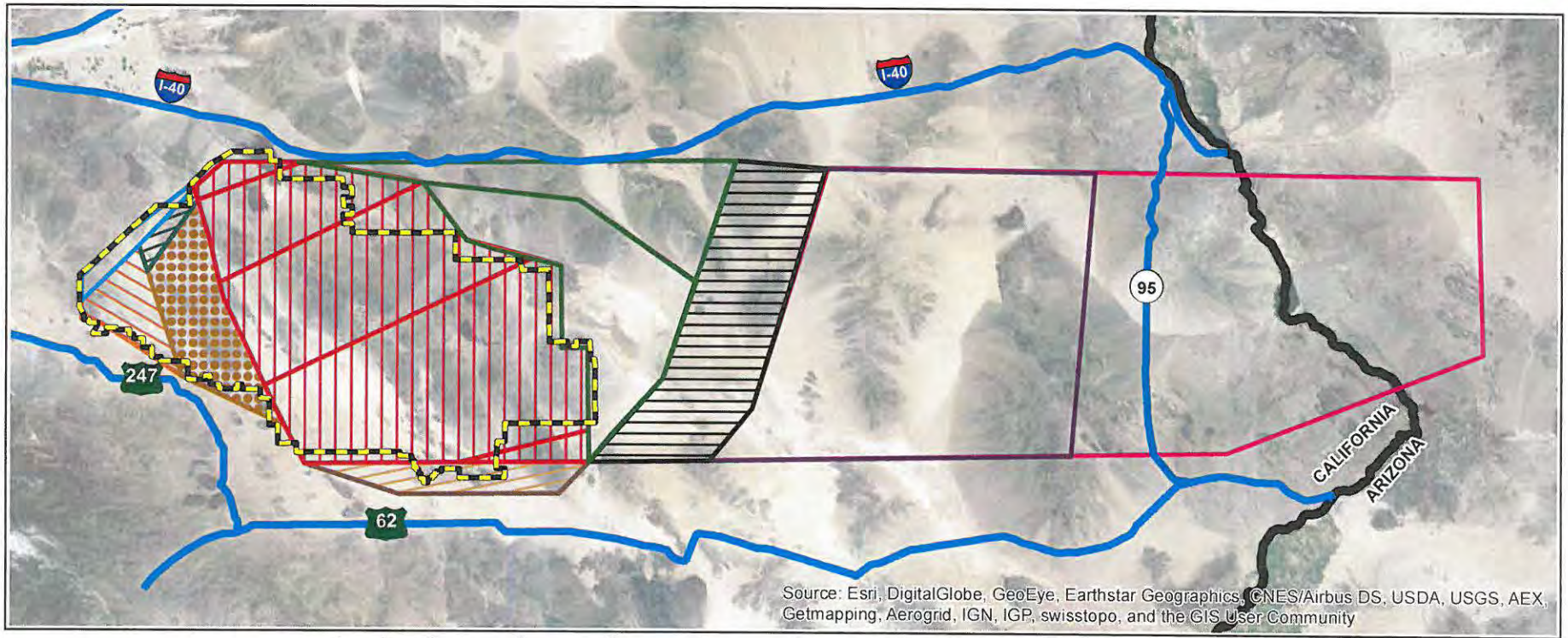


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

01-017-2019-004

September 04, 2019

[VIA EMAIL TO:janelle.harrison@usmc.mil]
Marine Corps
Ms. Janelle Harrison
Building 1418 Brown Rd.
Twentynine Palms, CA 92278

Re: Proposed Changes to Airspace Designations

Dear Ms. Janelle Harrison,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Proposed Changes to Airspace Designations project. A records check of the ACBCI cultural registry revealed that the project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area.We currently have no concerns regarding this project. This letter shall conclude our consultation efforts.

*We concur with the agency's determination at this time. Please inform our office if there are changes to the scope of this project that may affect this determination.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6956. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Lacy Padilla
Archaeologist
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

5401 DINAH SHORE DRIVE, PALM SPRINGS, CA 92264
T 760/699/6800 F 760/699/6924 WWW.AGUACALIENTE-NSN.GOV

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0093

JUL 30 2019

Ms. Amanda Vance
Chairperson
Augustine Band of Cahuilla Indians
84-481 Avenue 54
Coachella, CA 92236

Attention: H. Haines

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0093

JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

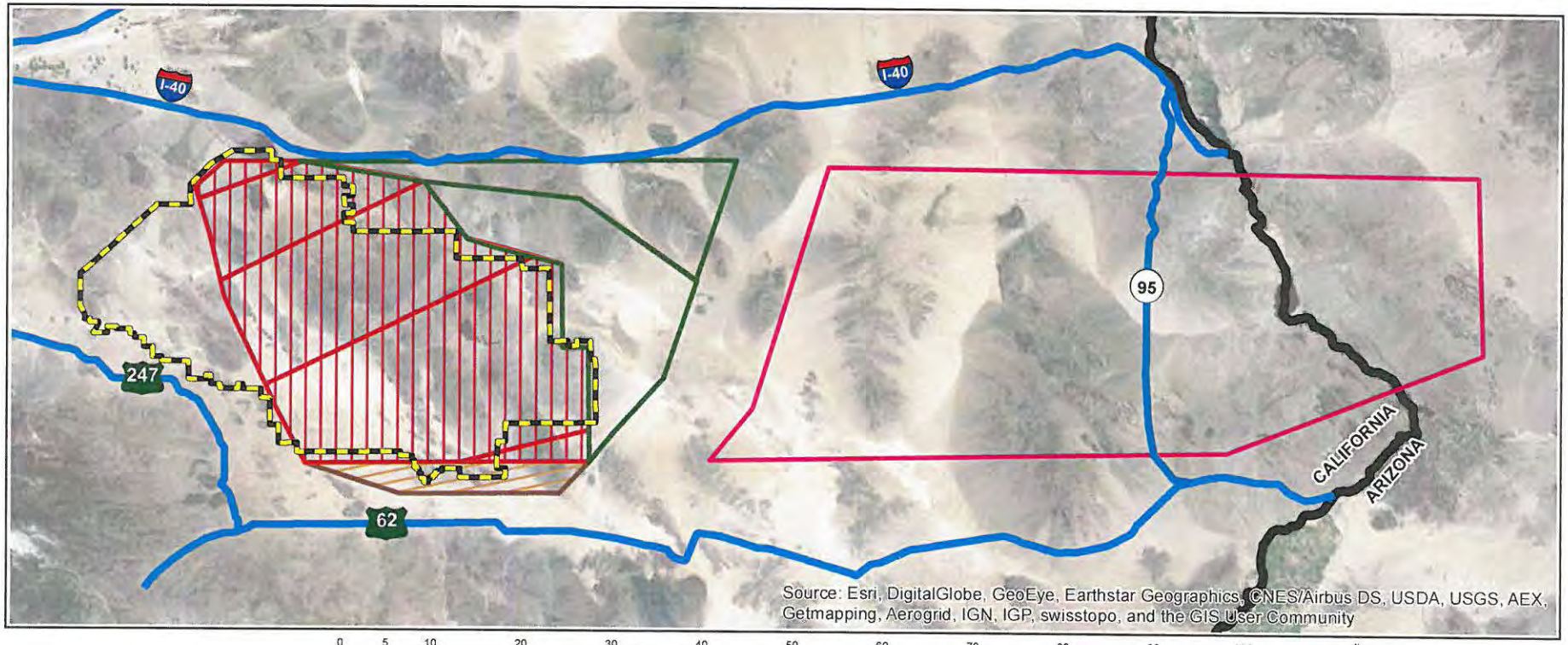


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

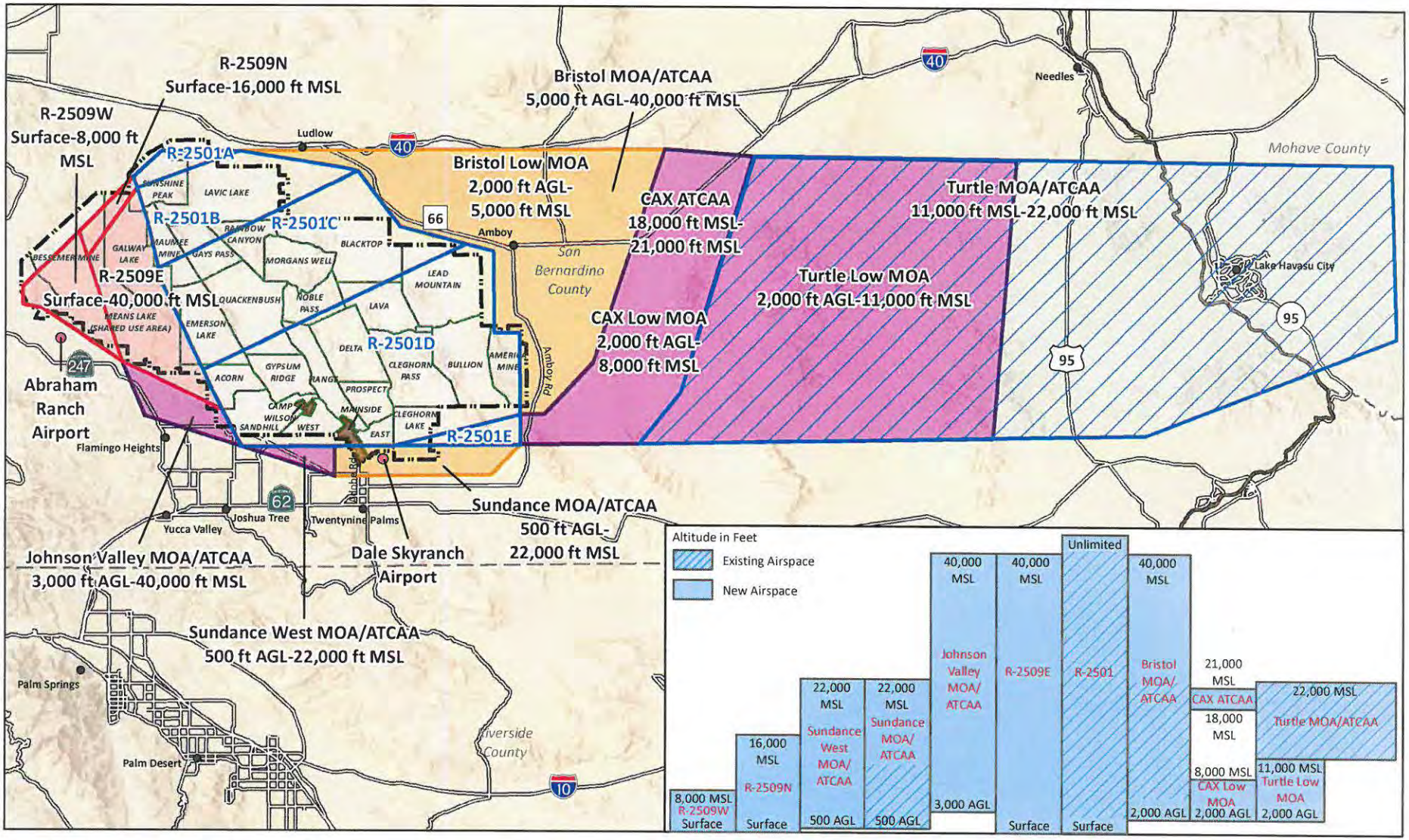
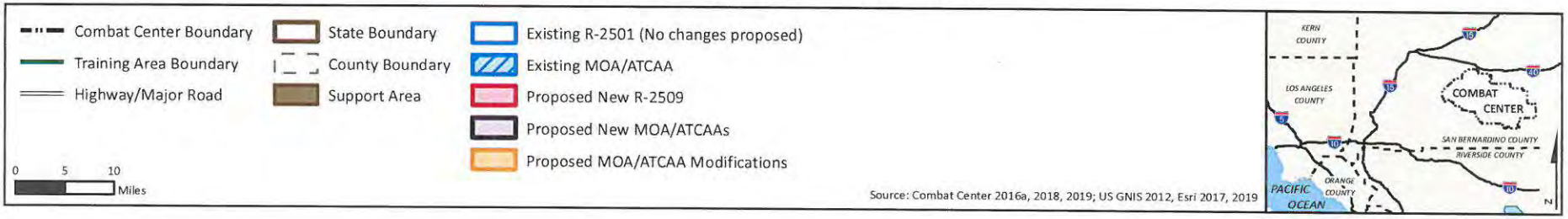


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

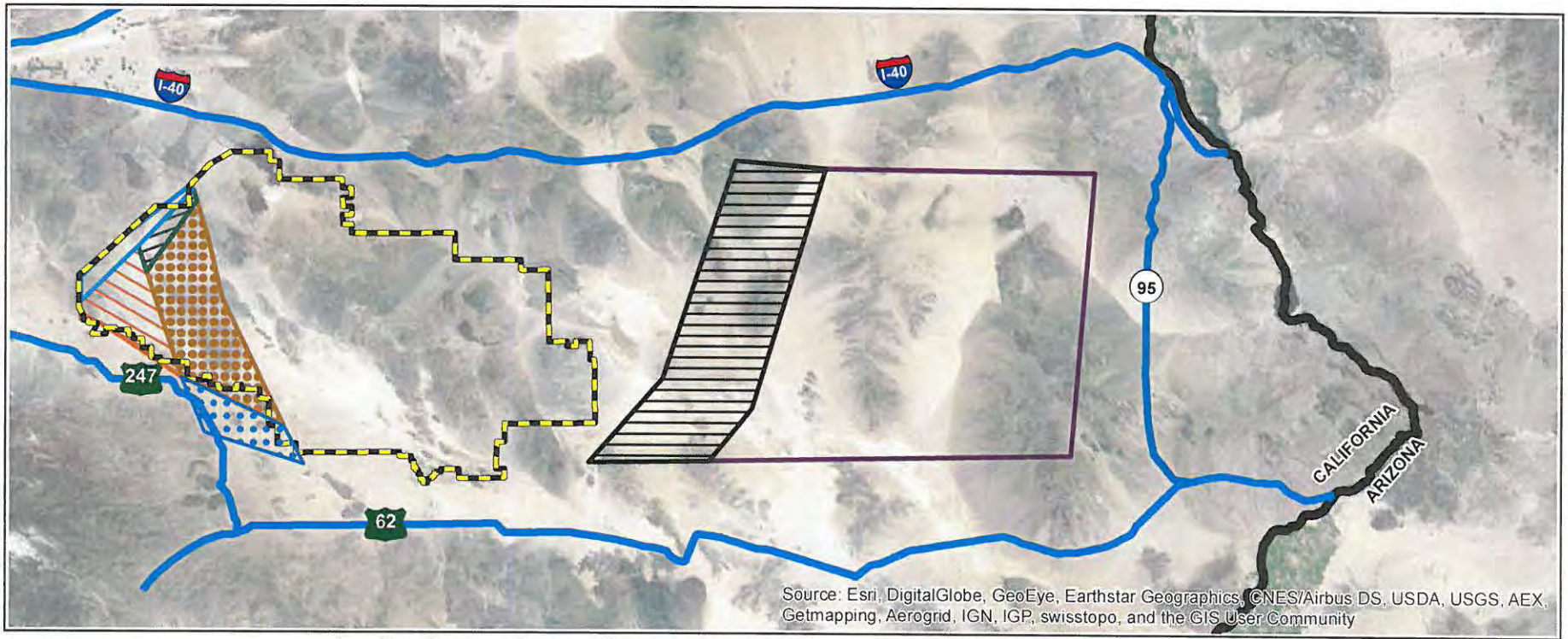


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

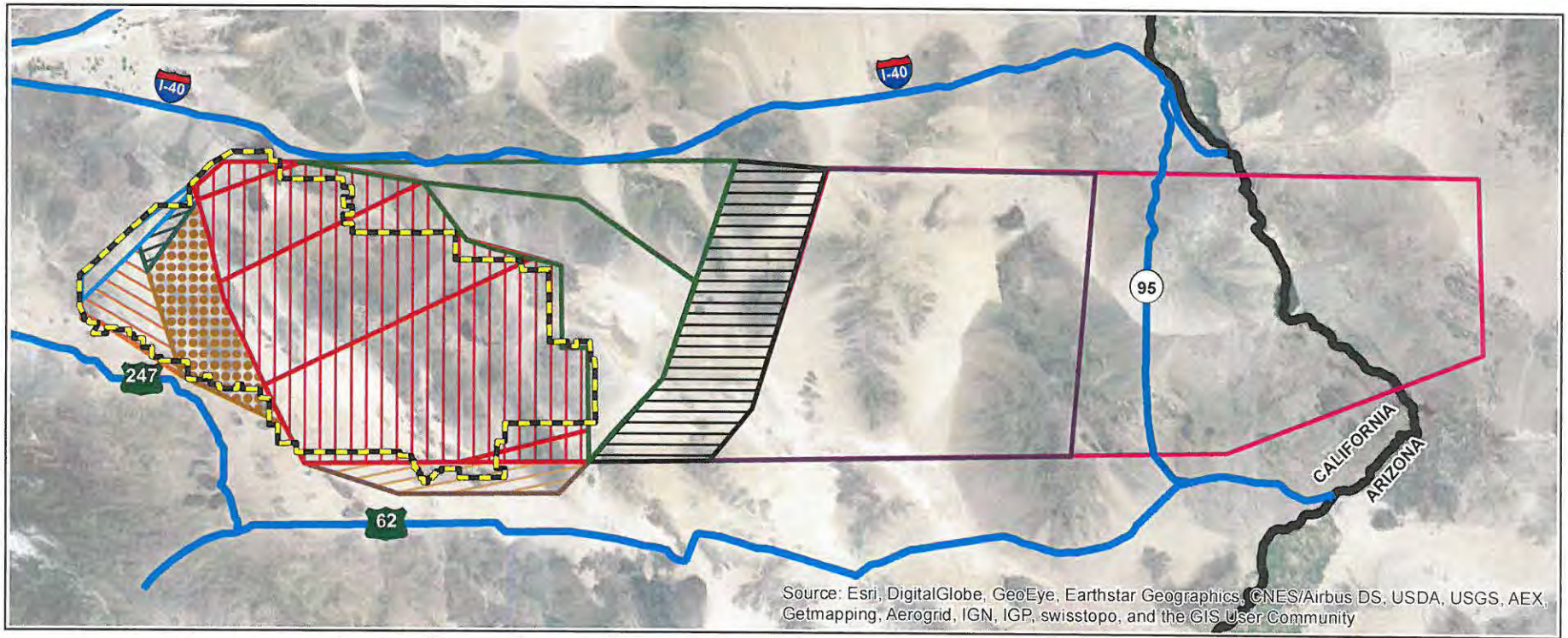


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0094

JUL 30 2019

Mr. Doug Welmas
Chairman
Cabazon Band of Mission Indians
84-245 Indio Springs Drive
Indio, CA 92201

Attention: J. Stapp

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0094

JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

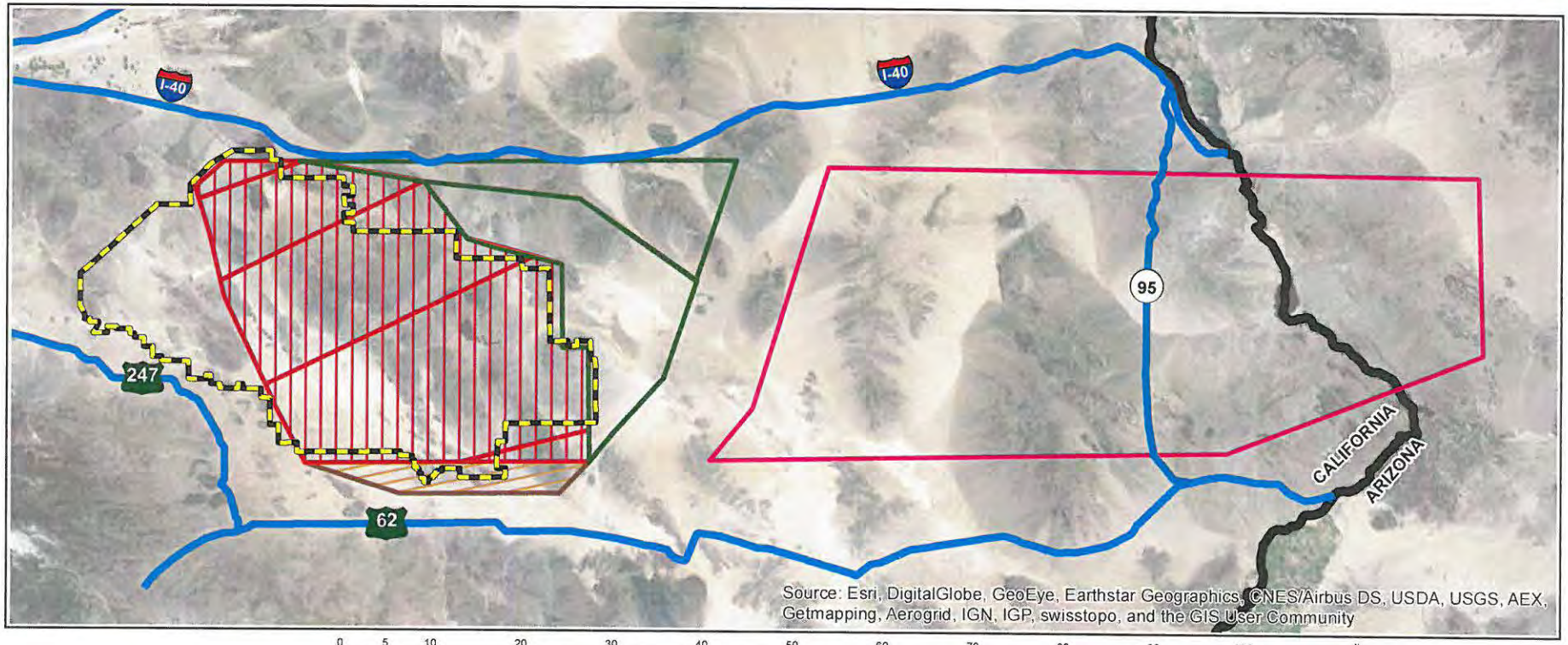


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

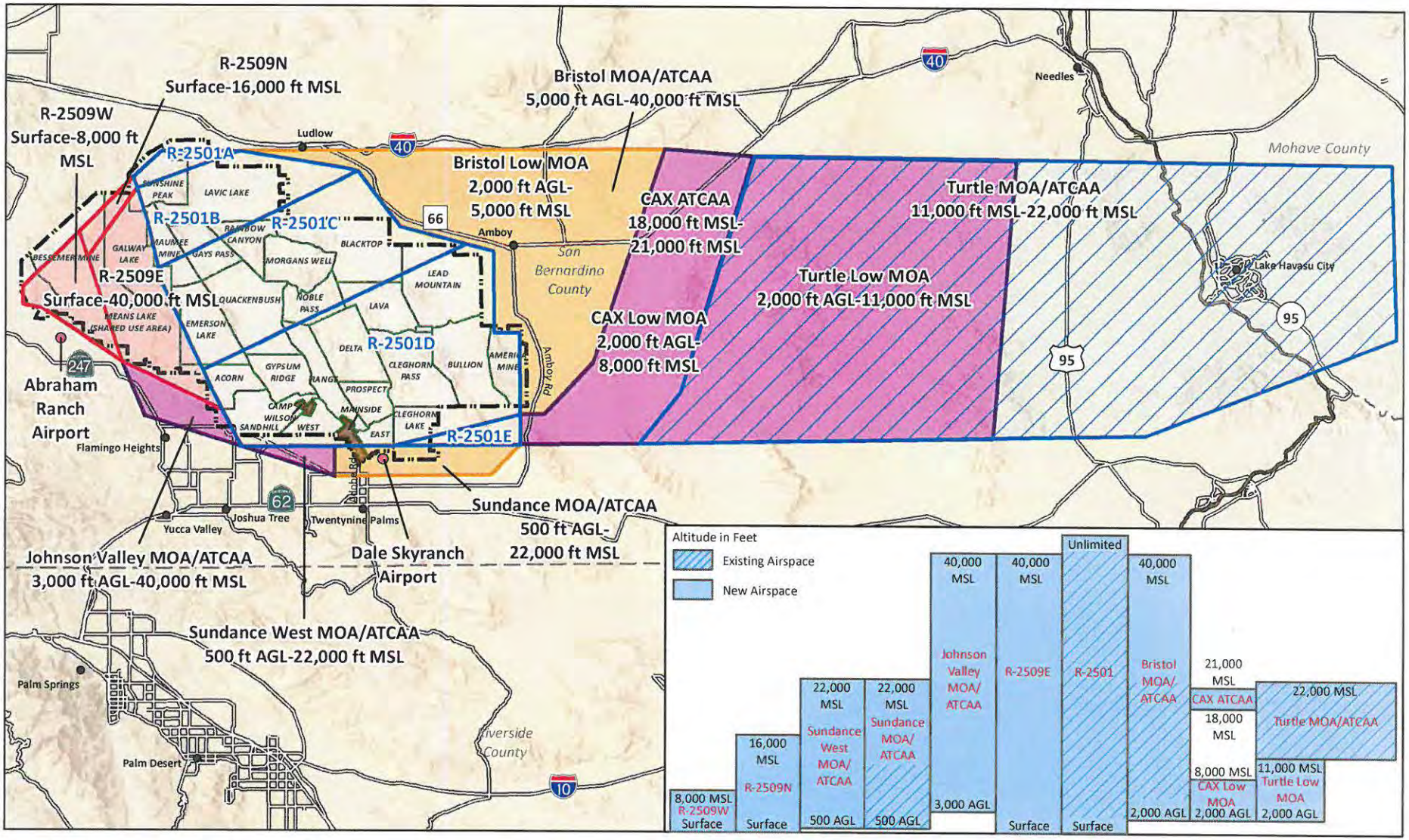
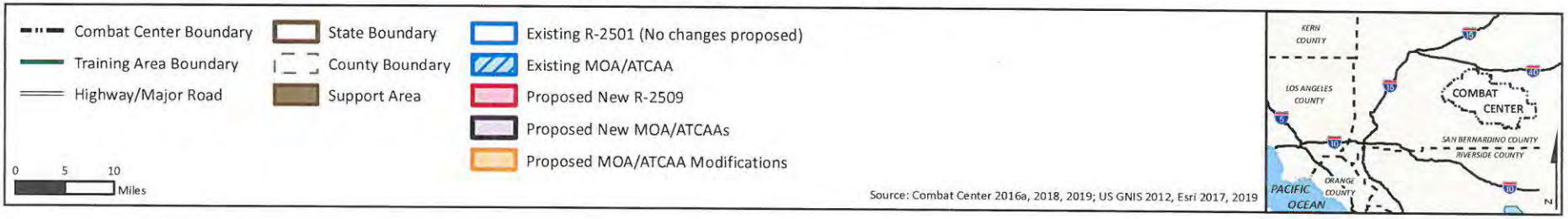


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

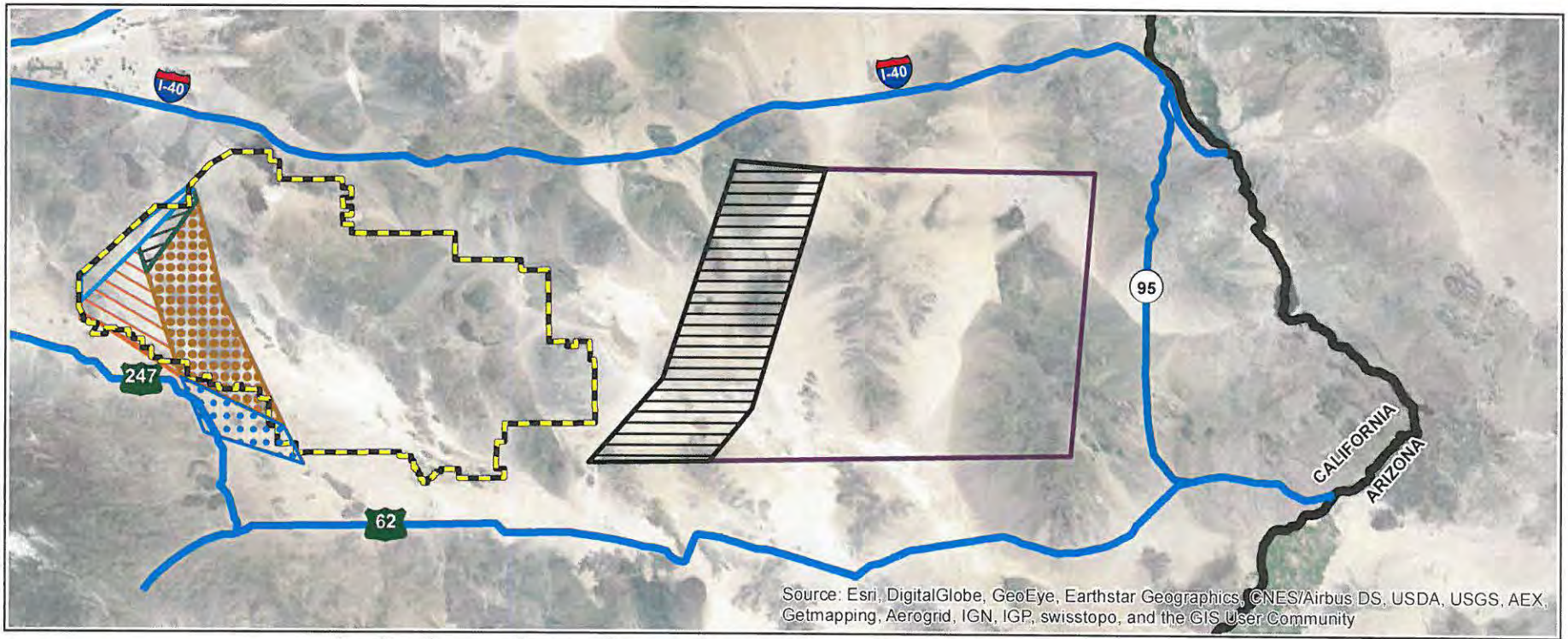


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

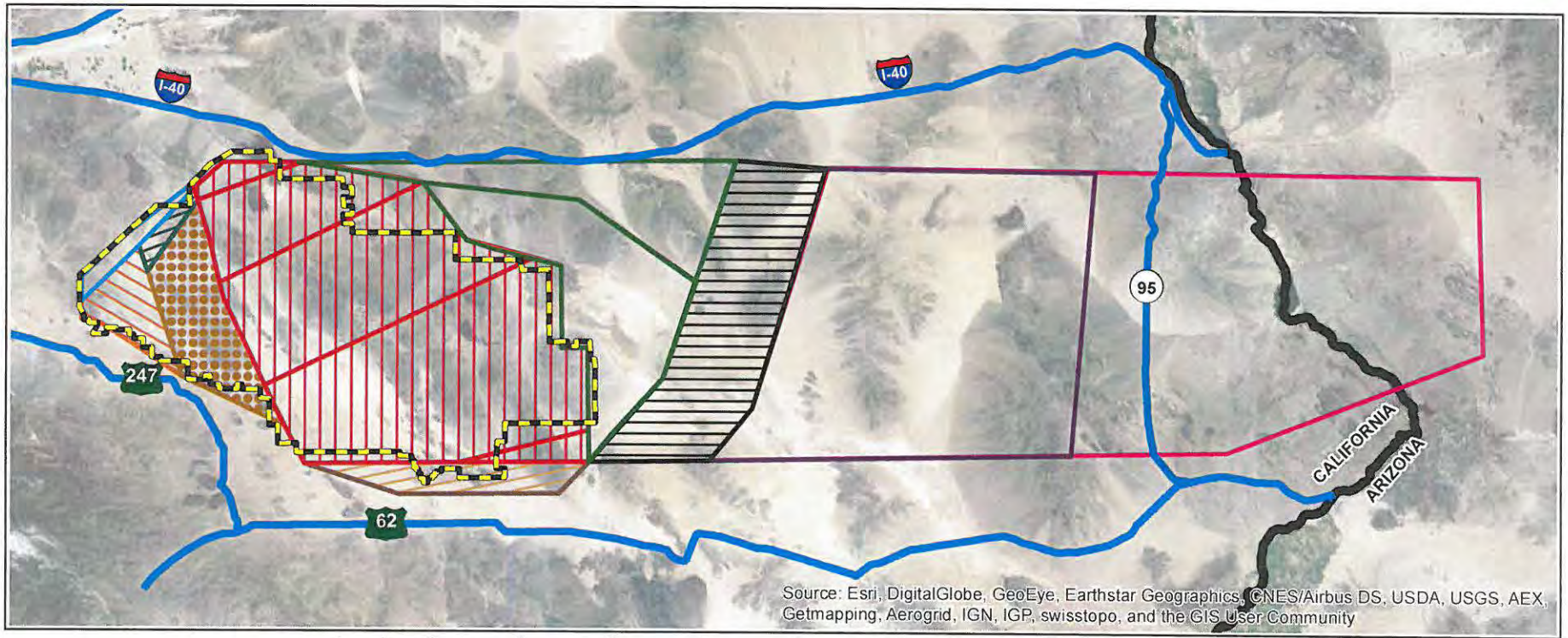


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0096
JUL 30 2019

Mr. Charles F. Wood
Chairman
Chemehuevi Indian Tribe
1990 Palo Verde Drive
Havasu Lake, CA 92363

Attention: M. Leivas

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0096
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

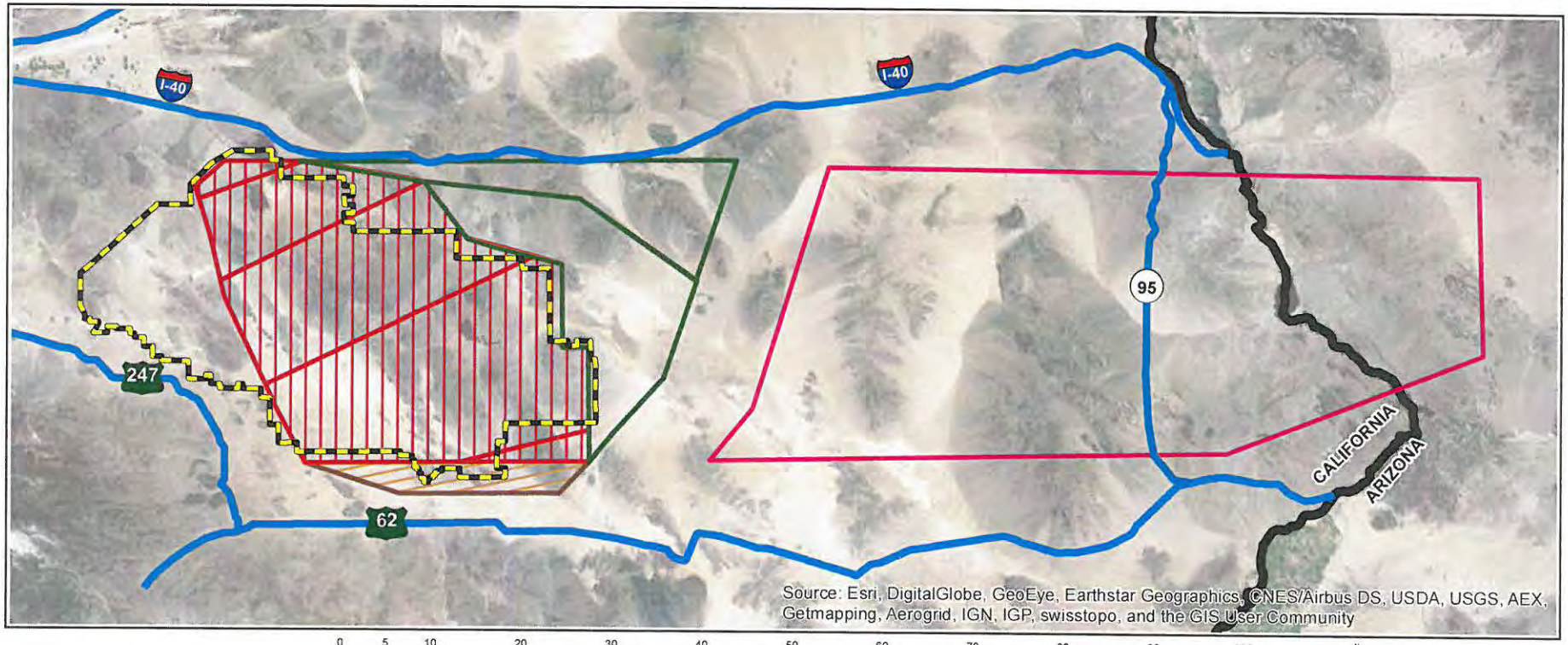


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

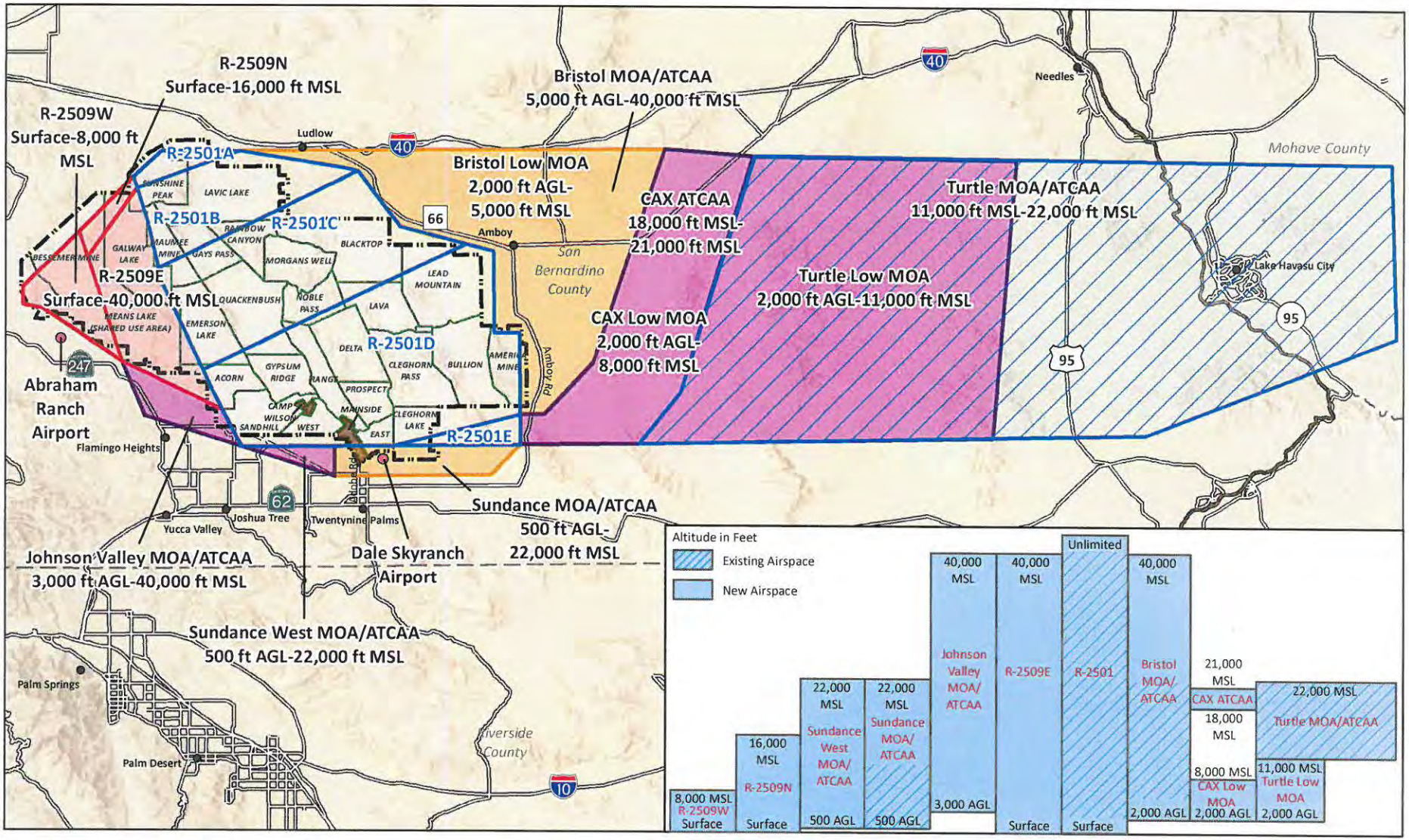
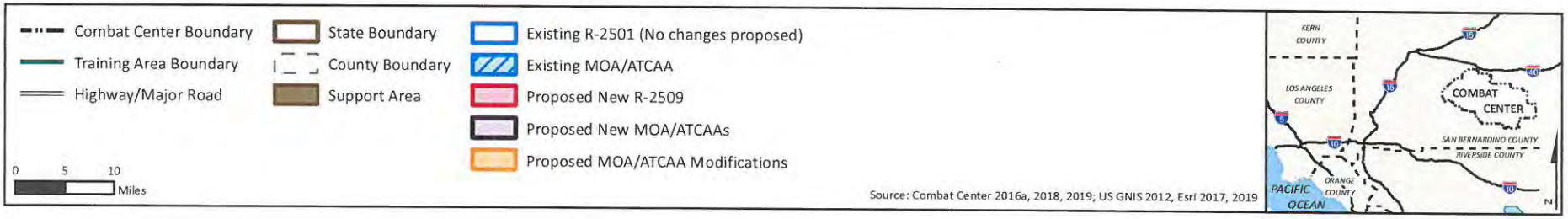


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

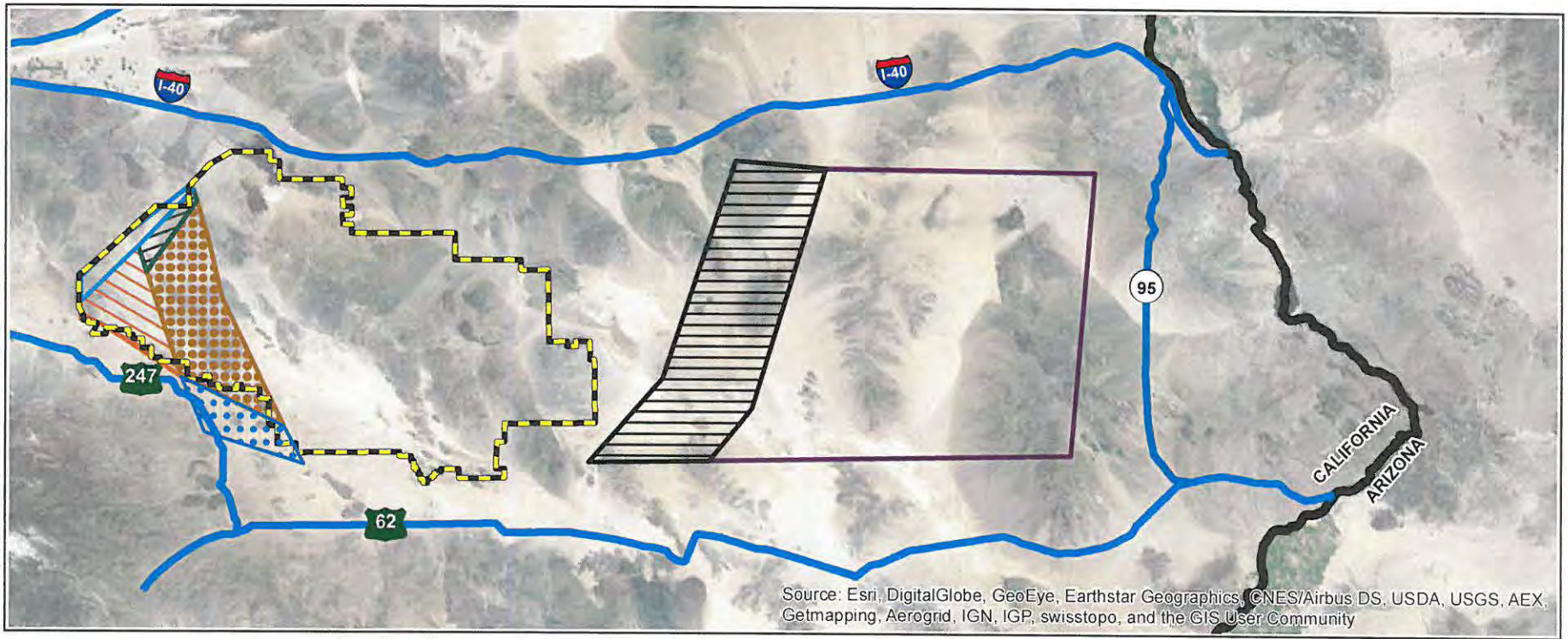


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

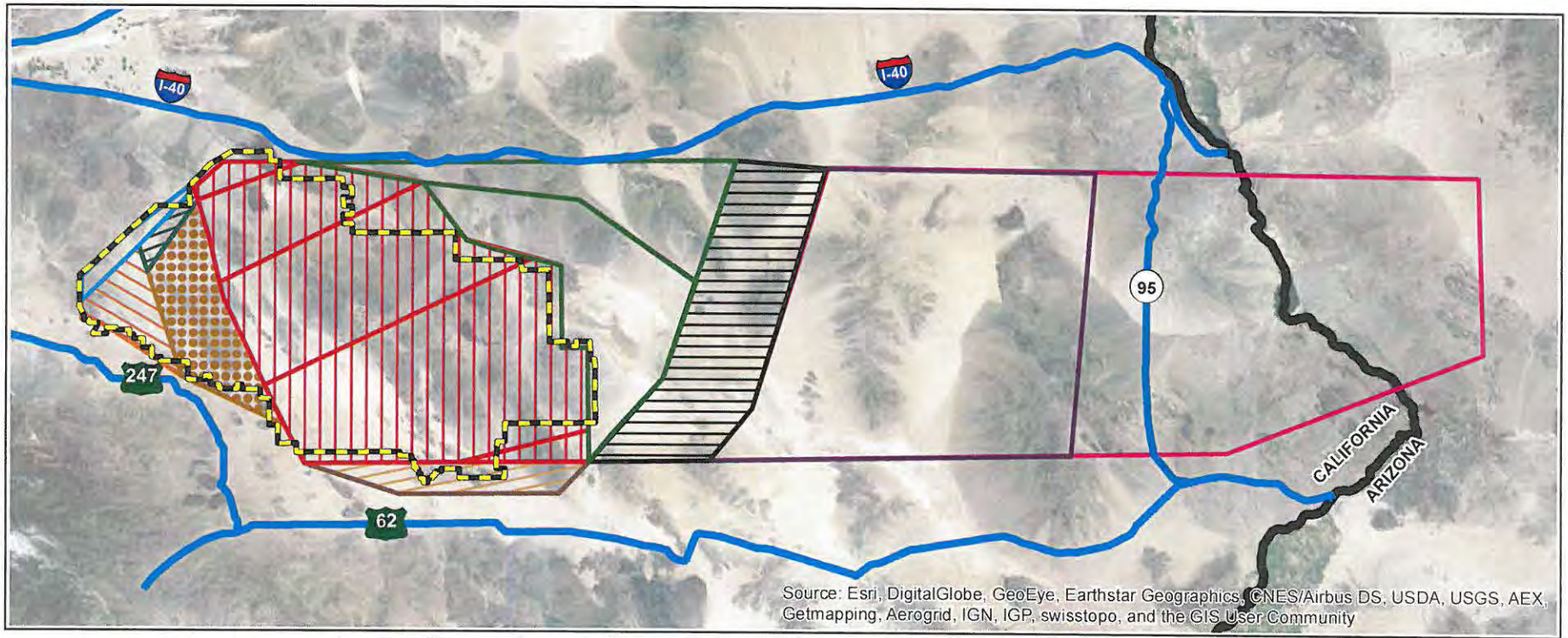


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0097

JUL 30 2019

Mr. Dennis Patch
Chairman
Colorado River Indian Tribes
26600 Mohave Road
Parker, AZ 85344

Attention: B. Etsitty, THPO

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0097
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

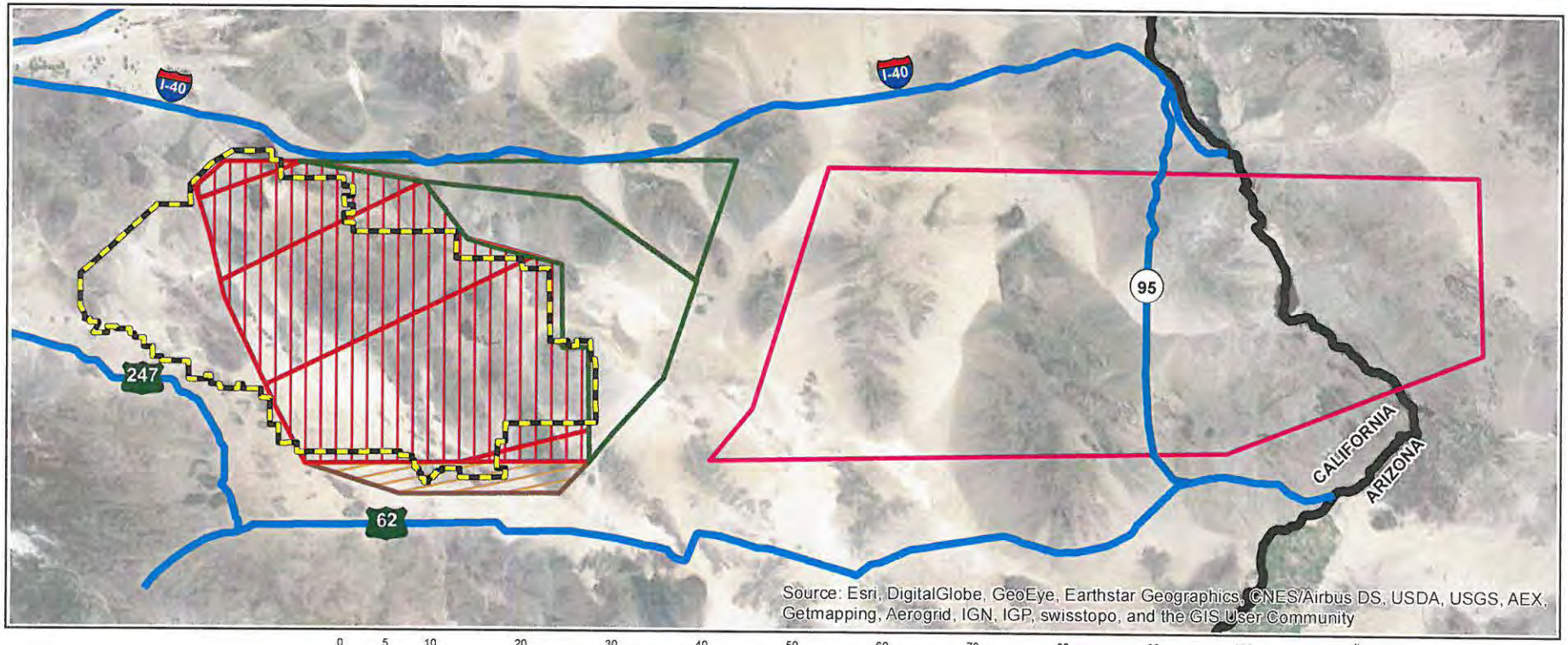


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

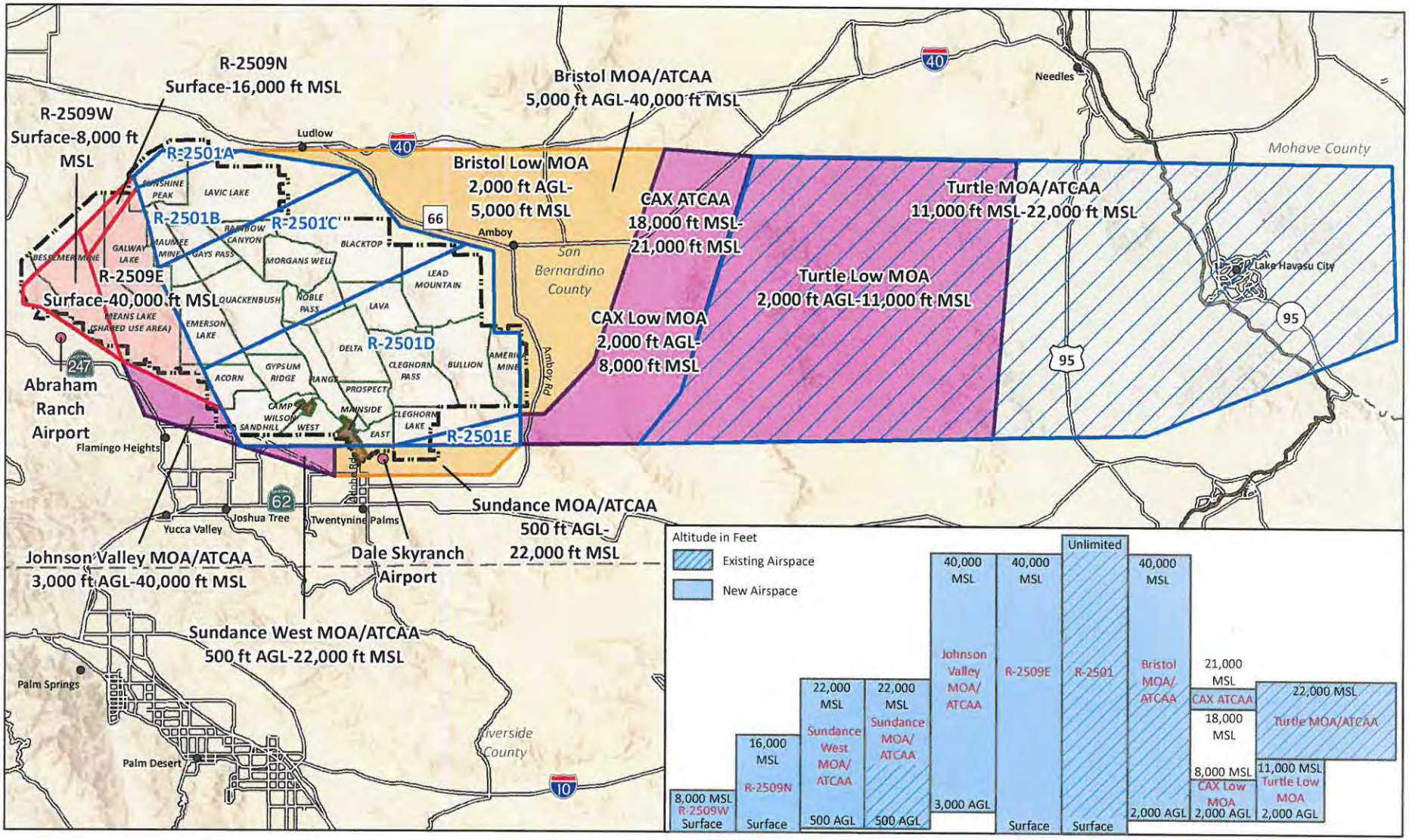
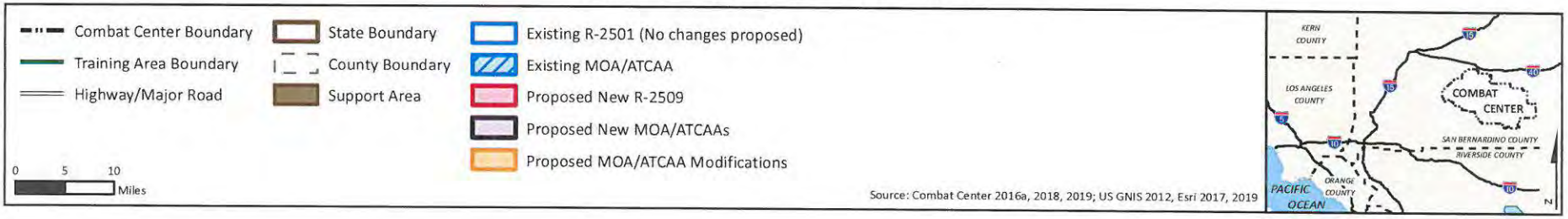


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

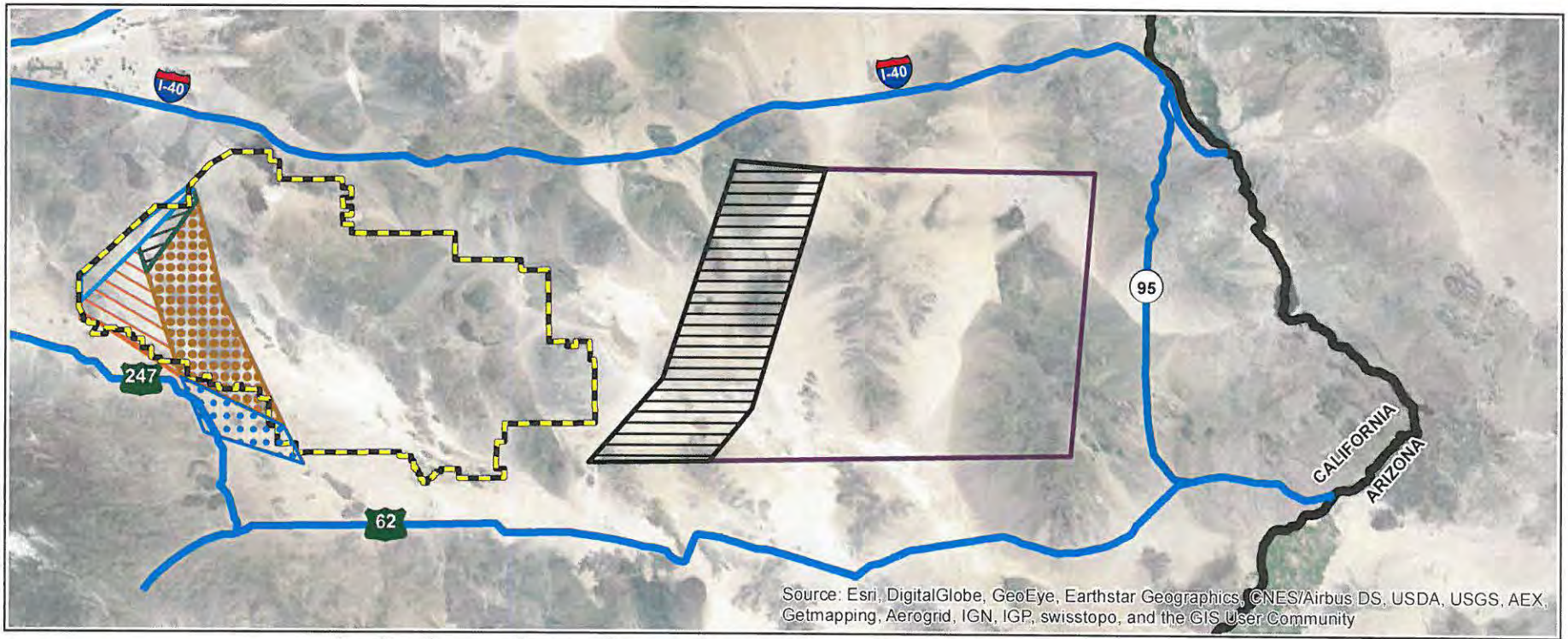


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

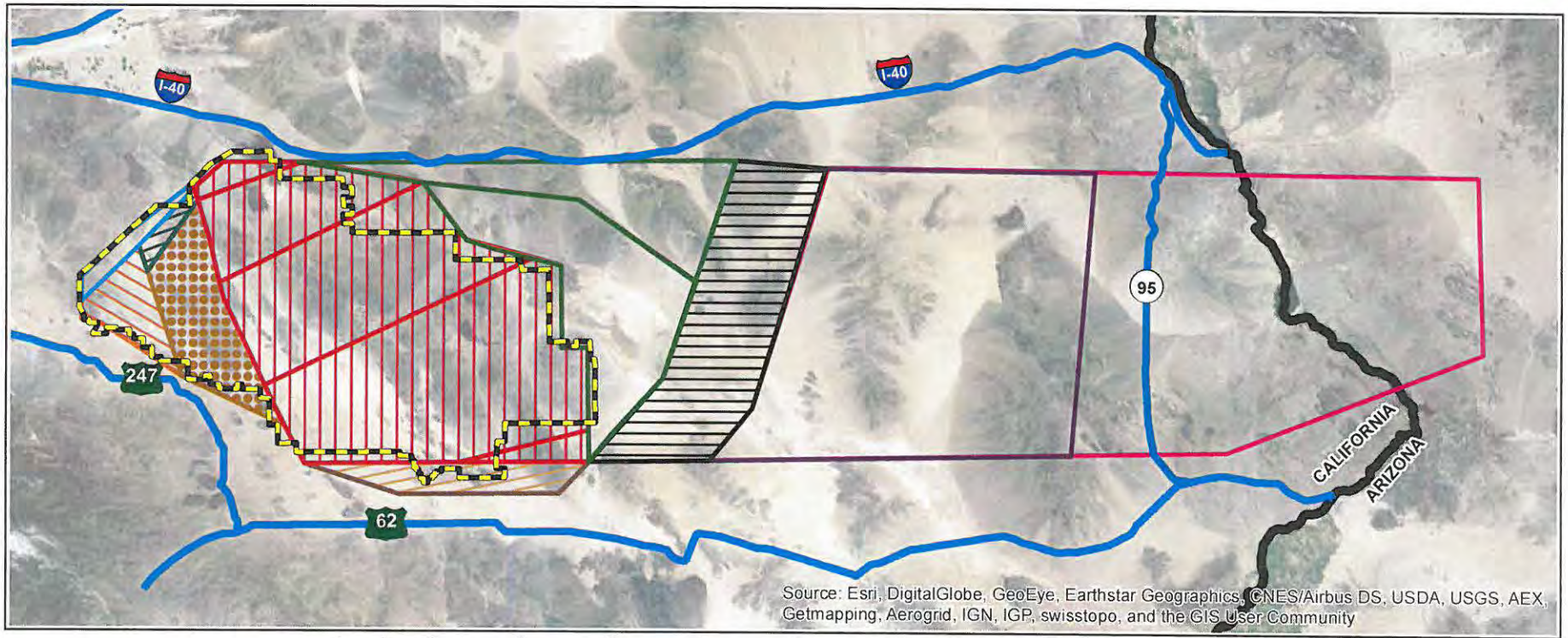


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0101
JUL 30 2019

Mr. Timothy Williams
Chairman
Fort Mojave Indian Tribe
500 Merriman Avenue
Needles, CA 92363

Attention: L. Otero

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0101
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

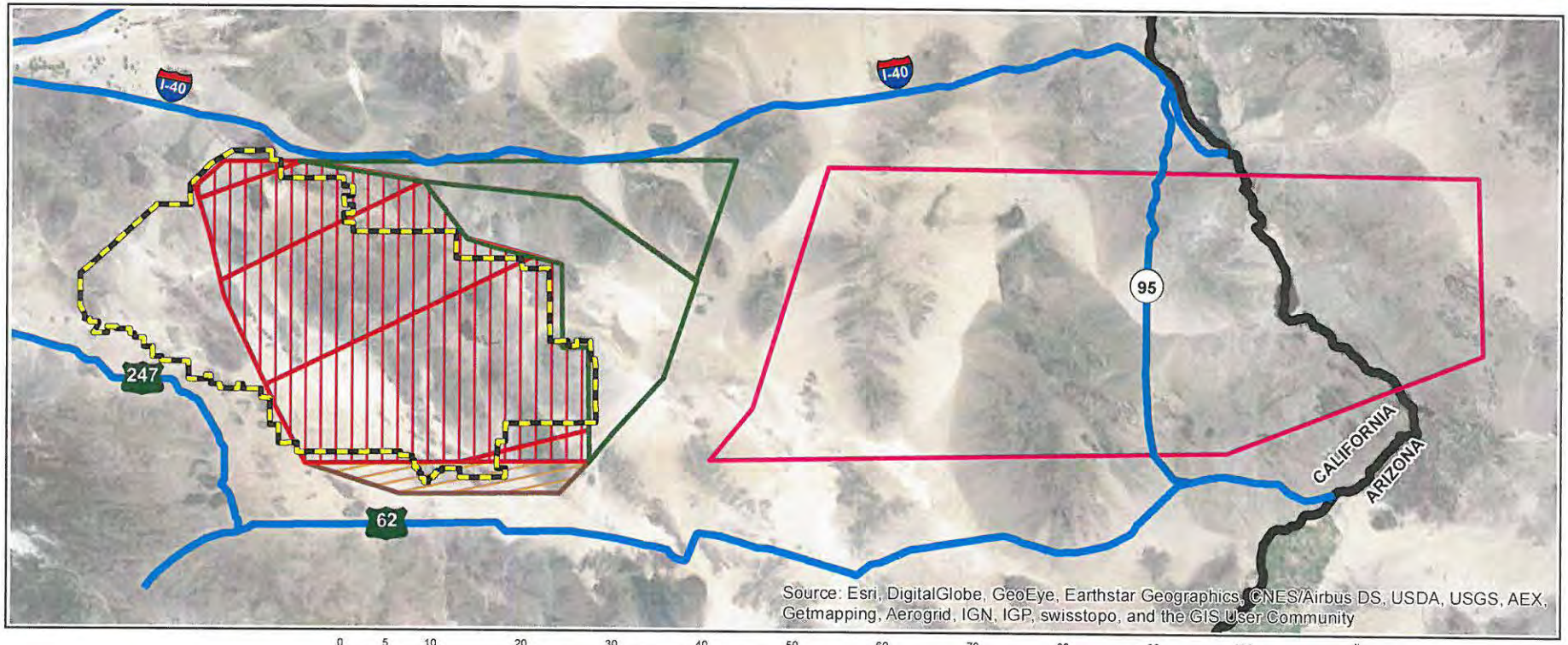


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

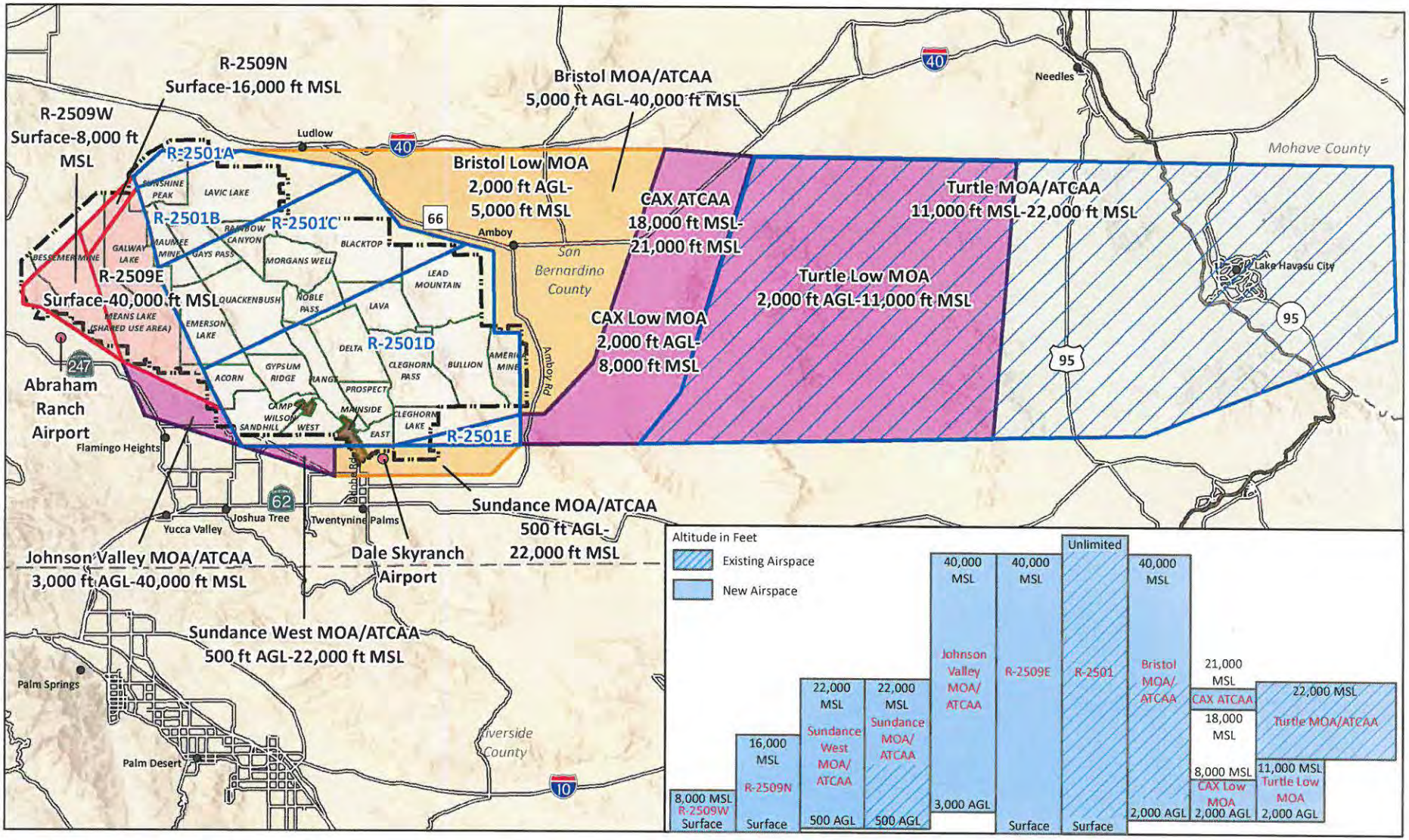
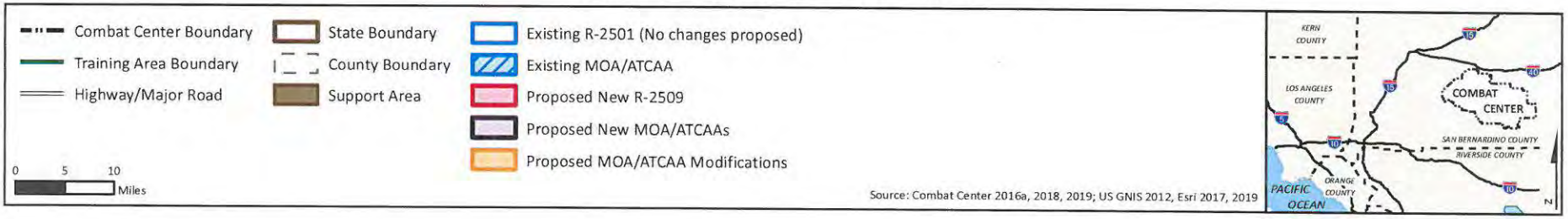


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

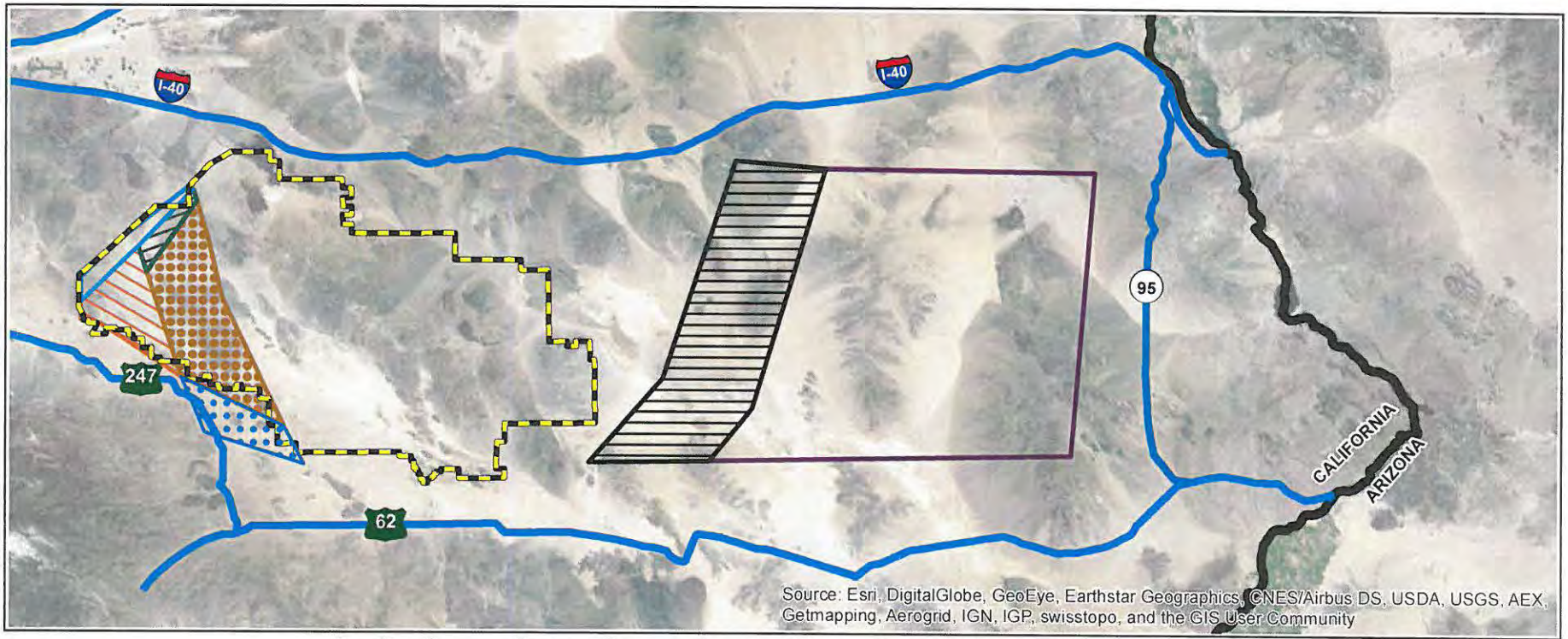


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

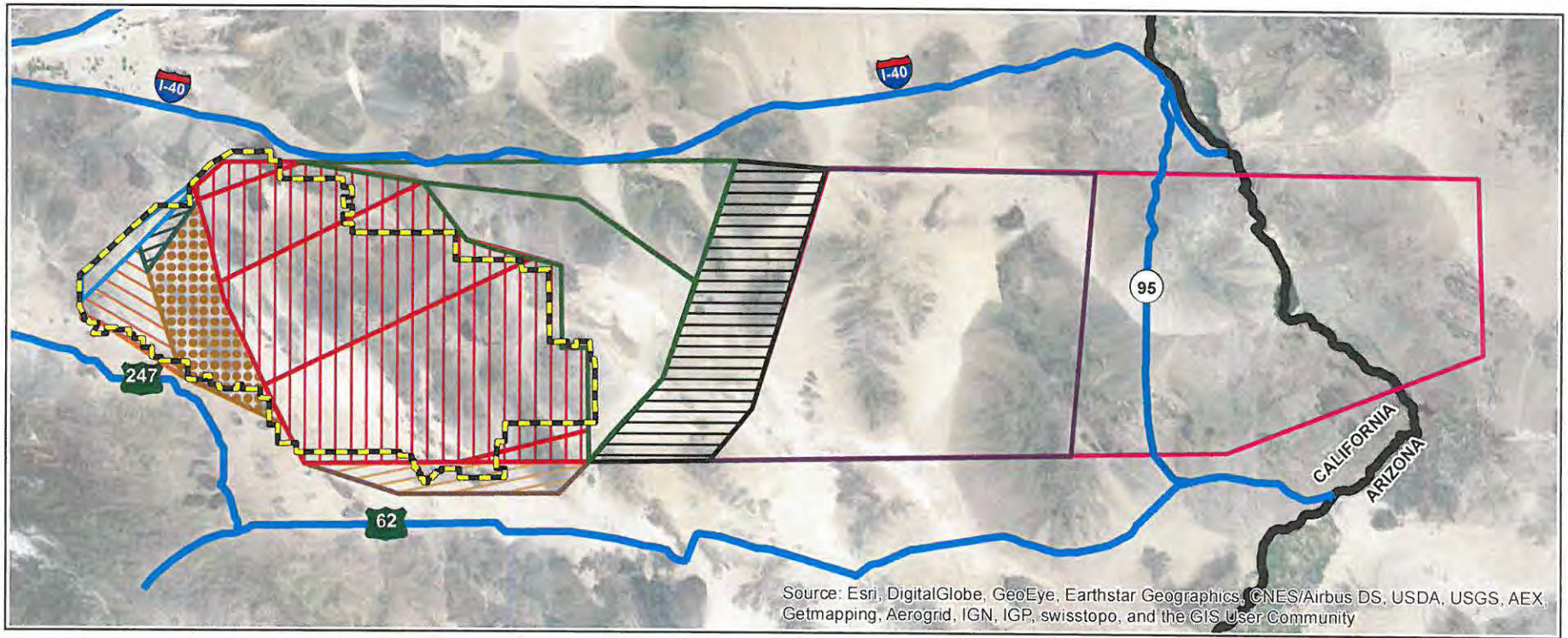


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

AHAMAKAV CULTURAL SOCIETY
Fort Mojave Indian Tribe
P.O. Box 5990 Mohave Valley, Arizona 86440
Phone (928) 768-4475 • Fax (928) 768-7996

August 15, 2019 FMIT P006C-19-0101 081519

Major Peter A. Baker, Director
United State Marine Corps
Environmental Affairs
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center
Box 788110
Twentynine Palms, California 92278-8110

Reference: Section 106 Consultation for Proposed Changes to Airspace Designations
ISD 12E/19-0101

Dear Major Baker,

The Fort Mojave Indian Tribe has evaluated your submission, dated July 30, 2019 in reference to proposed changes to airspace designations above and around the United States Marine Corps Ground Task Force Training Command Center in Twentynine Palms, California.

The project involves changing existing airspace designations into temporary, and permanent designations upon approval with the Federal Aviation Administration (FAA). According to your letter (July 30, 2019), there will be minimal changes to existing "visual, atmospheric, or audible elements that could potentially diminish the integrity," of any historic properties within the installation. Nevertheless, the region continues to hold cultural importance for Mojave and has a rich ethnographic history, including the value of cultural viewsheds and soundscapes found within mountain ranges, washes and playas. This is one of the main reasons the cultural landscape needs to be protected. Mojave people traveled and continue to travel throughout the Twentynine Palms area. The Fort Mojave Indian Tribe agrees that the project as described **will not adversely affect properties of cultural or sacred significance to the Fort Mojave Indian Tribe.** The findings of this S106 review are a determination of **No Adverse Effect.**

In accordance with the National Historic Preservation Act, [NHPA 16U.S.C. 470 et seq.] 1966, undertakings that have a direct bearing on the review process are referred to in S101(d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969). **The FMIT concurs that as a part of the scoping process the United States Marine Corps, Marine Air Ground Task Force Training Command Marine Corps Air Ground Combat Center fulfilled NHPA compliance by consulting with the Fort Mojave Indian Tribe through the AhaMakav Cultural Society regarding the *proposed Changes to Airspace Designations* at Twentynine Palms, California.**

The FMIT appreciates this opportunity to provide our comments and we look forward to continuing our combined efforts in achieving mutually agreed objectives. For the Mojave people, avoidance is the most acceptable form of conservation management for preserving and protecting our ancestral cultural landscapes. Please inform AhaMakav if during the project cultural resources are inadvertently discovered. We will be happy to assist.

If you have any questions, please do not hesitate to contact me at (928) 768-4475, or by email, at lindaotero@fortmojave.com.

Thank you for consulting with the FMIT on this matter.

Sincerely,

Ms. Linda Otero, Director, AhaMakav Cultural Society
Fort Mojave Indian Tribe

Cc: Mr. Timothy Williams, Chairman Fort Mojave Indian Tribe
Mr. Shan Lewis, Vice Chairman, Fort Mojave Indian Tribe
Ms. Janelle Harrison, MA, RPA 29 Palms, Environmental Affairs
janelle.harrison@usmc.mil
Mr. Tristan Tozer, CA SHPO
Ms. Dawn Hubbs, Consultant, Fort Mojave Indian Tribe

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0099
JUL 30 2019

Mr. Robert Martin
Chairman
Morongo Band of Mission Indians
12700 Pumarra Road
Banning, CA 92220

Attention: T. Armstrong

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0099
JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

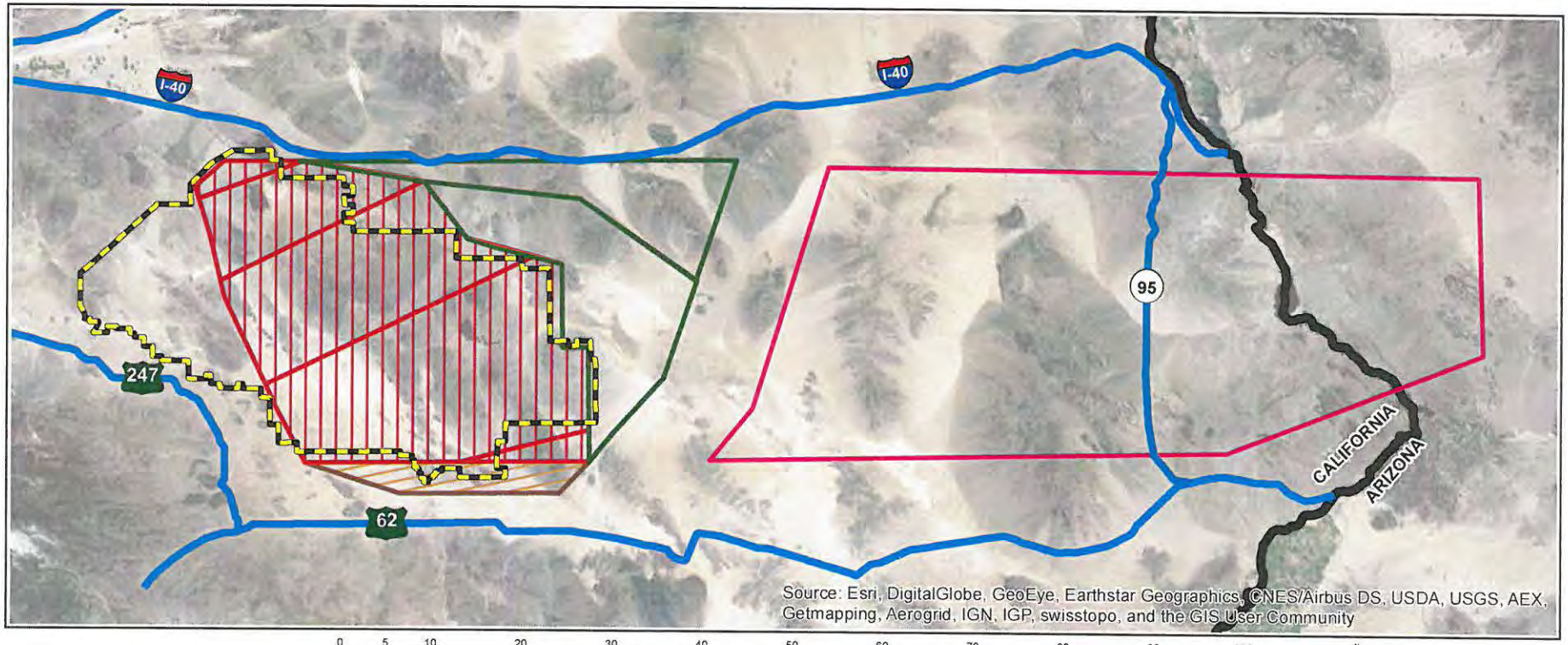


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

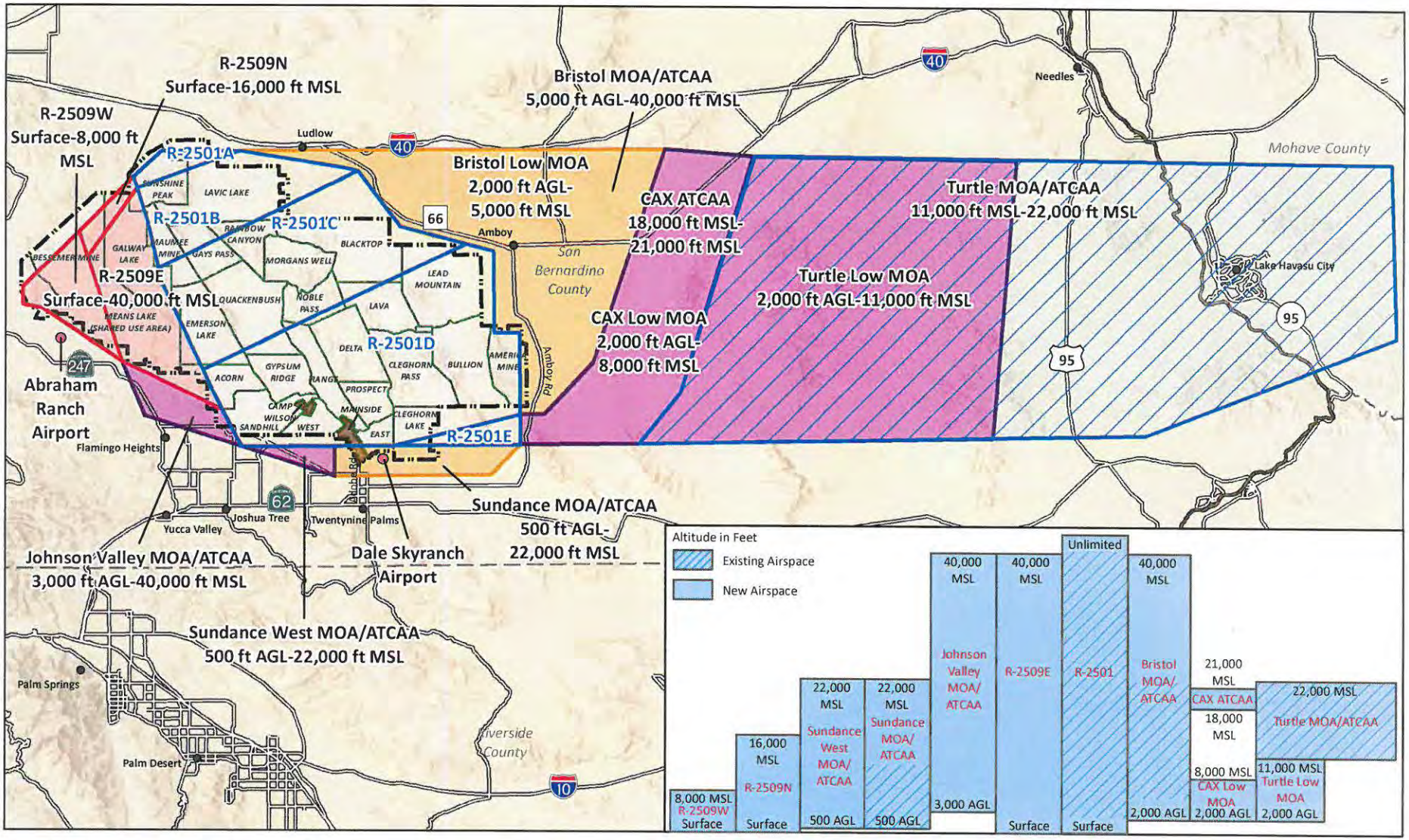
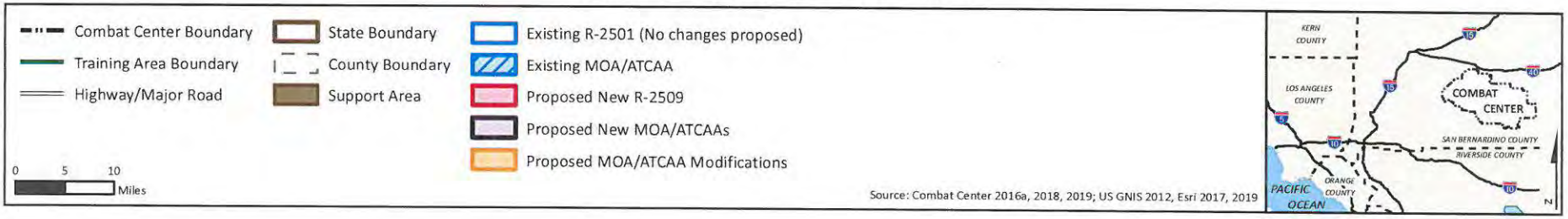


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

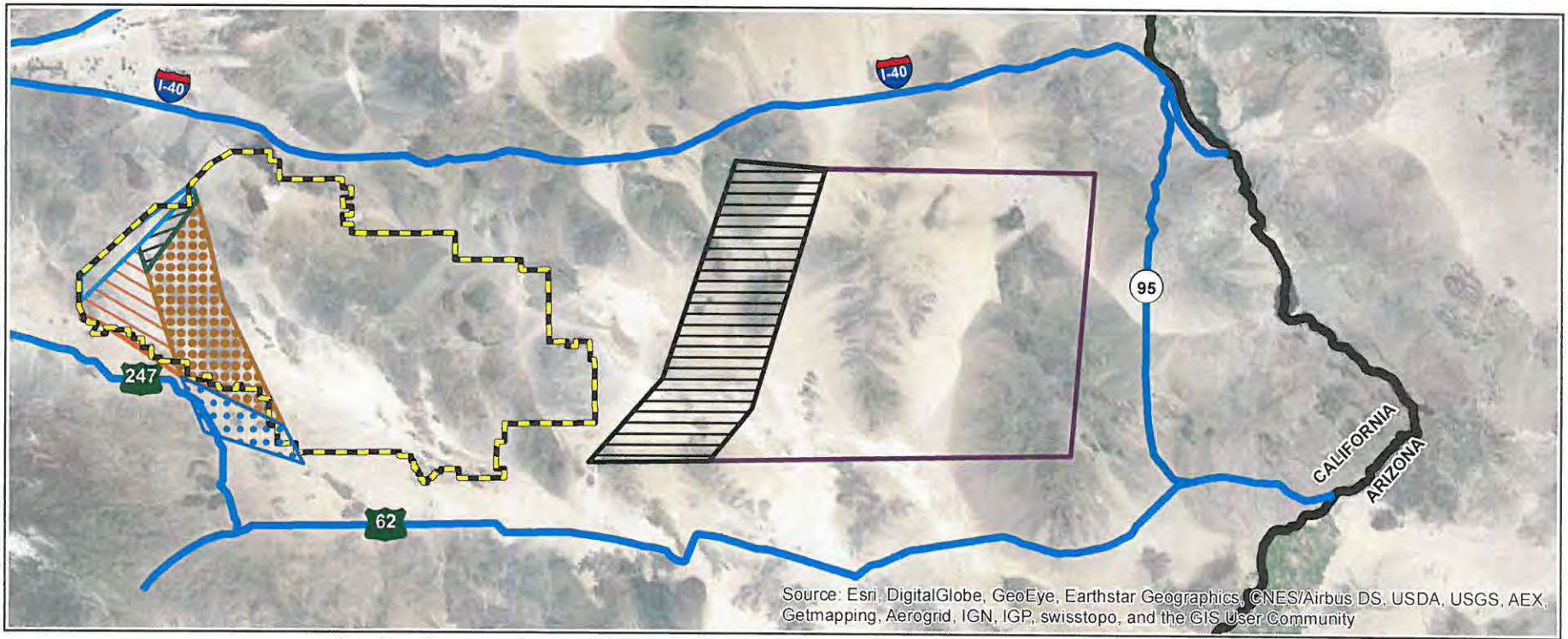


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

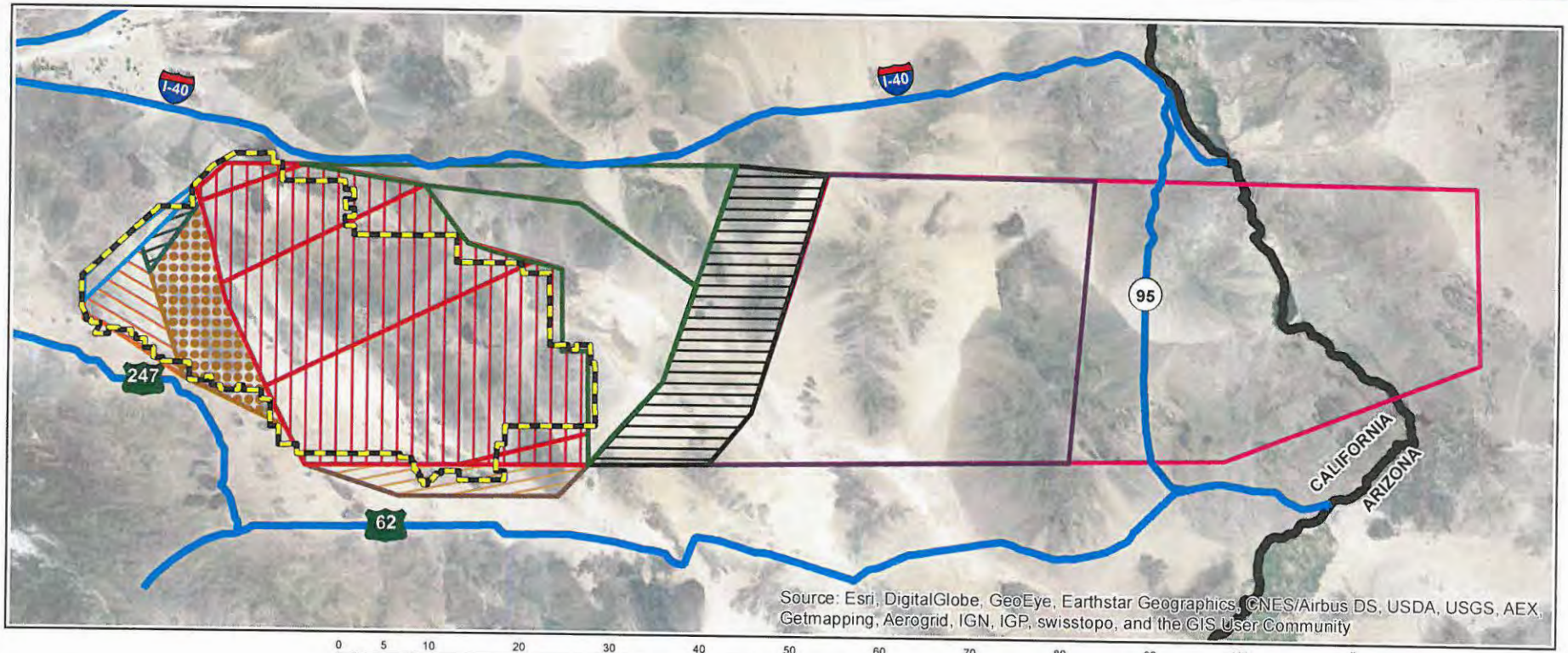


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

From: Tribal Historic Preservation Office
To: Harrison CIV Janelle L
Subject: [Non-DoD Source] Proposed Changes to Airspace Designations
Date: Wednesday, August 7, 2019 1:01:18 PM

Hello Janelle,

Regarding the above referenced project, we have no additional information to provide at this time.

Thank you for reaching out to our office.

Sincerely,

Travis Armstrong

Tribal Historic Preservation Officer

Morongo Band of Mission Indians

951-755-5259

Email: thpo@morongo-nsn.gov

The information contained in this communication is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, or distribution of this information is strictly prohibited and may be unlawful.

For your safety, the contents of this email have been scanned for viruses and malware.

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0098
JUL 30 2019

Ms. Lynn Valbuena
Chairwoman
San Manuel Band of Mission Indians
26569 Community Center Drive
Highland, CA 92346

Attention: L. Clauss

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0098

JUL 30 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures:
1. Existing airspace designations
2. Temporary airspace designations proposed for change
3. Description of proposed temporary and permanent airspace changes
4. Permanent airspace designations for change
5. Resulting Permanent airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

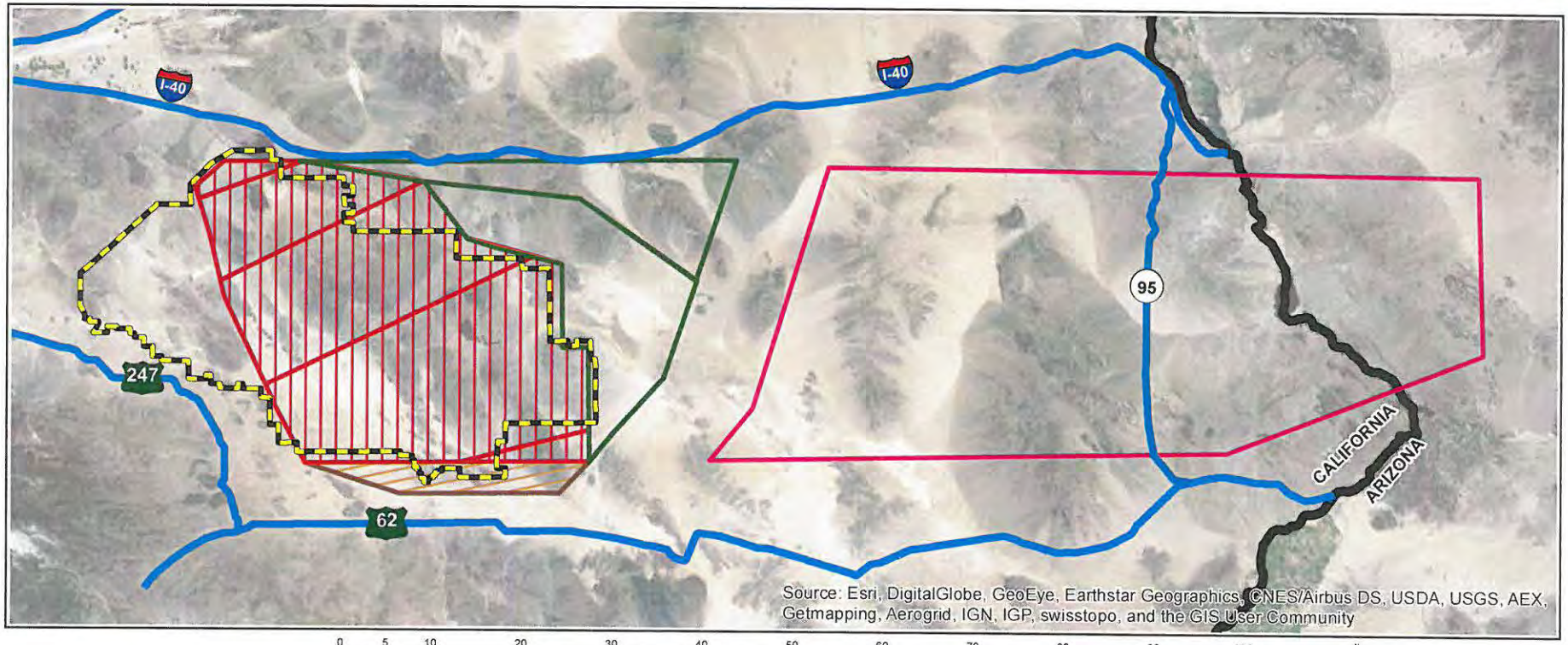


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

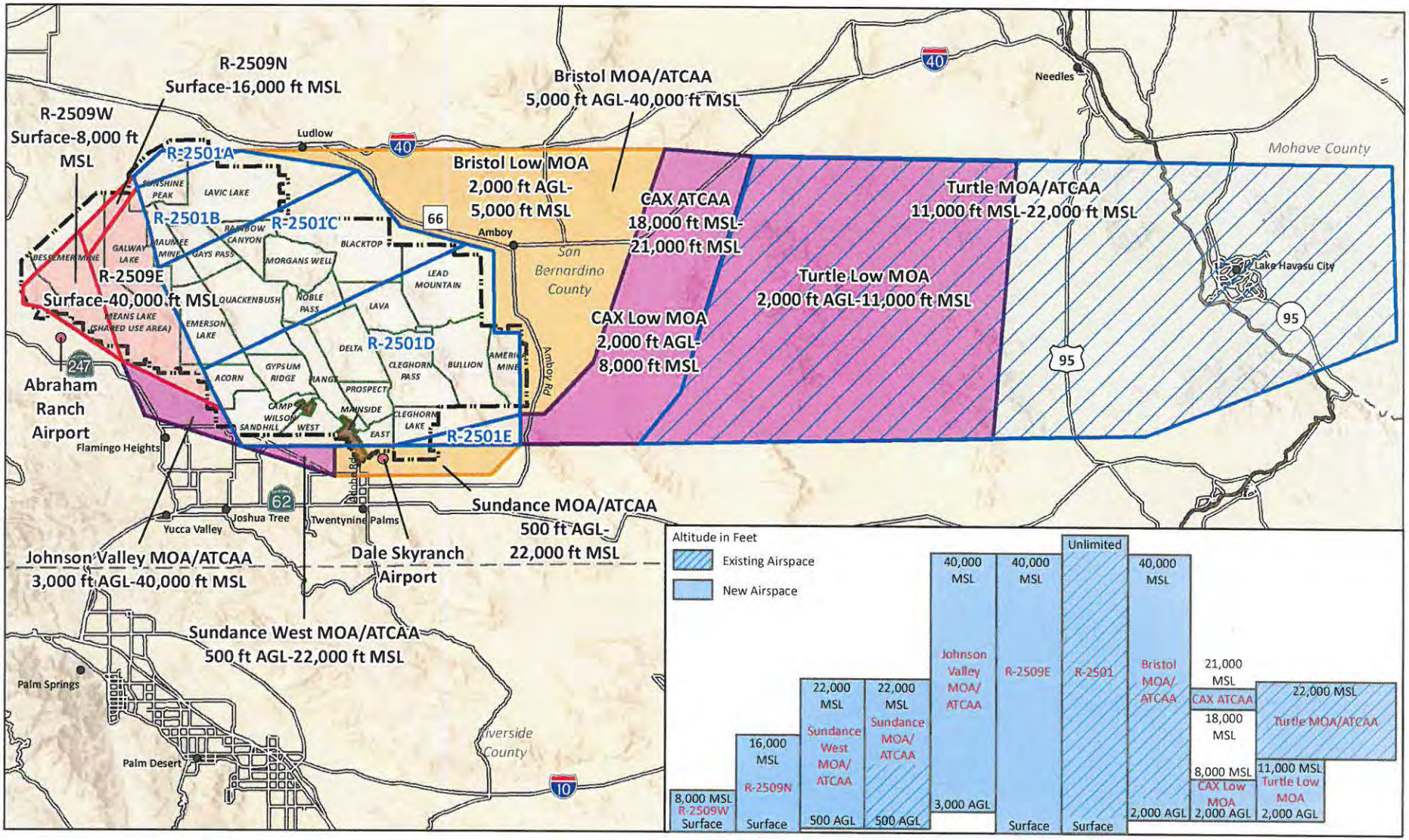
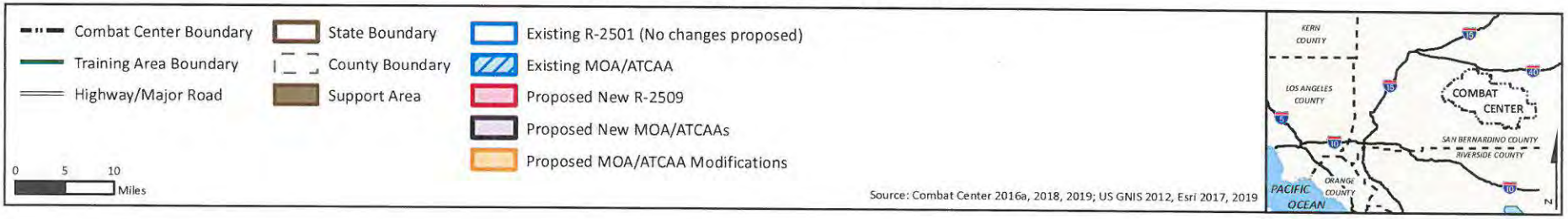


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

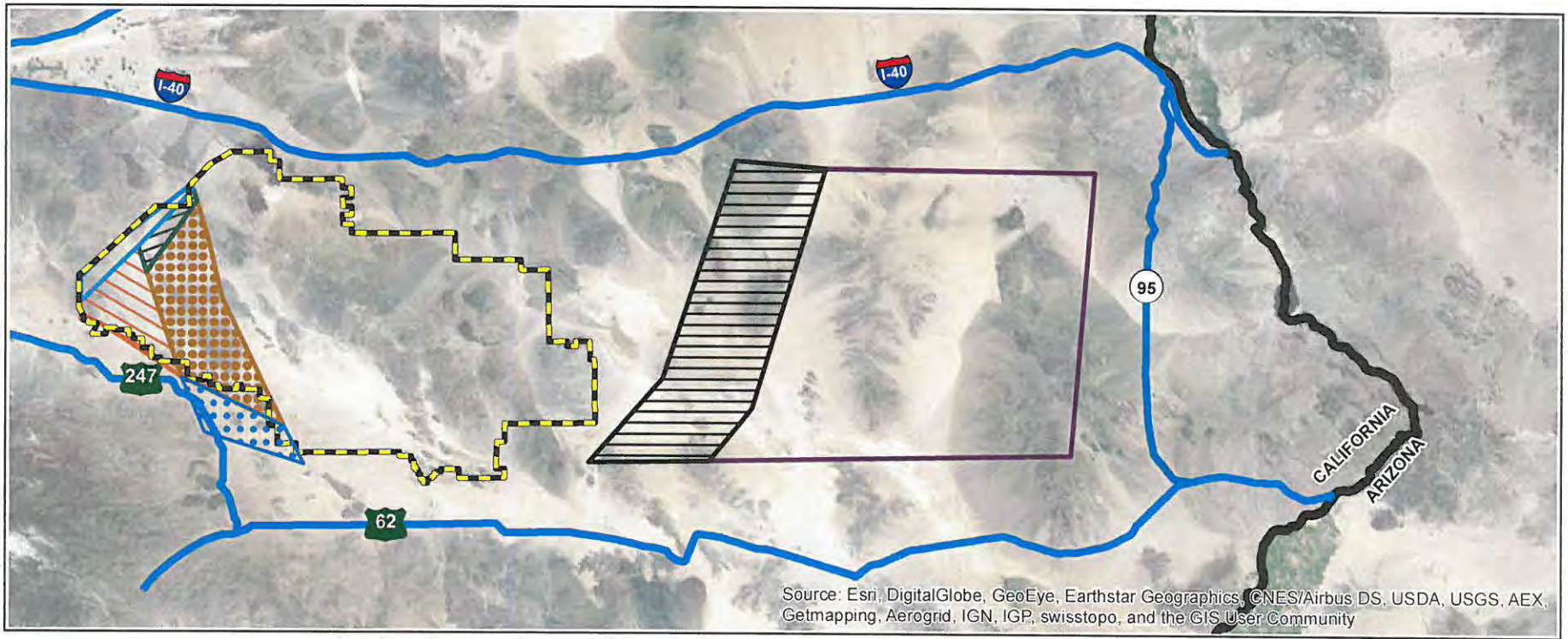


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

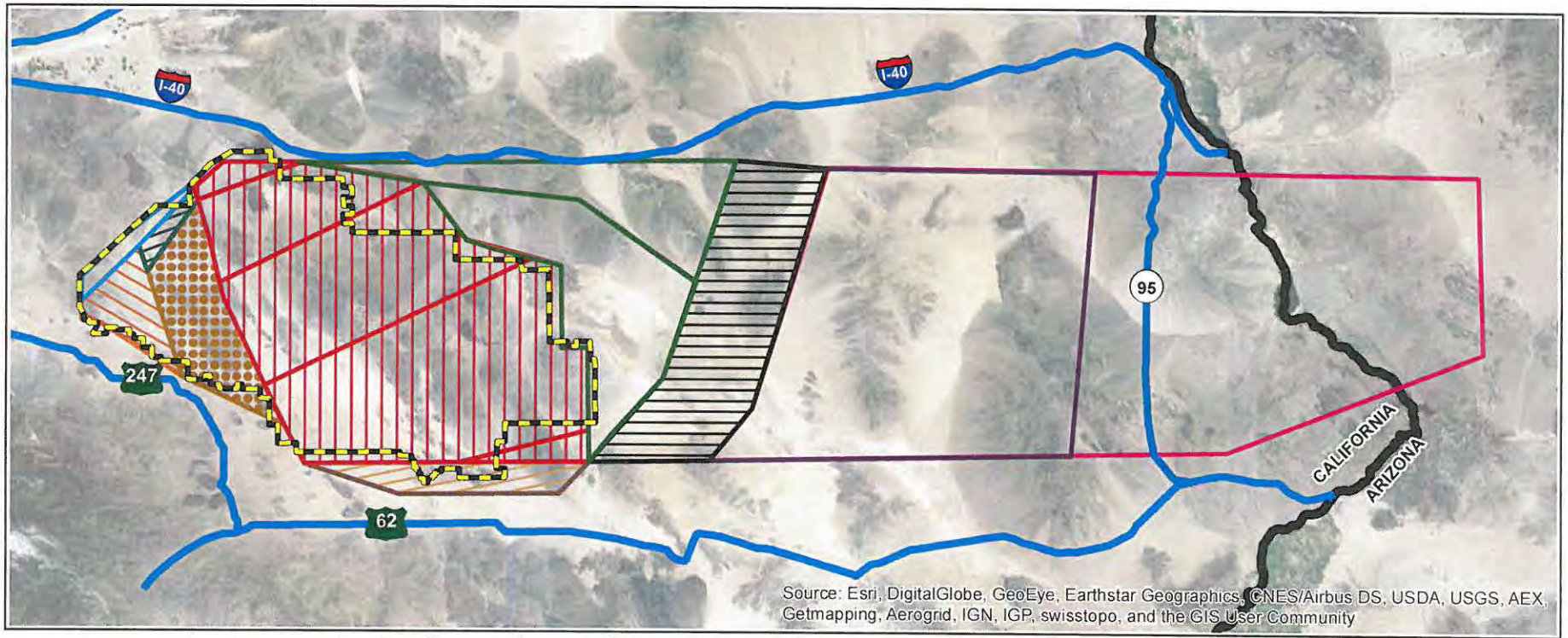


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

From: Lee Clauss
To: Christensen CIV Walter J; Harrison CIV Janelle L
Subject: [Non-DoD Source] Proposed Revised Air Space Designations
Date: Friday, September 6, 2019 9:09:58 AM

Good morning, Walter,

Thank you for providing San Manuel Band of Mission Indians (SMBMI) an opportunity to review and comment on the above-referenced undertaking. The SMBMI Cultural Resources Management (CRM) Department has completed its review of the correspondence and associated documents, which were received on August 2, 2019. Based on that initial paper screen and our in-depth conversation yesterday at the annual multi-tribal meeting on this subject, it has become apparent that in order for a thorough Section 106 based assessment to be completed, the CRM Department will need to be supplied with the EA that has been drafted for this project. Once the EA is received by the Tribe, it will be reviewed and comments on historic properties and any direct, indirect, or cumulative effects to such properties will be provided to MCAGCC within 30 days.

Thank you again for the additional explanation provided yesterday regarding this project. I look forward to receiving the EA in the near future. As always, should you have any questions in the interim, please do not hesitate to contact me at your convenience, as I will continue to be your POC for this project.

Thank you,
Lee

Lee Clauss
DIRECTOR, CULTURAL RESOURCES MANAGEMENT
O: (909) 864-8933 x503248
Internal: 50-3248
M:(909) 633-5851
26569 Community Center Drive Highland California 92346

THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You

From: Lee Clauss
To: Harrison CIV Janelle L
Subject: [Non-DoD Source] Re: MCAGCC Section 106 for PSUA Environmental Assessment
Date: Wednesday, November 6, 2019 9:41:00 AM

Good morning, Janelle,

I am writing to follow up on the SMBMI CRM Department's review of the EA for the PSUA project and its implications for the Department's comments pertaining to the Section 106-based conclusions that MCAGCC has drawn.

Given that MCAGCC staff indicated using the information contained in the EA to guide their determination of "no historic properties affected" for the PSUA undertaking, and given SMBMI's comments pertaining to cumulative effects, emissions effects on rock art, and noise/vibratory effects on cultural resources, SMBMI cannot concur with MCAGCC's determination at this time.

Our review has led to the conclusion that additional study and clarification is needed on the afore-mentioned topics before determining that historic properties will not be affected or that any potential adverse effects to historic properties can be properly and substantially mitigated.

Please let me know if you wish to discuss this undertaking or SMBMI's comments further. I will continue to be your main POC for the project and encourage you to contact me at your convenience to provide additional insight about MCAGCC's next steps and plans with regard to the PSUA undertaking.

Respectfully,
Lee

Lee Clauss
DIRECTOR, CULTURAL RESOURCES MANAGEMENT
O: (909) 864-8933
Internal: 50-3248
M:(909) 633-5851
26569 Community Center Drive Highland California 92346

> On Nov 5, 2019, at 4:09 PM, Harrison CIV Janelle L <janelle.harrison@usmc.mil> wrote:
>
> Alexandra,
>
> Thank you for your comments regarding the EA for the PSUA. While you provided
> technical comments for a few revisions in the EA, I have not received a
> response to the section 106 consultation and the Combat Centers finding of "no
> adverse effects" to historic properties.
>
> Lee, could you provide further comments in regards to this based on
> Alexandra's review?
>
> Thank you.
>
> v/r
> Janelle Harrison M.A., RPA

> Cultural Resources Manager
> Environmental Affairs Division
> Installation Support Directorate
> Building 1418 Brown Road
> Box 788110
> Twentynine Palms CA 92278
>
> Office: 760-830-7641
> Cell: 760-662-3618
> Email: Janelle.harrison@usmc.mil
> Curation: 760-830-1196 (if I can't be reached
> In my office/Tues. only)
>
>
> -----Original Message-----
> From: Alexandra McCleary [mailto:Alexandra.McCleary@sanmanuel-nsn.gov]
> Sent: Tuesday, November 5, 2019 2:25 PM
> To: Harrison CIV Janelle L <janelle.harrison@usmc.mil>
> Cc: Lee Clauss <LClauss@sanmanuel-nsn.gov>
> Subject: [Non-DoD Source] RE: MCAGCC Section 106 for PSUA Environmental
> Assessment
>
> Dear Janelle,
>
>
>
> Thank you for providing the attached documentation and for affording SMBMI the
> opportunity to review the materials. Attached are my comments on the PSUA EA.
>
>
>
> Respectfully,
>
>
>
> Alexandra
>
>
>
>
>
> Alexandra McCleary
> TRIBAL ARCHAEOLOGIST
> O: (909) 864-8933 x502023
> M: (909) 633-0054
> 26569 Community Center Drive Highland CA 92346
> <http://www.sanmanuel-nsn.gov>
>
>
>
>
>
> From: Lee Clauss <LClauss@sanmanuel-nsn.gov>
> Sent: Tuesday, November 5, 2019 8:44 AM
> To: Alexandra McCleary <Alexandra.McCleary@sanmanuel-nsn.gov>
> Subject: Fwd: MCAGCC Section 106 for PSUA Environmental Assessment
>

>
>
>
> FYI...please get Comments to Janelle today
>
>
>
> Thanks!
>
> Lee
>
>
>
> Lee Clauss
> DIRECTOR, CULTURAL RESOURCES MANAGEMENT
> O: (909) 864-8933
> Internal: 50-3248
> M: (909) 633-5851
> 26569 Community Center Drive Highland California 92346
> <http://www.sanmanuel-nsn.gov>
>
>
>
>
>
> Begin forwarded message:
>
> From: Harrison CIV Janelle L <janelle.harrison@usmc.mil
> <mailto:janelle.harrison@usmc.mil> >
> Date: November 5, 2019 at 8:35:52 AM PST
> To: Lee Clauss <LClauss@sanmanuel-nsn.gov <mailto:LClauss@sanmanuel-nsn.gov>
> Subject: MCAGCC Section 106 for PSUA Environmental Assessment
>
> Good morning Lee,
>
> I wanted to see if you've had an opportunity to review the draft EA for the
> PSUA? I just submitted my comments on draft v2 and I've attached them for
> you to see.
>
> Do you have any questions regarding the EA? I might be able to answer them.
>
> I'm hoping to send a second consultation letter to SHPO by Monday asking for
> concurrence that no historic properties are "adversely effected" and I would
> like to forward the Tribal comments along with the letter.
>
> v/r
> Janelle Harrison M.A., RPA
> Cultural Resources Manager
> 29 Palms Marine Corps Air Ground Combat Center
> Environmental Affairs
> Installation Support Directorate
> Building 1418 Brown Rd
> Box 788110
> Twentynine Palms, CA. 92278
>
>
>

> ++
> For suspicious emails please contact the IT Service Desk at extension 4500 or
> (909) 863-5700.
> If you are on your Outlook client, report the suspicious email by clicking on
> Report Phish icon in your Outlook toolbar.
> If you are on a mobile device, forward the suspicious email to
> spam@sanmanuel.com <mailto:spam@sanmanuel.com> .
>
> THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH
> IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL
> AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message
> is not the intended recipient or agent responsible for delivering the message
> to the intended recipient, you are hereby notified that any dissemination or
> copying of this communication is strictly prohibited. If you have received
> this electronic transmission in error, please delete it from your system
> without copying it and notify the sender by reply e-mail so that the email
> address record can be corrected. Thank You
>
> ++
> For suspicious emails please contact the IT Service Desk at extension 4500 or (909) 863-5700.
> If you are on your Outlook client, report the suspicious email by clicking on Report Phish icon in your Outlook toolbar.
> If you are on a mobile device, forward the suspicious email to spam@sanmanuel.com.
THIS MESSAGE IS INTENDED ONLY FOR THE USE OF THE INDIVIDUAL OR ENTITY TO WHICH IT IS ADDRESSED AND MAY CONTAIN INFORMATION THAT IS PRIVILEGED, CONFIDENTIAL AND EXEMPT FROM DISCLOSURE UNDER APPLICABLE LAW. If the reader of this message is not the intended recipient or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination or copying of this communication is strictly prohibited. If you have received this electronic transmission in error, please delete it from your system without copying it and notify the sender by reply e-mail so that the email address record can be corrected. Thank You

UNITED STATES MARINE CORPS
MARINE AIR GROUND TASK FORCE TRAINING COMMAND
MARINE CORPS AIR GROUND COMBAT CENTER
BOX 788110
TWENTYNINE PALMS, CALIFORNIA 92278-8110

5090.4
ISD 12E/19-0100

JUL 30 2019

Mr. Thomas Tortez
Chairman
Torres-Martinez Desert Cahuilla Indians
66-725 Martinez Street
Thermal, CA 92274

Attention: T. Tortez

SUBJECT: PROPOSED CHANGES TO AIRSPACE DESIGNATIONS

The Marine Corps Air Ground Combat Center (Combat Center) proposes to change airspace designations above and around the installation with the Federal Aviation Administration (FAA). Existing airspace designations are depicted in enclosure (1). Temporary airspace designations that would change in this proposal are depicted in enclosure (2) and described in enclosure (3). Permanent airspace designations that would change in this proposal are depicted in enclosure (4). Permanent resulting airspace designations after implementing the proposed changes are depicted in enclosure (5).

AREA OF POTENTIAL EFFECT

The Combat Center has defined the area of potential effects (APE) as the airspace from surface level to the top of each airspace designation proposed for change, plus a one mile horizontal buffer.

SITE IDENTIFICATION AND EVALUATION

Per 36 CFR 800.4 (b)(1), the Combat Center's record search has taken into account the magnitude and nature of the undertaking, as well as the nature and extent of potential effects on historic properties in the APE. There is one known historic property listed on the National Register of Historic Places (NRHP); approximately 352 sites identified as potentially eligible historic properties; and approximately 1,768 sites that are currently undetermined for eligibility for the NRHP located on the Combat Center lands. This undertaking will not have any ground disturbance and minimal introduction of visual, atmospheric, or audible elements that could potentially diminish the integrity of a properties' significance per 36 CFR 800.5 (a)(2)(v).

DETERMINATIONS

The Combat Center seeks your concurrence on its determinations that the undertaking will result in "No Adverse Effect" to historic properties in accordance with the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR 800.4(d)(1).

5090.4
ISD 12E/19-0100
JUL 3 0 2019

CONTACT

Please contact Ms. Janelle Harrison, Cultural Resources Manager, at janelle.harrison@usmc.mil or (760) 830-7641.

Sincerely,

PETER A. BAKER
Major, U.S. Marine Corps
Director, Environmental Affairs

Enclosures: 1. Existing airspace designations
2. Airspace designations proposed for change
3. Description of proposed airspace changes
4. Resulting airspace designations

MARINE CORPS AIR GROUND COMBAT CENTER

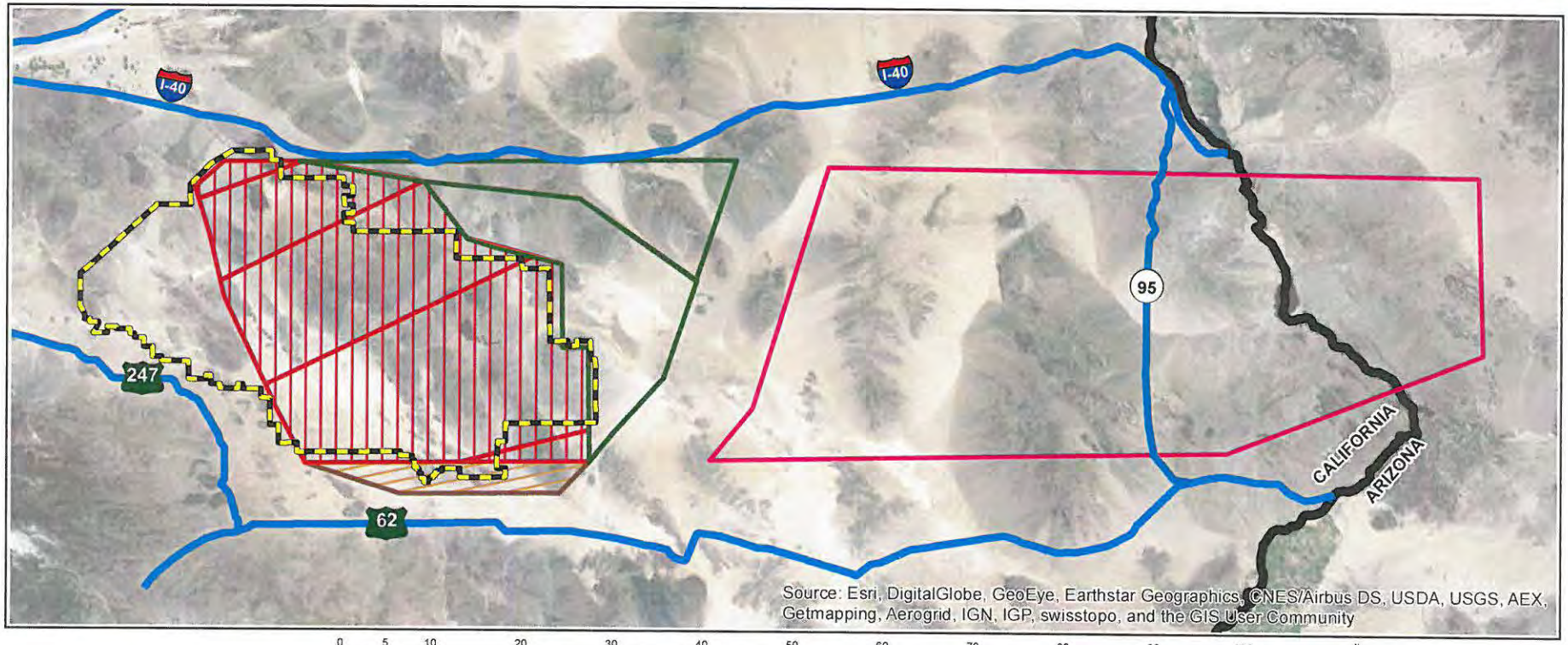


FIGURE 1

Legend

- MCAGCC Boundary
- R2501 A -E
- Bristol MOA / ATCAA
  Exisitng SUA but proposed modifications
- Sundance MOA / ATCAA
  Exisitng SUA but proposed modifications
- Turtle MOA / ATCAA
  Exisitng SUA but proposed modifications

EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (1)

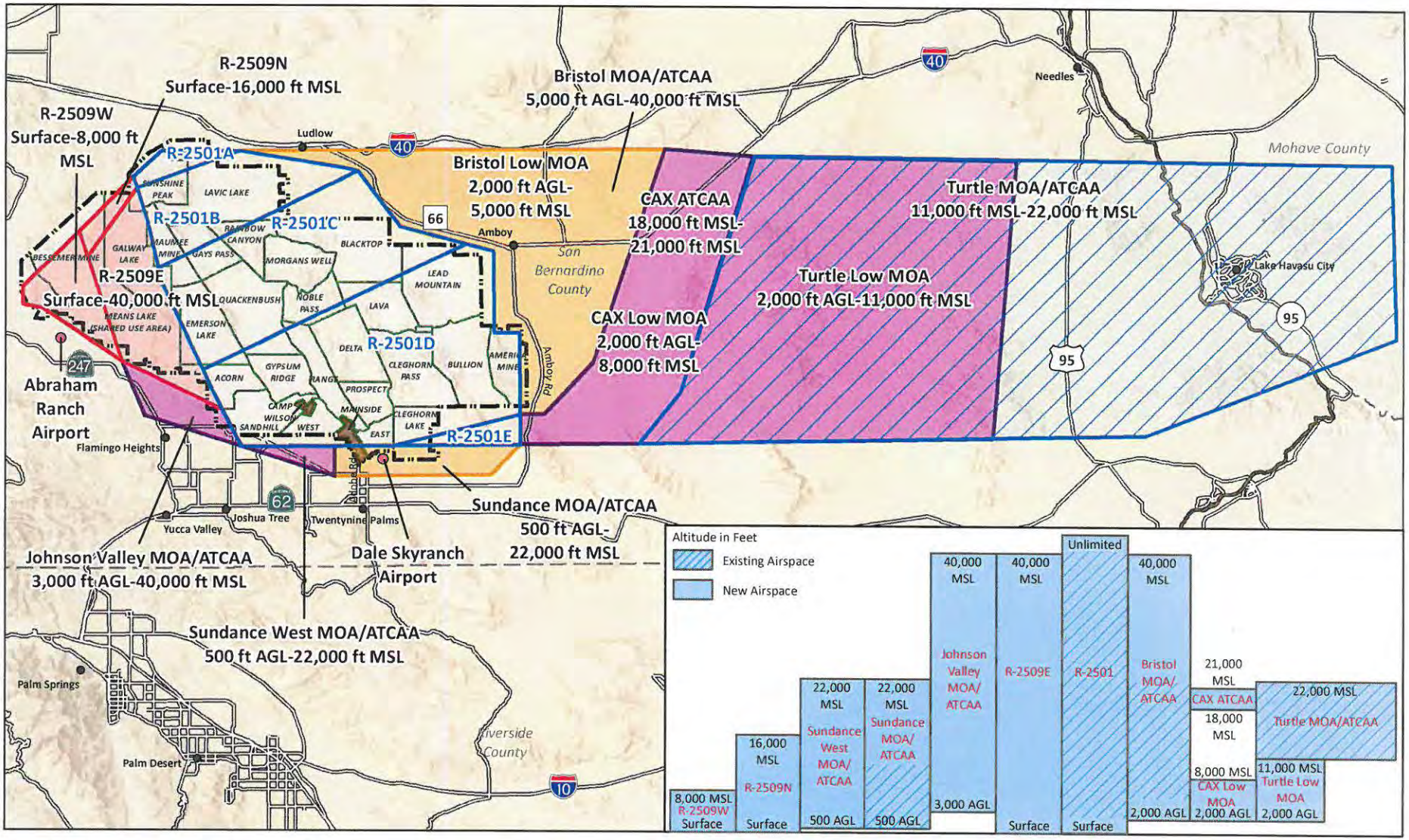
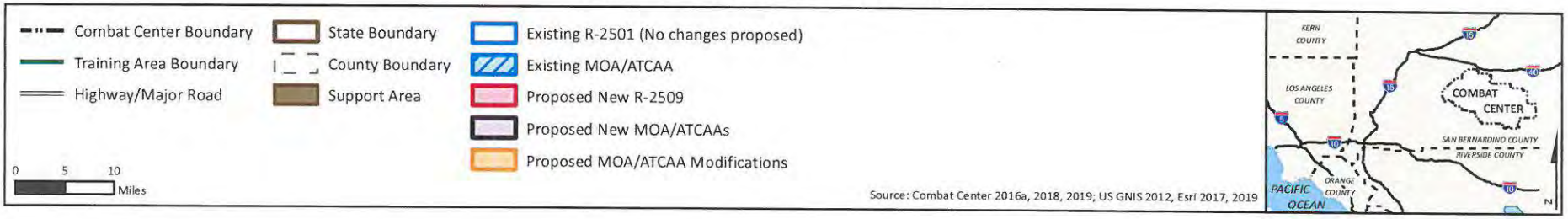


Figure 2. Temporary Special Use Airspace



ENCLOSURE (2)

PROPOSED SPECIAL USE AIRSPACE FLIGHT LEVELS

AIRSPACE	EXISTING	PROPOSED TEMPORARY	PROPOSED PERMANENT
R-2501 A-E	SURFACE - UNLIMITED	SURFACE- 16,000 ft MSL	NO CHANGE- SURFACE - UNLIMITED
CAX CORRODOR MOA/ATCAA	NOT DESIGNATED- OCCASIONAL USE	2,000 ft MSL – 8,000 ft MSL	MOA= 2,000 ft AGL- 8,000 ft MSL ATCAA= 18,000 ft MSL – 21,000 ft MSL
JOHNSON VALLEY MOA/ ATCAA	NONE	3,000 ft MSL – 16,000 ft MSL	1,500 ft AGL – 40,000 ft MSL
SUNDANCE MOA/ATCAA	MOA= 500 ft AGL – 10,000 ft MSL	10,001 ft MSL- 22,000 ft MSL	MOA/ATCAA 500 ft AGL – 22, 000 ft MSL
TURTLE MOA/ATCAA	11,000 ft MSL- 22, 000 ft MSL	NO CHANGE	NO CHANGE
*TUTLE LOW MOA	NONE	2,000 ft MSL- 11,000 ft MSL	2,000 ft AGL – 11, 000 ft MSL
BRISTOL MOA/ATCAA	5,000 ft MSL – 18,000 ft MSL	2,000 ft MSL – 5,000 ft MSL	2,000 ft MSL- 40,000 ft MSL

Notes: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Areas; MSL = Mean Sea Level

**Turtle Low MOA/ATCAA is proposed special use airspace below the western portion of the existing Turtle MOA/ATCAA. The special use airspace for the Turtle MOA/ATCAA does not add additional SUA horizontally, only vertically.*

ENCLSOURE (3)

MARINE CORPS AIR GROUND COMBAT CENTER

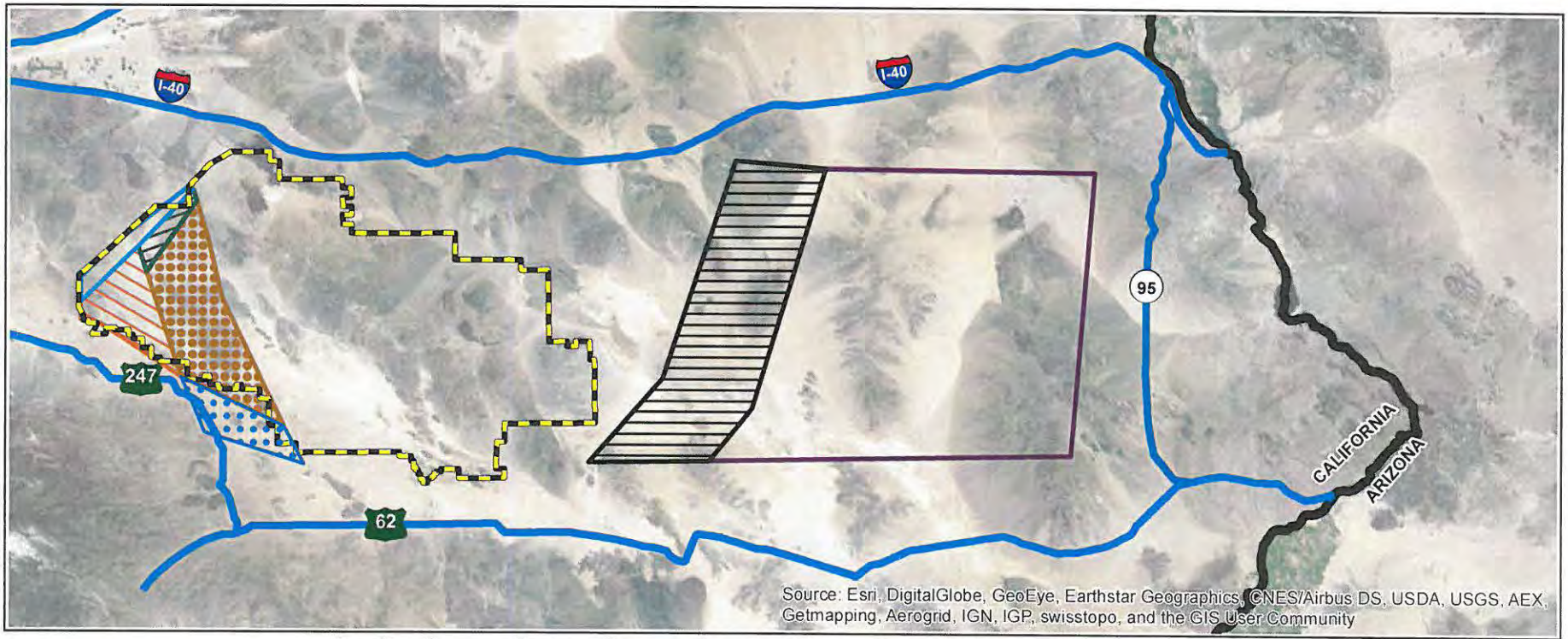


FIGURE 4

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- CAX Corridor MOA / ATCAA
- Turtle Low MOA
- R2509 A
- R2509 B
- R2509 C
- R2509 D

PROPOSED NEW
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

ENCLSOURE (4)

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

MARINE CORPS AIR GROUND COMBAT CENTER

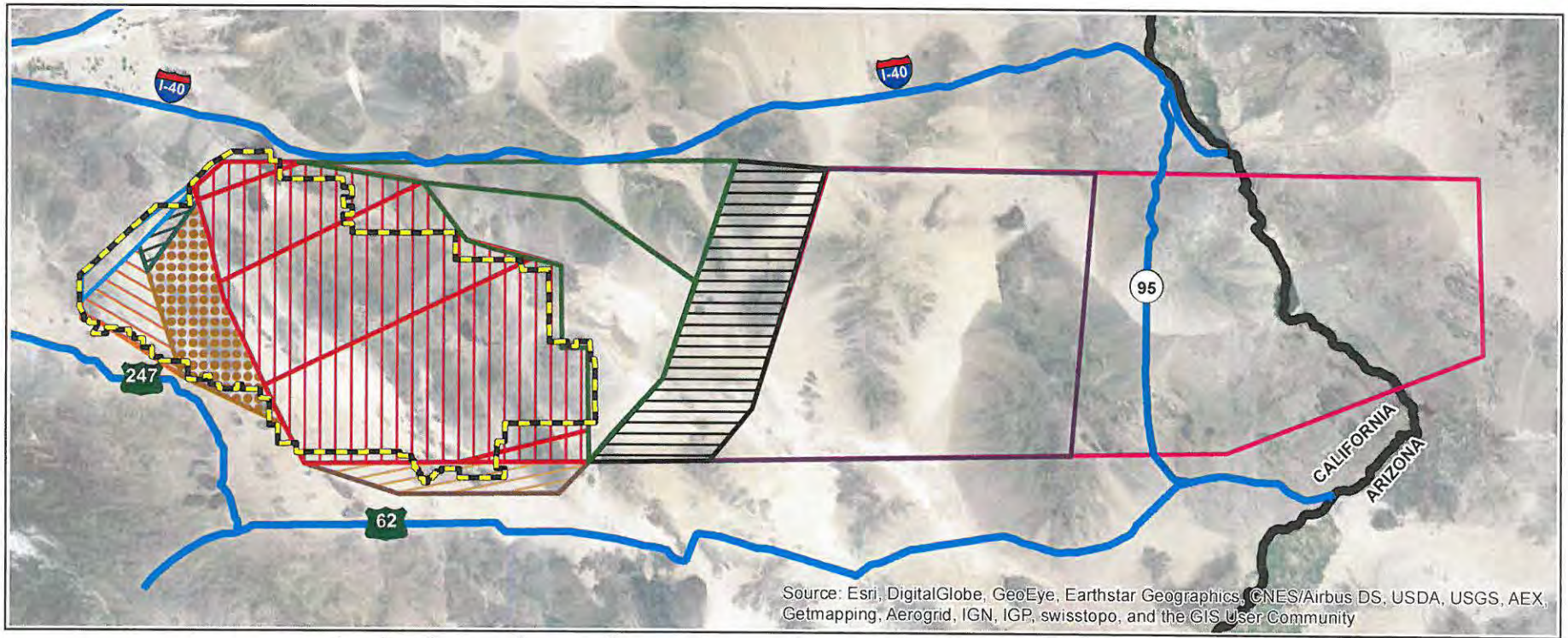


FIGURE 5

Legend

- MCAGCC Boundary
- Johnson Valley MOA/ATCAA
- Bristol MOA / ATCAA
- CAX Corridor MOA / ATCAA
- R2509 A
- R2509 B
- R2509 C
- R2509 D
- R2501 A -E
- Sundance MOA / ATCAA
- Turtle Low MOA
- Turtle MOA / ATCAA

RESULTING NEW AND EXISTING
SPECIAL USE AIRSPACE

Coordinate System: WGS 1984 UTM Zone 11N
Projection: Transverse Mercator
Datum: World Geodetic 1984
Units: Meters

UNCLASSIFIED//
FOR OFFICAL USE ONLY// (FOUO)

ENCLOSURE (5)

Section 106 Administrative Record

This page intentionally left blank.

Permanent Special Use Airspace Establishment and Modifications
Section 106 Consultation Administrative Record

Marine Corps Air Ground Combat Center
Twentynine Palms, CA

Entity	1st Contact (email)	1st Contact (mailed)	Comments	2nd Contact (email)	2nd Contact (mailed)	Comments
California SHPO	7/31/2019	8/2/2019	Received comment from CASHPO on 8/23/2019. SHPO commented that the APE for the project adequate to account for direct and indirect effects. They recommended consultation with Native American tribes.	4/14/2020; 3/8/2021	4/16/2020	Received comment from CASHPO on 5/6/2021. SHPO concurs the undertaking will not adversely affect historic properties.
Agua Caliente Band of Cahuilla Indians	7/31/2019	8/2/2019	Received comment from ACBCI on 9/4/2019. Tribe agrees with agency determination of no effect, would like to be contacted in case of there are changes in scope that may affect this determination.			
Augustine Band of Cahuilla Indians	7/31/2019	8/2/2019	Received comment from ABCI on 2/6/2024. No comment on project, would like to be contacted in case of post-review discovery.			
Cabazon Band of Mission Indians	7/31/2019	8/2/2019				
Cahuilla Band of Indians	7/31/2019	8/2/2019	Received comment from Cahuilla on 2/5/2024. No comment on project, would like to be contacted in case of post-review discovery.			
Chemehuevi Indian Tribe	7/31/2019	8/2/2019				
Colorado River Indian Tribes	7/31/2019	8/2/2019				
Fort Mojave Indian Tribe	7/31/2019	8/2/2019	Received comment on 8/15/2019. Tribe agreed with the determination of no adverse effect to properties of cultural and sacred significance. Stated that MAGTFTC completed Section 106 compliance for the project.			
Morongo Band of Mission Indians	7/31/2019	8/2/2019	Received comment on 8/7/2029. No comment on the project.			

Permanent Special Use Airspace Establishment and Modifications
Section 106 Consultation Administrative Record

Marine Corps Air Ground Combat Center
Twentynine Palms, CA

Entity	1st Contact (email)	1st Contact (mailed)	Comments	2nd Contact (email)	2nd Contact (mailed)	Comments
Yuhaaviatam of San Manuel Nation	7/31/2019	8/2/2019	Received comments from YSMN on 9/6/2019. Tribe requested a copy of the EA draft to review. MAGTFTC and YSMN met in person to discuss the project. Received comment from YSMN on 11/6/2019. Tribe does not concur with no effect finding. Request for additional studies on the effect of noise/vibration on rock art within the PSUA area to determine if there are potential effects that need to be mitigated. MAGTFTC provided additional studies on noise/vibration from the NEPA review for the 2019 Boeing Starliner Launch and the 2012 EIS for the MCAGCC Land Acquisition and Establishment to review. YSMN did not have any further objections to the proposed undertaking.			
Torres Martinez Band of Desert Cahuilla	7/31/2019	8/2/2019				
Twenty-Nine Palms Band of Mission Indians	7/31/2019	8/2/2019				

Signed Memorandum of Understanding

This page intentionally left blank.

Mission Support Services
800 Independence Avenue,
SW.
Washington, DC 20591

U.S. Department
of Transportation
**Federal Aviation
Administration**

R. Martinez
Chief of Staff, U.S. Marine Corps
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center
Box 788100
Twentynine Palms, California 92278-8100

November 7, 2018

Dear R. Martinez,

Thank you for your letter of November 2, 2018 requesting that the Federal Aviation Administration (FAA) participate as a cooperating agency in the U.S. Marine Corp's Environmental Assessment for the proposed establishment of new permanent Special Use Airspace (SUA) in the region of the Marine Corps Air Ground Combat Center at Twentynine Palms, California (aka: Combat Center). In addition to establishing new permanent SUA, the proposed action would modify the lateral boundaries, component sectors, and/or altitude limits of the existing SUA to support ongoing daily training activities.

The FAA appreciates the USMC's recognition of our role as a cooperating agency in the evaluation of SUA and analysis of potential impacts to airspace associated with your project as required by the National Environmental Policy Act (NEPA) and its implementing regulations at 40 C.F.R. Part 1500. Since this USMC proposal involves the use of SUA, the FAA accepts the USMC's request to act as a cooperating agency in accordance with the guidelines set forth in the Memorandum of Understanding (MOU) between the FAA and the Department of Defense (DoD) Concerning SUA Environmental Actions, dated October 4, 2005, and in accordance with the NEPA regulations at 40 C.F.R. Section 1501.6 regarding cooperating agencies, and with FAA Order 7400.2L, Chapter 32, Appendix 8 – *FAA Special Use Airspace Environmental Processing Procedures* which outlines the process by which FAA works with DoD as a cooperating agency on projects involving SUA.

FAA's participation in the development of the EA for this proposed action resides under the jurisdiction of FAA's Western Service Center, Operations Support Group, at 2200 South 216th Street, Des Moines, Washington 98198. Shawn Kozica, the Operations Support Group Manager for the Western Service Center, will assign an environmental specialist to coordinate NEPA document development and reviews. The Western Service Center's environmental specialist will be the focal point for matters related to the review of the USMC's NEPA documentation for this

project and any related airspace issues that will be tracked and coordinated by FAA Headquarters Environmental Policy Group (AJV-114).

While Appendix 8 of FAA Order 7400.2L indicates that the airspace review and environmental impacts review should be conducted in tandem as much as possible, they are still separate processes. Approval of either the aeronautical portion or the environmental impact analysis portion of the NEPA document does not automatically indicate approval of the entire proposal. Enclosed are Appendices 7 and 8 from FAA Order 7400.2L for additional details.

A copy of the USMC's request for FAA's cooperating agency status and this reply are being forwarded to Mr. Shawn Kozica of the Western Service Center's Operations Support Group. Mr. Kozica can be contacted at Mr. Kozica can be contacted at 425-203-4500 or shawn.m.kozica@faa.gov for further review of the NEPA document(s).

For questions regarding NEPA document processing and coordination with the Service Center, please contact either me in the Airspace Policy Group (AJV-11) at (202)-267-1209, or Paula Miller (202)-267-7378 in AJV-114.

Sincerely,

Rodger A. Dean
Manager, Airspace Policy Group
Air Traffic Organization
Federal Aviation Administration

Cc: Shawn Kozica, Operations Support Group Manager, FAA/AJV-W2, Western Service Center
Paula Miller, AJV-114, FAA HQ, Environmental Policy Group
Ken Ready, AJV-113, FAA HQ, Airspace Policy and Regulations Group
Elizabeth Healy, AJV-114, FAA, Western Service Center, Environmental Policy Group
Zachery Likins, USMC Regional Environmental Planner
Scott Kerr, USMC
James Taylor, Lt. Col., USMC/FAA Liaison Officer, AJR-04 HQ
Sean Hook, Maj, USAF, Exec. Dir., USAF/FAA, AJV-11 HQ

Enclosures
Chapter 32, Appendices 7 and 8 from FAA Order 7400.2L

Appendix 7. FAA/DOD Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING BETWEEN
THE FEDERAL AVIATION ADMINISTRATION AND
THE DEPARTMENT OF DEFENSE
Concerning
Environmental Review of Special Use Airspace Actions

I. Purpose and Scope.

The purpose of this Memorandum of Understanding (MOU) is to describe the guidelines for compliance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S.C. 4321) and the Council on Environmental Quality (CEQ) Regulations (40 CFR Parts 1500−1508) without unnecessary duplication of effort by the Federal Aviation Administration (FAA) and the Department of Defense (DOD). This MOU promotes early coordination between FAA and DOD during the environmental review process associated with the establishment, designation, and modification of Special Use Airspace (SUA); permits the application of "lead agency" and "cooperating agency" procedures to environmental assessments (EA) and findings of no significant impact as well as to environmental impact statements (EIS); and provides for the issuance of environmental documents for the development, designation, modification, and use of SUA.

II. Definitions.

The definitions contained in the CEQ Regulations (40 CFR Parts 1500−1508), FAA Orders, and relevant DOD and/or Service guidance are applicable to this MOU.

III. Designation of Lead and Cooperating Agency.

A. Introduction: The actions taken by DOD and FAA in the establishment, designation, or modification of SUA are subject to environmental impact evaluation pursuant to NEPA, as implemented by the CEQ regulations. The CEQ regulations encourage a lead agency be designated where related actions by several Federal agencies are involved.

The lead agency, in such instances, is responsible for consultation with other agencies, for coordination of appropriate environmental studies and evaluations, and for preparation of any NEPA−related determinations or documents in cooperation with other Federal agencies. Each agency recognizes the need to eliminate duplication. The cooperating agency assumes responsibility to independently review the environmental documents prepared by the lead agency and to assess whether the environmental documents meet the standards for adequacy under NEPA.

The DOD and the FAA will ensure appropriate consideration of all actions and impacts, including cumulative impacts. The resultant environmental documents of the lead agency are accepted and used in decisions and planning by all agencies involved with the proposed action.

B. Designation of lead agency. When the DOD proposes that the FAA establish, designate, or modify SUA, the DOD shall serve as the lead agency for the evaluation of environmental impacts and the preparation and

processing of environmental documents. However, when the FAA proposes the establishment, designation, or modification of SUA affecting DOD, the FAA shall serve as the lead agency for the evaluation of environmental impacts and the preparation and processing of environmental documents.

C. Designation of cooperating agency. When the DOD proposes that the FAA establish, designate, or modify SUA, the FAA shall act as a cooperating agency for the evaluation of environmental impacts. However, when the FAA proposes the establishment, designation, or modification of SUA affecting DOD, the DOD shall act as a cooperating agency for the evaluation of environmental impacts.

IV. Level of Environmental Documentation

A. General. Environmental documentation will be processed in accordance with applicable FAA Orders, and DOD and/or Service directives.

B. Categorical Exclusions. Where the actions of one agency are subject to a categorical exclusion (CATEX), and the actions of the other agency, with respect to the same SUA request, require an EA, the agency requiring the EA will prepare the appropriate environmental documentation. The applicability of a CATEX to parts of the actions of one of the agencies will be noted in the environmental document. The background information in support of CATEXs, identified by either DOD or FAA, shall be forwarded to the agency requiring preparation of the EA and may be used by either agency, as allowed by their respective regulations/directives.

When the categorical exclusion of the proponent is not listed in FAA Order 1050.1, Chapter 5, which would require FAA to prepare the environmental documentation; FAA budget constraints may delay processing and implementation of a proponent's proposal.

V. General Guidance

A. Scheduling. Whenever an action under this MOU requires cooperation or coordination between the FAA and DOD, the two agencies shall agree on a schedule to ensure that required actions are taken on a timely basis. Each agency will notify the other of any difficulty with meeting scheduled deadlines or any need to revise the schedule.

B. Resolution of disagreements. If the FAA and DOD fail to reach agreement at the normal working level on any issue relating to environmental processing of SUA proposals, the matter will be referred, in ascending order, as outlined in the table below. At any time, the FAA's Office of the Chief Counsel and the Office of the General Counsel of the Service Department involved shall be consulted for assistance with legal issues.

Equivalent Levels of Responsibility for Resolution of Disagreements	
FAA Administrator	Service Secretary
Vice President, Mission Support Services	Policy Board on Federal Aviation (PBFA) Principal Member
Director, System Operations & Safety	PBFA Alternate Principal Member
Manager, System Operations & Safety, Environmental Programs	PBFA Working Group Member

VI. Effective Date. This MOU shall become effective on the last signature date below and shall remain in effect until otherwise rescinded or modified by both signatory parties. If either party determines that it is necessary to amend this MOU, the other party shall be notified in writing of the specific change(s) desired, with proposed language and the reason(s) for the amendment. The proposed amendment shall become effective upon written agreement of both parties.

SIGNED: DATE: October 4, 2005

Carl P. McCullough
Department of Defense

Michael A. Cirillo
Federal Aviation Administration

This page intentionally left blank.

Appendix 8. FAA Special Use Airspace Environmental Processing Procedures

1. GENERAL

This appendix provides guidance for FAA participation in the environmental review of proposed special use airspace (SUA) actions. The requirements in this appendix are in addition to the airspace proposal processing procedures contained in this order and Appendix 4. The aeronautical and environmental processes for SUA proposals involve some overlap; actions taken, or modifications made to a proposal, in one process may affect the actions required and/or the outcome of the other process.

2. BACKGROUND

a. The SUA program is designed to accommodate national security requirements and military training activities wherein activities must be confined to designated airspace because of their nature, or in airspace where limitations are imposed upon aircraft operations.

b. SUA proposals are subject to both NEPA and aeronautical processing requirements. Since the FAA is the approval authority for SUA actions, the agency cannot make a final decision on any particular SUA proposal prior to the completion of the NEPA and aeronautical processing phases.

3. POLICIES

The following policies apply to the processing of SUA proposals:

a. In addition to responsibilities of a cooperating agency as defined in the NEPA implementing regulations at 40 CFR Parts 1500–1508, FAA must:

1. Provide to DoD information and technical expertise within the special expertise and jurisdiction of the FAA as it relates to the proposed action.

2. Resolve or respond to environmental issues raised during the NEPA process relating to aeronautical issues.

3. If an EA or EIS is required, identify and evaluate the environmental impacts relating to the proposal.

4. Furnish to DoD the names of organizations, agencies, or other parties the FAA believes may be interested in the DoD proposal.

5. Notify and coordinate FAA proposed airspace actions with DoD components that may be affected.

b. FAA Participation in NEPA Meetings. The FAA may be required to participate in scoping, interagency, and public NEPA meetings conducted by the Proponent. The Air Traffic Service Center Director (or the Director's Designee) with responsibility for Cooperating Agency participation will determine FAA representation in the meetings. When FAA personnel participate in such meetings:

1. The audience must be informed that FAA participation is to provide aeronautical technical expertise and is not to be construed as FAA endorsement or support of any SUA proposal, and that no decisions concerning the proposal will be made at the meeting.

2. If requested, the FAA will provide an overview of the procedures followed by the FAA for processing SUA proposals.

3. The FAA will advise the audience of the service center handling the processing of the aeronautical proposal. Written comments on the aeronautical aspects of the proposal should be submitted during the public comment period associated with the aeronautical circularization.

c. FAA NEPA Compliance Options. In accordance with CEQ regulations at 40 CFR §1501.6, the FAA must participate in the DoD Proponent's NEPA process as a Cooperating Agency in cases where the FAA has jurisdiction by law, and may participate as a Cooperating Agency where the FAA has special expertise. The FAA may adopt an EA or EIS prepared by the DoD Proponent if the FAA independently evaluates the information in the document and takes full responsibility for the scope and content that addresses FAA actions. Where the Proponent's NEPA documentation is deficient and does not meet the requirements for adoption in FAA Order 1050.1, corrections and/or additional NEPA documentation must be made by the Proponent before the FAA can make a final decision to adopt the document. The FAA may ask the DoD Proponent to correct any deficiencies and re−submit the document (see FAA Order 1050.1, Environmental Impacts: Policies and Procedures, paragraphs 2−2.1 and 2−2.2). The FAA must issue its own Adoption EA/FONSI or Adoption EIS/ROD in accordance with FAA Order 1050.1, Paragraph 8−2, Adoption of Other Agencies' National Environmental Policy Act Documents.

d. Time Limits for Final Environmental Impact Statements (EIS). If three years have expired following the approval of a final EIS, and major steps towards implementation of the Proponent's proposed action have not commenced, the Proponent agency must prepare a written reevaluation of the adequacy, accuracy, and validity of the final EIS. Written reevaluations must comply with the requirements set forth in FAA Order 1050.1, paragraph 9−2. The Proponent may also elect to prepare new documentation if circumstances dictate.

4. LEAD AND COOPERATING AGENCIES

The FAA/DoD MOU provides for the application of "lead agency" and "cooperating agency" responsibilities in the SUA environmental process. When the DoD is the Proponent, the DoD will serve as lead agency for the evaluation of SUA environmental impacts and the preparation and processing of environmental documents.

a. The DoD, as lead agency, will determine whether an SUA proposal:

1. Is a major action significantly affecting the quality of the human environment requiring an environmental impact statement (EIS);

2. Requires an environmental assessment (EA); or,

3. Is categorically excluded in accordance with FAA Order 1050.1, paragraphs 5−6.1 through 5−6.5.

These determinations must be coordinated with the FAA at the earliest possible time to prevent delay in preparation of any required NEPA documentation.

b. The appropriate FAA service center, as identified in response to the DoD Proponent's request that the FAA participate as a Cooperating Agency, will act as the point of contact during the evaluation of the proposal's environmental study. The FAA should review documents prepared by the Proponent in its environmental process for scope and content of the documentation and assumes responsibility as described in subparagraph 3c, above. (See FAA Order 1050.1, paragraph 8−2.)

c. Where the actions of one agency are subject to a categorical exclusion, and the actions of the other agency with respect to the same SUA, are not covered under a categorical exclusion, then the other agency will prepare an environmental assessment (EA). The applicability of a categorical exclusion by either the DoD Proponent or the FAA will be noted in the other agency's EA. FAA budget constraints may delay processing and implementation of the DoD Proponent's SUA proposal when a comparable categorical exclusion covering the same type of proposed action as the DoD's Proponent is not listed in FAA Order 1050.1, chapter 5.

5. SUA ENVIRONMENTAL CONCERNS

In addition to other environmental considerations required under NEPA, CEQ regulations, and FAA Order 1050.1, the following are items the FAA should consider, if applicable, in SUA environmental documents. These items include, but are not limited to:

a. Other Times by NOTAM. When specified in the proposal, this provision permits access to the SUA area 24 hours per day. The environmental document must address the potential impacts of the DoD users' activities within the SUA during the "other times by NOTAM" period of use.

b. Flares and Chaff. Address the potential impact of flare and/or chaff use when this activity is specified in the SUA proposal.

c. "No Action Alternative." Include discussion of this alternative.

d. Coastal Zone Consistency Determination. Include if applicable.

e. Proposed Airspace Parameters. The environmental analysis in a CatEx, EA, or EIS for the SUA proposal must match the airspace parameters contained in the SUA proposal (for example, boundaries, altitudes, times of use, and type and extent of activities).

f. Non−participating Aircraft. Include a discussion of the effect of the SUA proposed action on non−participating aircraft, if applicable.

g. Mitigation. As defined in CEQ regulations, mitigation includes:

1. Avoiding the impact altogether by not taking a certain action or parts of an action;

2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation;

3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and

5. Compensating for the impact by replacing or providing substitute resources or environments.

h. Cumulative Impacts. Cumulative impacts to the environment are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or Non−Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

i. Consultation. Consultation must be conducted in accordance with the National Historic Preservation Act, Section 106; the Endangered Species Act, Section 7; FAA Order 1210.20, American Indian and Alaska Native

Tribal Consultation Policy and Procedures, and other applicable laws, regulations, and Department of Transportation and FAA orders.

6. INTERAGENCY SUA ENVIRONMENTAL PLANNING MEETING

To facilitate early coordination between the FAA and the DoD Proponent, the DoD Proponent must make a request to the FAA for Cooperating Agency status as soon as the Proponent decides to initiate the environmental process.

When the FAA is invited to participate as a cooperating agency, it is suggested that a planning meeting be held as soon as practical. The agenda of the meeting should be based on the type of SUA proposal and the extent of the planned environmental analysis.

a. The appropriate Regional Military Representative (Milrep) will coordinate the Proponent's request for a planning meeting with the appropriate Service Center Director (or his/her designee). Representatives of the FAA, the Proponent, and the Proponent's NEPA consultant, if any, should be invited to participate by the military representative.

b. The meeting should include discussion of pertinent issues, including but not limited to:

1. The type of SUA proposal to be submitted,

2. Identification of points−of−contact and establishment of liaison between concerned parties,

3. Determination of the appropriate type of environmental documentation,

4. The appropriate extent of FAA participation,

5. Identification of potentially significant impacts,

6. Consideration of the need for scoping, interagency, and/or other public meetings,

7. Setting processing milestones,

8. Clarifying any questions the Proponent may have regarding the FAA's requirements for the environmental analysis and documentation; and,

9. Exchange of information on any environmental and/or aeronautical concerns in the area of potential effect.

c. At the meeting, the Service Center Airspace Specialist should:

1. Brief attendees on the airspace processing procedures in Part 5 of this order that will apply to the SUA proposal.

2. Encourage the Proponent to work proactively with aviation user groups and individuals to address aeronautical issues as they arise. This should ensure early consideration of aeronautical mitigation.

d. At the meeting, the service center environmental representative should:

1. Brief attendees on the environmental processing procedures in FAA Order 1050.1 and Chapter 32 of this order that apply to the SUA proposal.

2. Encourage the Proponent to work proactively with other Federal, State, and Local agencies; Tribal Governments; and the public on environmental concerns as they arise. This will ensure that mitigation to address environmental concerns is considered early in the process.

3. Advise attendees that the FAA cannot render a final determination on the environmental effects of the SUA proposal until after completion of the Proponent's environmental process, the FAA's aeronautical process, the FAA's independent review of the Proponent's environmental documentation, and any additional environmental analyses conducted by the FAA.

e. The meeting format may be tailored to the needs of the specific proposal. It may be conducted by a teleconference, if permitted by the scope of the proposal or if necessary due to funding or other constraints.

f. Additional meetings should be scheduled as needed to discuss changes, revise milestones, share updated environmental and/or aeronautical impact data or public comments, discuss alteration of the proposal in order to mitigate valid aeronautical objections, incorporate agreements by the Proponent to mitigate environmental impacts, or discuss other matters.

7. RELATIONSHIPS AND TIMING OF ENVIRONMENTAL AND AERONAUTICAL PROCESSES

a. SUA proposals are subject to both environmental and aeronautical processing requirements. These processes are separate but closely related. Any actions by a Proponent to mitigate environmental impacts, and/or changes to the proposal to address valid aeronautical objections, may alter the type and extent of environmental analysis required.

b. Normally, the SUA Proponent will initiate the environmental process well in advance of submitting an actual SUA proposal to the FAA for review. The appropriate Milrep should inform the appropriate service center as soon as possible after receiving notice that a DoD Proponent plans to initiate the environmental study process. A letter requesting FAA participation in the environmental study process as a Cooperating Agency should be forwarded to AJV−11, Manager of the Airspace Regulations and Environmental Policy Group of the Office of Mission Support, Airspace Services, at FAA Headquarters.

c. Proponents should submit SUA proposals to the applicable FAA service center prior to completion of the NEPA process. This will enable the FAA to initiate the aeronautical processing phase prior to completion of any required NEPA documents, which will facilitate the earlier consideration of aeronautical factors that may result in modification of the proposal and may affect the environmental analysis. In all cases, the FAA will defer a final decision on the proposal until the required DoD Proponent's NEPA documentation is completed.

d. During the aeronautical processing of a proposal with alternatives, only the alternative submitted to the FAA in accordance with Part 5. of this order will be subjected to the aeronautical process described in this order (such as non−rulemaking circularization or Notice of Proposed Rulemaking (NPRM)) by the FAA. However, all reasonable alternatives, including the alternative of no action, must be evaluated in the DoD SUA Proponent's environmental document.

8. SERVICE CENTER PROCEDURES

a. Normally, FAA participation in the SUA environmental process will begin at the headquarters level with a request by the Proponent of an SUA proposal for the FAA to participate in the process as a Cooperating Agency. However, the FAA point of contact will generally be a representative from the Air Traffic Organization at the service center level. Close coordination is required between the Service Center Airspace Specialist and

Environmental Specialist throughout the process. This will ensure that FAA concerns are provided to the Proponent for consideration, and that NEPA and DOT/FAA environmental requirements are met.

b. Once notified of the initiation of the environmental process by the DoD SUA Proponent, the Service Center Environmental Specialist should request that the Proponent provide an electronic copy of all preliminary, draft, and final environmental documents for FAA review. The Service Center Environmental Specialist will forward these documents to FAA Headquarters AJV−11 (Airspace Regulations and Environmental Policy Group).

c. To the extent practicable, the service center should provide FAA representation at pre−scoping, scoping, and/or other NEPA public meetings concerning the SUA proposal. If requested by the service center, representation from the headquarters Airspace Policy and/or Airspace Management Groups will be provided.

d. Service Center Airspace Specialist Responsibilities:

1. Coordinate requests from the Milrep to schedule an interagency SUA environmental planning meeting with the Service Center Director (or the Director's designee) and the environmental specialist.

2. Participate in interagency SUA environmental planning meetings as directed, by the Service Center Director (or the Director's designee). (See paragraph 6, above.)

3. Participate in pre−scoping, scoping and/or other public meetings as directed.

4. Provide information and assistance as required to the Proponent regarding the aeronautical aspects of the proposal and processing procedures under Part 5 of this order.

5. Coordinate with and assist the Environmental Specialist in the review of environmental documents to ensure consideration of pertinent aeronautical issues. Compare the SUA proposal parameters with the analysis in the environmental document to ensure that the analysis is consistent with the Proponent's airspace request. Provide corrections and/or comments to the environmental specialist for transmittal to the Proponent.

6. Maintain liaison with the Proponent's environmental team to determine if any comments received pertain to aeronautical issues; provide information regarding the aeronautical aspects of alternatives developed by the Proponent.

7. Provide to the Proponent aeronautical impact information obtained from the formal aeronautical study conducted in accordance with Chapter 21 of this order and during the aeronautical public comment period. As required, negotiate with the Proponent to modify the proposal to mitigate valid aeronautical objections or adverse aeronautical impact.

8. Upon receipt of the SUA proposal, initiate processing in accordance with Part 5 of this order.

(a) Determine if an Informal Airspace Meeting will be held in accordance with the procedures in Part 5. of this order. If a meeting is planned, request participation by the Proponent to explain and answer questions about the proposal.

NOTE−
Informal Airspace Meetings are optional for SUA proposals. Normally, they are held only if the service center determines that there is a need to obtain additional aeronautical facts and information relevant to the SUA proposal under study. Informal airspace meetings may also be held based on known or anticipated controversy of the proposal.

(b) Complete the appropriate rulemaking or non−rulemaking processing requirements as defined in Part 5 of this order.

9. In consultation with the Service Center Environmental Specialist and the Regional Counsel, review the Proponent's decision document to ensure that it is consistent with any modifications made to the SUA proposal, if applicable, and that any agreed upon aeronautical mitigation measures are included.

10. If the Service Center Airspace Specialist recommends approval of the SUA proposal, submit the completed proposal package to the Airspace Regulations Team (AJV−113) for final review and determination.

e. Service Center Environmental Specialist Responsibilities:

1. Coordinate as required with the Service Center Airspace Specialist regarding SUA matters.

2. Notify the Airspace Regulations and Environmental Policy Group (AJV−11) when informed of scheduled interagency SUA environmental planning meetings. Participate in planning meetings as directed by the Service Center Director (or the Director's designee) (see paragraph 6 above). Provide a review copy of the Proponent's environmental documentation to FAA HQ AJV−114 and request their participation in environmental planning meetings as necessary.

3. Provide information as required to the SUA Proponent regarding FAA environmental requirements and concerns.

4. In coordination with the Service Center Airspace Specialist, review the SUA Proponent's environmental documents to ensure that applicable impact categories and any specific FAA environmental concerns are considered. After each review, forward any corrections and FAA comments to the Proponent.

5. Review the Proponent's final document to assess whether it meets the standards for an adequate document under NEPA, the CEQ regulations, DOT Order 5610.1C, and FAA Order 1050.1. Following consultation with the Regional Counsel, determine if the FAA considers the document adequate for adoption. If so, prepare a draft Adoption document and provide a copy of the draft to FAA HQ AJV−114 for review and comment, and to Regional Counsel or HQ AGC−600 for a Legal Sufficiency Review (LSR). In cases where the DoD Proponent's NEPA document does not meet the above−listed standards, the Service Center Environmental Specialist must return the document to the DoD Proponent for correction or additional analysis and documentation. Provide documentation of the results of each review and a recommendation regarding FAA adoption to the Airspace Regulations and Environmental Policy Group (AJV−11).

6. If the DoD SUA Proponent determines that a DoD categorical exclusion (CATEX) applies to an SUA proposal:

(a) Determine if FAA Order 1050.1, Chapter 5, Categorical Exclusions, lists a CATEX that adequately covers the action. Verify that no extraordinary circumstances exist that would preclude use of the CATEX for the SUA proposal. Determine what additional environmental analysis would be required if the CATEX is not listed. Where the actions of one agency are subject to a categorical exclusion, and the actions of the other agency, with respect to the same SUA proposal require an EA, the agency requiring the EA will prepare the appropriate environmental analysis with the assistance of the Proponent. Applicability of a CATEX to parts of a proposed action of one of the agencies will be noted in the EA. Background information in support of CATEXs or project data necessary to support adequate impact analysis in an EA, identified by either DoD or FAA, must be forwarded to the agency requiring preparation of the EA and may be used by either agency, as allowed by their respective regulations/directives.

(b) Document the results of the review in subparagraph (a) above, and submit the findings to the Airspace Regulations and Environmental Policy Group (AJV−11).

7. Retain the administrative record in accordance with FAA retention guidelines. If DoD is the lead agency for the proposed project, a copy of DoD Proponent's NEPA document, their letter requesting Cooperating Agency status, FAA's acceptance, and other supporting documentation should be included in FAA's administrative record.

9. MISSION SUPPORT, AIRSPACE SERVICES, AIRSPACE REGULATIONS AND ENVIRONMENTAL POLICY GROUP (AJV−11) ENVIRONMENTAL DOCUMENTATION REVIEW PROCEDURES:

a. Review the Proponent's environmental document(s) to verify that the analysis matches the parameters specified in the SUA aeronautical proposal and that any required environmental issues are adequately analyzed for potential impacts. Verify that the environmental analysis matches the parameters specified in the SUA proposal and that any required aeronautical issues are considered. Conduct this review simultaneously with the service center's review as described in paragraph 8. Provide corrections and identify deficiencies to the Service Center Airspace and/or Environmental Specialist for transmittal to the Proponent.

b. The Airspace Regulations and Environmental Policy Group (AJV−11) must review the Proponent's environmental documents for content and compliance with NEPA, CEQ regulations, and applicable DOT and FAA Orders. Coordinate within the Airspace Regulations and Environmental Policy Group (AJV−11) as needed, regarding concerns, corrections, or other comments on aeronautical impacts. Provide FAA Headquarters' comments to the Service Center Environmental Specialist for transmittal to the Proponent.

c. Ensure that the Service Center Airspace Specialist has provided a copy of the SUA aeronautical proposal, including any environmental documentation, to the Service Center Environmental Specialist. Provide assistance and policy guidance regarding SUA environmental processing to the Service Center Environmental Specialist upon request.

d. Coordinate within the Airspace Regulations and Environmental Policy Group (AJV−11) as needed for additional information concerning the SUA proposal including any airspace and aeronautical impact matters.

e. Assist the Service Center Environmental Specialist in reviewing the Proponent's Final EIS or EA/Finding of No Significant Impact (FONSI), and the Service Center Environmental Specialist's comments regarding compliance with NEPA, CEQ, and applicable DOT and FAA requirements. Assist the Service Center Environmental Specialist in determining if the Proponent's NEPA document is suitable for adoption by the FAA. Assist the Service Center Environmental Specialist in preparing the FAA adoption documentation in accordance with FAA Order 1050.1, chapter 8, paragraph 8−2; and keep a copy with the Airspace Regulations and Environmental Policy Group (AJV−11) for inclusion in the airspace docket or case file.

f. Review the Proponent's and Service Center Environmental Specialist's comments regarding applicability of a CATEX. If a CATEX does not apply, determine if additional environmental analysis is required. Consider if CATEX documentation is required in accordance with FAA Order 1050.1,chapter 5. Provide a copy of the determination to the Airspace Regulations and Environmental Policy Group (AJV−11) for inclusion in the airspace docket or case file.

g. As appropriate, coordinate with the FAA Office of the Chief Counsel, Airports and Environmental Law Division. See FAA Order 1050.1, paragraphs 2−2.1b(2)(b); 4−3.3, 5−2a(2) and b(10); 5−3e; 6−4a; 7−1.2b; 7−1.2d(3)(c); 8−2c;8−7; 9−2e; 10−2b, d, e; 10−3b; 10−4a(2); 10−6a(2), b; 11−3; 11−4a, b.

h. Ensure that the FAA has adopted the Proponent's EIS or EA as applicable, that all additional FAA environmental requirements are satisfied, and that final decision notices are not published in the Federal Register until after the NEPA process is completed. Submit copies of the DoD Proponent's and FAA's NEPA documentation for inclusion in the rulemaking docket file or non−rulemaking airspace case file.

i. For rulemaking SUA actions, prepare the environmental compliance statement for inclusion in the ENVIRONMENTAL REVIEW sections of the NPRM and Final Rule. Insert the following statement in the environmental review section of SUA NPRMs:

> "This proposal will be subject to appropriate environmental impact analysis by the FAA prior to any final FAA regulatory action."

For non−rulemaking SUA actions, include the DoD Proponent's and FAA's NEPA documentation for the airspace case file, and notify the public in accordance with FAA Order 1050.1, paragraph 6−2.2b.

NOTE−
For "Direct−to−Final−Rule" actions which are categorically excluded under FAA Order 1050.1, the following statement may be inserted in the environmental review section of the Final Rule:

> *"This action is categorically excluded under FAA Order 1050.1, Environmental Impacts: Policies and Procedures, Paragraph (insert Paragraph Number). Therefore, this action is not subject to further environmental review."*

j. Prepare and provide a signature copy of the Final FAA Adoption NEPA document to the manager of the Airspace Regulations and Environmental Policy Group (AJV−11) for signature. Provide a signed copy to the Service Center's Environmental Specialist for additional distribution as necessary or requested.

This page intentionally left blank.

Confirmation of Responsibility for Agency Consultations

This page intentionally left blank.

From:	Kerr CIV Scott A
To:	elizabeth.healy@faa.gov
Cc:	Maynard, Ryan CIV NAVFAC SW; Christensen CIV Walter J; AdminRecord@29PalmsPSUA.com; Chatelin CIV Andy; Stella Acuna; Scott Coombs
Subject:	Confirmation of Responsibility for Agency Consultations for PSUA EA
Date:	Tuesday, February 05, 2019 10:57:43 AM
Attachments:	Signed MOU letter with Sp[redacted] Attachments 7 and 8.pdf

Good Morning Ms. Healy:

This note requests your written confirmation on the agreed upon approach between FAA and USMC to agency consultations for the proposed Permanent Special Use Airspace Establishment and Modifications EA at the Combat Center Twentynine Palms. As discussed in previous status meetings and as the lead agency for the NEPA process, the USMC will be the lead agency for completing all required consultations with other agencies as designated in the 2005 Memorandum of Understanding between the FAA and DOD concerning Environmental Review of Special Use Airspace Actions (FAA JO 7400.2L, Appendix 7). Consultation may include NHPA Section 106 (Tribes and THPOs/SHPOs) and tribal consultation. Additionally, the USMC will retain responsibility for coordination and consultation with other agencies as required. The FAA will independently review the environmental documents to ensure they meet FAA NEPA requirements.

For your convenience, I've also attached a copy of FAAs acceptance of the USMC's request for the FAA to be a cooperating agency and the FAA/DOD MOU.

Thank you for your support. If we can be of assistance in moving this matter along, please let me know

R/S

Mr. Scott A. Kerr
NEPA Program Manager
Environmental Affairs
Bldg 1418 (Corner of 4th and Brown)
Marine Air Ground Task Force Training Command Twentynine Palms, CA 92278
Comm: (760) 830-8190
FAX: (760) 830-5718

FOR OFFICIAL USE ONLY - This e-mail and/or its attachment(s) contains information afforded protection by the Privacy Act of 1974 (5 U.S.C. §552a), the Freedom of Information Act (5 U.S.C. §552, as amended), and/or Navy and Marine Corps instructions. Any misuse or unauthorized access may result in civil and/or criminal penalties. Do not release outside of Department of Defense channels without the consent of the originator's office and ensure that required safeguarding and handling procedures are observed. If this e-mail is received in error, please notify the sender immediately.

Appendix C
Overview of Public Involvement Process

This page intentionally left blank.

Appendix C
Overview of Public Involvement Process

1 Timing and Methods of Public Involvement

1.1 Public Review of the Description of Proposed Action and Alternatives

A Notice of Intent to Prepare an Environmental Assessment (EA) and Notice of Availability (NOA) of the Description of Proposed Action and Alternatives (DOPAA) were published in the following local newspapers:

- *The Desert Trail* (three non-consecutive days)
- *Hi-Desert Star* (three non-consecutive days)
- *Desert Sun* (three consecutive days)
- *San Bernardino Sun* (three consecutive days)
- *Riverside Press Enterprise* (three consecutive days)
- *Desert Dispatch* (three non-consecutive days)
- *Victor Valley Daily Press* (three consecutive days)
- *Big Bear Grizzly* (three non-consecutive days)

The DOPAA was made available for a 32-day public review period from March 6 to April 7, 2019. The purpose of the DOPAA review period was to provide an opportunity for agencies and members of the public to comment on the proposed action, including input on potential environmental issues. The DOPAA was also made available for public review on the project's website (at http://www.29palmspsua.com). Copies of the DOPAA were made available for public review at the following libraries:

- San Bernardino County Library Administrative Offices
- Twentynine Palms Branch (county library)
- Yucca Valley Branch (county library)
- Barstow Branch Library (county library)
- Newton T. Bass Apple Valley Library
- Palm Springs Public Library
- Stanley Mosk Library and Courts Building
- Victorville City Library
- Joshua Tree Library
- Lucerne Valley Janice Horst Branch Library
- Needles Branch Library
- Ovitt Family Community Library

Public comments on the DOPAA were considered in the preparation of the Draft EA.

1.2 Summary of Comments Received During the DOPAA Public Comment Period

During the DOPAA public comment period from March 6 to April 7, 2019, two comments from individual citizens were received. One comment expressed concern over how the Proposed Action would impact the Johnson Valley Shared Use Area and the other commenter expressed concern that Alternative 1 was overreaching.

1.3 Responses to Public Comments on the DOPAA

Comments received on the DOPAA and associated Marine Corps responses to the comments can be found in Appendix C of the Draft EA.

1.4 Public Review of the Draft Environmental Assessment

As part of the National Environmental Policy Act process, the Marine Corps released the Draft EA for a 45-day public review period from August 1 to September 15, 2025. A NOA announcing the review period and how to access the document was mailed to federal, state, and local agencies, and interested members of the public, and was published in the following local newspapers:

- *The Desert Trail* (three non-consecutive days)
- *Hi-Desert Star* (three non-consecutive days)
- *Desert Sun* (three consecutive days)
- *San Bernardino Sun* (three consecutive days)
- *Riverside Press Enterprise* (three consecutive days)
- *Desert Dispatch* (three non-consecutive days)
- *Victor Valley Daily Press* (three consecutive days)
- *Big Bear Grizzly* (three non-consecutive days)
- *Havasu News* (three non-consecutive days)

Federal, state, and local agencies, and members of the public had the opportunity to review and comment on the Draft EA during the 45-day public review period. Electronic copies of the Draft EA were posted to the project's website (at http://www.29palmspsua.com) and were made available for public review at the following libraries:

- San Bernardino County Library Administrative Offices
- Twentynine Palms Branch (county library)
- Yucca Valley Branch (county library)
- Barstow Branch Library (county library)
- Newton T. Bass Apple Valley Library
- Palm Springs Public Library
- Stanley Mosk Library and Courts Building
- Victorville City Library
- Joshua Tree Library
- Lucerne Valley Janice Horst Branch Library

- Needles Branch Library
- Ovitt Family Community Library
- Lake Havasu City Branch Library

Public comments on the Draft EA, as well as feedback from applicable resource and permitting agencies, was responded to in writing as part of the Final EA and considered to evaluate the project's alternatives and environmental impacts before a final decision was made.

1.5 Summary of Comments Received During the Draft EA Public Comment Period

During the Draft EA public comment period from August 1 to September 15, 2025, 30,280 comments were received via email, mail, and the project website. Comments were received from California and federal government agencies, elected officials, business and commercial entities, interest groups, non-governmental organizations, and individual citizens. Of the total number of comments received, 3,266 comments were unique, with the remaining comments consisting of form letters or duplicate comments. Most of the comments received on the Draft EA were critical of the proposed action and some comments identified potential impacts to recreational activities (off-highway vehicle use and organized events in the Johnson Valley Shared Use Area due to restrictions on airspace use by the public); socioeconomic (due to impacts on off-highway vehicle use and organized events); and general aviation activities (decrease or eliminate public access and restrict general aviation activities and increase safety risks when airspace is activated). Not all comments received were considered substantive[1], though all were fully considered and made part of the administrative record.

2 Comment Response Process for the Draft EA

Appropriate resource specialists and the Marine Corps carefully reviewed and considered all comments received during the public comment period for the Draft EA. Due to the number of comments received, stand-alone comments and comments containing multiple distinct or separable points were grouped into similar topic areas so that, in many cases, a single response could be provided for multiple comments, thereby reducing redundancy in responses. Content contributing to each topic area was summarized. Written responses were prepared for each topic area.

3 Responses to Public Comments on the Draft EA

A summary of substantive comments received on the Draft EA and associated Marine Corps responses to the comments can be found in Table C-1 (below). Table C-1 summarizes comments by topic area, provides responses and/or explains how the Marine Corps made changes to the Final EA (if changes were made).

4 Summary of Revisions Made to the Final EA

Many of the comments were focused on potential impacts under the Proposed Actions to recreational activities and permitted events in the Johnson Valley Shared Use Area (e.g., King of the Hammers), and associated impacts to socioeconomics in the region due to these potential impacts. There were also concerns about potential impacts under the Proposed Actions to general aviation (safety and operations) and regional

[1] Substantive comments are those that generally challenge the analysis, methodologies, or information in the EA as being factually inaccurate or analytically inadequate; that identify impacts not analyzed or developed and evaluate reasonable alternatives or feasible mitigations not considered by the federal agency; or that offer specific information that may have a bearing on the decision, such as differences in interpretations of significance, scientific, or technical conclusions, or cause changes or revisions in the proposal.

airports. Clarification on the Proposed Action has been added to the Final EA (Chapter 2) to address concerns about potential impacts to general aviation and public recreation above and within the Johnson Valley Shared Use Area and the overall region. Additional analysis was added to the Final EA (Chapter 3) to address comments on noise, airspace management, land use and recreation, socioeconomics, solid waste/ hazardous materials and waste, utilities and infrastructure, and public health and safety. More specific details on response to comment topics and updates to the Final EA are provided in Table C-1.

Table C-1. Response to Public Comments on the Draft EA

Topic Area(s)	Comment Source(s)	Summary	Comment Response
General - Public Trust	• *Individual citizens* • *Businesses* • *NGOs/Interest groups*	*Commenters saw the Proposed Action as government overreach and felt the proposed airspace changes would undermine public trust and violate prior agreements (e.g., designation of the Johnson Valley Shared Use Area under the National Defense Authorization Act of 2014). They emphasized that since the prior agreement, the community has acted in good faith to balance military training needs with recreation, and that the Proposed Action would break that trust.*	The Marine Corps remains committed to maintaining public access and use of the Johnson Valley Shared Use Area and ensuring minimal impact to existing recreational activities. Consistent with the 2012 Land Acquisition & Airspace Establishment EIS, the 2013 ROD, and the National Defense Authorization Act of 2014, closures of the Johnson Valley Shared Use Area for Marine Corps training would continue to be limited to a maximum of two 30-day periods per year. As described in the EA (Section 1.4.3), proposed action in the 2012 Land Acquisition & Airspace Establishment EIS (2012 Final EIS) consisted of three interrelated components that were essential to support the proposed MEB-sized exercises: (1) acquisition of land adjacent to the Combat Center, (2) modification and establishment of permanent SUA, and (3) expansion of training operations. The National Defense Authorization Act of 2014 implemented the proposed land expansion assessed in the 2012 Final EIS. However, the DON deferred the decision on establishing additional permanent SUA in the 2013 ROD and, instead, reopened coordination with the FAA to redesign the proposed SUA and make the modifications necessary to reduce effects on the National Airspace System. In alignment with the 2012 Final EIS and the resulting 2013 ROD, the Marine Corps engaged with the FAA and stakeholders to develop an airspace proposal that can meet Marine Corps training requirements while enhancing the safety and efficiency of military training and civil aviation and minimizing impacts to the National Airspace System (see Section 2.1 of the EA). In addition, the Marine Corps is working with the FAA to develop procedural measures that would preserve the character of recreational activities within the Johnson Valley Shared Use Area. Clarification on the Proposed Action has been added to the Final EA (Chapter 2) to address concerns about potential impacts to general aviation and public recreation above and within the Johnson Valley Shared Use Area. Times of use for R-2509 would be continuous (Alternative 1) or limited to 60 days per year (Alternative 2 – Preferred Alternative), but the Marine Corps would return R-2509 to the Los Angeles ARTCC when not needed for military training in compliance with FAA Joint Order 7400.2R, Section 21-1-8, so it would be available to other users. To ensure public safety and access, the Marine Corps would manage the R-2509 airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public. In compliance with FAA Joint Order 7400.2R, Section 23-1-4, the proposed new R-2509 “floor” would be established from ground surface only when

Topic Area(s)	Comment Source(s)	Summary	Comment Response
			the Marine Corps closes the Johnson Valley Shared Use Area to the public for military training. Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at 1,500 feet AGL. This vertical separation ensures that ground-based activities like off-roading, camping, hiking, recreational rocketry and drones, etc. can continue on the ground without interruption or interference from military aircraft overhead. This would be codified in the FAA/Marine Corps LOP for R-2509. The Marine Corps would coordinate with the event proponents regarding significant permitted events in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support the organized events covered under a BLM Special Use Permit. If an event requires airspace access to an altitude higher than the proposed R-2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponents on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements. For public land (BLM and state land) and private land located outside the Combat Center and below proposed new R-2509 with a "floor" below 1,200 feet AGL, the Marine Corps would provide civilian pilots with reasonable and timely aerial access to such lands in compliance with FAA Joint Order 7400.2R, Section 21-3-3(f.2). This would also be codified in the FAA/Marine Corps LOP for R-2509. Based on analysis in the Final EA (Section 3.6.3) and the proposed "floor" of the various airspace components, typical recreational activities in the Johnson Valley Shared Use Area (e.g., OHV use, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft) would be minimally impacted by the Proposed Action and would remain subject to existing regulations, permit requirements, and closures. Consequently, while the establishment of R-2509 would restrict transit of civilian aircraft when activated/in use for military training, ground level and ground-related activity would not be significantly impacted and there would be minimal adverse impacts to the type, scope, or quality of recreational experiences currently available in the Johnson Valley Shared Use Area

Topic Area(s)	Comment Source(s)	Summary	Comment Response
NEPA – Purpose and Need	• *Individual citizens*	*Commenters questioned the necessity and justification for the proposed airspace changes, arguing that in a time of relative peace, the purpose of the Proposed Action is unclear.* *Commenters also questioned whether the stated intent was genuine, expressing concern about other potential motives such as access to underground water resources or future privatization of the public lands.*	The EA provides background (Chapter 1) and a description of the purpose and need for the Proposed Action (Section 1.2). The proposed permanent SUA analyzed in this EA (Chapter 2 and Appendix E) is the result of the ongoing Marine Corps coordination with the FAA since the 2012 Final EIS and resulting 2013 ROD. Any additional use or development of the lands or resources outside those described in this EA would be subject to separate NEPA.
NEPA – Public Outreach and Analysis	• *Private property owners* • *Individual citizens* • *NGOs/Interest groups*	*Commenters expressed concerns regarding the adequacy and transparency of the NEPA process. They identified inadequate public outreach to key aviation stakeholders (e.g., CalPilots, regional airport commissions, or aviation safety groups) and OHV stakeholders. These groups requested (1) additional opportunities for public engagement, including for a public meeting and an extension of the comment period to allow for thorough consideration of potential impacts; and (2) preparation of an EIS.*	The Marine Corps kept the public informed as required by NEPA, including mailing a NOA announcing the review period for the Draft EA to federal, state, and local agencies and interested members of the public; publishing the NOA in eight local newspapers; and issuing a press release. Rather than a 30-day public comment period, the Marine Corps provided a 45-day public comment period for the Draft EA. The Marine Corps made the document publicly accessible for review and comment using modern and traditional outreach methods (e.g., available electronically on the project website, available in 13 libraries). This public outreach was conducted in accordance with NEPA requirements and provided an opportunity for all interested parties to provide comments on the Proposed Action. All comments received on the Draft EA were reviewed and considered while finalizing the analysis in the Final EA (Chapter 3). The Marine Corps conducted a thorough environmental review process in accordance with NEPA. The EA includes a detailed review of potential environmental impacts and consideration of reasonable alternatives, including the No-Action Alternative. Based on the analysis provided in the Final EA (Chapter 3), the Marine Corps has determined the Proposed Action would not have a significant impact to the human environment, and therefore, an EIS is not required (refer to the Findings of No Significant Impact [FONSI]). The FAA's Notice of Proposed Rulemaking (NPRM) (FAA JO 7400.2R, Section 3) provides a separate and more targeted mechanism for engaging aviation stakeholders, including civil aviation groups, airport authorities, and regional commissions. This process is required before any SUA changes are approved and includes coordination with affected interests to ensure safe and efficient use of the National Airspace System. This process will occur before final approval of the proposed airspace by the FAA.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
NEPA – Additional Action Alternatives	• *Individual citizens* • *NGOs/Interest groups* • *Businesses* • *Elected officials* • *Private pilots* • *Local government/Public entities*	*Commenters requested that additional alternatives be added to the EA to include the following:* *A. consider other locations, with suggestions of expanding the Combat Center to the north, use of existing military RAs in other areas of the region (e.g., Naval Air Weapons Station China Lake), or training instead at Fort Irwin National Training Center.* *B. less restrictive alternatives.* *C. an alternative that includes designation of temporary airspace, as needed.* *D. airspace located above the Johnson Valley Shared Use Area would remain a single, continuous corridor rather than be divided into multiple blocks of airspace; commenters noted that a continuous corridor would provide predictable and safe access for recreational users and emergency services.* *E. airspace above the Johnson Valley Shared Use Area remain open from the surface up to 1,500 feet AGL or 1,500 feet above the highest terrain, including over peaks.*	Responses on commenters suggested additional alternatives to the Proposed Action are provided below: A. As outlined in the EA (Chapter 1), the purpose of the Proposed Action is specific to providing permanent SUA above and adjacent to the Combat Center to support current and future combined-arms training activities 365 days per year. The Combat Center is the Marine Corps' largest combined-arms, live-fire training range complex that affords units the opportunity to practice tactics in a realistic and challenging environment. In order to conduct combined-arms training, aircraft need to operate in tandem with the ground forces – meaning, the airspace needs to be above and adjacent to the land where ground forces are operating. This type of training, utilizing the unique combination of land and airspace, cannot be replicated at other installations, which lack the specific ranges, terrain, and controlled airspace environment necessary for large-scale, integrated training. Establishment of airspace to the north of the Combat Center or use of existing airspace at other installations in the region would not enable essential combined-arms training to take place and would not meet the purpose of the Proposed Action. Specifically, Naval Air Weapons Station China Lake does not support large-scale combined-arms, live-fire training and therefore does not meet training needs identified in Screening Criterion 2. Fort Irwin National Training Center currently conducts 10 army training rotations per year and therefore does not have capacity to support Marine Corps training needs identified in Screening Criterion 2. In addition, establishment of airspace to the north of the Combat Center would not meet Screening Criterion 6 and is not expected to meet Screening Criterion 7. Refer to the EA (Section 2.1.1) for these Screening Criteria. Even if the adjacent installations had the unique combination of land and airspace, the logistics and resources required to conduct training at another branch's installation would not be realistic. While certain training activities can be conducted at non-Marine Corps installations, the training regimen prescribed by Congress requires unique facilities, equipment, and specialized instructors that are specific to the Marine Corps and would not be easily replicated at a Naval or Army installation. B. As discussed in the EA (Section 2.1), airspace alternatives were developed through coordination of the Marine Corps and FAA and application of screening criteria that support the purpose and need for the Proposed Action. This process led to the development of less restrictive airspace alternatives (e.g., Alternative 1 having a reduced overall footprint and lower altitudes compared to the 2012 Final EIS airspace proposal; altitudes were further reduced from Alternative 1 to Alternative 2 in this EA [Chapter 2]; and days of activation of R-2509 and Johnson Valley MOA were limited to up to 60 days per year and CAX MOA and Turtle Low MOA were limited to up to 40 days per year under Alternative 2).

Topic Area(s)	Comment Source(s)	Summary	Comment Response
			C. As discussed in the EA (Section 2.1), designation of temporary airspace was considered by the Marine Corps and FAA and approved only once in 2017. This alternative was eliminated because (1) temporary SUA proposals do not provide a permanent solution to support ongoing training requirements; and (2) establishing SUA would improve safety for military and civilian pilots by providing charted, predictable boundaries in compliance with FAA Joint Order 7400.2P, Section 21-1-15(a), which allows pilots to more effectively plan their flights when the SUA is active in accordance with published NOTAMs. This clear delineation would minimize uncertainty and improve situational awareness for all airspace users. In addition, Temporary Flight Restrictions (TFRs) are not a viable alternative to SUA because they are unsuitable for the type of ongoing, complex military training conducted at the Combat Center. FAA Regulations (14 CFR 91.137 and 91.145) specifically limit TFR usage to unplanned hazardous events such as natural disasters, aircraft accidents, aerial demonstrations, sporting events, national security (presidential movements), or short-term emergency situations that create ground or air hazards. Therefore, TFRs were deemed unsuitable to meet the Marine Corps' training requirements. D. The designation of the four blocks of airspace within R-2509 was closely coordinated with the FAA and Los Angeles ARTCC to manage commercial and civilian aircraft and minimize impacts to the National Airspace System. The designation of a single, continuous corridor over the Johnson Valley Shared Use Area would not meet Screening Criteria 3, 4, or 7 (see Section 2.1.1 in the Final EA) and was therefore not carried forward. E. As discussed in the EA (Section 2.1), airspace is needed to support current and future ground-based and airborne live-fire training activities in and around the Combat Center. To meet Screening Criterion 2, airspace is needed to the ground surface over the Johnson Valley Shared Use Area while it is closed to the public for military training (i.e., for up to two 30-day periods each year).
Noise - General	• *Individual citizens* • *Local government/Public entities* • *U.S. EPA, Region 9*	*Commenters expressed concern about noise impacts from military training activities, including the switch to F-35 aircraft. They noted that noise spikes would disrupt recreation, disrupt the area's wilderness character, and negatively affect the quality of life for residents below and south of R-2509, Johnson Valley MOA, and Sundance MOA.*	The EA (Section 3.1 and Appendix F) provides an analysis of noise impacts. Similar to existing conditions, air-to-ground ordnance would only be utilized in R-2501 and the portion of R-2509 that overlies the exclusive military use areas (i.e., not over the Johnson Vally Shared Use Area). When the Johnson Vally Shared Use Area is open to the public, the Sundance MOA, Johnson Valley MOA, and R-2509 would only be used to support non-hazardous flight training (i.e., no air-to-ground ordnance would be authorized). Noise and safety conditions would remain consistent with current operations. Although there would be a reportable increase in noise due to aircraft platform changes (e.g., F-35), no noise sensitive areas would be exposed to either CNELmr or CNEL of 65 dB or greater under either Alternative 1 or Alternative 2, the standard at which both the DOW and the FAA determine noise impacts are significant. The changes occurring at noise sensitive locations, primarily residences, would be

Topic Area(s)	Comment Source(s)	Summary	Comment Response
		Commenters also expressed concern that expanding airspace use would increase vibrations that shake homes and disturb residents and animals, reporting that existing military activities already cause these issues. *The EPA recommends the Marine Corps consider including an analysis of the Time Above (TA) and Number of events Above (NA) metrics in the Final EA and identifying any appropriate noise mitigation for the school. Additionally, the EPA noted that while the Draft EA briefly discusses sleep disturbance in residential areas, it does not quantify sleep awakenings or propose mitigation for any sleep impacts. Consider identifying mitigation for nighttime sleep disturbance and providing opportunities for those affected to report disruptive noise levels.*	noticeable but would be compatible with residential use. Clarification and analysis has been added to the Final EA (Section 3.1.3) to address impacts associated with vibrations. Therefore, the EA determined that noise and vibration impacts would be less than significant. The EA (Appendix F) includes detailed single-event noise modeling for multiple aircraft types, including the F-35B, AV-8B, and F-18A/C. The modeling shows that the F-35B produces higher SEL and L_{max} values than legacy platforms across all altitudes. These results were generated using the FAA-approved NOISEMAP suite, including MRNMap and BASEOPS noise analysis programs, and follow DoW standards for cumulative and single-event noise analysis. While the EA does not include a side-by-side comparison table of legacy versus replacement aircraft, the data supports the conclusion that F-35 operations would result in higher single-event noise exposures. The modeling also accounts for operational profiles, including speed and power settings, and applies onset-rate penalties to reflect the startle effect from rapid sound increases. Environmental analysis supporting F-35 training activities was conducted separately and informs the assumptions for noise analysis used in this EA (Appendix F). The Final EA (Section 3.7.3) analysis was updated to include the following discussion of classroom effects analysis, "DoD guidance recommends an exterior Equivalent Continuous Sound Level of 60 dB as the screening threshold for assessment of noise impacts to classrooms, which would be reached but not exceeded under Alternative 1 so the children attending Condor Elementary could experience a small but not significant impact to classroom disruptions (DNWG 2013)." DOD policy advises the NA and TA calculations to be performed only if/when the Equivalent Continuous Sound Level of 60 dB would be exceeded and is generally more appropriate in the vicinity of airfields where flight paths are more consistent and regular; therefore, no such analysis was performed for this action. A brief discussion has been added to the Final EA (Section 3.1.3) to provide a qualitative summary as follows: "Alternative 1 would not substantially change the altitudes or types of aircraft activities that would occur in the vicinity of Condor Elementary. The primary cause of the increase in CNEL would be due to the replacement of F-18 by F-35 and the F-35 generates greater noise. Therefore, the numbers of aircraft noise events experienced at Condor Elementary would be similar, but a portion of the noise events would be louder because there would be a greater proportion flown by F-35, which may result in an increase in the duration of time that adversely affects classroom learning."

Topic Area(s)	Comment Source(s)	Summary	Comment Response
			Sound proofing is an FAA grant program under 14 CFR 150 and that under the Defense Community Infrastructure Program (DCIP). DoD only awards grants for noise mitigation when funding is available and only for noise exposures above 65 dB CNEL; this does not apply under Alternative 1 or 2, nor would it be appropriate without a significant impact. The Proposed Alternatives do not alter the numbers of aircraft operations during DNL nighttime (2200 to 0700), and most of the nighttime flights occur at higher altitudes less likely to disrupt sleep. Therefore, neither of the proposed alternatives would create a substantial change to sleep disturbance. The referenced methodology for calculating number awakenings was described by the Acoustical Society of America/American National Standards Institute (ANSI/ASA S12.9-2008, part 6) "Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes," which was withdrawn by ANSI/ASA in 2018 as unreliable and inaccurate, so no such calculation was performed in this EA. The Combat Center provides both a phone number and an online webform to allow residents to submit noise comments or complaints that is available at: https://www.29palms.marines.mil/Staff-Offices/Government-and-External-Affairs/Sound-Reporting/.
Airspace – Safety and Emergency Response	• *Blue Ribbon Coalition* • *American Motorcycle Association* • *Individual citizens* • *Businesses* • *Elected officials*	*Commenters raised concerns that designation of new RA could reduce access for emergency medical flights or result in delayed response times due to requesting access. They noted that MEDEVAC helicopters are essential for responding to OHV-related accidents and other emergencies, and that limitations on airspace could delay response times and increase safety risks, with a potential for fatal consequences. Commenters also expressed concerns that firefighting operations would be hindered/delayed by the proposed RA.*	The Marine Corps understands that minutes can be critical in emergency response and is fully committed to ensuring that MEDEVAC and air ambulance flight access is not compromised by the proposed airspace expansion. Emergency aircraft such as MEDEVAC, air ambulance, county Sheriff, and firefighting flights retain priority under standard FAA air traffic control procedures, and this would not change under the Proposed Action. Clarification has been added to the Final EA (Chapter 3, *Resources not Considered in Detail*) that when any SUA is active, MEDEVAC, air ambulance flights, county Sheriff, and firefighting flights would receive priority handling in compliance with FAA Joint Order 7110.65BB.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
Airspace – Drones	• *Individual citizens* • *Businesses* • *NGOs/Interest groups*	*Commenters noted that designation of new RA would restrict drone use that could impact recreational, professional, and organized OHV event-related activities. They highlighted that drones are used for filming and televising OHV events, supporting spectator engagement and participation by larger race teams, as well as for work-related operations and personal recreation.*	**Recreational Drone Use:** Clarification has been added to the Final EA (Chapter 2) that when the Johnson Valley Shared Use Area is open to the public, the R-2509 "floor" would be established at 1,500 feet above AGL. This vertical separation ensures that ground-based activities like recreational drone use can continue without interruption or interference from military aircraft overhead. *Note*: recreational drone use activities would continue to be subject to existing regulations, permit requirements, and closures. **Organized Events:** Clarification has been added to the Final EA (Chapter 2) that the Marine Corps would coordinate with the event proponents regarding significant permitted events in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support the permitted events. If an event requires airspace access to an altitude higher than the proposed R-2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponents on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements. Clarification has been added to the Final EA (Chapter 2) and the analysis (Section 3.6.3) to indicate there would be minimal impacts to recreational or event drone use in Johnson Valley Shared Use Area because: (1) the Marine Corps would activate R-2509 by NOTAM only when required for military training (when the SUA is not activated, it would be available to other users in compliance with FAA Joint Order 7400.2R, Section 21-1-8, which requires unneeded SUA be returned to the controlling agency and be available for nonparticipating aircraft); (2) the R-2509 "floor" would be established at 1,500 feet AGL when the Johnson Valley Shared Use Area is open to the public; (3) activation of the airspace "floor" at this altitude would not affect typical flight activities associated with recreational or event drone use. Therefore, there would be minimal impacts to drone use associated with recreation and organized events in the Johnson Valley Shared Use Area.
Airspace – Helicopter Use for Utility Inspection and Repairs	• *Individual citizens*	*Commenters noted that designation of new RA could limit helicopter access needed to conduct utility line inspections and upgrades/repairs.*	Clarification has been added to the Final EA (Chapter 3, *Resources not Considered in Detail*) that the Proposed Action would not impact access by utility companies to perform necessary repair and maintenance to facilities located on the Combat Center and/or below proposed SUA. Utility companies would continue to coordinate with the Combat Center to obtain access to utility rights-of-way.
Airspace – Restricted Use for General Aviation Aircraft	• *Private pilots* • *Individual citizens* • *Local government/Public entities*	*Commenters expressed concern that designation of new RA would decrease or eliminate public access and restrict general aviation activities such*	The EA (Section 3.2 and Appendix G) acknowledges that the proposed SUA would alter VFR routing options across the Mojave Desert and southern California region when SUA is activated. The document does analyze common Victor airways through the area (e.g., V264, V386, and V370) for proximity to the proposed SUA, with V264 and V370 remaining clear of the proposed airspace and V386 affecting only aircraft

Topic Area(s)	Comment Source(s)	Summary	Comment Response
		as backcountry flying, sailplanes, gliders, and ultralights. Specifically, there is concern that the Proposed Action would eliminate viable VFR navigation options across much of the Mojave Desert and southern California. Commenters also expressed concern that the EA failed to document existing or historical general aviation usage.	below 8,000 feet MSL. While there is not complete radar coverage of the area and not all VFR flight plans are known, the EA (Section 3.2 and Appendix G) incorporates the best available data to estimate routing impacts and flight volumes. VFR flight traffic analyzed in the FAA's 2021 Aeronautical Study has been added to the Final EA (Section 3.2.2 and Appendix G) to support the analysis of impacts on general aviation pilots. Clarification has been added to the Final EA (Section 3.2.3) that the Proposed Action would result in compression of VFR flights to the west of R-2509 and outside the southeast corner of Turtle Low MOA. When R-2509 sectors are active, approximately four VFR aircraft may be affected per day. When Turtle Low MOA is active, approximately 35 VFR aircraft may be affected per day during the busiest month. This may result in increased travel distances when this SUA is active and pilots either cannot enter R-2509 or elect not to transit the MOAs (*Note*: VFR aircraft may choose to transit through an active MOA). For example, VFR aircraft arriving or departing Iron Mountain Airport traveling to or from the north that fly around the proposed Turtle Low MOA may add approximately 20 nautical miles of travel distance. General aviation pilots could also experience inconvenience from alteration of travel plans or need to cancel flights; increased travel time and fuel costs associated with avoiding active SUA; and any expended efforts in tracking the SUA status through available advisory services.
Airspace – Safety Risks to General Aviation Aircraft	• *Private pilots* • *Individual citizens* • *Local government/Public entities*	*Commenters expressed concern that designation of new RA would increase safety risks to private aviation due to being forced to fly near terrain; compression of civilian flight corridors; lower MOA floors increasing collision risk; and increased potential for mid-air collision.*	The EA (Section 3.2 and Appendix G) describes the establishment of RAs as the primary mechanism for deconflicting military and civil aviation activity. The proposed SUA structure is specifically designed to segregate high-intensity and hazardous military operations from general aviation traffic during scheduled activation periods. Los Angeles ARTCC would continue to manage the National Airspace System in compliance with FAA Joint Order 7110.65A, *Air Traffic Control*, which establishes procedures for managing the ATC system to prevent a collision involving aircraft operating in the system. The ATC system is designed to give first priority (duty priority) to separating aircraft and issuing safety alerts and provide support to national security and homeland defense activities. When the proposed SUA is active, the Marine Corps would continue to mitigate potential safety risks (e.g., midair collisions). This involves the Combat Center's Range Control Office monitoring training areas to determine whether nonparticipating aircraft are present and, if so, immediately suspending military activities, as necessary, as a safety precaution. These measures, along with ongoing coordination with Los Angeles ARTCC, are designed to reduce midair collision risk and maintain safe airspace operations.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
			The EA (Section 3.2 and Appendix G) also acknowledges that lowering MOA "floors" could increase interaction between military and general aviation aircraft. Military pilots are responsible for avoiding general aviation aircraft and use airborne radar systems to "see" civil aircraft well beyond visual range, allowing them to initiate actions to avoid those aircraft. The EA (Section 3.2.3) acknowledges that for VFR general aviation pilots to avoid flying through active RAs they may elect to fly below or around active RAs or MOAs, potentially resulting in being forced to fly near terrain and/or compression of civilian flight corridors. In addition to the EA, as part of the FAA's approval process, potential impacts on civil aviation were examined as prescribed by FAA Joint Order 7400.2R (i.e., aeronautical study, safety risk management, public comment period). An aeronautical study is required before FAA approval of any change to SUA, including that analyzed in this EA. Because Alternative 2 is the Preferred Alternative, the FAA prepared an Aeronautical Study and held a Safety Risk Management (SRM) Panel in 2021 on airspace proposed under Alternative 2. The FAA's 2021 Aeronautical Study and SRM Panel resulted in modifications to the Alternative 2 airspace proposal and the 2025 airspace proposal (Final EA, Appendix E) is currently being re-analyzed in a new Aeronautical Study by the FAA to identify the safe and efficient use of the airspace by all users. If Alternative 1 is selected in the Marine Corps FONSI, then the FAA will need to conduct the same airspace approval process (i.e., aeronautical study, safety risk management, public comment period) before establishing/designating the proposed airspace under Alternative 1.
Airspace – Impacts to Airport Access and Operations	• *Local governments/Public entities* • *Elected officials* • *CalPilots* • *NGOs/Interest groups* • *Individual citizens*	*Commenters expressed concern that designation of new RA would limit access and routing for regional airports such as Twentynine Palms, Yucca Valley, Big Bear, Barstow-Daggett, Apple Valley, and Yucca Valley, and affect procedures for major airports such as those in the Los Angeles and Las Vegas areas. Specifically, commenters expressed concerns about impacts to (1) IFR procedures at Big Bear Airport and (2) aircraft using Standard Terminal Arrival Route (STAR)*	The analysis in the EA (Appendix G), which uses the best available information, includes operational summaries and confirms instrument procedures for public airports in the area. The analysis in Appendix G is based on the FAA's 2021 Aeronautical Study, which used airport departure data to annualize and assess the impact of aircraft departing/transiting through the proposed SUA. The EA (Section 3.2 and Appendix G) analysis only identified approach and departure services for Palm Springs Airport and Big Bear Airport that would be directly impacted. Based on approximately eight departures monthly entering the proposed SUA, approximately 100 flights (0.2% of total flights) at Palm Springs Airport would be impacted annually under the Proposed Action (FAA 2021). While the analysis acknowledges that some departure/arrivals would be impacted and civilian aircraft may need to transit around or through active airspace (e.g., transit through or between the CAX MOA/ATCAA), the EA (Section 3.2.3) concludes that such a minor effect would not be significant. The Marine Corps coordinated resolution of the concern about impacts to IFR procedures at Big Bear Airport with the FAA and the EA (Table 3.0-1) provides the following management measure to address this concern: "When Instrument Flight Rule

Topic Area(s)	Comment Source(s)	Summary	Comment Response
		for Los Angeles International Airport (LAX), called ANJLL4.	approach or departure out of Big Bear Airport (west of the proposed Johnson Valley MOA/ATCAA) is required due to weather, the airspace would be released to Los Angeles Air Route Traffic Control Center to minimize impacts to arrivals utilizing the Big Bear Airport Runway 26 RNAV (GPS) approach." The analysis in the EA (Appendix G) concludes that Lake Havasu City Airport, Chemehuevi Valley Airport, Needles Airport, and Twentynine Palms Airport are in the vicinity of the Proposed Action airspace but departure/arrivals would not be impacted. All other public airports (e.g., Barstow-Daggett Airport, Apple Valley Airport, and Yucca Valley Airport) identified in Appendix G are located at least 15 miles from the Proposed Action airspace and would also not be impacted. Clarification has been added to the Final EA (Section 3.2 and Appendix G) that the Proposed Action would result in no significant impacts to ANJLL4 (STAR for LAX). A STAR provides repeatable, predictable lateral flight paths and safe and efficient descent profiles into airports. ANJLL4 is the primary arrival route for commercial flights into LAX arriving from the east. When R-2501 is active above FL190, aircraft cannot remain on their published profile in that segment of ANJLL4. To remain clear of the active airspace, controllers must either direct aircraft to climb above R-2501 or route them laterally around it. Under Alternative 1, the proposed Bristol South ATCAA and R-2509 would be located adjacent to R-2501 along the ANJLL4 STAR and could extend up to FL400. Because the Bristol South ATCAA and R-2509C would only be activated at times and altitudes consistent with R-2501, their operational effect on ANJLL4 STAR would be the same as current conditions when R-2501 is active above FL190. With the lower altitudes of Bristol ATCAA (FL220) and R-2509C (16,000 feet MSL) under Alternative 2 (Preferred Alternative), there would be no impacts to civil aircraft using ANJLL4 into LAX. Therefore, the Proposed Action would not introduce any new impacts beyond those that already occur today due to existing R-2501 activation.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
Airspace – Use of Airstrips/Dry Lake Beds for General Aviation Aircraft Landings	• *Private pilots* • *Individual citizens*	*Commenters expressed concern that designation of new RA would block access to historical landing sites (e.g., Giant Rock, Soggy Dry Lake, Bessemer Mine Airstrip, Galway Lake) and private airstrips located on private land outside the Combat Center.*	Clarification has been added to the Final EA (Section 3.2.3) to explicitly address the potential impacts to use of historical landing sites within the Johnson Valley Shared Use Area. Times of use would be continuous (Alternative 1) or limited to 60 days per year (Alternative 2 – Preferred Alternative), but the Marine Corps would return R-2509 to the Los Angeles ARTCC when not needed for military training in compliance with FAA Joint Order 7400.2R, Section 21-1-8, so it would be available to other users. When the airspace is not activated, pilots would be minimally impacted by the Proposed Action, and would remain subject to existing regulations, permit requirements, and closures. Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at 1,500 feet AGL and private pilots would continue to be able to use historical landing sites within the Johnson Valley Shared Use Area (e.g., Soggy Dry Lake, Giant Rock Airport). This would be codified in the FAA/Marine Corps Letter of Procedure (LOP). For use of private airstrips located on public land and private land outside the Combat Center, the Marine Corps would provide civilian pilots with reasonable and timely aerial access to such land in compliance with FAA Joint Order 7400.2R, 23-1-4. However, pilots using private airstrips located on private land may need to coordinate with the FAA to establish approaching and departing procedures. Bessemer Mine Airstrip and Galway Lake are located within the Exclusive Military Use Area and withdrawn from public access (as a result of the National Defense Authorization Act of 2014); these historical landing sites are no longer available for use by private pilots. The Proposed Action would result in no change to the current land status at these two locations, which is military and restricts public access.
Land Use/Recreation – General Recreation and OHV Use	• *Individual citizens* • *NGOs/Interest groups* • *Businesses* • *Local government/Public entities* • *Elected officials*	*Commenters were concerned about a potential loss of access to land used for general recreation in the Johnson Valley Shared Use Area, such as for camping and enjoying nature, and some acknowledged the potential for overcrowding in other areas as a result.* *Many commenters emphasized the importance of Johnson Valley as a unique and irreplaceable OHV recreation*	Clarification has been added to the Final EA (Chapter 2 and Section 3.6.3) to address concerns about potential impacts to public recreation within the Johnson Valley Shared Use Area. Times of use would be continuous (Alternative 1) or limited to 60 days per year (Alternative 2 – Preferred Alternative), but the Marine Corps would return R-2509 to the Los Angeles ARTCC when not needed for military training in compliance with FAA Joint Order 7400.2R, Section 21-1-8, so it would be available to other users. To ensure public safety and access, the Marine Corps would manage the R-2509 airspace differently depending on whether the Johnson Valley Shared Use Area is open or closed to the public. In compliance with FAA Joint Order 7400.2R, Section 23-1-4, the proposed new R-2509 "floor" would be established from ground surface only when the Marine Corps closes the Johnson Valley Shared Use Area to the public for military training. Should R-2509 be activated when the Johnson Valley Shared Use Area is open to the public, the "floor" would be established at 1,500 feet AGL. This vertical

Topic Area(s)	Comment Source(s)	Summary	Comment Response
		area. They noted that it provides valuable access for families and off-roading enthusiasts, and restricting public access would threaten recreation that has already been encroached upon throughout the region and cannot be easily relocated elsewhere. *Commenters also expressed that the designation of RA over the Johnson Valley Shared Use Area does not meet Congressional intent to protect public access to Johnson Valley OHV areas.*	separation ensures that ground-based activities like off-roading, camping, hiking, recreational rocketry and drones, etc. can continue on the ground without interruption or interference from military aircraft overhead. This would be codified in the FAA/Marine Corps LOP for R-2509. Based on analysis in the Final EA (Section 3.6.3) and the proposed "floor" of the various airspace components, typical recreational activities in the Johnson Valley Shared Use Area (e.g., OHV use, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft) would be minimally impacted by the Proposed Action, and would remain subject to existing regulations, permit requirements, and closures. Consequently, while the establishment of R-2509 would restrict transit of civilian aircraft access when activated/in use for military training, ground level and ground-related recreational activity would not be restricted, and there would be minimal adverse impacts to the type, scope, or quality of recreational experiences currently available in the Johnson Valley Shared Use Area when open to the public.
Land Use/Recreation – OHV Events	• *Individual citizens* • *NGOs/Interest groups* • *Businesses* • *Elected officials*	*Many commenters highlighted the importance of Johnson Valley for hosting large-scale OHV events, particularly King of the Hammers. They noted that the event draws thousands of participants and spectators annually, making the area a central gathering place for the OHV community. Specifically, commenters expressed concern that designation of new RA could restrict or effectively prevent use of the airspace by drones and helicopters for monitoring and filming events; and MEDEVAC access, essentially ending the viability of these types of popular events.*	Clarification has been added to the Final EA (Section 3.6.3) that the Marine Corps would coordinate with event proponents regarding significant permitted events in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support the permitted events. If an event requires airspace access to an altitude higher than the R-2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponent on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements. The analysis in the Final EA (Section 3.6.3) indicates there would be minimal impacts to organized events in the Johnson Valley Shared Use Area because: (1) when the Johnson Valley Shared Use Area is open to the public for an organized event, the proposed R-2509 "floor" would be established at an altitude of 1,500 feet AGL, which would not affect typical recreational activities in Johnson Valley, including off-roading, drone use, and low-flying rotary aircraft for chase/filming; (2) if the event proponent requires airspace access above the proposed R2509 "floor" of 1,500 feet AGL, the Marine Corps would coordinate with the event proponents on a case-by-case basis to establish an appropriate altitude; (3) and MEDEVAC flights and other emergency operations would receive priority handling consistent with FAA regulations.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
Land Use/Recreation – Public Access During Events and Holidays	• *Individual citizens*	*Commenters requested that military use of the airspace (and closure of the Johnson Valley Shared Use Area) avoid key recreation periods when large OHV events and other recreational activities take place (e.g., during major holidays and the months of January and February).*	Consistent with the National Defense Authorization Act of 2014, closures of the Johnson Valley Shared Use Area for Marine Corps training are limited to up to two 30-day periods per year and will continue to be scheduled at a minimum of 12 months in advance, allowing ample time for the public to plan for recreation in the area. Clarification has been added to the Final EA (Section 3.6.3) that when the Johnson Valley Shared Use Area is open to the public, the proposed R-2509 "floor" would be established at an altitude of 1,500 feet AGL. Therefore, the Proposed Action would not affect typical recreational activities in the Johnson Valley Shared Use Area (e.g., off-roading, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft).
Biological Resources - General	• *Individual citizens*	*Some commenters expressed concern that expanding military airspace could harm sensitive desert ecosystems and wildlife by disrupting habitats, migration, and the natural quiet. Some also noted that designated OHV areas like Johnson Valley Shared Use Area can help protect fragile ecosystems by concentrating recreational activities in managed zones and supporting volunteer stewardship efforts.*	The Proposed Action would not alter existing ground-based activities at the Combat Center, including the Johnson Valley Shared Use Area. As discussed in the Final EA (Section 4.2), the Combat Center's 2023 Ongoing Training Supplemental EA and Biological Opinion; the establishment, funding and implementation of the desert tortoise Recovery and Sustainment Partnership; the Combat Center *Integrated Natural Resources Management Plan*; and the Combat Center's ongoing Head Start program would continue to be implemented to minimize potential impacts to desert tortoises and other natural resources at the Combat Center, including those within the Johnson Valley Shared Use Area. These programs restore and build species and ecosystem resilience on critical habitat and other high value off-installation habitat in partnership with DOW, Department of the Interior, Department of Agriculture, state (e.g., California Natural Resources Agency, Wildlife Conservation Board, and California Department of Fish and Wildlife), county and local agencies and Native American Tribes.
Biological Resources - Desert Tortoise	• *Desert Tortoise Council* • *Member of the public*	*Commenters expressed concern that expanding military airspace could adversely affect the Mojave desert tortoise, a species listed as endangered in California and threatened under the federal Endangered Species Act. They referenced potential impacts from aircraft noise and vibrations on tortoise behavior and physiology and on their burrows (citing Bowles et al. 1999 and Barneich et al. 2004). They also noted that rare,*	The analysis in the EA (Section 3.4.3) utilizes and summarizes findings from Bowles et al. 1999, which detailed behavioral and physiological responses to 'overflight' and sonic boom sounds iterated in several series to tortoises in indoor sound chambers. While the 'most obvious and intense' response to aircraft overflights was freezing, the one 113-minute freezing record 'was atypical' and that 'freezing' typically was 'an abrupt cessation of activity' followed by remaining still, looking around, and returning to movement behavior in less than 10 minutes (page 78). No bout of freezing lasted more than 5 minutes after the first day (i.e., change was short lived and suggested habituation to the various flight noises; page 108). This and their other findings (e.g., below) suggest short-term and mild or no responses to the sonic booms and the subsonic overflight acoustics. a) When exposed to subsonic noise (not booms), freezing behavior was about 5 percent of activities observed, was the fifth most frequent of the six common activities (Table XVI), was followed by even fewer head retractions (ca. 3%; a

Topic Area(s)	Comment Source(s)	Summary	Comment Response
		emergency landings or crashes could cause ground disturbance with additional impacts to the tortoise.	common). Head retractions are common responses in wild Mojave desert tortoises and other chelonians. These responses were not the most common and were short duration. b) The 'being still' activity occurred often during the first exposure series, but were short duration and confined to the first series of exposures, indicative of habituation to the noises in subsequent exposures (Page 83). c) There seemed to be no startle response to sounds, no freezing response to sonic booms, and no behaviors showing trends or correlation to sonic booms (page xxii). d) Holding still (not 'freezing') responses returned to near baseline after overflight (subsonic) exposure (page 80), and long bouts of stillness were uncommon, confined to the first exposure series (page 83). e) In response to sonic booms, reactions were mild and showed no sign of change over time (page 84). f) There were no heart rate trends in response to overflight noises (i.e., subsonic) and no patterns associated with sonic booms (pages 97 and 101, respectively) g) Hearing sensitivity increased in response to sonic booms but quickly recovered to normal levels (page 106). h) The animals were sedated for the physiological measurements (e.g., auditory system responses, page 36), and sounds were applied in small, indoor chambers (Figure 4). Bowles et al. 1999 recommended testing responses in natural conditions outdoors (page 112). i) Burrows attenuated sounds about 10 dB, so tortoises, which inhabit burrows for 95% of their lives (Nagy and Medica 1986), should experience reduced exposures in the wild. This plus the 'low duty cycle' of military aircraft means that flight sound exposures would be about 2 to 3% of the time (Bowles et al. 1999: page 109), further reducing the flight noise risk to Mojave desert tortoises. The Combat Center does not have vibrations data from aircraft to evaluate against findings in Barneich et al. 2004, but the Combat Center's 2023 Ongoing Training Supplemental EA estimated the 'take' risk of aircraft landing on desert tortoises (and their burrows) was very low. Consequently, the noise and vibrations by overflight should impose much less risk to tortoises and burrows than landing aircraft. Emergency landings or aircraft accidents at the Combat Center are rare (i.e., for emergency landings, there have been an average of 1.3 occurrences per year for the last 10 years; one accident has occurred in the last 10 years); therefore, ground disturbance from these occurrences is not evaluated in the this EA. Note that accidental death or injury to the desert tortoise from ongoing training at the Combat Center is covered under the Combat Center's 2023 Biological Opinion.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
Socioeconomics	• *Individual citizens* • *NGOs/Interest groups* • *Businesses* • *Local government/Public entities*	*Commenters emphasized the significant socioeconomic role of Johnson Valley Shared Use OHV Area, particularly tied to organized events (e.g., King of the Hammers) and year-round OHV recreation. They noted that these activities draw many visitors, generating revenue for local businesses, service providers, and lodging in the surrounding areas. Commenters stressed that changes to access to airspace would cause economic harm to the region and threaten the viability of businesses that rely on recreation-based tourism.*	The primary concerns about socioeconomic impacts were related to how there could be substantial reduction of visitors and associated revenue for local businesses, service providers, and lodging in the region if recreational activities and events like the King of the Hammers are significantly impacted by the Proposed Action. However, there would be minimal impacts to recreation and organized events as described below. **Recreation:** Clarification has been added to the Final EA (Sections 3.6.3 and 3.7.3) to address concerns about potential impacts to public recreation within the Johnson Valley Shared Use Area. Based on analysis in the Final EA (Section 3.6.3), typical recreational activities in the Johnson Valley Shared Use Area (e.g., off-roading, camping, drones, model rocketry, remote control airplanes, aerial filming via drone or low-flying rotary aircraft) would be minimally impacted by the Proposed Action, and would remain subject to existing regulations, permit requirements, and closures. **Organized Events:** Clarification has been added to the Final EA (Sections 3.6.3 and 3.7.3) that the Marine Corps would coordinate with the event proponents regarding significant permitted events in the Johnson Valley Shared Use Area (e.g., King of the Hammers) to determine altitude requirements for aviation activities to support such events. If an event requires airspace access to an altitude higher than the proposed R-2509 "floor" established when the Johnson Valley Shared Use Area is open to the public, the Marine Corps would coordinate with the BLM on a case-by-case basis to evaluate options for deconflicting military aviation activities with proposed event schedules and requirements. Because there would be minimal impacts to recreation and organized events utilizing the Johnson Valley Shared Use Area and other nearby areas, analysis in the Final EA (Section 3.7.3) concludes there would be less than significant socioeconomic impacts related to these activities.
Increases in Hazardous Materials and Wastes and Need for New Infrastructure to Support Increase in Training	• *California Department of Toxic Substances Control*	*The commenter suggested that increased aircraft use could result in (1) a proportional increase in fuel or hazardous material use, storage, and management at the Combat Center; (2) redesigned or new maintenance facilities construction; or (3) construction of a new air traffic control tower and support operations.*	While the Proposed Action represents an increase in aircraft operations when compared to the No-Action Alternative, the proposed aircraft operations remain within scope of what was previously analyzed in the 2012 Final EIS and the associated Clean Air Act conformity determination. Aircraft—all of which are owned and maintained by visiting units—would continue to use existing facilities at the Combat Center while conducting exercises at the Combat Center. The Marine Corps does not anticipate the need to construct new or redesign existing facilities to account for the incremental changes in aircraft use. Therefore, while the proposed changes in aircraft operations may result in a small increase in the use of hazardous materials and the disposal of solid / hazardous waste while visiting units are conducting exercises, there would be no change to the management or storage of hazardous materials and waste.

Topic Area(s)	Comment Source(s)	Summary	Comment Response
			The incremental changes in aircraft operations would not require construction of new air traffic control towers or other support facilities. If expansion is required in the future to support ongoing operations, this effort would be subject to separate NEPA review. Clarification has been added to the Final EA (Chapter 3, *Resources not Considered in Detail*) to clarify why the following resource areas were considered to have negligible or non-existent effects: solid waste, hazardous materials and waste, and utilities and infrastructure.

Legend: AGL = Above ground level; ARTCC = Air Route Traffic Control Center; BLM = Bureau of Land Management; dB = decibels; DoW = Department of War; EA = Environmental Assessment; EIS = Environmental Impact Statement; FAA = Federal Aviation Administration; FL = Flight Level; FONSI = Findings of No Significant Impact; IFR = Instrument Flight Rules; Lmax = Maximum Sound Level; MOA = Military Operations Area; MSL = Mean Sea Level; NEPA = National Environmental Policy Act; NGO = Non-Government Organization; NOA = Notice of Availability; NOTAM = Notice to Airmen; OHV = off highway vehicle; RA = Restricted Area; ROD = Record of Decision; SEL = Sound Exposure Level; SRM = Safety Risk Management; SUA = Special Use Airspace; TFR = Temporary Flight Restrictions; UAS = Unmanned Aerial Systems; VFR = Visual Flight Rule

Big Bear Grizzly
Big Bear Lake (San Bernardino County) California

This space is for the County Clerk's Filing Stamp

4200 Fox Farm Road, Big Bear Lake, Ca 92315
909-866-3456 legalads@bigbeargrizzly.net

Stantec
JACKIE CLARK
514 Via De La Valle, Suite 308
Solana Beach CA 92705

PROOF OF PUBLICATION
(2015.5 C.C.P)
STATE OF CALIFORNIA
ss.
COUNTY OF SAN BERNARDINO,

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am the principal clerk of Big Bear Grizzly, a newspaper of general circulation, published in the City of Big Bear Lake, County of San Bernardino, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, under date of September 14, 1960, Case Number 102161; that the notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates to-wit:
BBG: 8/7/2025, 8/14/2025, 8/21/2025

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Micah Ramirez, Big Bear Grizzly

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:
Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Published: 08/07, 08/14, 08/21/2025

Affidavit of Proof of Publication

STATE OF ARIZONA

ss

COUNTY OF MOHAVE

I, Amanda Bowers, being duly sworn, says that during the publication of the notice, as herein mentioned, she was and now is an Authorized Agent of **Today's News-Herald**, a seven-times weekly newspaper published on Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday of each and every week in the City of Lake Havasu City, in Mohave County, State of Arizona. That said newspaper was printed and published as aforesaid on the following date, to-wit:

Notice of Availability of Draft Environmental

Published dates:

August 1, 2, 3, 2025

of which the annexed copy is a printed and true copy, was printed and inserted in each and every copy of said newspaper, printed and published on the date aforesaid, and in the body of said newspaper and not in a supplement thereof.

Amanda Bowers

Subscribed and sworn to before me this 9th day of August 3, 2025

Kelli Blumm

Notary Public

December 08, 2027

My Commission Expires

KELLI BLUMM
NOTARY PUBLIC - STATE OF ARIZONA
MOHAVE COUNTY
COMM. # 660359
MY COMMISSION EXPIRES
12-08-2027

TODAY'S NEWS-HERALD

LOTTERY

Powerball — July 30
4-15-35-50-64-8 PP: 4

Mega Millions — July 29
17-30-34-63-67-11

The Pick — July 30
2-10-11-12-23-44

Triple Twist — July 30
23-24-27-34-40-42

Fantasy 5 — July 30
11-28-31-33-39

Pick 3 — July 30
3-3-6

START YOUR DAY HERE

FLAGS
U.S. flags are at full staff.

GAS PRICES
Arizona average: $3.20
National average: $3.14
Lowest Price in Havasu: $2.89 at ARCO (cash)

*According to GasBuddy.com

SETTING IT STRAIGHT

It is the News-Herald's policy to acknowledge errors promptly. If you believe an error has been made, call Editor Brandon Bowers at 928-453-4237, ext. 206, or email editor@havasunews.com.

ADOPTION SPOTLIGHT

THOMAS: Meet Tommy, an active and fun-loving boy who shines outdoors! He loves swimming, going to the park and trips to the trampoline park. On his iPad, Tommy enjoys videos, games and music—and he's always ready to dance. He hopes for a caring, supportive family to help him thrive. Get to know Tommy and other adoptable children at childrensheartgallery.org.

DO JUST ONE THING

Do you follow the "Five-Hour Rule" when deciding whether to drive or fly? The rule is simple: If your destination is within a five-hour drive, it's more eco-friendly to hit the road. Short flights have disproportionately high emissions, resulting in a larger carbon footprint per passenger. Driving also lets you bring extra belongings without worrying about baggage fees or airport hassles.

TODAY IN HISTORY

1861: Lt. Col. John R. Baylor proclaimed the Confederate Territory of Arizona, with the Territorial capitol at Mesilla, and himself as military governor. The new Confederate Territory extended from Texas to California and lay generally south of the Gila River.

2006: The Arizona Cardinals' new home, University of Phoenix Stadium, opens in Glendale.

TODAY IS: INTERNATIONAL MAHJONG DAY

August 1st, International Mahjong Day, deals a game to get the celebration started! Play your tiles well, and perhaps you'll honor the day with a win. There are a variety of styles of Mahjong. Find the version you enjoy best to play!

— National Day Calendar

ALMANAC

Today is the 213th day of 2025 and the 43rd day of summer.

TODAY'S BIRTHDAYS: William Clark (1770-1838), explorer; Francis Scott Key (1779-1843), poet/lawyer; Herman Melville (1819-1891), author; Dom DeLuise (1933-2009), actor/comedian; Yves Saint Laurent (1936-2008), fashion designer; Jerry Garcia (1942-1995), singer-songwriter; Coolio (1963-2022), rapper; Sam Mendes (1965-), film director; Edgerrin James (1978-), football player; Jason Momoa (1979-), actor; Madison Bumgarner (1989-), baseball player.

TODAY'S FACT: "Video Killed the Radio Star" by the Buggles was the first music video aired on MTV when the network launched on this day in 1981.

TODAY'S SPORTS: In 1936, the Olympic Games opened in Berlin before a crowd of 100,000 spectators.

TODAY'S QUOTE: "Who in the rainbow can draw the line where the violet tint ends and the orange tint begins? Distinctly we see the difference of the colors, but where exactly does the one first blendingly enter into the other? So with sanity and insanity." — Herman Melville, "Billy Budd"

TODAY'S NUMBER: 14,130 — final elevation (in feet) of Colorado's Mount Blue Sky Scenic Byway, the highest paved road in North America.

TODAY'S MOON: First quarter moon (Aug. 1).

BE INVOLVED

Aug. 4: Mohave County Board of Supervisors, 9:30 a.m.

Aug. 13: Mohave County Planning Commission, 10 a.m., 700 W. Beale St., Kingman.

TODAY'S NEWS-HERALD
HavasuNews.com
DELIVERY/CIRCULATION
928-453-4237

FACEBOOK
Scan QR code for link to our Facebook page.

YOUTUBE
Scan QR code for link to our Youtube page.

GOT THE SCOOP? SEND IT IN!
Donations, upcoming events, ribbon cuttings, grand openings, photos and all other community news tips can be sent to planner@havasunews.com.

ADDRESS
2225 W Acoma Blvd
Lake Havasu City, AZ 86403

OFFICE HOURS
Monday - Thursday 7:30 a.m. to 3 p.m.
Friday 7:30 a.m. to 1 p.m.
Saturday & Sunday: Closed

NEWSROOM
EDITOR
Brandon Bowers ext. 2206
bbowers@prescottnewspapers.com
ASSOCIATE EDITOR
Taylor Schwartz-Olson
tolson@havasunews.com
REPORTERS
Brandon Massick
bmassick@havasunews.com
La Erica Corner-Sims
lcornersims@havasunews.com
Bryanna Winner
bwinner@havasunews.com

Gov. Hobbs wants $760 million in reimbursement from federal government for border security

By BOB CHRISTIE
CAPITOL MEDIA SERVICES

PHOENIX – Gov. Katie Hobbs wants the federal government to reimburse Arizona for nearly $760 million it has spent since 2021 on border security, including about $100 million former Gov. Doug Ducey spent in his last months in office to stack hundreds of shipping containers along the border for an ersatz border wall.

The Democratic governor formally asked Homeland Security Secretary Kristi Noem for the money in a letter sent Thursday. She is asking Noem to use part of a $12 billion appropriation the secretary has said is dedicated to reimbursing states for their border costs contained in President Trump's big tax and spending law dubbed the "Big Beautiful Bill."

Although a fact sheet released by the secretary after President Donald Trump signed the law on July 4 includes the $12 billion figure and the governor's office used that figure on Thursday, the actual bill dedicated $10 billion to Homeland Security to reimburse states for immigration costs. There's another $3.5 billion appropriated to the U.S. Department of Justice for grants to states for similar reimbursements.

The two-high shipping containers put up at Ducey's direction in late 2022 were quickly taken down after the Biden Administration sued, alleging they were on federal land along the border in Yuma and Cochise counties. That added an additional cost of about $70 million.

File

Former Arizona Speaker of the House Rusty Bowers (middle) is among the officials that toured the border in Yuma in 2021.

Felony child abuse charges for mother of four

By BRANDON MESSICK
TODAY'S NEWS-HERALD

A Lake Havasu City woman has been charged with multiple counts of felony child abuse and aggravated assault, after investigators allegedly learned of instances of violence by the suspect against four children, ages 0 to 9, at their home on the 2800 block of Kiowa Boulevard.

Investigation in the case began July 17, when a Lake Havasu City Police detective was called to the address to assist in interviews conducted by the Arizona Department of Child Services. During those interviews, one of the children reportedly told DCS officials that 33-year-old Amanda R. Smith struck her several hours prior to DCS officials' arrival. The victim also allegedly told DCS officials and that detective that Smith had choked her during that incident.

According to the police report, the child did not appear to be visibly injured while speaking with the detective, or with DCS.

Lake Havasu City investigators questioned Smith in the case, as DCS officials spoke with other children at Smith's home. According to the police report, Smith denied harming the victim in that incident. She reportedly said she grabbed the child's chin to make the child look at her when she spoke, but said she did not choke the victim during the incident.

But according to the report, further interviews by CPS and police officials yielded statements from each of the children that detailed acts of alleged violence by Smith. Those acts allegedly included kicking a 9-year-old victim and choking her; and similarly choking a 6-year-old victim after throwing a shoe at him. Smith is also accused of punching a 1-year-old child during an incident in December, as allegedly observed by another child in the household. Investigators also say that from November until her arrest in July, Smith shook one child on multiple occasions in a manner that could potentially have caused death or serious injury to the victim.

Smith was taken into custody July 18 on charges including two counts of aggravated assault and five counts of felony child abuse, and indicted July 24 in Mohave Superior Court.

STAR CINEMAS
Wednesday Seniors pay $5.00 and receive FREE popcorn!
Bargain Sundays: All showings before 5 are only $5.00
Movie Times for 7-31-8-6

MOVIES HAVASU
IN THE ♥ OF HAVASU
VOTED BEST MOVIE THEATER BY THE READERS POLL FOR 2024

Fortiline Waterworks facility on Lake Havasu Avenue seeking rezone for outdoor storage

TODAY'S NEWS-HERALD

Owners of Fortiline Waterworks, a wholesale warehouse facility located at 669 Lake Havasu Ave, are requesting to rezone the property from General Commercial to General Commercial/Planned Development to allow for an outdoor storage area.

The rezone request and two code exceptions being requested would allow for an outdoor storage area to be constructed in front of the primary building, and would allow it to exceed the area of the building.

According to city documents, the property is currently developed with a 12,500 square foot commercial building, and the property is 1.66 acres. Fortiline Waterworks is in the commercial/industrial piping wholesale business, and according to a letter of intent, the "business involves inside warehousing and an outdoor storage yard for a variety of heavy-duty plastic piping."

Further, the letter states that a new secondary driveway from Lake Havasu Avenue will be constructed to replace an older style asphalt entrance, and that outdoor storage in the front, side, and rear yards will be shielded from view by a six-foot-tall perimeter screen wall.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025**, to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

IN BRIEF:

WASHINGTON

» **CORPORATION FOR PUBLIC BROADCASTING SHUTS DOWN AFTER FEDERAL FUNDING CUTS:** The Corporation for Public Broadcasting said Friday it was shutting down, about one week after President Donald Trump signed legislation stripping its funding. The group, which administers funds for PBS TV affiliates and NPR radio stations, said it would "begin an orderly wind-down of its operations." A majority of staff positions will be cut Sept. 30, when the group's fiscal year ends. "A small transition team will remain through January 2026 to ensure a responsible and orderly closeout of operations," the nonprofit said in a statement.

DEIR AL-BALAH, GAZA STRIP

» **US ENVOY VISITS AID SITE IN GAZA RUN BY ISRAELI-BACKED GROUP THAT HAS BEEN HEAVILY CRITICIZED**

U.S. President Donald Trump's Mideast envoy has visited a food distribution site in the Gaza Strip operated by an Israeli-backed American contractor whose efforts to deliver food to the hunger-stricken territory have been marred by violence and controversy. International experts warned this week that a "worst-case scenario of famine" is playing out in Gaza. Israel's nearly 22-month military offensive against Hamas has shattered security and made it nearly impossible to safely deliver food to starving people.

ANACONDA, MONTANA

» **4 KILLED IN A SHOOTING AT A MONTANA BAR, MANHUNT UNDERWAY**

Four people were killed in a shooting at a Montana bar Friday, authorities said as they launched a manhunt for the suspect. The shooting happened around 10:30 a.m. on Friday at The Owl Bar in Anaconda, according to the Montana Division of Criminal Investigation, which is leading the investigation. The agency confirmed four people were pronounced dead at the scene. The suspect, who was identified as 45-year-old Michael Paul Brown, lived next door to the bar.

— news services

Trump orders nuclear subs repositioned over statements from ex-Russian leader

ASSOCIATED PRESS

WASHINGTON — In a warning to Russia, President Donald Trump said Friday he's ordering the repositioning of two U.S. nuclear submarines "based on the highly provocative statements" of the country's former president Dmitry Medvedev.

Trump posted on his social media site that based on the "highly provocative statements" from Medvedev he had "ordered two Nuclear Submarines to be positioned in the appropriate regions, just in case these foolish and inflammatory statements are more than just that."

The president added, "Words are very important, and can often lead to unintended consequences, I hope this will not be one of those instances."

It wasn't immediately clear what impact Trump's order would have on U.S. nuclear subs, which are routinely on patrol in the world's hotspots, but it comes at a delicate moment in the Trump administration's relations with Moscow.

Trump has said that special envoy Steve Witkoff is heading to Russia to push Moscow to agree to a ceasefire in its war with Ukraine and has threatened new economic sanctions if progress is not made. He cut his 50-day deadline for action to 10 days, with that window set to expire next week.

Tribune News Service

President Donald Trump answers a question in the Oval Office of the White House in Washington, D.C., last month.

The post about the sub repositioning came after Trump, in the wee hours of Thursday morning, had posted that Medvedev was a "failed former President of Russia" and warned him to "watch his words." Medvedev responded hours later by writing, "Russia is right on everything and will continue to go its own way."

Medvedev was president from 2008 to 2012 while Putin was barred from seeking a second consecutive term but stepped aside to let him run again. Now deputy chairman of Russia's National Security Council, which Putin chairs, Medvedev has been known for his provocative and inflammatory statements since the start of the war in 2022, a U-turn from his presidency, when he was seen as liberal and progressive.

He has frequently wielded nuclear threats and lobbed insults at Western leaders on social media. Some observers have argued that with his extravagant rhetoric, Medvedev is seeking to score political points with Putin and Russian military hawks.

Trump and Medvedev have gotten into online spats before.

On July 15, after Trump announced plans to supply Ukraine with more weapons via its NATO allies and threatened additional tariffs against Moscow, Medvedev posted, "Trump issued a theatrical ultimatum to the Kremlin. The world shuddered, expecting the consequences. Belligerent Europe was disappointed. Russia didn't care."

Earlier this week, he wrote, "Trump's playing the ultimatum game with Russia: 50 days or 10" and added, "He should remember 2 things: 1. Russia isn't Israel or even Iran. 2. Each new ultimatum is a threat and a step towards war. Not between Russia and Ukraine, but with his own country."

Night vision goggles may have hampered helicopter pilots before crash with jet, experts tell NTSB

ASSOCIATED PRESS

The pilots of a U.S. Army helicopter that collided with a passenger jet over Washington in January would've had difficulty spotting the plane while wearing night vision goggles, experts told the National Transportation Safety Board on Friday.

The Army goggles would have made it difficult to see the plane's colored lights, which might have helped the Black Hawk determine the plane's direction. The goggles also limited the pilots' peripheral vision as they flew near Ronald Reagan Washington National Airport.

The challenges posed by night-vision goggles were among the topics discussed at the NTSB's third and final day of public testimony over the fatal midair crash, which killed all 67 people aboard both aircrafts.

Experts said another challenge that evening was distinguishing the plane from lights on the ground while the two aircraft were on a collision course. Plus, the helicopter pilots may not have known where to look for a plane that was landing on a secondary runway that most planes didn't use.

"Knowing where to look. That's key," said Stephen Casner, an expert in human factors who used to work at NASA.

Two previous days of testimony underscored a number of factors that likely contributed to the collision, sparking Board Chairwoman Jennifer Homendy to urge the Federal Aviation Administration to "do better" as she pointed to warnings the agency ignored years earlier.

Some of the major issues that have emerged so far include the Black Hawk helicopter flying above prescribed levels near the airport as well as the warnings to FAA officials for years about the hazards related to the heavy chopper traffic there.

It's too early for the board to identify what exactly caused the crash. A final report from the board won't come until next year.

But it became clear this week how small a margin of error there was for helicopters flying the route the Black Hawk took the night of the nation's deadliest plane crash since November 2001.

Tribune News Service

A U.S. Park Police helicopter flies over the Potomac River near Ronald Reagan Washington National Airport after the crash between an American Airlines passenger jet and an Army Black Hawk helicopter.

Teacher charged in fatal Arkansas stabbings bounced between schools in 3 different states

ASSOCIATED PRESS

LITTLE ROCK, Ark. — A 28-year-old teacher who authorities say admitted to fatally stabbing two hikers he didn't know in an Arkansas state park bounced between four school districts in three states in recent years.

Andrew James McGann was placed on administrative leave at an elementary school in the Dallas suburb of Flower Mound, Texas, in spring 2023 after concerns were raised about his classroom management. But he passed background checks in two different Oklahoma school districts and had been expected to start a new job in northwest Arkansas on Aug. 11.

McGann has been charged with two counts of capital murder in the killing Saturday of Clinton David Brink, 43, and Cristen Amanda Brink, 41.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Discover the Best Independent Living Community in Lake Havasu!

- Gourmet Dining Experiences
- All-Inclusive Living
- Resort-Style Experiences
- Fitness and Wellness Programs
- Engaging Social Events Daily

Meet our Executive Director, Jojo! She brings years of expertise in independent living, creating a vibrant community where comfort meets active engagement.

Discover Your New Home
(928) 223-5690

Uncover What Sets Us Apart!

Cliff Berger/Southwest Area Incident Management Team

The Dragon Bravo fire burning along the Grand Canyon's North Rim was at 11% containment as of Aug. 2. It has burned 114,538 acres since July 4.

Megafire

FIRE GROWTH IN GRAND CANYON SLOWS SLIGHTLY, BUT NO END YET IN SIGHT

ARIZONA DAILY SUN, FLAGSTAFF

The explosive growth of the Dragon Bravo Fire burning on the North Rim of the Grand Canyon and in the Kaibab National Forest has slowed somewhat in the second half of this week.

As of Friday morning, the latest available infrared mapping showed the fire at 111,970 acres — still the 10th-largest fire in Arizona's recorded history and the largest active wildfire currently burning in the United States.

But it is no longer advancing by 15,000 acres a day.

In a video briefing shared on Thursday, fire behavior analyst Chris Moore from the Southwest Area Complex Incident Management Team Two said the team was expecting continued growth on the fire's northern edge in the days to come. Burn scars from previous fires, including the 2023 Kane Fire and 2006 Warm Fire, may help restrain that growth.

"Most of the time, in an average year, old fire scars will slow down fire spread," Moore said. "But it being so dry this year, we'll see if that holds true today."

Operations Section Chief Craig Daugherty, in another video update, noted that the eastern flank of the fire was approaching a "fuels transition" in the House Rock Valley area.

Moving out of the dense mixed-conifer forest should provide more favorable opportunities for firefighters to create containment, although steep and rugged terrain will present another challenge.

Total containment has increased slightly from 4% up to 8%. An increase in relative humidity, especially overnight, provided "slight moderation" in the fire's behavior on Thursday night, but fire managers are predicting yet another drop in humidity over the weekend.

Nearly 1,200 personnel remain assigned to the Dragon Bravo Fire, nearly a month after it first ignited.

Three other national parks also burning

By SAM HILL
TRIBUNE NEWS SERVICE

Wildfires are burning through four national parks across the West in what is shaping up to be an intense fire season for an already beleaguered federal agency. Making things even worse, experts say, is that the National Park Service employs fewer firefighters than it now needs, and is using an antiquated fire management strategy.

In Washington, crews at the southern edge of Olympic National Park have been battling the human-caused Bear Gulch Fire since July 6 as the fire has grown to over 3,000 acres and continued to spread north. The fire has caused evacuations of the Lake Cushman recreation area and the park's Staircase Campground area.

At Colorado's Black Canyon of the Gunnison National Park, wildfire responders have been working to suppress a fire at the park's South Rim that has been burning since July 10. And in Wyoming, the 10-acre Ash Fire was spotted burning in the southwest corner of Yellowstone National Park Wednesday.

While the fact that there are wildfires at four different national parks at the same time isn't alarming on its own, it's a sign that regional wildfire seasons are extending and overlapping — a troubling idea heading into the peak wildfire season that responders call "Dirty August."

Robin Wills, a retired park service chief of Fire and Aviation for the Pacific West Region, told SFGATE in a call that large and dangerous wildfires are starting to burn across entire calendar years instead of during shorter, monthlong periods in specific regions.

Chris Rubio/Arizona Forestry

Almost 1,200 personel are committed to fighting the Dragon Bravo fire as of Saturday, Aug. 2. ABOVE: Arizona Forestry's Tuscon Fire Crew.

Courtesy of InciWeb.gov

The Dragon Bravo fire as seen on July 30, 2025.

PIPE DREAMS

Wake Up Call

By The Craig Plumbing Staff

I see where Arizona has now adopted a 5 AM start time for construction activities during the summer months, from May 1 - October 15, and we could not agree more. This 5 AM start time applies only during the week, and 7 AM on Saturdays. Additionally, the pouring of concrete can start 1 hour earlier.

While it is a temporary inconvenience for some, protecting the health of our construction workers is the objective, and let's face it, the summer months are absolutely brutal in most parts of our state. It's miserable for sure, but I suppose it's a different kind of miserable wearing insulated coveralls and scraping ice off your windshield just to head off to work in North Dakota. Not sure which is worse.

Sure, no one wants the sound of nail gun or concrete mixer as their wake-up call, but try to think of the workers well being, and remember it's only temporary. Try to avoid yelling at the crews starting at 5 AM while wearing your bunny slippers and drinking a soy milk latte...they now have a right to start early, and for good reason.

And to the construction crews and company owners, let's minimize the friction and be professionals, keeping the radio off or low, watching the colorful language, and keeping the jobsite clean by picking up your trash. While we all know to stay hydrated, also know the signs of heat stroke and keep an eye on each other for those signs.

Now let's go build something!

Craig PLUMBING

Serving the community for over 42 years !

Craigplumbing.net

(928) 692-1800 | (928) 453-7173 | (928) 754-7173

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Hi-Desert Star
People you know. News you can't find anywhere else.

This space is for the County Clerk's Filing Stamp

57675 Twentynine Palms Highway, Suite 103
Yucca Valley, Ca 92284
760-365-3315
Legals@hidesertstar.com

STANTEC
Jackie Clark
514 Via De La Valle, Suite 308
Solana Beach CA 92075

PROOF OF PUBLICATION
(2015.5 C.C.C.P.)

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above entitled matter. I am the principal clerk of the printer of the:

HI-DESERT STAR

a newspaper of general circulation, printed and published **WEEKLY** in the City of **YUCCA VALLEY**. County of San Bernardino, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California,
under the date of **November 27, 1961**.

Case Number **107762**: that the notice, of which the annexed is printed copy (set in type not smaller than nonpareil), has been published in each regular and entire issue of the said newspaper and not in supplement thereof on the following dates, to wit:

Hi-Desert Star: 8/6/2025, 8/13/2025, 8/20/2025

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

Dated at: **YUCCA VALLEY**, California,
This day of **8/20/2025**

Micah Ramirez

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com.** Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by September 15, 2025, to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Pub. S.: 08/06, 08/13, 08/20/2025

Clean&Seal
HIGH QUALITY STONE SURFACE CARE
EXPERT CLEANING, MAINTENANCE, AND RESTORATION OF STONE, TILE/GROUT, CONCRETE, AND MUCH MORE!
Carpet & Upholstery Cleaning
Damaged Overlay
Dirty Travertine
Call Jeff at 706-275-7866 | www.cleanandsealonline.com

CUSTOM UPHOLSTERY
INDOOR & OUTDOOR
Sofas, Patio Furniture, Recliners, Awning Insert Cushions, Powder Coating, Headboards, Bed Frames, Sectionals, Sling Chairs, Golf Carts & More.
STAIN RESISTANT FABRIC AVAILABLE!
SUNBRELLA FABRIC AVAILABLE!
CONTACT US TODAY FOR A FREE ESTIMATE!
(760) 835-2421
DS-40933759

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:
Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

DS-42256213

Study uses wristbands to measure cancer risks

Ruby Grisin
Louisville Courier Journal
USA TODAY NETWORK

LOUISVILLE, KY – A simple silicone wristband could bring important findings to continued cancer research in Louisville, Kentucky, and beyond.

The Southern Environmental Health Study is a project that combines the efforts of researchers at Vanderbilt University with those of medical experts at Louisville's Family Health Centers Inc. to uncover more definitive data about the environmental factors that cause cancer.

While there have been animal studies done for certain chemicals, Vanderbilt University researcher Dr. Martha Shrubsole told the Louisville Courier Journal, part of the USA TODAY Network, that the new study is unique because it considers a variety of risks, from the air we breathe to how much sleep we get.

"Another big part that I find really important is the career and lifestyle component," said Evan Sims, a research assistant working on the study. "Someone who works in manufacturing for 30 years is going to come in contact with chemicals that someone who is a receptionist won't come in contact with."

The wristbands have a pivotal role in identifying cancer risks and potentially minimizing the number of people who need treatment later down the line, Shrubsole said. Silicone mimics the way skin absorbs particles, allowing organic chemicals from the air, water and skin of the wearer to be absorbed into the band.

Ryan Combs is volunteering in a cancer study that uses wristbands to collect data in a person's immediate environment. MICHAEL CLEVENGER/ LOUISVILLE COURIER JOURNAL

"By better understanding the environmental and lifestyle contributors to cancer, we can work to create healthier communities and a healthier world for generations to come," Shrubsole said in a Family Health Centers news release.

After filling out a general survey, participants are asked to wear a wristband for seven days so it can collect particles from their surroundings. According to FHC, these wristbands can collect and identify over 1,400 potentially dangerous chemical signals.

Participants can also provide optional blood, urine and saliva samples to enhance results. The more researchers know about a person's lifestyle, the more patterns they can detect.

The wristbands are then sent off to a lab where the exposures are recorded. While most participants do not have a cancer diagnosis when they sign up for the long-term study, researchers can look back at the data years later and assess the similarities and differences between those who did and did not develop cancer.

There are two key factors that necessitate the study: A lack of clarity on what causes cancer and a lack of knowledge about why Southern states suffer higher rates, said FHC chief communications officer Melissa Mather.

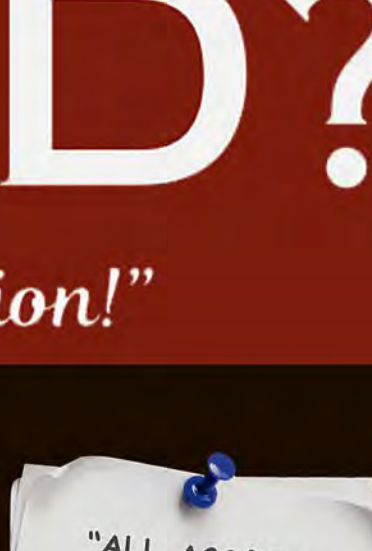
According to 2021 data from the National Cancer Institute, Kentucky is the state with the highest cancer rates.

When referencing both the prevalence and morbidity of cancer in the South, Mather said: "It's just so different in places like Kentucky than it is in New England." While the data from the National Cancer Institute does not indicate a clear trend, there has been an effort within the scientific community to learn why many Southern states have high cancer rates.

FIESTA Ford USED CAR STORE
WE BUY CARS, TRUCKS & RV'S
Call Greg Brown
760.250.7586

Enhance Lifetime Retirement Security with a Reverse Mortgage Loan
CALL TODAY FOR MORE INFORMATION

Clay Behm NMLS: 582971
Certified Reverse Mortgage Professional
Phone (760) 501-1279
37281 Pineknoll Ave
Palm Desert CA 92211
cbehm@mutualmortgage.com
MutualReverse.com/Clay-Behm
Mutual of Omaha MORTGAGE
Mutual of Omaha Mortgage, Inc., NMLS 1025894. 3131 Camino Del Rio N 1100, San Diego, CA 92108. Licensed by the Department of Business Oversight under the California Residential Mortgage Lending Act - California License 4131356 These materials are not from HUD or FHA and the document was not approved by HUD, FHA or any Government Agency. Subject to Credit Approval. www.nmlsconsumeraccess.org MOOMR.1120.34 Equal Housing Lender

INJURED?
"You deserve justice and compensation!"
Call Harry, Injury Lawyer
"ALL ACCIDENT CASES ARE CONSIDERED. NO RECOVERY, NO FEE. FREE CONSULTATIONS."
(800) 760-0468

OFFICE LOCATIONS THROUGHOUT THE COACHELLA VALLEY
MILLIONS RECOVERED!
Harry Kaladjian, Esq.
Personal Injury Lawyer
www.HarryTheLawyer.com

Flights

Continued from Page 3A

airline that launched in 2021 and initially focused on providing flights to outdoor-recreation focused destinations in the western US.

Avelo, which also initially offered flights between Palm Springs and the Oregon markets of Eugene and Bend/Redmond, flew twice a week between Palm Springs and Santa Rosa.

But in mid-July, Avelo announced it would no longer fly in the western half of the country, including Palm Springs, and would be refocusing on airports in the eastern half.

A spokesperson for the airline confirmed the seasonal service to Santa Rosa had ended in June.

The Santa Rosa route is a bit of an anomaly for airlines serving Palm Springs International Airport, where the vast majority of the flights are to much larger airports in major metropolitan areas.

Only Allegiant Airline's seasonal flights between Palm Springs and Bellingham, Washington — a college town located between Seattle and Vancouver, British Columbia — serve a smaller airport and market than Schulz airport and Santa Rosa.

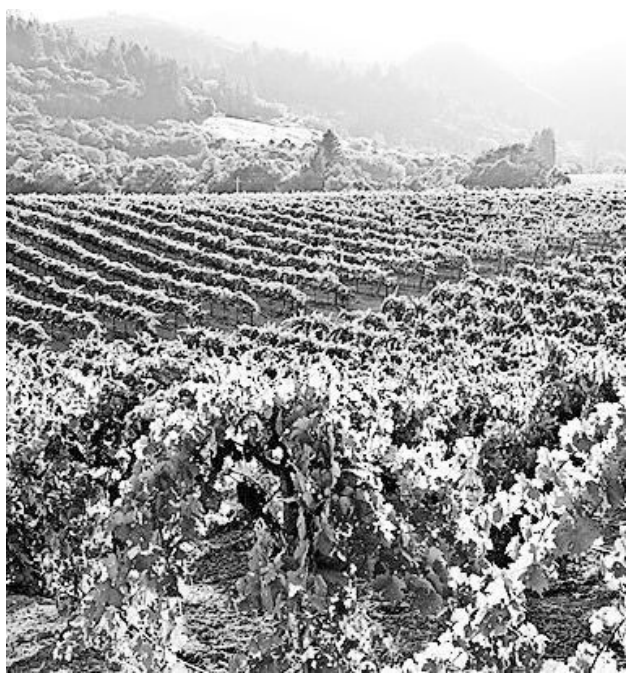
But the PSP–Santa Rosa flights will connect two areas known for their major tourism draws and wealthy residents, although they line up better with Palm Springs' wintertime tourist high season than Sonoma's summertime peak season.

Alaska is now selling tickets for the flights. As of Thursday morning, seats on the inaugural Oct. 26 flight to Santa Rosa ranged from $259 for a "saver ticket", which has more restrictions than others, to $354 for a first-class seat.

However, tickets are being sold for the same flight a few days later, on Halloween, for $79 for a saver ticket or $154 for a seat in first class.

The new route was one of seven the airline announced Thursday, with the other six going between California and smaller cities in the Pacific Northwest. They include new flights between Ontario International Airport and Boise, Idaho and between John Wayne International Airport in Orange County and Spokane, Washington.

Paul Albani-Burgio covers growth, development and business in the Coachella Valley. Email him at paul.albani-burgio@desertsun.com.



People flying to Santa Rosa often visit the Sonoma Valley's wineries. PROVIDED BY SONOMA COUNTY

High school

Continued from Page 1A

up just to see how they're doing," he said.

They've been working together long enough that they can naturally split duties during a visit. While Tinoco talks with students — asking about their summer or what they're worried about — Perez turns to the parents, answering questions and sharing resources.

"It's not just about the students, it's about the whole household," Perez said. "You can't help kids if you're not listening to their families, too."

That mindset, she said, is what she feels makes the high school unique, a culture where staff and families see each other as extended family. It also shows in her easy rapport with Tinoco.

Perez laughed as she recalled letting him take care of the occasional barking dog.

"I'll throw him in the front," she said. "He can handle it."

Desert Hot Springs High School Principal Omar Tinoco smiles while talking about his experiences doing home visits with families of his students in Desert Hot Springs on July 30.
ANDY ABEYTA/THE DESERT SUN

Glimpses into students' lives beyond the classroom

On the surface, a visit seems simple — a quick introduction, a small bag of supplies, a business card — but it often opens the door to deeper conversations about students' summers, anxieties about school and families' expectations.

Often, it's incoming freshmen who carry the most anxiety about starting at a new campus. And for Tinoco, some of those students are ones he first knew as kindergarteners at Bubbling Wells Elementary, now returning to his care as high-schoolers. But sometimes the requests come from sophomores or even seniors — students who want to reconnect with school, or as Tinoco put it, "lock in" for their final year.

Some conversations are lighthearted, like a student proudly showing off her newly decorated bedroom, while others reveal deeper needs.

"Last year we met a student who was completely disconnected from school — grades, attendance, behavior, everything," Tinoco said. "When we visited his house, he had a barbershop set up in the back. Now he's in our barbering program and competing in it. Those connections — where we get to see a little bit of their lives — are incredible."

Being welcomed into a family's home is "an intimate moment," he said, noting that many parents also use the visits to connect with the school and seek guidance on their child's academics, behavior and next steps.

"I'll be honest — sometimes they don't open the door after they've even set up the schedules because their anxiety is so high right now," he said. "All they see are two officials and the polos."

Though the visits focus on calming back-to-school jitters, they also tackle larger, politically driven issues facing students and families. When the Trump administration recently urged Deferred Action for Childhood Arrivals recipients to self-deport, saying they were "not automatically protected from deportation," Tinoco said it left many reeling and led him to help one student work through the trauma of that fear.

"Sometimes students share things they haven't told anyone else. This year, one of our visits turned into helping a student navigate his future while dealing with his immigration status," he said. "It's not just about school, it's about their lives."

Turning school connections into lifelong support

Throughout the school year, Perez works to connect families with essentials such as food, clothing, utility assistance and even prom attire. Her office also doubles as a welcoming space at lunchtime, where students often stop by to share their struggles or simply eat in a safe spot.

"Sometimes we spend more time with these kids than their parents do," Perez said. "We want them to know they always have someone here to support them."

She added that a big part of their work is providing "a little light, a little hope," reminding students and families that no matter how hard things get, they are not alone. That philosophy has been the guiding light for the school since Tinoco took over as principal four years ago, when it was still reeling from pandemic disruptions and a campus climate described as tense and fractured.

"We've worked hard to build a culture where they know we care about them," he said. "That changes everything."

Part of that culture shift has been ensuring that every student has at least one adult on campus they can trust — a goal Tinoco tracks systematically through clubs, mentorship programs and student groups.

"If there's a student who isn't connected to anything, we find something for them," he said. "At some point throughout their four years, they're going to need someone to help them out. We want to be that person."

One recent moment stood out: a former student, once upset with Tinoco over a difficult decision, visited the high school before departing for the Navy to thank him.

"It does not stop when you graduate," he said. "We're going to be here if you need help."

With the first day of school on the horizon on Wednesday, Aug. 6, Tinoco and Perez hope their visits spark a lasting sense of belonging — one that helps students and families build connections on campus that endure well beyond the classroom.

Jennifer Cortez covers education in the Coachella Valley. Reach her at jennifer.cortez@desertsun.com.

Housing market

Continued from Page 1A

Home prices in Desert Hot Springs for June

- **Number of homes sold:** 26 (-21.21% from June 2024)
- **Median price of home sold:** $402,500 (-0.62% from June 2024)
- **Median list price of home on the market:** $448,999
- **Lowest price of home sold:** $191,400
- **Highest price of home sold:** $640,000 (12613 Sylvanus Drive)
- **Average number of days homes were listed for before selling:** 63

Home prices in Cathedral City for June

- **Number of homes sold:** 37 (+2.78% from June 2024)
- **Median price of home sold:** $556,000 (-0.89% from June 2024)
- **Median list price of home on the market:** $599,999
- **Lowest price of home sold:** $230,000
- **Highest price of home sold:** $1.06 million (36296 Chagall Court)
- **Average number of days homes were listed for before selling:** 64

Home prices in Rancho Mirage for June

- **Number of homes sold:** 34 (-8.11% from June 2024)
- **Median price of home sold:** $1,192,500 (+14.66% from June 2024)
- **Median list price of home on the market:** $1.259 million
- **Lowest price of home sold:** $550,000
- **Highest price of home sold:** $3 million (29 Clancy Lane Estates)
- **Average number of days homes were listed before selling:** 71

Home prices in Palm Desert for June

- **Number of homes sold:** 84 (flat over June 2024)
- **Median price of home sold:** $625,000 (-5.30% from June 2024)
- **Median list price of home on the market:** $727,500
- **Lowest price of home sold:** $370,000
- **Highest price of home sold:** $3.1 million (196 Kiva Drive)
- **Average number of days homes were listed before selling:** 73

Home prices in Indian Wells for June

- **Number of homes sold:** 16 (+33.33% from June 2024)
- **Median price of home sold:** $2.165 million (+34.92% from June 2024)
- **Median list price of home on the market:** $1.795 million
- **Lowest price of home sold:** $865,000
- **Highest price of home sold:** $5.14 million (46000 East El Dorado Drive #1)
- **Average number of days homes were listed before selling:** 87

Home prices in La Quinta for June

- **Number of homes sold:** 94 (+22.08% from June 2024)
- **Median price of home sold:** $774,102 (+3.21% from June 2024)
- **Median list price of home on the market:** $877,500
- **Lowest price of home sold:** $368,000
- **Highest price of home sold:** $8.5 million (53400 Via Strada)
- **Average number of days homes were listed before selling:** 68

Home prices in Indio for June

- **Number of homes sold:** 85 (-2.30% from June 2024)
- **Median price of home sold:** $575,000 (+1.25% from June 2024)
- **Median list price of home on the market:** $599,250
- **Lowest price of home sold:** $320,000
- **Highest price of home sold:** $1.395 million (80970 Rockhurst Drive)
- **Average number of days homes were listed before selling:** 70

Home prices in Coachella for June

- **Number of homes sold:** 12 (+71.43% from June 2024)
- **Median price of home sold:** $447,500 (-8.49% from June 2024)
- **Median list price of home on the market:** $504,400
- **Lowest price of home sold:** $315,000
- **Highest price of home sold:** $573,166 (83840 Calle Moreno)
- **Average number of days homes were listed before selling:** 40

Paul Albani-Burgio covers growth, development and business in the Coachella Valley. Follow him on X at @albaniburgiop and email him at paul.albani-burgio@desertsun.com.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:
Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

DS-42256213

CALIFORNIA LOTTERY

Mega Millions/Friday	
Numbers	18,27,29,33,70
Meganumber	22
Jackpot	$140 million
Tuesday's jackpot estimate (drawing: 7:57 p.m.)	$150 million

SuperLotto Plus/Saturday	
Numbers	3,11,12,18,46
Meganumber	12
Jackpot	$30 million
Wednesday's jackpot estimate (drawing: 7:57 p.m.)	$31 million

Powerball/Saturday	
Numbers	6,18,34,35,36
Powerball	2
Jackpot	$410 million
Monday's jackpot estimate	$426 million

Lottery information: Riverside offices: (800) 568-8379
On the Web: www.calottery.com.

TODAY IN HISTORY

Today is Monday, Aug. 4, the 216th day of 2025. There are 149 days left in the year. On this date in:

1704: Britain captured the tiny but strategically important Rock of Gibraltar during the War of the Spanish Succession. Admiral George Rooke's Anglo-Dutch fleet fired about 15,000 cannonballs into the 2.3-square-mile city before making landfall. "The Rock" remains British today.

1790: Secretary of the Treasury Alexander Hamilton established the Revenue Cutter Service as Congress approved the building of 10 cutter ships. In 1915, the service merged with the Lifesaving Service to create the U.S. Coast Guard.

1892: Lizzie Borden's father and stepmother were found murdered by 29 whacks in Fall River, Massachusetts. A jury later ruled that Lizzie did not pick up the ax.

1900: The Honourable Elizabeth Angela Marguerite Bowes-Lyon – or as we knew her, the Queen Mum – was born in Hertfordshire, England.

1901: Louis Armstrong was born in New Orleans. He dropped out of school in the fifth grade and went to work for the Karnofsky family, which allowed him to buy his first cornet. He took his first formal lessons while incarcerated at the Colored Waifs Home for Boys, a juvenile detention facility.

1914: Great Britain declared war on Germany after the Germans invaded Belgium. The decision also bound its colonies, including India, Australia and Canada. As Europe tumbled into the Great War, the United States declared that it would remain neutral.

1932: Pioneering computer scientist Frances Allen was born in northern New York. She became the first woman to win the A.M. Turing Award, the highest prize in computer science, for her work on compiler techniques at IBM. She also died on this day, in 2020.

1944: The Nazis raided the "Secret Annex" in Amsterdam and sent Anne Frank and its seven other Jewish inhabitants to concentration camps. Only Anne's father, Otto Frank, survived.

– Danielle Dreilinger, USA TODAY Network

Newsom

Continued from Page 1A

Newsom: California must step in

Newsom asserted again Thursday that California must pause independent redistricting, which he has previously supported, to fight a president that "wants to rig the game" against Democrats, who could potentially block Trump's agenda if they win control of the House in 2026.

"De facto the Trump presidency ends in November of next year if the American people are given a fair chance and a voice and a choice," Newsom said.

While most other states give redistricting authority to their legislatures, California uses a bipartisan citizen commission created by voters through a ballot measure. So to usurp the commission and implement more Democratic-leaning districts, Newsom must call a statewide special election and go back to the voters.

Democrats currently hold 43 of the state's 52 House seats, including several competitive districts that flipped from Republican control last November.

The governor said he wants to hold the election on the first Tuesday in November because many communities already have local elections scheduled then. That could make it easier to mount on short notice and help reduce an estimated price tag of more than $200 million — though Newsom also said "there's too much at stake" to worry about the cost.

"How much did it cost to have the theatrics with the National Guard and Trump?" he said, referring to the president's recent deployment of thousands of troops in Los Angeles to quell immigration-related protests. "How many hundreds of millions of dollars was wasted?"

The November target gives California an extremely tight window to act. State law requires county elections offices to send a mail ballot to every registered voter a month before election day; military and overseas voter ballots and voter information guides go out 15 days before that. The material would need to be ready by late September to meet those deadlines.

Meanwhile, the Legislature is on summer recess until Aug. 18. The Democratic caucuses of the state Senate and Assembly are expected to begin private discussions next week about advancing a ballot measure, which requires a two-thirds majority in both houses, so that they could potentially pass it before the end of August.

Senate President Pro Tem Mike McGuire, a Healdsburg Democrat, did not immediately respond to a request for comment. Assembly Speaker Robert Rivas, a Salinas Democrat, said the Assembly will review its options to counteract Trump's redistricting scheme and "ensure our government remains fair, transparent and representative of the people."

"This move is an attempt to silence voters who reject MAGA extremism — including here in California, where the people have spoken loud and clear in two national elections," Rivas said in a statement.

PEOPLE IN THE NEWS

Busey pleads guilty to criminal charge for unwanted touching

Actor Gary Busey has pleaded guilty in a sexual misconduct case in New Jersey.

Busey, 81, made a virtual appearance in New Jersey Superior Court on July 31 and entered a guilty plea to one charge of fourth-degree criminal sexual contact, Busey's attorney Blair R. Zwillman confirmed to USA TODAY on Aug. 1.

With the plea, Busey has admitted to "touching the buttocks of a woman without her permission," Zwillman said. The case stems from his August 2022 appearance at the Monster-Mania Convention, where several women accused him of inappropriately touching them.

The "Buddy Holly Story" actor initially faced five criminal charges in the case and pleaded not guilty during a March arraignment, court records show. Prosecutors have since dismissed the other charges.

USA TODAY has reached out to the Camden County Prosecutor's Office for comment.

Busey was nominated for an Oscar for his portrayal of Buddy Holly in 1978's "The Buddy Holly Story." Aside from his film credits, which include "Point Break" and "Lethal Weapon," he's also forayed into reality television.

Nicks' shoulder injury will keep her off the road for two months

A recent injury will keep Stevie Nicks off the road for the next two months.

Nicks

The singer, 77, fractured her shoulder and "will require recovery time," Live Nation said in an Aug. 1 news release and statement posted on Nicks' social media accounts. As a result, nine of her upcoming concerts have been rescheduled.

The shows impacted are: Detroit; Saint Paul, Minnesota; Toronto; Brooklyn, New York; Boston; Cincinnati; Columbia, South Carolina; Tampa, Florida; and Hollywood, Florida.

The former Fleetwood Mac singer is scheduled to return to the stage with her Oct. 1 show at Moda Center in Portland, Oregon.

The news comes on the heels of the two-time Rock & Roll Hall of Fame inductee revealing she and former flame Lindsey Buckingham will rerelease their 1973 album "Buckingham Nicks."

Bryan responds to being hit by object at North Dakota State Fair

Luke Bryan says the person who threw an object at him during a concert in North Dakota went "too far" and if he'd seen who had done it, he would have taken action.

"I mean, if I saw him throw it, I could have gone right to him," Bryan told Taste of Country, a publication that mainly covers country music. "I probably would have jumped right off in there."

Bryan

The country music star, 49, was singing "Country Girl" during the North Dakota State Fair in Minot on July 26 when he was hit in the face by a small, round object.

Footage recorded by a fan shows Bryan stagger as he is momentarily shocked after being hit by the item, assumed to be a small ball. However, he maintained composure, only taking a brief moment to gather himself before finishing the song.

"It's the last song of the night.

It was a big ole fun party, and I think one person just took it too far," Bryan said. "At that point, if I'd even stopped it and pointed somebody out, it kills the vibe of the show."

The singer noted such incidents are becoming common and "every other entertainer out there is getting stuff" thrown at them. Cardi B, Lady Gaga, Drake, Lil Nas X, Zach Bryan and Pink are among the long list of artists who've had objects thrown at them during performances.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:
Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

DS-42256213

Convicted

Continued from Page 1A

Deputy District Attorney Joshua DeGonia told the jury during his closing statement at the Riverside Justice Center in Riverside that Moser was left shot and bleeding in the bathroom for 20 minutes before someone saw him and called 911.

"By that time it was too late," DeGonia said. "Michael Moser lost his life."

At issue, argued Trice's attorney, was whether or not Trice initiated the confrontation that resulted in the gun going off. Skip Feild argued on behalf of his client that the firearm accidentally went off when Moser attempted to defend himself.

"This situation was a tragedy," Feild told the jury. "Where we disagree is whether or not this was a murder."

The prosecution explained to the jury that Trice was charged with felony murder because he did not intend to kill when he and his associates planned the armed robbery. Bringing the firearm and using it, however, resulted in the end of Moser's life. Based on the evidence, the jury could have decided the killing amounted to a lesser charge or none at all.

A primary piece of evidence presented in the trial was video footage of an undercover operation in which law enforcement was placed in Trice's jail cell and asked him questions about the shooting.

That footage captured Trice recounting the crime, saying that he and the others were sitting in the vehicle in the outlets parking lot when they saw Moser walk by wearing what was described by the prosecutor as a $20,000 watch. Trice and a second associate, who was not charged, followed him into the bathroom and held him at gunpoint. Trice described that he didn't have his finger on the trigger. Moser grabbed the gun in defense, and when the two fought over the weapon the gun went off at so close a range Moser had burn marks from the muzzle.

Feild, Trice's attorney, argued that if Trice was going to claim a ruthless killing to establish a reputation for violence among his peers, the jailhouse confession would have been the moment.

DeGonia countered that texts days before the shooting capturing Trice conspiring to get the extended magazine he used during the robbery established that he had full knowledge of what he was doing and the danger it posed.

Two other people who were involved in the robbery already resolved their cases. Elijah Ray Burt Jr., 22, pleaded guilty to one count of voluntary manslaughter soon before trial. He is scheduled to be sentenced on Aug. 8. And Emanuel Rick Burt Jr., Burt's twin brother, pleaded guilty last year to conspiracy to commit a crime and was sentenced to six years in prison.

Christopher Damien covers public safety and the criminal justice system for The Desert Sun. He can be reached at christopher.damien@desertsun.com.

Desert Sun.
PART OF THE USA TODAY NETWORK

Customer service
To view important information online related to your subscription, visit **aboutyoursubscription.desertsun.com.** You can also manage your subscription at **account.desertsun.com.** Contact The Desert Sun for questions or report issues at 1-800-834-6052.

Operating hours are:
- Monday-Friday: 8:00 a.m.-5:00 p.m.
- Saturday: 7:00 a.m.-11:00 a.m. with limited support for Digital
- Sunday: 7:00 a.m.-11:00 a.m.

Full access print and digital subscriptions
Subscribe and save today by visiting **desertsun.com/subscribe.**

California law requires we inform you transportation costs are included in monthly subscription. The transportation fee can be avoided if you choose to pickup your newspaper at one of our distribution centers. To arrange for pickup, please call customer service at 1-800-834-6052.

Contact us
Customer Service 1-800-834-6052
Executive Editor ..... Kate Franco | 760-778-4688
Advertising ..... Denise Fleig | 760-778-4723
Obituaries ..... desertsun.com/obituaries
Classifieds ..... classifieds.desertsun.com

Corrections and clarifications
Our goal is to promptly correct errors. Email us at accuracy@thedesertsun.com to report a mistake or call 760-778-4629. Describe the error, where you saw it, the date, page number, or the URL.

Postal information
The Desert Sun, USPS# 155-000, is published 6 days per week excluding Saturday, Memorial Day, Independence Day, Labor Day, Thanksgiving (observed), Christmas Day (observed) and New Year's Day (observed) by Gannett Media Corp., 750 N. Gene Autry Trail, Palm Springs, CA 92262. Periodicals postage paid at Palm Springs, CA and additional mailing offices. **Postmaster:** Send all UAA to CFS. (See DMM 507.1.5.2); **NON-POSTAL ONE AND MILITARY FACILITIES:** Please send address corrections to Customer Service, 525 West Broadway, Louisville, KY 40202.

LocaliQ
California
GANNETT

PO Box 631437 Cincinnati, OH 45263-1437

AFFIDAVIT OF PUBLICATION

Jackie Clark
Stantec
514 Via De La Valle # 308
Solana Beach CA 92075-2718

STATE OF WISCONSIN, COUNTY OF BROWN

The Desert Sun, a newspaper published in the city of Palm Springs, Riverside County, State of California, and personal knowledge of the facts herein state and that the notice hereto annexed was Published in said newspapers in the issue:

08/01/2025, 08/03/2025, 08/04/2025

and that the fees charged are legal.
Sworn to and subscribed before on 08/04/2025

Legal Clerk

Notary, State of WI, County of Brown

My commission expires

Publication Cost:	$615.98	
Tax Amount:	$0.00	
Payment Cost:	$615.98	
Order No:	11509676	# of Copies:
Customer No:	1118517	1
PO #:		

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

VICKY FELTY
Notary Public
State of Wisconsin

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:
Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

DS-42256213

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

DS-42256213

The Press-Enterprise
3512 14th Street
Riverside, CA 92501
Willoughby, OH 44096
951-368-9222
951-368-9018 FAX

STANTEC
514 VIA DE LA VALLESTE 308
SOLANA BEACH, CA 92075--271

Account Number: 5291861

Ad Order Number: 0011747794

Customer's Reference / PO Number:

Publication: The Press-Enterprise

Publication Dates: 08/01/2025, 08/02/2025, 08/03/2025

Amount: $6,129.20

Payment Amount: $5,913.20 *Payment Method:* Credit Card

Invoice Text:

The Press-Enterprise
3512 14th Street
Riverside, CA 92501
Willoughby, OH 44096
951-368-9222
951-368-9018 FAX

5291861

STANTEC
514 VIA DE LA VALLESTE 308
SOLANA BEACH, CA 92075--271

Publication: The Press-Enterprise

PROOF OF PUBLICATION OF

Ad Desc:

PROOF OF PUBLICATION

I am a citizen of the United States. I am over the age of eighteen years and not a party to or interested in the above entitled matter. I am an authorized representative of THE PRESS-ENTERPRISE, a newspaper in general circulation, printed and published daily in the County of Riverside, and which newspaper has been adjudicated a newspaper of general circulation by the Superior Court of the County of Riverside, State of California, under date of April 25, 1952, Case Number 54446, under date of March 29, 1957, Case Number 65673, under date of August 25, 1995, Case Number 267864, and under date of September 16, 2013, Case Number RIC 1309013; that the notice, of which the annexed is a printed copy, has been published in said newspaper in accordance with the instructions of the person(s) requesting publication, and not in any supplement thereof on the following dates, to wit:

08/01/2025, 08/02/2025, 08/03/2025

I certify (or declare) under penalty of perjury that the foregoing is true and correct:

Date: August 05, 2025.
At: Riverside, California

Legal Advertising Representative, The Press-Enterprise

Legal No. **0011747794**

Ad Copy:

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENT
ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPA
ESTABLISHMENT AND MODIFICATIONS AT MARINE CORP
GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFO

The United States Marine Corps (USMC) and the Federal Administration (FAA) invites the public to review and comment on Environmental Assessment (EA) that evaluates a Proposed establish new permanent Special Use Airspace (SUA) and to modif SUA at the Marine Air Ground Task Force Training Command, Mar Air Ground Combat Center, Twentynine Palms, California (herein "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA a adjacent to the Combat Center to support current and future training 365 days per year. The Proposed Action is needed to increase sa adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmsp** Copies of the Draft EA are also available for review at: San Bernardin Library Administrative Offices, Twentynine Palms Branch Librar Valley Branch Library, Barstow Branch Library, Newton T. Bass Ap Library, Palm Springs Public Library, Stanley Mosk Library an Building, Victorville City Library, Joshua Tree Library, Lucerne Vall Horst Branch Library, Needles Branch Library, Lake Havasu Cit Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft E the 45-day public review period from August 1, 2025, to September All comments must be received or postmarked by **September 15,** be considered in the Final EA. Comments may be submitted via the or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the w **http://www.29palmspsua.com.**

AL
CE
S AIR
)RNIA

Aviation
the Draft
Action to
y existing
ine Corps
after, the

bove and
activities
fety while

sua.com.
no County
y, Yucca
ple Valley
d Courts
ey Janice
y Branch

EA during
15, 2025.
2025, to
e website

ebsite at

Start Your Day Here

Timberlake says he has Lyme disease as tour wraps

Justin Timberlake has been diagnosed with Lyme disease, the singer said Thursday on Instagram.

Timberlake shared the news in a post commemorating his Forget Tomorrow Tour, which wrapped in Turkey on Wednesday, adding that the disease "can be relentlessly debilitating, both mentally and physically."

Timberlake

The "SexyBack" singer wrote that he considered ending the tour when diagnosed but "decided the joy that performing brings me far outweighs the fleeting stress my body was feeling. I'm so glad I kept going."

Lyme disease is transmitted by deer ticks. It can cause flulike conditions, neurological problems, joint paint and other symptoms. In the vast majority of cases, it is successfully treated with antibiotics.

WHY DID COPS RUSH STAGE AT BRAD PAISLEY CONCERT?

Brad Paisley fans had cause for pause during a recent show in Connecticut when police swarmed the stage and surrounded the singer.

Video from the concert showed officers standing around the singer, arms crossed.

"They're the ones that said this is a speed trap," Paisley said, pointing out at the crowd. "Not me."

He then handed each officer a guitar pick and said, "It's not a bribe."

Paisley

Fans were catching on at that point and laughing along as it all played out.

Paisley then stepped back up to the mic and broke into his song "Mr. Policeman."

What might have had folks thinking the star of the show was headed up the road was actually a planned skit involving the local Bridgeport police.

"Last night was one for the books," the department posted while sharing the video on Facebook.

ALEC BALDWIN'S MALICIOUS PROSECUTION SUIT TOSSED

A New Mexico judge has dismissed a lawsuit filed by actor Alec Baldwin for malicious prosecution and civil rights violations in the 2021 fatal shooting of a cinematographer on the set of the Western movie "Rust."

The judge, in a ruling made public Wednesday, dismissed the case without prejudice for lack of significant action with the claim, which was filed in state district court earlier this year. Baldwin's attorneys will have 30 days to file a motion seeking reinstatement.

Luke Nikas, Baldwin's lead attorney, told The Associated Press in an email that the dismissal amounted to a nonevent since his team has been waiting to prosecute the case.

"We have been in good-faith settlement discussions with the parties to the lawsuit and will be refiling promptly if those discussions are not promptly and favorably resolved," he said.

— *Wire reports*

Hot shot

Claremont High's Doug Yegge runs through defenders during the first practice for the upcoming football season on Monday. **PHOTO BY MILKA SOKO**

BIRTHDAYS

Actor Giancarlo Giannini is 83.
Basketball Hall of Fame coach Roy Williams is 75.
Blues musician Robert Cray is 72.
Secretary of the Interior Doug Burgum is 69.
Rock singer Joe Elliott is 66.
Rapper huck D is 65.
Actor John Carroll Lynch is 62.
Rock singer Adam Duritz is 61.
Film director Sam Mendes is 60.
Actor Tempestt Bledsoe is 52.
Football Hall of Famer Edgerrin James is 47.
Actor Jason Momoa is 46.

COOL FACT

William Henry Harrison, the ninth president of the United States, holds a distinction that with luck will not be equaled. He was our shortest-serving president, dying on April 14, 1841, after just a month in office.

TODAY IN HISTORY

1936

Adolf Hitler presided over the opening ceremonies of the Summer Olympics in Berlin .

1966

Charles Joseph Whitman, 25, went on an armed rampage at the University of Texas in Austin that killed 14 people, most of whom were shot by Whitman while he was perched in the clock tower of the main campus building.

1981

MTV began its American broadcast; the first music video aired on the new cable TV network was "Video Killed the Radio Star," by The Buggles.

LOTTERY

WEDNESDAY'S NUMBERS
Daily 3 Afternoon: 9, 2, 6
Daily 3 Evening: 6, 1, 4
Daily 4: 0, 3, 2, 5
Fantasy 5: 9, 12, 23, 26, 36
DAILY DERBY
1st: 10, Solid Gold
2nd: 12, Lucky Charms
3rd: 11, Money Bags
Race time: 1:49.77
SUPER LOTTO PLUS
Wednesday's drawing: 12, 14, 32, 35, 47
Mega number: 7
Today's estimated jackpot: $30 million
MEGA MILLIONS
Tuesday's drawing: 17, 30, 34, 63, 67
Mega number: 11
Today's estimated jackpot: $140 million
POWERBALL
Wednesday's drawing: 4, 15, 35, 50, 64
Powerball: 8
Today's estimated jackpot: $410 million

Jacuzzi
BATH REMODEL

Safety. Style. Stress-Free Installation.

CALL NOW
877.326.0324

SPECIAL OFFER
Waiving All Installation Costs!

Add'l terms apply. Offer subject to change and vary by dealer. Expires 9/28/25.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Aging in Place?

Consider an AmeriGlide stair lift to keep you safe on your stairs.

Benefits of an AmeriGlide stair lift:
- Eliminate the risk of falls.
- Enjoy a comfortable ride up and down all of your home.
- Enjoy comfortable, safe and easy access to all of your home.
- More affordable than options such as moving.

Custom fit to your staircase
Indoor and Outdoor options
Fast delivery and installation

CALL NOW TO
SAVE $200
ON ANY STAIR LIFT!
1-855-409-4222

*Call today to get your **FREE, no obligation quote** in minutes!*

AmeriGlide
ACCESSIBILITY SOLUTIONS

NATIONAL DEBT RELIEF

BECOME DEBT FREE IN AS LITTLE AS 24-48 MONTHS

If you owe more than $10,000 in credit card or other unsecured debt, see how National Debt Relief can help resolve your debt for a fraction of what you owe.

Call today:

+1 (855) 980-3316

BBB ACCREDITED BUSINESS A+ rating

26BM

CALIFORNIA

2026 race for governor goes into new gear with Kamala Harris out

By Michael R. Blood
THE ASSOCIATED PRESS

Then-U.S. health secretary Xavier Becerra speaks at the Linen Building in Boise, Idaho, in 2024. **KYLE GREEN — AP**

Former U.S. Rep. Katie Porter, D-Calif., waves at supporters at an election night party March 5, 2024, in Long Beach. **DAMIAN DOVARGANES — THE ASSOCIATED PRESS**

LOS ANGELES — After months of uncertainty, the race to become California's next governor started Thursday.

Former Vice President Kamala Harris' decision Wednesday to bypass the 2026 contest pushed the campaign into a new phase, lacking its biggest potential star and the presumptive early favorite. Harris' formal exit opens the door for additional candidates to venture in, while scrambling a crowded field with no dominant candidate.

Democrats remain favored to hold the seat now occupied by term-limited Democratic Gov. Gavin Newsom, in a state where Republicans have not won a statewide election in nearly two decades. Democrats hold a nearly 2-to-1 advantage over registered Republicans statewide.

"The starting gun just popped," said Democratic consultant Andrew Acosta, calling it the first truly wide-open governor's race in over a quarter century. "The race is on."

Former U.S. Rep. Katie Porter moved quickly to establish herself as a leading contender, as her campaign pleaded for donations to "solidify Katie as the Democratic front-runner." Former Joe Biden administration health secretary Xavier Becerra sought to position himself as an heir to the Harris legacy: They both previously served as California attorneys general.

"The vice president and I have been together in this fight to restore the American dream for a long time," Becerra said in a statement. "I'm proud of our shared record — expanding health care for millions of Americans, bringing down the cost of prescription drugs, tackling our country's mental health crisis and defending reproductive freedom."

Harris' decision "reshapes this race for governor, but not the stakes," he added.

Because of Harris' potential candidacy, the contest had been in a slow walk for months. Now, following her decision, campaigns will be chasing her supporters while reevaluating a field in which Harris will not be taking part. Fundraising emails jammed inboxes.

Democratic consultant Michael Trujillo, a former aide to Democratic candidate and former Los Angeles Mayor Antonio Villaraigosa, said voters loyal to Harris are going to have to rethink their choices while looking at candidates they might not know much about in a large and growing field.

"I think everyone is picking up points from Kamala's voters now that she is not an option," Trujillo said. "There now is more oxygen for everyone else."

California is known as the epicenter of the so-called Trump resistance. The race will unfold with President Donald Trump dominating daily headlines as his administration battles the liberal-leaning state over health care funding for lower-income residents, immigration and environmental protection.

More than half of voters think the state is headed in the wrong direction, with many households vexed by inflation, notorious taxes and some of the nation's highest utility bills. Soaring rents and housing prices are driving residents to other, more affordable states. The state budget is expected to be in the red in coming years. And billions in spending on homelessness has done little to check the crisis.

But the primary election is not until June 2, so it is impossible to know what will be motivating voters in 10 months.

Long-suffering Republicans in the state have been heartened by last year's elections, in which the heavily Democratic state displayed a slight rightward shift. While Harris — a former San Francisco prosecutor, state attorney general and U.S. senator — won the state in a landslide, she fell well short of former President Joe Biden's vote totals in 2020 while Trump picked off a string of counties that eluded him four years earlier.

Among the candidates, Riverside County Sheriff Chad Bianco said in a statement that Harris realized "the status quo is impossible to defend." And conservative commentator Steve Hilton welcomed Harris' decision and said "after 15 years of one-party Democrat rule, everyone can see it's time for change in California."

As is the case in high-profile races for governor, a long list of candidates — some known, others not — fills out the ballot. California has what is known as a top-two primary system, in which all candidates appear on the same primary ballot regardless of political party, but only the top two vote-getters advance to the November general election, regardless of party.

Other Democrats in the mix include Lt. Gov. Eleni Kounalakis; former state Controller Betty Yee; former state Senate leader Toni Atkins; state schools Superintendent Tony Thurmond; and real estate developer Stephen Cloobeck.

In California, home to some of the nation's richest Americans, it is always possible a wealthy outsider could shake up the race. That was the case in 2010, when billionaire Republican Meg Whitman spent nearly $180 million, much of it her own money, but lost to Democrat Jerry Brown, a former governor.

Newsom — who has not endorsed a successor — was asked Thursday what he thought of the possibility that he and Harris, old friends from the San Francisco Bay Area, might meet again in the 2028 presidential race. Harris has not ruled out another run for the presidency after falling short in 2020 and 2024. Newsom is widely seen as positioning himself for a run in 2028, though he has veered away from speculating about his political future.

"We'll see where fate brings all of us," Newsom told reporters. "I'm looking forward to what she does next."

Associated Press writer Tran Nguyen in Sacramento contributed.

CALIFORNIA

Newsom wants a special election on redistricting in November

By Nicole Nixon and Lia Russell
THE SACRAMENTO BEE

SACRAMENTO — Gov. Gavin Newsom wants to ask voters in November to approve a series of new congressional maps to redistrict the state and combat a similar effort in Texas, he said Thursday.

The special election would be held the first Tuesday of November, and the maps would be in effect for the 2026, 2028 and 2030 election cycles, before reverting back to the control of the state Citizen Redistricting Commission.

"We're reacting to the president of the United States and (Texas Gov.) Greg Abbott trying to rig the election," Newsom told reporters Thursday during a news conference with Cal Fire at McClellan Park. "They recognize they can't win in the midterms. All the momentum has shifted away from them."

In an effort to keep Republicans in control of the U.S. House after the 2026 midterms, President Donald Trump has pressured the Texas Legislature to redraw maps in a way that benefits Republicans. A proposed congressional map unveiled this week could help Republicans win five additional House seats.

Republicans currently hold nine of California's 52 House seats. A "theoretical map" unveiled by the UCLA Voting Rights Project Thursday could shift the number of competitive or Republican-leaning districts from 16 to 5.

The Republicans hold a seven-seat majority over the House of Representatives, with four vacancies. Newsom said earlier this week that he believed Democrats could overturn the Republicans' 219-212 majority in the midterms.

In recent weeks Newsom has vocally advocated for the redistricting effort, but state lawmakers have not formally discussed the issue and adjourned July 18 for a monthlong summer recess.

Speaker Robert Rivas said this week he is "working with the governor and exploring every option to protect our democracy and ensure our government remains fair, transparent and representative of the people."

Senate President Pro Tem Mike McGuire has not commented on the proposal.

In most states, lawmakers draw new political lines after every census to account for population changes, but California is one of 15 states in which decennial redistricting is done via commission.

The 14-member citizen commission was created by voters in 2008 and is made up of five Democrats, five Republicans and four members with no party affiliation.

Newsom said he believed a special election would be doable because other counties already have elections planned for Nov. 4, and therefore would be cheaper than the 2021 recall, which cost more than $200 million.

The governor compared the cost of a special election to an old Mastercard commercial, saying democracy is "priceless."

He also promised transparency about any proposed political maps.

"This is not going to be done in a back room," he said. "It's not going to be done by members of some private group or bodies, so it can be given to the voters for their consideration in a very transparent way."

"There's too much at stake," Newsom said. "I'm not going to sit back any longer in a fetal position, in a position of weakness, when in fact, California could demonstrably advance strength, and that's what we intend to do to show our strength and capacity of purpose, of conviction, in the spirit of our founding fathers, in the spirit of the best of Roman Republic and Greek democracy, in the spirit of checks and balances, in the spirit of rule and love, the spirit that defines the best of this 249-year enduring experiment."

Newsom said he wants to call a special election for voters to weigh in, but lawmakers may not need to do that, according to a new memo from UCLA researchers.

The paper from the UCLA Voting Rights Project said that while the state Constitution explicitly requires the state's redistricting commission to draw new maps after every decennial census, it does not take away the Legislature's authority to conduct reapportionment as well.

"While the California Citizens Redistricting Commission has the legal responsibility to draw districts once every 10 years following the census, the California state Legislature has the legal constitutional authority to draw new districts today," the memo argues.

It notes that Article IV of the state Constitution "expressly recognize(s) the power of the Legislature to enact 'a statute establishing or changing boundaries of any legislative, congressional, or other election district.'"

The memo also addresses a 1983 ruling by the California Supreme Court, which blocked the then-Republican-led Legislature from adopting new maps mid-decade.

The ruling might serve as a legal hurdle for the current Democratic-controlled Legislature to do the same.

But the UCLA memo argues that when voters approved two ballot propositions in 2008 and 2010 that led to today's redistricting commission, certain constraints — including the once-per-decade rule — now apply only to the commission.

"The proposition ... did not include clear constitutional text that banned the Legislature from engaging in redistricting or prohibited the Legislature from doing so at certain times," the memo reads.

It concludes that the constitutional "requirements and limitations" surrounding redistricting "now apply only to the Citizen Redistricting Commission."

IMMIGRATION

Texas researcher faces deportation after San Francisco airport detention

By Olga R. Rodriguez and Christopher Weber
THE ASSOCIATED PRESS

SAN FRANCISCO — A researcher at Texas A&M University flying home from abroad was detained for more than a week by immigration authorities at the San Francisco International Airport, sleeping in a chair and living off food sold in the airport, his family and attorneys said Thursday.

It was unclear why Tae Heung "Will" Kim, who is a legal permanent resident with a green card, was detained July 21, his attorney Karl Krooth said at a news conference. Kim, who went to South Korea to attend his brother's wedding, is now in removal proceedings to be deported and is being held at an immigration detention facility in Arizona, Krooth said, adding that he has yet to talk to his client.

Customs and Border Protection said in a statement that any green card holder who has a drug offense is in violation of his legal status and can be detained. His attorneys said Kim was charged in 2011 with misdemeanor marijuana possession in Texas, where recreational use is illegal.

His attorneys declined to discuss those charges Thursday. But one attorney told The Washington Post, which first reported on Kim's detention, that he fulfilled a community service requirement and successfully petitioned for nondisclosure to seal the offense from the public record.

Since returning to the White House, President Donald Trump has launched an unprecedented campaign of immigration enforcement that has pushed the limits of executive power and clashed with federal judges trying to restrain him. American citizens, legal permanent residents, visa holders and visitors have been stopped at airports and detained for days. Some have faced deportation for minor infractions.

Kim, 40, has spent most of his life in the U.S., arriving at the age of 5. After helping out in his family's doll-manufacturing business following the death of his father, he recently entered a doctoral program at Texas A&M and is helping to research a vaccine for Lyme disease.

His attorney said holding Kim at the airport denied him his right to due process.

"The airport is not a detention facility. The airport is not in the immigration courtroom. And Customs and Border Protection officers are interrogators, they are not neutral arbiters," he said.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

JAPANESE

From Page 1

family endured.

Oda continues to voice her story as a survivor of Camp Tule Lake, even eight decades after the end of World War II. Most recently, she's one of nine Japanese Americans highlighted in a digital feature by photojournalist Morgan Lieberman.

Oda says her story, with roots spanning across eight decades, intersects with new, modern contexts.

These days, Oda spends her time in the San Fernando Valley, surrounded by friends and family. A retired school teacher, she says she's continuing to do "small things" for her community — collecting trash, donating anti-graffiti paint to go towards Little Tokyo.

She takes some inspiration from her Dodger hero, Shohei Ohtani, who she says always practices humility and respect. The Japanese star has a strict "no litter" policy. Even when he chews sunflower seeds in the dugout, he discards them in a cup he keeps nearby.

Moved by the gesture, Oda attempted to start an initiative to have Japanese fans help clean up Dodger Stadium after games.

She's also president of the Tuna Canyon Detention Station Coalition, a nonprofit whose mission is to illuminate the U.S. government's incarceration of immigrants at Tuna Canyon during World War II. She recently helped organize a traveling exhibit to tell the story of Tuna Canyon Detention Station and the Japanese, German and Italian immigrants and others who were incarcerated there.

She says she's made it her goal to "not be a bystander" so that such an injustice does not happen again.

Ten main incarceration camps for Japanese Americans were established mostly along the West Coast during World War II, including the 1,100-acre Camp Tule Lake in Northern California, where Kyoko Oda was born. **PHOTO COURTESY OF MORGAN LIEBERMAN — LONG LEAD**

HISTORY OF CAMPS

Oda belongs to a generation of Japanese Americans born or raised in incarceration.

During World War II, more than 125,000 Japanese Americans, most of whom were residing along the West Coast, were incarcerated — an action prompted after the Japanese attack on Pearl Harbor on Dec. 7, 1941.

Within hours of the attack, President Franklin D. Roosevelt invoked the Alien Enemies Act of 1798, which empowered the President to detain and deport Japanese, German, Italian and any U.S. residents deemed "alien enemies," regardless of their citizenship status.

In February of the following year, Roosevelt signed Executive Order 9066, designating military areas in the U.S. from which people could be excluded. The order led to the forced removal and incarceration of thousands of Japanese Americans from the West Coast.

Ten main incarceration camps were established mainly along the West Coast, including the 1,100-acre Camp Tule Lake in Northern California, where Oda was born.

In addition to the camps, 15 temporary detention centers were set up to process the arrival and transport of Japanese Americans, each arriving with only what they could carry. The Santa Anita Racetrack was one of these centers — holding approximately 19,000 people, with 8,500 residing in converted horse stalls within the racetrack.

In 1944, a unanimous Supreme Court ruling legally ended Japanese American incarceration. When the incarceration camps officially closed in 1946, each detainee was given $25 and a one-way ticket to their chosen destination. Countless were left in limbo, having lost their homes, businesses, friends and family, facing uncertain futures and fears of confronting post-war anti-Asian hostility.

In 1990, President George H.W. Bush signed an official letter of apology, acknowledging the injustice of internment, and each living survivor was given a $20,000 reparations check.

But the fear and anxiety stemming from incarceration would continue to resonate for decades across generations of Japanese Americans, among the children born into incarceration and even a new generation interested in preserving and untangling its history.

Last year, a personal project led photojournalist and MFA student Morgan Lieberman to Oda.

Based in Los Feliz, Lieberman, 30, was grappling with her own identity when she began researching World War II in 2023.

"It started off with me examining my own Jewish identity and thinking about the Holocaust. You know, I've kind of carried this grief around all my life," Lieberman said.

"Then I started going down this rabbit hole of realizing the atrocity of Japanese incarceration camps and how so much of this history surrounded my own backyard."

PROJECT EXPANDS

The project began as a profile of queer survivors of incarceration but quickly expanded to center nine Japanese Americans, including Oda, who shared their stories through interviews, videos and original photos.

The project, titled "The Age of Incarceration," was published in July by story studio Long Lead. But when she began the endeavor in late 2023, Lieberman couldn't predict its contemporary implications.

"Putting out this project feels very urgent," Lieberman said. "I think younger generations, especially with our access to social media, we have such a wealth of information about this déjà vu effect that is happening."

Lieberman says she sees "history repeating itself" with the nationwide ICE deportations.

The stepped-up immigration enforcement, promised by President Donald Trump during his campaign to return to the Oval Office, is focused on arresting and deporting dangerous felons, according to administration officials, who say the effort is achieving that goal.

But Lieberman and other critics call the program inhumane and said raids are taking in people without criminal records, and in some cases, have even included U.S. citizens.

Kristen Hayashi, a director and curator at the Japanese American National Museum, says there are parallels between the ongoing detainments and deportations and those from eight decades ago.

"What I think's the same is the hyperbole around 'threats.' Back then, they're saying there's a threat, and that's why they need to do this roundup. But there's really no evidence. That's how it echoes," Hayashi said. "There's a lesson to be learned from this, the arbitrary rules of immigration."

In light of the ongoing raids and the 80th anniversary of World War II and shadows of Japanese internment, Oda says she's focusing on moving forward, keeping herself busy.

She's working on Project Nozomi, a campaign effort with the San Fernando Valley Japanese American Community Center to raise money to improve and build new facilities for youth — a basketball court, classrooms and a cultural arts center for workshops and performances.

"When I realized what happened to my parents, and then now, I got confused and concerned," she said. "I love this country. My hope is that we will be the America I believe in."

"The Age of Incarceration" can be accessed at www.longlead.com.

Victoria Le is an intern with the Southern California News Group, through a partnership with the Asian American Journalists Association's L.A. chapter (AAJA-LA).

Are you in the market for a
new home?

THE SUN | THE PRESS-ENTERPRISE | INLAND VALLEY DAILY BULLETIN

Classifieds

NATIONAL DEBT RELIEF

BECOME DEBT FREE IN AS LITTLE AS 24-48 MONTHS

If you owe more than $10,000 in credit card or other unsecured debt, see how National Debt Relief can help resolve your debt for a fraction of what you owe.

Call today:

+1 (855) 980-3316

BBB ACCREDITED BUSINESS A+ rating

26BM

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

San Bernardino County Sun
473 E. Carnegie Dr, Ste 200
San Bernardino, CA 92408
909-386-3864
Fax 909-884-2536
sbsunlegals@inlandnewspapers.com

STANTEC
514 VIA DE LA VALLESTE 308
SOLANA BEACH, CA 92075--271

Account Number: 5291861

Ad Order Number: 0011747794

Customer's Reference / PO Number:

Publication: San Bernardino County Sun

Publication Dates: 08/01/2025, 08/02/2025, 08/03/2025

Amount: $6,129.20

Payment Amount: $5,913.20 *Payment Method:* Credit Card

Invoice Text:

San Bernardino County Sun
473 E. Carnegie Dr, Ste 200
San Bernardino, CA 92408
909-386-3864
Fax 909-884-2536
sbsunlegals@inlandnewspapers.com

5291861

STANTEC
514 VIA DE LA VALLESTE 308
SOLANA BEACH, CA 92075--271

Legal No. **0011747794**

PROOF OF PUBLICATION
(2015.5 C.C.P.)

STATE OF CALIFORNIA
County of San Bernardino

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer and publisher of the SAN BERNARDINO COUNTY SUN, a newspaper published in the English language in the city of SAN BERNARDINO, county of SAN BERNARDINO, and adjudged a newspaper of general circulation as defined by the' laws of the State of California by the Superior Court of the County of SAN BERNARDINO, State of California, under date 06/20/1952, Case No. 73084. The notice, of which the annexed is a printed copy, has been published in each regular and entire issue of said newspaper and not in any supplement thereof on the following dates, to wit:

08/01/2025, 08/02/2025, 08/03/2025

I certify (or declare) under the penalty of perjury that the foregoing is true and correct.

Executed in San Bernardino County, California
this 5th day of August, 2025.

Peggy Harmon

Signature

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENT
ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPA
ESTABLISHMENT AND MODIFICATIONS AT MARINE CORP
GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFC

The United States Marine Corps (USMC) and the Federal Administration (FAA) invites the public to review and comment on Environmental Assessment (EA) that evaluates a Proposed establish new permanent Special Use Airspace (SUA) and to modif SUA at the Marine Air Ground Task Force Training Command, Mar Air Ground Combat Center, Twentynine Palms, California (herein "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA a adjacent to the Combat Center to support current and future training 365 days per year. The Proposed Action is needed to increase sa adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmsp** Copies of the Draft EA are also available for review at: San Bernardir Library Administrative Offices, Twentynine Palms Branch Librar Valley Branch Library, Barstow Branch Library, Newton T. Bass Ap Library, Palm Springs Public Library, Stanley Mosk Library an Building, Victorville City Library, Joshua Tree Library, Lucerne Vall Horst Branch Library, Needles Branch Library, Lake Havasu Cit Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft E the 45-day public review period from August 1, 2025, to September All comments must be received or postmarked by **September 15,** be considered in the Final EA. Comments may be submitted via the or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments. please visit the w **http://www.29palmspsua.com.**

AL
CE
S AIR
)RNIA

Aviation
the Draft
Action to
y existing
ine Corps
after, the

bove and
activities
fety while

sua.com.
no County
y, Yucca
ple Valley
d Courts
ey Janice
y Branch

EA during
15, 2025.
2025, to
e website

ebsite at

Start Your Day Here

Timberlake says he has Lyme disease as tour wraps

Justin Timberlake has been diagnosed with Lyme disease, the singer said Thursday on Instagram.

Timberlake shared the news in a post commemorating his Forget Tomorrow Tour, which wrapped in Turkey on Wednesday, adding that the disease "can be relentlessly debilitating, both mentally and physically."

Timberlake

The "SexyBack" singer wrote that he considered ending the tour when diagnosed but "decided the joy that performing brings me far outweighs the fleeting stress my body was feeling. I'm so glad I kept going."

Lyme disease is transmitted by deer ticks. It can cause flulike conditions, neurological problems, joint paint and other symptoms. In the vast majority of cases, it is successfully treated with antibiotics.

WHY DID COPS RUSH STAGE AT BRAD PAISLEY CONCERT?

Brad Paisley fans had cause for pause during a recent show in Connecticut when police swarmed the stage and surrounded the singer.

Video from the concert showed officers standing around the singer, arms crossed.

"They're the ones that said this is a speed trap," Paisley said, pointing out at the crowd. "Not me."

He then handed each officer a guitar pick and said, "It's not a bribe."

Paisley

Fans were catching on at that point and laughing along as it all played out.

Paisley then stepped back up to the mic and broke into his song "Mr. Policeman."

What might have had folks thinking the star of the show was headed up the road was actually a planned skit involving the local Bridgeport police.

"Last night was one for the books," the department posted while sharing the video on Facebook.

ALEC BALDWIN'S MALICIOUS PROSECUTION SUIT TOSSED

A New Mexico judge has dismissed a lawsuit filed by actor Alec Baldwin for malicious prosecution and civil rights violations in the 2021 fatal shooting of a cinematographer on the set of the Western movie "Rust."

The judge, in a ruling made public Wednesday, dismissed the case without prejudice for lack of significant action with the claim, which was filed in state district court earlier this year. Baldwin's attorneys will have 30 days to file a motion seeking reinstatement.

Luke Nikas, Baldwin's lead attorney, told The Associated Press in an email that the dismissal amounted to a nonevent since his team has been waiting to prosecute the case.

"We have been in good-faith settlement discussions with the parties to the lawsuit and will be refiling promptly if those discussions are not promptly and favorably resolved," he said.

— *Wire reports*

Hot shot

Claremont High's Doug Yegge runs through defenders during the first practice for the upcoming football season on Monday. **PHOTO BY MILKA SOKO**

BIRTHDAYS

Actor Giancarlo Giannini is 83.
Basketball Hall of Fame coach Roy Williams is 75.
Blues musician Robert Cray is 72.
Secretary of the Interior Doug Burgum is 69.
Rock singer Joe Elliott is 66.
Rapper huck D is 65.
Actor John Carroll Lynch is 62.
Rock singer Adam Duritz is 61.
Film director Sam Mendes is 60.
Actor Tempestt Bledsoe is 52.
Football Hall of Famer Edgerrin James is 47.
Actor Jason Momoa is 46.

COOL FACT

William Henry Harrison, the ninth president of the United States, holds a distinction that with luck will not be equaled. He was our shortest-serving president, dying on April 14, 1841, after just a month in office.

TODAY IN HISTORY

1936

Adolf Hitler presided over the opening ceremonies of the Summer Olympics in Berlin .

1966

Charles Joseph Whitman, 25, went on an armed rampage at the University of Texas in Austin that killed 14 people, most of whom were shot by Whitman while he was perched in the clock tower of the main campus building.

1981

MTV began its American broadcast; the first music video aired on the new cable TV network was "Video Killed the Radio Star," by The Buggles.

LOTTERY

WEDNESDAY'S NUMBERS
Daily 3 Afternoon: 9, 2, 6
Daily 3 Evening: 6, 1, 4
Daily 4: 0, 3, 2, 5
Fantasy 5: 9, 12, 23, 26, 36
DAILY DERBY
1st: 10, Solid Gold
2nd: 12, Lucky Charms
3rd: 11, Money Bags
Race time: 1:49.77
SUPER LOTTO PLUS
Wednesday's drawing: 12, 14, 32, 35, 47
Mega number: 7
Today's estimated jackpot: $30 million
MEGA MILLIONS
Tuesday's drawing: 17, 30, 34, 63, 67
Mega number: 11
Today's estimated jackpot: $140 million
POWERBALL
Wednesday's drawing: 4, 15, 35, 50, 64
Powerball: 8
Today's estimated jackpot: $410 million

Jacuzzi
BATH REMODEL

Safety. Style. Stress-Free Installation.

CALL NOW
877.326.0324

SPECIAL OFFER
Waiving All Installation Costs!

Add'l terms apply. Offer subject to change and vary by dealer. Expires 9/28/25.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Aging in Place?

Consider an AmeriGlide stair lift to keep you safe on your stairs.

Benefits of an AmeriGlide stair lift:
- Eliminate the risk of falls.
- Enjoy a comfortable ride up and down all of your home.
- Enjoy comfortable, safe and easy access to all of your home.
- More affordable than options such as moving.

Custom fit to your staircase
Indoor and Outdoor options
Fast delivery and installation

CALL NOW TO
SAVE $200
ON ANY STAIR LIFT!
1-855-409-4222

*Call today to get your **FREE, no obligation quote** in minutes!*

AmeriGlide
ACCESSIBILITY SOLUTIONS

NATIONAL DEBT RELIEF

BECOME DEBT FREE IN AS LITTLE AS 24-48 MONTHS

If you owe more than $10,000 in credit card or other unsecured debt, see how National Debt Relief can help resolve your debt for a fraction of what you owe.

Call today:
+1 (855) 980-3316

BBB ACCREDITED BUSINESS A+ rating

26BM

CALIFORNIA

2026 race for governor goes into new gear with Kamala Harris out

By Michael R. Blood
THE ASSOCIATED PRESS

Then-U.S. health secretary Xavier Becerra speaks at the Linen Building in Boise, Idaho, in 2024. **KYLE GREEN — AP**

Former U.S. Rep. Katie Porter, D-Calif., waves at supporters at an election night party March 5, 2024, in Long Beach. **DAMIAN DOVARGANES — THE ASSOCIATED PRESS**

LOS ANGELES — After months of uncertainty, the race to become California's next governor started Thursday.

Former Vice President Kamala Harris' decision Wednesday to bypass the 2026 contest pushed the campaign into a new phase, lacking its biggest potential star and the presumptive early favorite. Harris' formal exit opens the door for additional candidates to venture in, while scrambling a crowded field with no dominant candidate.

Democrats remain favored to hold the seat now occupied by term-limited Democratic Gov. Gavin Newsom, in a state where Republicans have not won a statewide election in nearly two decades. Democrats hold a nearly 2-to-1 advantage over registered Republicans statewide.

"The starting gun just popped," said Democratic consultant Andrew Acosta, calling it the first truly wide-open governor's race in over a quarter century. "The race is on."

Former U.S. Rep. Katie Porter moved quickly to establish herself as a leading contender, as her campaign pleaded for donations to "solidify Katie as the Democratic front-runner." Former Joe Biden administration health secretary Xavier Becerra sought to position himself as an heir to the Harris legacy: They both previously served as California attorneys general.

"The vice president and I have been together in this fight to restore the American dream for a long time," Becerra said in a statement. "I'm proud of our shared record — expanding health care for millions of Americans, bringing down the cost of prescription drugs, tackling our country's mental health crisis and defending reproductive freedom."

Harris' decision "reshapes this race for governor, but not the stakes," he added.

Because of Harris' potential candidacy, the contest had been in a slow walk for months. Now, following her decision, campaigns will be chasing her supporters while reevaluating a field in which Harris will not be taking part. Fundraising emails jammed inboxes.

Democratic consultant Michael Trujillo, a former aide to Democratic candidate and former Los Angeles Mayor Antonio Villaraigosa, said voters loyal to Harris are going to have to rethink their choices while looking at candidates they might not know much about in a large and growing field.

"I think everyone is picking up points from Kamala's voters now that she is not an option," Trujillo said. "There now is more oxygen for everyone else."

California is known as the epicenter of the so-called Trump resistance. The race will unfold with President Donald Trump dominating daily headlines as his administration battles the liberal-leaning state over health care funding for lower-income residents, immigration and environmental protection.

More than half of voters think the state is headed in the wrong direction, with many households vexed by inflation, notorious taxes and some of the nation's highest utility bills. Soaring rents and housing prices are driving residents to other, more affordable states. The state budget is expected to be in the red in coming years. And billions in spending on homelessness has done little to check the crisis.

But the primary election is not until June 2, so it is impossible to know what will be motivating voters in 10 months.

Long-suffering Republicans in the state have been heartened by last year's elections, in which the heavily Democratic state displayed a slight rightward shift. While Harris — a former San Francisco prosecutor, state attorney general and U.S. senator — won the state in a landslide, she fell well short of former President Joe Biden's vote totals in 2020 while Trump picked off a string of counties that eluded him four years earlier.

Among the candidates, Riverside County Sheriff Chad Bianco said in a statement that Harris realized "the status quo is impossible to defend." And conservative commentator Steve Hilton welcomed Harris' decision and said "after 15 years of one-party Democrat rule, everyone can see it's time for change in California."

As is the case in high-profile races for governor, a long list of candidates — some known, others not — fills out the ballot. California has what is known as a top-two primary system, in which all candidates appear on the same primary ballot regardless of political party, but only the top two vote-getters advance to the November general election, regardless of party.

Other Democrats in the mix include Lt. Gov. Eleni Kounalakis; former state Controller Betty Yee; former state Senate leader Toni Atkins; state schools Superintendent Tony Thurmond; and real estate developer Stephen Cloobeck.

In California, home to some of the nation's richest Americans, it is always possible a wealthy outsider could shake up the race. That was the case in 2010, when billionaire Republican Meg Whitman spent nearly $180 million, much of it her own money, but lost to Democrat Jerry Brown, a former governor.

Newsom — who has not endorsed a successor — was asked Thursday what he thought of the possibility that he and Harris, old friends from the San Francisco Bay Area, might meet again in the 2028 presidential race. Harris has not ruled out another run for the presidency after falling short in 2020 and 2024. Newsom is widely seen as positioning himself for a run in 2028, though he has veered away from speculating about his political future.

"We'll see where fate brings all of us," Newsom told reporters. "I'm looking forward to what she does next."

Associated Press writer Tran Nguyen in Sacramento contributed.

CALIFORNIA

Newsom wants a special election on redistricting in November

By Nicole Nixon and Lia Russell
THE SACRAMENTO BEE

SACRAMENTO — Gov. Gavin Newsom wants to ask voters in November to approve a series of new congressional maps to redistrict the state and combat a similar effort in Texas, he said Thursday.

The special election would be held the first Tuesday of November, and the maps would be in effect for the 2026, 2028 and 2030 election cycles, before reverting back to the control of the state Citizen Redistricting Commission.

"We're reacting to the president of the United States and (Texas Gov.) Greg Abbott trying to rig the election," Newsom told reporters Thursday during a news conference with Cal Fire at McClellan Park. "They recognize they can't win in the midterms. All the momentum has shifted away from them."

In an effort to keep Republicans in control of the U.S. House after the 2026 midterms, President Donald Trump has pressured the Texas Legislature to redraw maps in a way that benefits Republicans. A proposed congressional map unveiled this week could help Republicans win five additional House seats.

Republicans currently hold nine of California's 52 House seats. A "theoretical map" unveiled by the UCLA Voting Rights Project Thursday could shift the number of competitive or Republican-leaning districts from 16 to 5.

The Republicans hold a seven-seat majority over the House of Representatives, with four vacancies. Newsom said earlier this week that he believed Democrats could overturn the Republicans' 219-212 majority in the midterms.

In recent weeks Newsom has vocally advocated for the redistricting effort, but state lawmakers have not formally discussed the issue and adjourned July 18 for a monthlong summer recess.

Speaker Robert Rivas said this week he is "working with the governor and exploring every option to protect our democracy and ensure our government remains fair, transparent and representative of the people."

Senate President Pro Tem Mike McGuire has not commented on the proposal.

In most states, lawmakers draw new political lines after every census to account for population changes, but California is one of 15 states in which decennial redistricting is done via commission.

The 14-member citizen commission was created by voters in 2008 and is made up of five Democrats, five Republicans and four members with no party affiliation.

Newsom said he believed a special election would be doable because other counties already have elections planned for Nov. 4, and therefore would be cheaper than the 2021 recall, which cost more than $200 million.

The governor compared the cost of a special election to an old Mastercard commercial, saying democracy is "priceless."

He also promised transparency about any proposed political maps.

"This is not going to be done in a back room," he said. "It's not going to be done by members of some private group or bodies, so it can be given to the voters for their consideration in a very transparent way."

"There's too much at stake," Newsom said. "I'm not going to sit back any longer in a fetal position, in a position of weakness, when in fact, California could demonstrably advance strength, and that's what we intend to do to show our strength and capacity of purpose, of conviction, in the spirit of our founding fathers, in the spirit of the best of Roman Republic and Greek democracy, in the spirit of checks and balances, in the spirit of rule and love, the spirit that defines the best of this 249-year enduring experiment."

Newsom said he wants to call a special election for voters to weigh in, but lawmakers may not need to do that, according to a new memo from UCLA researchers.

The paper from the UCLA Voting Rights Project said that while the state Constitution explicitly requires the state's redistricting commission to draw new maps after every decennial census, it does not take away the Legislature's authority to conduct reapportionment as well.

"While the California Citizens Redistricting Commission has the legal responsibility to draw districts once every 10 years following the census, the California state Legislature has the legal constitutional authority to draw new districts today," the memo argues.

It notes that Article IV of the state Constitution "expressly recognize(s) the power of the Legislature to enact 'a statute establishing or changing boundaries of any legislative, congressional, or other election district.'"

The memo also addresses a 1983 ruling by the California Supreme Court, which blocked the then-Republican-led Legislature from adopting new maps mid-decade.

The ruling might serve as a legal hurdle for the current Democratic-controlled Legislature to do the same.

But the UCLA memo argues that when voters approved two ballot propositions in 2008 and 2010 that led to today's redistricting commission, certain constraints — including the once-per-decade rule — now apply only to the commission.

"The proposition ... did not include clear constitutional text that banned the Legislature from engaging in redistricting or prohibited the Legislature from doing so at certain times," the memo reads.

It concludes that the constitutional "requirements and limitations" surrounding redistricting "now apply only to the Citizen Redistricting Commission."

IMMIGRATION

Texas researcher faces deportation after San Francisco airport detention

By Olga R. Rodriguez and Christopher Weber
THE ASSOCIATED PRESS

SAN FRANCISCO — A researcher at Texas A&M University flying home from abroad was detained for more than a week by immigration authorities at the San Francisco International Airport, sleeping in a chair and living off food sold in the airport, his family and attorneys said Thursday.

It was unclear why Tae Heung "Will" Kim, who is a legal permanent resident with a green card, was detained July 21, his attorney Karl Krooth said at a news conference. Kim, who went to South Korea to attend his brother's wedding, is now in removal proceedings to be deported and is being held at an immigration detention facility in Arizona, Krooth said, adding that he has yet to talk to his client.

Customs and Border Protection said in a statement that any green card holder who has a drug offense is in violation of his legal status and can be detained. His attorneys said Kim was charged in 2011 with misdemeanor marijuana possession in Texas, where recreational use is illegal.

His attorneys declined to discuss those charges Thursday. But one attorney told The Washington Post, which first reported on Kim's detention, that he fulfilled a community service requirement and successfully petitioned for nondisclosure to seal the offense from the public record.

Since returning to the White House, President Donald Trump has launched an unprecedented campaign of immigration enforcement that has pushed the limits of executive power and clashed with federal judges trying to restrain him. American citizens, legal permanent residents, visa holders and visitors have been stopped at airports and detained for days. Some have faced deportation for minor infractions.

Kim, 40, has spent most of his life in the U.S., arriving at the age of 5. After helping out in his family's doll-manufacturing business following the death of his father, he recently entered a doctoral program at Texas A&M and is helping to research a vaccine for Lyme disease.

His attorney said holding Kim at the airport denied him his right to due process.

"The airport is not a detention facility. The airport is not in the immigration courtroom. And Customs and Border Protection officers are interrogators, they are not neutral arbiters," he said.

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

JAPANESE

From Page 1

family endured.

Oda continues to voice her story as a survivor of Camp Tule Lake, even eight decades after the end of World War II. Most recently, she's one of nine Japanese Americans highlighted in a digital feature by photojournalist Morgan Lieberman.

Oda says her story, with roots spanning across eight decades, intersects with new, modern contexts.

These days, Oda spends her time in the San Fernando Valley, surrounded by friends and family. A retired school teacher, she says she's continuing to do "small things" for her community — collecting trash, donating anti-graffiti paint to go towards Little Tokyo.

She takes some inspiration from her Dodger hero, Shohei Ohtani, who she says always practices humility and respect. The Japanese star has a strict "no litter" policy. Even when he chews sunflower seeds in the dugout, he discards them in a cup he keeps nearby.

Moved by the gesture, Oda attempted to start an initiative to have Japanese fans help clean up Dodger Stadium after games.

She's also president of the Tuna Canyon Detention Station Coalition, a nonprofit whose mission is to illuminate the U.S. government's incarceration of immigrants at Tuna Canyon during World War II. She recently helped organize a traveling exhibit to tell the story of Tuna Canyon Detention Station and the Japanese, German and Italian immigrants and others who were incarcerated there.

She says she's made it her goal to "not be a bystander" so that such an injustice does not happen again.

Ten main incarceration camps for Japanese Americans were established mostly along the West Coast during World War II, including the 1,100-acre Camp Tule Lake in Northern California, where Kyoko Oda was born. **PHOTO COURTESY OF MORGAN LIEBERMAN — LONG LEAD**

HISTORY OF CAMPS

Oda belongs to a generation of Japanese Americans born or raised in incarceration.

During World War II, more than 125,000 Japanese Americans, most of whom were residing along the West Coast, were incarcerated — an action prompted after the Japanese attack on Pearl Harbor on Dec. 7, 1941.

Within hours of the attack, President Franklin D. Roosevelt invoked the Alien Enemies Act of 1798, which empowered the President to detain and deport Japanese, German, Italian and any U.S. residents deemed "alien enemies," regardless of their citizenship status.

In February of the following year, Roosevelt signed Executive Order 9066, designating military areas in the U.S. from which people could be excluded. The order led to the forced removal and incarceration of thousands of Japanese Americans from the West Coast.

Ten main incarceration camps were established mainly along the West Coast, including the 1,100-acre Camp Tule Lake in Northern California, where Oda was born.

In addition to the camps, 15 temporary detention centers were set up to process the arrival and transport of Japanese Americans, each arriving with only what they could carry. The Santa Anita Racetrack was one of these centers — holding approximately 19,000 people, with 8,500 residing in converted horse stalls within the racetrack.

In 1944, a unanimous Supreme Court ruling legally ended Japanese American incarceration. When the incarceration camps officially closed in 1946, each detainee was given $25 and a one-way ticket to their chosen destination. Countless were left in limbo, having lost their homes, businesses, friends and family, facing uncertain futures and fears of confronting post-war anti-Asian hostility.

In 1990, President George H.W. Bush signed an official letter of apology, acknowledging the injustice of internment, and each living survivor was given a $20,000 reparations check.

But the fear and anxiety stemming from incarceration would continue to resonate for decades across generations of Japanese Americans, among the children born into incarceration and even a new generation interested in preserving and untangling its history.

Last year, a personal project led photojournalist and MFA student Morgan Lieberman to Oda.

Based in Los Feliz, Lieberman, 30, was grappling with her own identity when she began researching World War II in 2023.

"It started off with me examining my own Jewish identity and thinking about the Holocaust. You know, I've kind of carried this grief around all my life," Lieberman said.

"Then I started going down this rabbit hole of realizing the atrocity of Japanese incarceration camps and how so much of this history surrounded my own backyard."

PROJECT EXPANDS

The project began as a profile of queer survivors of incarceration but quickly expanded to center nine Japanese Americans, including Oda, who shared their stories through interviews, videos and original photos.

The project, titled "The Age of Incarceration," was published in July by story studio Long Lead. But when she began the endeavor in late 2023, Lieberman couldn't predict its contemporary implications.

"Putting out this project feels very urgent," Lieberman said. "I think younger generations, especially with our access to social media, we have such a wealth of information about this déjà vu effect that is happening."

Lieberman says she sees "history repeating itself" with the nationwide ICE deportations.

The stepped-up immigration enforcement, promised by President Donald Trump during his campaign to return to the Oval Office, is focused on arresting and deporting dangerous felons, according to administration officials, who say the effort is achieving that goal.

But Lieberman and other critics call the program inhumane and said raids are taking in people without criminal records, and in some cases, have even included U.S. citizens.

Kristen Hayashi, a director and curator at the Japanese American National Museum, says there are parallels between the ongoing detainments and deportations and those from eight decades ago.

"What I think's the same is the hyperbole around 'threats.' Back then, they're saying there's a threat, and that's why they need to do this roundup. But there's really no evidence. That's how it echoes," Hayashi said. "There's a lesson to be learned from this, the arbitrary rules of immigration."

In light of the ongoing raids and the 80th anniversary of World War II and shadows of Japanese internment, Oda says she's focusing on moving forward, keeping herself busy.

She's working on Project Nozomi, a campaign effort with the San Fernando Valley Japanese American Community Center to raise money to improve and build new facilities for youth — a basketball court, classrooms and a cultural arts center for workshops and performances.

"When I realized what happened to my parents, and then now, I got confused and concerned," she said. "I love this country. My hope is that we will be the America I believe in."

"The Age of Incarceration" can be accessed at www.longlead.com.

Victoria Le is an intern with the Southern California News Group, through a partnership with the Asian American Journalists Association's L.A. chapter (AAJA-LA).

Are you in the market for a
new home?

THE SUN | THE PRESS-ENTERPRISE | INLAND VALLEY DAILY BULLETIN

Classifieds

NATIONAL DEBT RELIEF

BECOME DEBT FREE IN AS LITTLE AS 24-48 MONTHS

If you owe more than $10,000 in credit card or other unsecured debt, see how National Debt Relief can help resolve your debt for a fraction of what you owe.

Call today:

+1 (855) 980-3316

BBB ACCREDITED BUSINESS A+ rating

26BM

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

The Desert Trail

57675 Twentynine Palms Highway, Suite 103
Yucca Valley, Ca 92284
760-365-3315
Legals@hidesertstar.com

This space is for the County Clerk's Filing Stamp

STANTEC
Jackie Clark
514 Via De La Valle, Suite 308
Solana Beach CA 92075

PROOF OF PUBLICATION
(2015.5 C.C.P.)

I am a citizen of the United States and a resident of the State of California; I am over the age of eighteen years, and not a party to or interested in the above-entitled matter. I am the principal clerk of the printer of the:

THE DESERT TRAIL

a newspaper of general circulation, printed and published **WEEKLY** in the City of **TWENTYNINE PALMS**. County of San Bernardino, and which newspaper has been adjudged a newspaper of general circulation by the Superior Court of the County of San Bernardino, State of California, under the date of **November 11, 1938**.

Case Number **43099** : that the notice, of which the annexed is printed copy
(set in type not smaller than nonpareil), has been published in each regularand entire issue of the said newspaper and not in supplement thereof on the following dates, to wit:

Desert Trail: 8/6/2025, 8/13/2025, 8/20/2025

I certify (or declare) under penalty of perjury that the foregoing is true and correct.

dated at: **YUCCA VALLEY**, California,
This day of **8/20/2025**

Micah Ramirez

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com.** Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by September 15, 2025, to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058
For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Pub. T.: 08/06, 08/13, 08/20/2025

LOCALiQ
Mount Shasta Herald
Siskiyou Daily News
Daily Press | The Record

PO Box 631437 Cincinnati, OH 45263-1437

AFFIDAVIT OF PUBLICATION

Jackie Clark
Elaine Bauer
Stantec
2496 Old Ivy RD # 300
Charlottesville VA 22903-4895

STATE OF CALIFORNIA, COUNTY OF SAN BERNARDINO

I, being duly sworn, says:
That I am the Legal Clerk of the Daily Press, a newspaper of general circulation, printed and published in Victorville, San Bernardino Count, California; that the publication, a copy of which is attached hereto, was published in the said newspaper in the issues dated:

08/03/2025, 08/06/2025, 08/10/2025

That said newspaper was regularly issued and circulated on those dates.

Sworn to and subscribed before on 08/10/2025

Legal Clerk

Notary, State of WI, County of Brown

8-25-26

My commission expires

Publication Cost:	$182.56	
Tax Amount:	$0.00	
Payment Cost:	$182.56	
Order No:	11523922	# of Copies:
Customer No:	1198592	1
PO #:		

THIS IS NOT AN INVOICE!

Please do not use this form for payment remittance.

MARIAH VERHAGEN
Notary Public
State of Wisconsin

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

VV-4228791

NOTICE OF AVAILABILITY OF DRAFT ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

The United States Marine Corps (USMC) and the Federal Aviation Administration (FAA) invites the public to review and comment on the Draft Environmental Assessment (EA) that evaluates a Proposed Action to establish new permanent Special Use Airspace (SUA) and to modify existing SUA at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center").

The purpose of the Proposed Action is to provide permanent SUA above and adjacent to the Combat Center to support current and future training activities 365 days per year. The Proposed Action is needed to increase safety while adequately supporting year-round training operations.

The Draft EA is available for review at **http://www.29palmspsua.com**. Copies of the Draft EA are also available for review at: San Bernardino County Library Administrative Offices, Twentynine Palms Branch Library, Yucca Valley Branch Library, Barstow Branch Library, Newton T. Bass Apple Valley Library, Palm Springs Public Library, Stanley Mosk Library and Courts Building, Victorville City Library, Joshua Tree Library, Lucerne Valley Janice Horst Branch Library, Needles Branch Library, Lake Havasu City Branch Library, and Ovitt Family Community Library.

The USMC and FAA are accepting written comments on the Draft EA during the 45-day public review period from August 1, 2025, to September 15, 2025. All comments must be received or postmarked by **September 15, 2025,** to be considered in the Final EA. Comments may be submitted via the website or mailed to:

Naval Facilities Engineering Systems Command Southwest
Attention: Mr. Ryan Maynard, PSUA EA Project Manager
750 Pacific Highway, Floor 12
San Diego, CA 92132-0058

For more information or to provide comments, please visit the website at **http://www.29palmspsua.com.**

Appendix D
Regulatory Framework

This page intentionally left blank.

Appendix D
Regulatory Framework

The Marine Corps has prepared this Environmental Assessment (EA) based upon federal laws, statutes, regulations, and policies pertinent to the implementation of the Proposed Action:

- National Environmental Policy Act (NEPA) of 1969 (Public Law 91-190, 42 United States (U.S.) Code [U.S.C.] sections 4321–4370h)
- Council on Environmental Quality (CEQ) regulations implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500–1508)
- Department of the Navy (DON) regulations for implementing NEPA (32 CFR Part 775)
- Marine Corps Order (MCO) 5090.2, Volume 12, Environmental Compliance and Protection Program
- Federal Aviation Administration (FAA) Joint Order (JO) 7400.2P, Procedures for Handling Airspace Matters
- FAA JO 7110.65AA, Air Traffic Control
- FAA JO 7610.4W, Special Military Operations
- FAA Order 1050.1F, Environmental Impacts: Policies and Procedures
- FAA Order 1210.20, American Indian and Alaska Native Tribal Consultation Policy and Procedures
- American Indian Religious Freedom Act (42 U.S.C. section 1996)
- Archaeological Resources Protection Act (16 U.S.C. sections 470aa–470mm)
- Clean Air Act (CAA), as amended (42 U.S.C. sections 7401–7671q), including 1990 General Conformity Rule
- Endangered Species Act (ESA) (16 U.S.C. sections 1531–1544)
- Executive Order (EO) 11593 – Protection and Enhancement of the Cultural Environment
- EO 13007 – *Indian Sacred Sites*
- EO 13045 – *Protection of Children from Environmental Health Risks and Safety Risks*
- EO 13175 – *Consultation and Coordination with Indian Tribal Governments*
- EO 13186 – *Responsibilities of Federal Agencies to Protect Migratory Birds*
- EO 14008 – *Tackling the Climate Crisis at Home and Abroad*
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. sections 703–712)
- National Historic Preservation Act (NHPA) (54 U.S.C. section 300101 et seq.)
- Native American Graves Protection and Repatriation Act (25 U.S.C. sections 3001 et seq.)

The regulatory framework for the environmental analysis specific to each resource area analyzed in detail in the EA is presented below.

D.1 Noise

Aircraft operations can be heard in the local community and cause short-term disruptions to daily activities. Extensive research has been conducted regarding noise effects including general annoyance, disruption, speech interference, sleep disturbance, noise-induced hearing impairment, non-auditory health effects, performance effects, noise effects on children, effects on domestic animals and wildlife, and effects on property values, structures, terrain, and archaeological sites (e.g., Federal Interagency Committee on Noise 1992; FAA 2022). There is no demonstrated causal connection between intermittent exposure to aviation noise and health effects in local communities. The principal effect of aircraft noise on exposed communities

is annoyance, defined by the U.S. Environmental Protection Agency (EPA) as any negative subjective reaction on the part of an individual or group. There is a consistent relationship between Day-Night A-weighted (DNL) (the noise metric used in the impact analysis) and the level of community annoyance (Federal Interagency Committee on Noise 1992). The FAA has adopted 65 A-weighted decibel (dBA) DNL as the threshold for potential land use incompatibility, and this metric is used for aircraft noise analyses nationwide. Anything less than 65 dBA DNL is considered compatible with all residential land uses, including consideration of health effects listed above such as sleep, hearing, and non-auditory health effects.

The Department of Defense (DoD) policy directive requires that hearing loss risk be estimated for the at risk population, defined as the population exposed to DNL greater than or equal to 80 dB. Specifically, DoD components are directed to "use the 80 DNL noise contour to identify populations at the most risk of potential hearing loss" (Defense Noise Working Group [DNWG] 2013). If a population is determined to be exposed to 80 dB DNL or greater, DNWG describes use of the $L_{eq(24hr)}$ to estimate the noise-induced permanent threshold shift (hearing loss) risk.

The joint instruction, Office of the Chief of Naval Operations Instruction 11010.36C and MCO 11010.16, *Air Installations Compatible Use Zones (AICUZ) Program*, provides guidance administering the AICUZ program, which recommends land uses that are compatible with aircraft noise levels. In accordance with the Office of the Chief of Naval Operations, Instruction 11010.36C, NOISEMAP is to be used for developing noise contours and is the best noise modeling science available today for fixed-wing aircraft, although the Advanced Acoustic Model can be used for rotary-wing aircraft.

The FAA requires noise impact analysis with DNL and optionally allows Community Noise Equivalent Level (CNEL) for use in California. Table D-1 summarizes FAA noise thresholds for significance and 'reportable' conditions, as outlined in FAA Order 1050.1F (FAA 2020). The DoD analyzes the intensity of the action and the context in which it would occur to determine the potential for adverse noise impacts rather than the defined changes in DNL noise level used by the FAA.

Table D-1. FAA Criteria for Determining Impact of Changes in Aircraft Noise

DNL Noise Exposure Level	Increase in DNL with Preferred Alternative	Aircraft Noise Exposure Change Consideration
DNL 65 and higher	DNL 1.5 dB or more [1]	Exceeds Threshold of Significance
DNL 60 to 65	DNL 3.0 dB or more [1]	Reportable Noise Increase (Applicable to air traffic airspace and procedure action)
DNL 45 to 60	DNL 5.0 dB or more [1]	Reportable Noise Increase (Applicable to air traffic airspace and procedure action)

Notes: [(1)]Source FAA Order 1050.1F Desk Reference.
Legend: db = decibel; DNL = Day-Night Average Sound Level

D.2 Airspace Management

Procedures governing the use of training areas and airspace operated and controlled by the Marine Corps are included in Office of the Chief of Naval Operations Instruction 3770.2L, *Department of the Navy Airspace Procedures and Planning* (DON 2017).

FAA Order 1050.1F (issued July 16, 2015), *Environmental Impacts: Policies and Procedures*, provides FAA policy and procedures to ensure agency compliance with the requirements set forth in the CEQ regulations for implementing the provisions of the NEPA; Department of Transportation Order 5610.1C, *Procedures for Considering Environmental Impacts*; and other related statutes and directives.

FAA JO 7400.2P (issued April 20, 2023), *Procedures for Handling Airspace Matters*, provides procedures for administration of the airspace program. Specifically, Part 5, Chapter 21, prescribes specific policies and procedures to establish/designate airspace in the interest of national defense, security, and/or welfare. Special Use Airspace (SUA) is published annually in FAA JO 7400.10F, *Special Use Airspace* (current effective publication is February 16, 2024).

D.3 Aviation Emissions and Air Quality

The Federal Clean Air Act (CAA) of 1970 and its subsequent amendments establish air quality regulations and the National Ambient Air Quality Standards (NAAQS) and delegate the enforcement of these standards to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations. The CAA establishes air quality planning processes and requires areas in nonattainment of a NAAQS to develop a State Implementation Plan (SIP) that details how the state will attain the standard within mandated time frames. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area. The following summarizes the air quality rules and regulations that apply to the proposed project.

As part of the CAA, the USEPA has established standards for the pollutants of concern, called "criteria pollutants." The criteria pollutants include carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), ozone (O_3), particulate matter less than or equal to 10 microns in diameter (PM_{10}), particulate matter less than or equal to 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). Regulatory standards for these pollutants, called the NAAQS, represent maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect the public health and welfare. Based on measured ambient criteria pollutant data, the USEPA designates areas in the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS.

In addition to criteria pollutants, the USEPA has defined 187 substances as hazardous air pollutants. Hazardous air pollutants are substances that have been determined to present some level of acute or chronic health risk (cancer or non-cancer) to the general public. These pollutants may be emitted in trace amounts from various types of sources, including combustion sources. Emission factors for most hazardous air pollutants from mobile sources are roughly three or more orders of magnitude lower than emission factors for criteria pollutants. Trace amounts of hazardous air pollutants may be emitted from aircraft during flight; however, the amounts that would be emitted would be small in comparison with the emissions of criteria pollutants. Emissions of hazardous air pollutants would largely be above the mixing height, and at all altitudes, emissions would be subject to dispersion due to wind mixing and other dissipation factors. Therefore, hazardous air pollutants are not analyzed further in the EA.

Individual states are delegated the responsibility to regulate air quality to achieve or maintain air quality in attainment with these standards. CARB enforces air pollution regulations and sets guidelines to attain and maintain the NAAQS and California Ambient Air Quality Standards (CAAQS) within the state of California. These guidelines are contained in the California SIP.

The USEPA has classified the Mojave Desert Air Basin (MDAB) as in attainment of the NAAQS for all criteria pollutants except O_3 and PM_{10} (EPA 2023a). The portions of the MDAB that encompass the Proposed Action are rated as "Severe-15" for both the 2008 and 2015 O_3 standards. The MDAB is designated as "Moderate" nonattainment for PM_{10} (EPA 2023b). The NAAQS and CAAQS are summarized in Table D-2.

Table D-2 National Ambient Air Quality Standards

Pollutant	Averaging Time	National Standards[(1)] Primary[(2)]	National Standards[(1)] Secondary[(2),(3)]
O_3	8-hour	0.070 ppm	Same as primary
CO	1-hour	35 ppm	—
	8-hour	9 ppm	—
NO_2	1-hour	100 ppb	—
	Annual	53 ppb	Same as primary
SO_2	1-hour	75 ppb	—
	3-hour	—	0.5 ppm
PM_{10}	24-hour	150 µg/m^3	Same as primary
$PM_{2.5}$	24-hour	35 µg/m^3	Same as primary
$PM_{2.5}$	Annual	12 µg/m^3	15 µg/m^3
Lead	Rolling 3-month average	0.15 µg/m^3	Same as primary

Notes: [(1)]In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m3 as a calendar quarter average) also remain in effect.
([2])The level of the annual NO2 standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
(3)Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O3 standards are not revoked and remain in effect for designated areas. Additionally, some areas may have certain continuing implementation obligations under the prior revoked 1-hour (1979) and 8-hour (1997) O3 standards.
(4)The previous SO2 standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2)any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO2 standards or is not meeting the requirements of a SIP call under the previous SO2 standards (40 CFR 50.4(3)). A SIP call is an EPA action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required NAAQS.

Legend: % = percent; µg/m3 = micrograms per cubic meter; CO = carbon monoxide; mg/m3 = milligrams per cubic meter; NO2 = nitrogen dioxide; O3 = ozone; PM2.5 = particulate matter less than or equal to 2.5 microns in diameter; PM10 = particulate matter less than 10 microns in diameter but greater than 2.5 microns in diameter; ppb = parts per billion; ppm = parts per million; SO2 = sulfur dioxide.

Source: EPA 2023.

The General Conformity Rule (40 CFR 93 Subpart B), states that a federal agency shall not engage in, support or approve an activity that does not conform to an applicable SIP. Proposed actions must not: (1) cause or contribute to any new violation of a NAAQS; (2) increase the frequency or severity of any existing violation; or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone. The General Conformity Rule applies in federal nonattainment and maintenance areas.

D.4 Biological Resources

Biological resources occurring within the project area that would potentially be impacted by proposed activities are protected by, and managed in accordance with, various statutory and executive requirements including, but not limited to, the following:

- ESA (16 U.S.C. sections 1531-1599)
- MBTA (16 U.S.C. sections 703-712)

- Sikes Act Improvement Act of 1997 (16 U.S.C. section 670 et seq.)
- EO 13112, Invasive Species
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds

D.5 Cultural Resources

The principal federal law addressing cultural resources is the Natural Historic Preservation Act (NHPA) of 1966, as amended (54 USC 300101 et seq.), and associated implementing regulations (36 CFR Part 800). Compliance with these regulations, commonly referred to as Section 106, requires the federal agency to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The process involves four major steps: identify the undertaking, identify historic properties, assess adverse effects to those properties, and resolve effects if the undertaking may affect historic properties.

NHPA Section 106 is concerned exclusively with effects on "*historic properties*," defined in NHPA as properties that are listed, or may be eligible for listing, in the NRHP. These may include prehistoric or historic districts, sites, buildings, structures, objects, or properties of traditional religious and cultural importance to Tribal Nations, that meet the NRHP criteria. The goal of the Section 106 process is to identify and consider effects to historic properties that might be affected by an undertaking and to attempt to resolve any adverse effects through consultation. The process provides for participation by applicable State Historic Preservation Office (SHPO), Tribal Historic Preservation Office, tribal, state, and local governments, Tribal Nations, applicants for federal assistance, permits, or licenses, representatives from interested organizations, private citizens, and the public. As part of the Section 106 process, proponent agencies are required to consult with the applicable SHPO.

Federal agencies have independent statutory obligations under NEPA and NHPA. Impacts considered under NEPA include cultural and historic resources (40 CFR section 1508.8). The term "cultural resources" covers a wider range of resources than "historic properties" as defined under the NHPA, such as sacred sites and archaeological sites not eligible for the NRHP.

Several other federal laws and regulations have been established to manage cultural resources, including the Archaeological and Historic Preservation Act (1974), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). In addition, coordination and consultation of resource management with federally recognized Tribal Nations occurs in accordance with the American Indian Religious Freedom Act (1978); EO 13007, *Sacred Sites*; and EO 13175, *Consultation and Coordination with Indian Tribal Governments*. Cultural resources located within the jurisdiction of the Combat Center are managed in accordance with these laws, regulations, and guidance documents, as well as DoD Instruction 4715.16, Change 1, *Cultural Resources Management*, dated November 21, 2017, and MCO 5090.2, dated June 11, 2018, *Environmental Compliance and Protection Program*, Volume 12, "Environmental Planning and Review."

The Region of Influence (ROI) for cultural resources is the area of potential effect (APE) as defined in the NHPA. Under the NHPA, the APE is considered "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties if any such properties exist. The APE is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking." 36 CFR 800.16(d). The APE for this undertaking is the airspace from surface level to the top of each airspace designation proposed for change, plus a 1-mile horizontal buffer. There will not be any new ground disturbance (i.e., construction, demolition or land-based training) as part of the proposed action.

D.6 Land Use and Recreation

The primary federal, state, and local statutes and regulations that pertain to land use and recreation are identified below.

- **Federal Land Policy and Management Act:** The Barstow and Needles Field Offices of the Bureau of Land Management (BLM) manage public lands in the vicinity of the Combat Center. Two pertinent BLM management directions outlined in the Federal Land Policy and Management Act of 1976 for public lands are to establish a plan for the 12.1 million acres of public lands forming the California Desert Conservation Area (CDCA) and to inventory the land for its wilderness characteristics, as required by the Wilderness Act of 1964.

- **California Desert Conservation Area Plan:** The California Desert District of the BLM manages the CDCA, pursuant to Section 601 of the Federal Land Policy and Management Act and the CDCA Plan. This plan is based on providing for multiple and sustained use of desert resources. Over 100 amendments have been made to the CDCA Plan. Regional plans addressing sub-regions within the CDCA are among these amendments. They address protection of the desert tortoise, other special status species, and a variety of multiple use activities. Multiple Use Class land management guidelines are outlined in the CDCA Plan that address varying levels of resource protection while providing for differing levels of sustained multiple use including limited, moderate, and controlled use.

  Twelve elements are contained in the CDCA Plan that provide specific details on how balanced management of sensitive natural and cultural resources should occur relative to allowed multiple uses: Cultural Resources; Native American; Wildlife; Vegetation; Wilderness; Wild Horse and Burro: Livestock Grazing; Recreation; Motorized Vehicle Access; Geology, Energy, and Mineral Resources; Energy Production and Utility Corridors; and Land Tenure Adjustment.

  The CDCA Plan also identifies a number of Areas of Critical Environmental Concern and Special Areas, procedures for designating new special areas, implementation and monitoring requirements, and management prescriptions.

- **Integrated Natural Resources Management Plan (INRMP):** Combat Center missions and associated land uses are managed according to direction outlined in the current INRMP (Combat Center 2018). The INRMP provides for the management of natural resources, allows for multi-purpose resource use, and provides public access necessary and appropriate for these uses, without any net loss in the capability of the installation to support its military mission.

- **Executive Order 11644, amended by EO 11989 – Use of Off-Road Vehicles on the Public Lands:** EO 11644, as amended by EO 11989, pertains to the use of off highway vehicles (OHVs) on the public lands. The purpose of this EO is to establish policies and procedures to ensure that OHV use on public lands "will be controlled and directed so as to protect the resources of those lands, to promote the safety of all users of those lands, and to minimize conflicts among the various uses of those lands." The Marine Corps implements this EO through development of INRMPs and associated plans.

- **Combat Center Master Plan:** The Combat Center Master Plan was last updated in 2009 and provides the Combat Center with a framework for facility and infrastructure planning for a 5- to 10-year period. The plan identifies specific sites for future projects that will utilize existing Mainside land assets as well as reinforce appropriate land use and circulation patterns.

- **Presidential Proclamation – Establishment of the Mojave Trails National Monument:** The Presidential Proclamation establishing the Mojave Trails National Monument was issued February

12, 2016. The proclamation preserves 1.6 million acres of public land in order to, "preserve its cultural, prehistoric, and historic legacy and maintain its diverse array of natural and scientific resources, ensuring that the prehistoric, historic, and scientific values of this area remain for the benefit of all Americans." The proclamation establishes the BLM as the managing agency as a unit of the National Landscape Conservation System. A management plan is currently being developed for the Mojave Trails National Monument.

- **California State Lands Commission – School Land Grant of 1853:** Pursuant to the School Land Grant of 1853, school lands were granted to the State of California, some of which are within the ROI. These interests are under the jurisdiction of the California State Lands Commission and managed under the State School Lands Management Program. The California State Lands Commission, through this program, manages approximately 458,843 acres of school lands held in fee ownership by the state and the reserved mineral interests on approximately 790,000 acres where the surface estates previously have been sold (California State Lands Commission 2018).
- **San Bernardino County General Plan:** The San Bernardino County General Plan includes mapping of the planned land uses. SUA areas are generally situated over unincorporated areas of San Bernardino County, largely on public lands. Limited rural development that maximizes open space preservation, watershed, and wildlife habitat areas is encouraged in most of the privately owned lands.

D.7 Socioeconomics and Children's Health and Safety Risks

The CEQ regulations implementing NEPA state that when economic or social effects and natural or physical environmental effects are interrelated, the Environmental Assessment will discuss these effects on the human environment (40 CFR 1508.14). The CEQ regulations further state that the "human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment." Following from these CEQ regulations, the socioeconomic analysis evaluates how elements of the human environment such as population, employment, housing, and public services might be affected by the Proposed Action.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, specifies how to consider and protect children from potential environmental health risks. This analysis is included with the Noise Impact analysis (Section 3.1.3) as children are part of noise sensitive populations.

D.8 References

Combat Center. 2018. Integrated Natural Resources Management Plan, Fiscal Years 2018 through 2022. Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, CA.

DNWG. 2013. *Technical Bulletin, Noise-Induced Hearing Impairment, Defense Noise Working Group.* December.

DON. 2017. Supplemental Environmental Impact Statement for *1* Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. Prepared by Cardno under the direction of MAGTFTC, MCAGCC Twentynine Palms, and NAVFAC Southwest. January.

EPA. 2023a. NAAQS Table. Available at: https://www.epa.gov/criteria-air-pollutants/naaqs-table. Last updated March 15, 2023. Accessed on August 4, 2023.

EPA. 2023b. Nonattainment Areas for Criteria Pollutants (Green Book). Available at: https://www.epa.gov/green-book. Last updated July 31, 2023. Accessed on August 4, 2023.

Federal Interagency Committee on Noise. 1992. Federal Agency Review of Selected Airport Noise Analysis Issues. August.

FAA. 2020. 1050.1F Desk Reference, Chapter 11 - Noise and Noise-Compatible Land Use. February 2020. Available at: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref.

FAA. 2022. FAA JO 7400.11G, Airspace Designations and Reporting Points. August 19, 2022. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1041272

Appendix E
Proposed Airspace Descriptions

This page intentionally left blank.

Appendix E
Proposed Airspace Descriptions

1.0 Alternative 1

Descriptions of the proposed airspace under Alternative 1 are provided below.

1.1 Restricted Area 2509

Boundaries: R-2509A
Beginning at latitude (lat.) 34°40'47" North (N.), longitude (long.) 116°30'18" West (W.); to lat. 34°40'30" N., long. 116°29'43"W. to lat. 34°35'03"N., long. 116°36'10"W.; to lat. 34°29'44"N., long. 116°42'51"W.; to lat. 34°32'09"N., long. 116°42'51"W.; to lat. 34°36'15"N., long. 116°37'33"W.; to the point of beginning.
R-2509B
Beginning at lat. 34°35'03"N., long. 116°36'10"W.; to lat. 34°40'30" N., long. 116°29'43"W.; to lat. 34°39'24"N., long. 116°29'19"W.; to lat. 34°32'36"N., long. 116°35'12"W.; to the point of beginning.
R-2509C
Beginning at lat. 34˚39'24"N., long. 116˚29'19"W.; to lat. 34˚36'00"N., long. 116˚28'03"W.; to lat. 34˚31'30"N., long. 116˚26'48"W.; to lat. 34˚30'00"N., long. 116˚26'23"W.; to lat. 34˚21'35"N., long. 116˚21'38"W.; to lat. 34˚19'30"N., long. 116˚20'29"W.; to lat. 34˚17'38"N., long. 116˚19'19"W.; to lat. 34˚22'25"N., long. 116˚31'10"W.; to lat. 34˚32'36"N., long. 116˚35'12"W.; to the point of beginning
R-2509D
Beginning at lat. 34˚35'03"N., long. 116˚36'10"W.; to lat. 34˚32'36"N., long. 116˚35'12"W.; to lat. 34˚22'25"N., long. 116˚31'10"W.; to lat. 34˚27'38"N., long. 116˚40'34"W.; to lat. 34˚27'59"N., long. 116˚42'51"W.; to lat. 34˚29'44"N., long. 116˚42'51"W.; to the point of beginning;

Designated Altitudes: R-2509A: Surface to 6,000 feet mean sea level (MSL)
R-2509B: Surface to 16,000 feet MSL
R-2509C: Surface to Flight Level (FL) 400
R-2509D: Surface to 8,000 feet MSL excluding the airspace within a 3.4-nautical mile (nm) radius of lat. 34°25'03"N., long. 116°36'52"W., which would be surface to 1,500 feet AGL to accommodate Abraham Ranch, Kelly, and B&E private airports (see Figure 2-2)

Times of Use: Continuous

Controlling Agency: Federal Aviation Administration (FAA) Los Angeles Air Route Traffic Control Center (ARTCC)

Using Agency: Combat Center

Proposed Training in R-2509

Training activities conducted within proposed R-2509 would include live-fire from pistols, rifles, machine guns, anti-tank weapons, mortars, artillery; and fixed-wing, rotary-wing, and unmanned aircraft training activities, including close air support and live ordnance delivery. Specific manned and unmanned aircraft

operations and activities associated with Marine Expeditionary Brigade (MEB) building block training events and planned Large-Scale Exercises (LSEs) include the following: low-level bombing, strafing, close air support, limited ground controlled intercepts, air combat maneuvers, dissimilar air combat training, parachute operations, close-in fire support, target marking, forward air control, electronic warfare, visual reconnaissance, aerobatic flights, Marine inserts, Tactical Air Control Party operations, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, spotter of artillery and/or air strikes, and photo and photoflash runs. Aviation ordnance delivery would include use of rockets, live and non-live bombs, including precision guided bombs and strafing ordnance. Use of ordnance and all ground-based training activities were fully analyzed in the 2012 Final Environmental Impact Statement (EIS) and included in the preferred alternative selected in the 2013 Record of Decision (ROD) (refer to Section 1.4.3 of the Environmental Assessment [EA]). The changes to Restricted Airspace (RA) between the 2012 Final EIS and the proposed R-2509 would not affect how air-to-ground ordnance is delivered. The impact areas for high explosive ordnance would remain the same and only non-dud producing ordnance would be used in the Shared Use Area, as described in the 2012 Final EIS. Therefore, use of ordnance and all ground-based training activities are not further addressed in the EA.

Surface-to-surface weapons that would be fired within the proposed R-2509 include pistols, rifles and machine guns (up to 0.50 caliber), flares, smoke, hand grenades, demolitions, grenade launchers (40 millimeter [mm]), rocket launchers, missile launchers, mortars (60mm, 81mm, 120mm), all classes of lasers, mines, mine clearing line charges, Abrams MI AI battle tanks, 155mm Howitzers, and High Mobility Artillery Rocket Systems. Use of these surface-to-surface weapons was fully analyzed in the 2012 Final EIS and included in the preferred alternative selected in the 2013 ROD (refer to Section 1.4.3 of the EA). The impact areas for high explosive ordnance would remain the same and only non-dud producing ordnance would be used in the Shared Use Area as described in the 2012 Final EIS. Therefore, use of surface-to-surface weapons is not further addressed in the EA.

The maximum altitude for weapons that would be fired vary from 1,500 feet above ground level (AGL) to FL400. Specific firing locations and impact points for all weapons systems would be determined in accordance with all safety regulations. Combat Center range regulations would be amended to include the new airspace prior to its use.

1.2 Johnson Valley Military Operations Area (MOA)/Air Traffic Control Assigned Airspace (ATCAA)

Johnson Valley MOA

Boundaries:	Beginning at lat. 34°22'25"N., long. 116°31'10" W.; to lat. 34°17'38"N., long. 116°19'19"W.; to lat. 34°14'00"N., long. 116°17'03"W.; to lat. 34°17'06"N., long. 116°28'30"W.; to the point of beginning
Designated Altitudes:	1,500 feet AGL up to but not including FL180
Times of Use:	Intermittent by Notice to Airmen (NOTAM)
Controlling Agency:	FAA Los Angeles ARTCC
Using Agency:	Combat Center

Johnson Valley ATCAA

Boundaries:	Same as Johnson Valley MOA
Designated Altitudes:	FL180 to FL400
Times of Use:	Anticipated 0600–1600 Mon-Fri; other times by NOTAM
Controlling Agency:	FAA Los Angeles ARTCC
Using Agency:	Combat Center

Proposed Training in Johnson Valley MOA/ATCAA

The proposed Johnson Valley MOA/ATCAA would support specific aircraft operations and nonhazardous activities associated with MEB-sized exercises and other LSEs, as well as MEB building block training events. Training activities would include: maneuvering activities or ingress and egress patterns/routing in support of hazardous activities (such as electronic warfare; low-level bombing), limited ground controlled intercepts, air combat maneuvers, dissimilar air combat training, parachute operations, forward air control, electronic warfare, visual reconnaissance, aerobatic flights, Marine inserts, Tactical Air Control Party operations, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, observer training, aerial refueling, and photo and photoflash runs.

1.3 Bristol Military Operations Area/Air Traffic Control Assigned Airspace

Bristol MOA

Boundaries: Beginning at lat. 34°43'00"N., long. 116°17'03"W.; to lat. 34°42'50"N., long. 115°26'33"W.; to lat. 34°31'19"N., long. 115°31'26"W.; to lat. 34°22'00"N., long. 115°35'23"W.; to lat. 34°14'00"N., long. 115°44'03"W.; to lat. 34°17'00"N., long. 115°44'03"W.; to lat. 34°25'00"N., long. 115°44'03"W.; to lat. 34°25'00"N., long. 115°47'03"W.; to lat. 34°33'00"N., long. 115°47'03"W.; to lat. 34°33'41"N., long. 115°50'24"W.; to lat. 34°34'40"N., long. 115°54'58"W.; to lat. 34°35'30"N., long. 115°58'03"W.; to lat. 34°41'00"N., long. 116°03'03"W.; to lat. 34°41'15"N., long. 116°04'33"W.; to the point of beginning.
Designated Altitudes: 2,000 feet AGL up to but not including FL180
Times of Use: 0800–2200 daily, other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Bristol ATCAA

Boundaries: Bristol North ATCAA
Beginning at lat. 34°43'00"N., long. 116°17'03"W.; to lat. 34°42'50"N., long. 115°26'33"W.; to lat. 34°31'19"N., long. 115°31'26"W.; to lat. 34°39'15"N., long. 115°44'55"W.; to lat. 34°41'00"N., long. 116°03'03"W.; to lat. 34°41'15"N., long. 116°04'33"W.; to the point of beginning
Bristol South ATCAA
Beginning at lat. 34°41'00"N., long. 116°03'03"W.; to lat. 34°39'15"N., long. 115°44'55"W.; to lat. 34°31'19"N., long. 115°31'26"W.; to lat. 34°22'00"N., long. 115°35'23"W.; to lat. 34°14'00"N., long. 115°44'03"W.; to lat. 34°17'00"N., long. 115°44'03"W.; to lat. 34°25'00"N., long. 115°44'03"W.; to lat. 34°25'00"N., long. 115°47'03"W.; to lat. 34°33'00"N., long. 115°47'03"W.; to lat. 34°33'41"N., long. 115°50'24"W.; to lat. 34°34'40"N., long. 115°54'58"W.; to lat. 34°35'30"N., long. 115°58'03"W.; to the point of beginning
Designated Altitudes: Bristol North ATCAA: FL180 to FL220
Bristol South ATCAA: FL180 to FL270; FL180 to FL400 for LSEs
Times of Use: Anticipated 0800–2200 daily, other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Proposed Training in Bristol MOA/ATCAA

The proposed Bristol MOA/ATCAA would support specific aircraft operations and nonhazardous activities associated with MEB-sized exercises and other LSEs, as well as MEB building block training events. Training activities would include: maneuvering activities or ingress and egress patterns/routing in support of hazardous activities (such as electronic warfare; low-level bombing), low-level bombing, strafing, close air support, limited ground controlled intercepts, air combat maneuvers, dissimilar air combat training, parachute operations, close-in fire support, target marking, forward air control, electronic warfare, visual reconnaissance, aerobatic flights, Marine inserts, Tactical Air Control Party operations, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, spotter of artillery and/or air strikes, aerial refueling, and photo and photoflash runs.

1.4 Sundance Military Operations Area/Air Traffic Control Assigned Airspace

Sundance MOA

Boundaries: Beginning at lat. 34°14'00"N., long. 116°17'03"W.; to lat. 34°14'01"N., long. 115°59'00"W.; to lat. 34°14'00"N., long. 115°44'03"W.; to lat. 34°12'37"N., long. 115°45'40"W.; to lat. 34°11'00"N., long. 115°47'33"W.; to lat. 34°11'00"N., long. 116°01'28"W.; to lat. 34°11'00"N., long. 116°06'03"W.; to the point of beginning
Designated Altitudes: 500 feet AGL up to but not including FL180; excluding a 1-nm radius of the Dale Skyranch Airport (see Figure 2-2) surface to 1,500 feet AGL and a 1-mile wide corridor, extending from the center of the airport on a straight line south to the edge of the Sundance MOA
Times of Use: Intermittent by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Sundance ATCAA

Boundaries: Same as Sundance MOA
Designated Altitudes: FL180 to FL220
Times of Use: Anticipated 0600–1600 Mon-Fri; other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Proposed Training in Sundance MOA/ATCAA

The proposed Sundance MOA/ATCAA would support specific aircraft operations and nonhazardous activities associated with MEB-sized exercises and other LSEs, as well as MEB building block training events. Training activities would include: maneuvering activities or ingress and egress patterns/routing in support of hazardous activities (such as electronic warfare; low-level bombing), limited ground controlled intercepts, air combat maneuvers, dissimilar air combat training, parachute operations, forward air control, electronic warfare, visual reconnaissance, aerobatic flights, Marine inserts, Tactical Air Control Party operations, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, observer training, aerial refueling, and photo and photoflash runs.

1.5 CAX Military Operations Area/Air Traffic Control Assigned Airspace

CAX MOA

Boundaries: Beginning at lat. 34˚42’50”N., long. 115˚26’33”W.; to lat. 34˚42’00”N., long. 115˚16’03”W.; to lat. 34˚19’00”N., long. 115˚25’03”W.; to lat. 34˚14’00”N., long. 115˚30’03”W.; to lat. 34˚14’00”N., long. 115˚44’03”W.; to lat. 34˚22’00”N., long. 115˚35’23”W.; to lat. 34˚31’19”N., long. 115˚31’26”W.; to the point of beginning.
Designated Altitudes: 2,000 feet AGL to 8,000 feet MSL
Times of Use: Intermittent by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

CAX ATCAA

Boundaries: Same as CAX MOA
Designated Altitudes: FL180 to FL210
Times of Use: Anticipated 0800–2200 daily, other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Proposed Training in CAX MOA/ATCAA

The proposed CAX MOA/ATCAA would support specific aircraft operations and nonhazardous activities associated with MEB-sized exercises and other LSEs, as well as MEB building block training events. Training activities would include: ingress and egress patterns/routing associated with low-level bombing, strafing, close air support, limited ground controlled intercepts, dissimilar air combat training, close-in fire support, forward air control, electronic warfare, visual reconnaissance, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, and photo and photoflash runs.

1.6 Turtle Low Military Operations Area

Boundaries: Beginning at lat. 34°42’00”N., long. 115°16’03”W.; to lat. 34°41’10”N., long. 114°44’42”W.; to lat. 34°41’00”N., long. 114°44’42”W.; to lat. 34°14’00”N., long. 114°48’07”W.; to lat. 34°14’00”N., long. 115°30’03”W.; to lat. 34°19’00”N., long. 115°25’03”W.; to the point of beginning
Designated Altitudes: 2,000 feet AGL up to but not including 11,000 feet MSL
Times of Use: Intermittent by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

Proposed Training in Turtle Low MOA

The proposed Turtle Low MOA would support specific aircraft operations and nonhazardous activities associated with MEB-sized exercises and other LSEs, as well as MEB building block training events. Training activities would include: ingress and egress patterns/routing associated with low-level bombing, strafing, close air support, limited ground controlled intercepts, dissimilar air combat training, close-in fire support, forward air control, electronic warfare, visual reconnaissance, medical evacuation support, Marine lifts, resupply, low-altitude training, night vision goggle training, aerial refueling, and photo and photoflash runs.

2.0 Alternative 2

Descriptions of the proposed airspace under Alternative 2 are provided below.

2.1 Restricted Area 2509

Boundaries: Same as under Alternative 1
Designated Altitudes: R-2509A: Surface to 6,000 feet MSL (same as under Alternative 1)
R-2509B: Surface to 16,000 feet MSL (same as under Alternative 1)
R-2509C: Surface to 16,000 feet MSL
R-2509D: Surface to 8,000 feet MSL excluding the airspace within a 3.4-nm radius of lat. 34°25'03"N., long. 116°36'52"W., which would be surface to 1,500 feet AGL to accommodate Abraham Ranch, Kelly, and B&E private airports (see Figure 2-2) (same as under Alternative 1)
Times of Use: By NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

2.2 Johnson Valley Military Operations Area

Boundaries: Same as under Alternative 1. However, a Johnson Valley Air Traffic Control Assigned Airspace would not be created
Designated Altitudes: 1,500 feet AGL up to 16,000 feet MSL
Times of Use: By NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

2.3 Bristol Military Operations Area/Air Traffic Control Assigned Airspace

Bristol MOA

Proposed modifications and associated training activities conducted within Bristol MOA under Alternative 2 would be the same as under Alternative 1; except for the following:

Times of Use: Intermittent by NOTAM.

Bristol ATCAA

An ATCAA would be established to overlie and support operation in the proposed Bristol MOA. Compared to Alternative 1, the ATCAA would not be divided into Bristol North ATCAA and Bristol South ATCAA and altitude would be limited to FL220 under Alternative 2.

Boundaries: Same as Bristol MOA
Designated Altitudes: FL180 to FL220
Times of Use: Anticipated 0800–2200 daily, other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

2.4 Sundance Military Operations Area/Air Traffic Control Assigned Airspace

Sundance MOA

The modification to Sundance MOA and associated training activities under Alternative 2 would be the same as under Alternative 1. Time of use for Sundance MOA would be intermittent by NOTAM.

Sundance ATCAA

An ATCAA would be established to overlie a portion of and support operation in the proposed Sundance MOA. Compared to Alternative 1, the eastern sect ion of the southern boundary of Sundance ATCAA was modified under Alternative 2 to accommodate commercial and civilian air traffic in the vicinity.

Boundaries: Beginning at lat. 34°14'00"N., long. 116°17'03"W.; to lat. 34°14'01"N., long. 115°59'00"W.; to lat. 34°14'00"N., long. 115°44'03"W.; to lat. 34°12'37"N., long. 115°45'40"W.; to lat. 34°11'00"N., long. 116°01'28"W.; to lat. 34°11'00"N., long. 116°06'03"W.; to the point of beginning
Designated Altitudes: FL180 to FL220
Times of Use: Anticipated 0600–1600 Mon-Fri; other times by NOTAM
Controlling Agency: FAA Los Angeles ARTCC
Using Agency: Combat Center

2.5 CAX Military Operations Area

The establishment of proposed CAX MOA and associated training activities under Alternative 2 would be the same as under Alternative 1; except for the following:

Times of Use: By NOTAM at least 6 hours in advance, not to exceed 40 days per calendar year

There would be no establishment of a CAX ATCAA under Alternative 2.

2.6 Turtle Low Military Operations Area

The establishment of proposed Turtle Low MOA and associated training activities under Alternative 2 would be the same as under Alternative 1; except for the following:

Times of Use: By NOTAM at least 6 hours in advance, not to exceed 40 days per calendar year

This page intentionally left blank.

Appendix F
Final Noise Study

This page intentionally left blank.

Appendix F
Noise Study

for

Permanent Special Use Airspace Establishment and Modifications
at
Marine Corps Air Ground Combat Center
Twentynine Palms, CA

December 2024

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS ..... **iii**

1.0 INTRODUCTION **1**

1.1 Location 1
1.2 Background 1
1.3 Document Structure 3

2.0 METHODOLOGY **3**

2.1 Primary Noise Metrics and Noise Modeling 3
2.2 Special Use Airspace 5
2.3 Additional (Supplemental) Noise Metrics 5
2.3.1 Maximum Sound Level 5
2.3.2 Sound Exposure Level 5
2.4 Aircraft Training Calculations 5

3.0 EXISTING CONDITIONS **6**

3.1 Airspace Configuration 6
3.2 Modeling Data 8
3.3 Noise Exposure 12

4.0 NO-ACTION ALTERNATIVE **12**

4.1.1 Airspace Configuration and Modeling Data 12
4.1.2 Noise Exposure 13

5.0 PROPOSED ACTION ALTERNATIVES **14**

5.1 Alternative 1 Scenario 14
5.1.1 Airspace Configuration 14
5.1.2 Modeling Data 16
5.1.3 Noise Exposure 18
5.2 Alternative 2 Scenario 21
5.2.1 Airspace Configuration 21
5.2.2 Modeling Data 21
5.2.3 Noise Exposure 23

6.0 SINGLE-EVENT NOISE LEVELS **24**

7.0 LIST OF PREPARERS **25**

8.0 REFERENCES **27**

List of Figures

Figure 1 Regional Location of the Combat Center 2
Figure 2 Existing Airspace Used to Support the Combat Center 7
Figure 3 Special Use Airspace Under Alternative 1 15
Figure 4 Special Use and Land Ownership/Land Management in Potential Impact Areas 19
Figure 5 Special Use and Land Ownership & Management Near R2509 and Johnson Valley 20
Figure 6 Special Use Airspace Under Alternative 2 22

List of Tables

Table 1 Noise Modeling Parameters....4
Table 2 Combat Center SUA Existing Annual Airspace Sorties by Airspace Unit....8
Table 3 UAS Capable of Operating at the Combat Center....8
Table 4 Aircraft Modeled Speeds and Power Settings and General Altitude Ranges....11
Table 5 Combat Center SUA Existing Noise Levels....12
Table 6 Combat Center SUA Existing Annual Airspace Sorties by Airspace Unit....13
Table 7 Combat Center Permanent SUA Noise Levels Under the No-Action Alternative....13
Table 8 Combat Center SUA Alternative 1 Annual Airspace Sorties....17
Table 9 Combat Center SUA Noise Levels Under Alternative 1....18
Table 10 Combat Center Permanent SUA Noise Levels Under Alternative 2....23
Table 11 Aircraft Overflight Noise Levels....24

ACRONYMS AND ABBREVIATIONS

AGL	above ground level
ANSI	American National Standards Institute
ATCAA	Air Traffic Control Assigned Airspace
CNEL	Community Noise Equivalent Level
$CNEL_{mr}$	Onset Rate-Adjusted Community Noise Equivalent Level
Combat Center	Marine Corps Air Ground Combat Center
dB	Decibel
dBA	A-weighted decibels
DNL	Day-Night Average Sound Level
DNWG	Department of Defense Noise Working Group
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FL	Flight Level
km	kilometer(s)
L_{max}	Maximum Sound Level
LSE	Large-Scale Exercise
MOA	Military Operations Area
MSL	mean sea level
nm	nautical mile
RPM	Revolution per minute
SEL	Sound Exposure Level
SUA	Special Use Airspace
UAS	unmanned aircraft systems

This page intentionally left blank.

1.0 Introduction

The United States Marine Corps is preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts associated with establishing new permanent Special Use Airspace (SUA) and modifying existing SUA associated with the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center"). This noise study supports that effort and evaluates noise levels under existing conditions, No-Action Alternative, and two Proposed Action Alternatives. Although the Combat Center does not anticipate changes to operational levels within the next 5 years relative to existing conditions, across the Department of Defense (DoD) the AV-8B aircraft is in the process of replacement by F-35B/D, so the No-Action Alternative conditions analysis includes that change for comparison to the action alternatives.

1.1 Location

The Combat Center is currently the largest military training area in the nation and is located in the Mojave Desert, approximately 130 miles (209 kilometers [km]) east of Los Angeles and 54 miles (87 km) northeast of Palm Springs in San Bernardino County, California (Figure 1). The southern boundary of the installation is approximately 6 miles (10 km) north of Highway 62, and the northern boundary is south of Interstate 40. The city of Twentynine Palms is adjacent to the southern boundary of the installation. The project area would include airspace above San Bernardino County in California, to include airspace above, adjacent to, and to the east of the Combat Center.

1.2 Background

Military training away from airfields often occurs in SUA, which includes Restricted Areas (RA), Military Operations Areas (MOAs), Warning Areas, Prohibited Areas, Alert Areas, Controlled Firing Areas, and National Security Areas (Federal Aviation Administration [FAA] 2021). In addition to SUA, Air Traffic Control Assigned Airspace (ATCAA) from Flight Level (FL) 180 through FL600 (approximately 18,000 to 60,000 feet) augment the SUA for higher altitude flight operations. This noise study analyzes aircraft activities in RAs, MOAs, and ATCAAs.

The EA evaluates the No-Action Alternative and two action alternatives. The Proposed Action is to establish new permanent SUA areas and to modify the lateral boundaries, component sectors, and/or altitude limits within existing SUA areas to support ongoing daily training activities at the Combat Center. The Proposed Action would establish new permanent SUA to the west and east of existing Combat Center SUA (R-2509, Johnson Valley MOA, CAX MOA, and Turtle Low MOA) and modify existing Combat Center SUA along the southern and eastern boundaries of the Combat Center (Bristol MOA/ATCAA and Sundance MOA/ATCAA). The Proposed Action would allow the Combat Center to support current and future training activities in accordance with pre-deployment readiness directives of Marine Corps Order 3502.6, *Marine Corps Force Generation Process;* U.S. Marine Corps' Force Design 2030 (March 2020, with annual updates); and Combat Center Order 3500.16A, *Service Level Training Exercise Order* (May 14, 2020).

There is no proposed change to the ordnance use/training activities, so this noise study only analyzes impacts associated with changes to airspace and changes to use of aircraft due to the proposed airspace establishment/modifications, as modified since the 2012 Final Environmental Impact Statement (EIS).

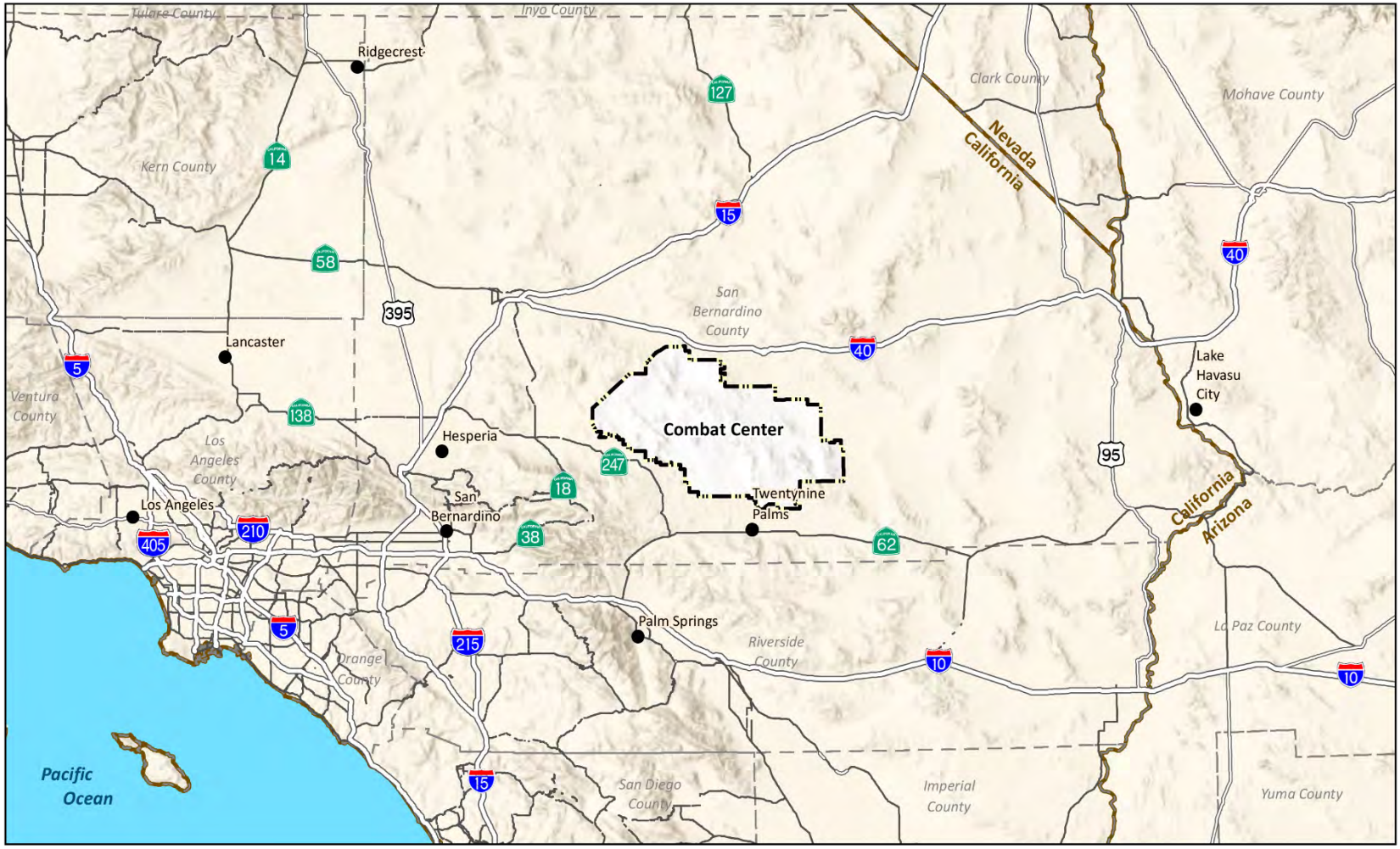


Figure 1. Regional Location of the Combat Center

This noise study will be used to support the preparation of the EA and analyzes the existing conditions, No-Action Alternative, and two Proposed Action Alternatives. Existing operations are part of ongoing training at current SUA associated with the Combat Center while the No-Action Alternative accounts for the replacement of AV-8B by F-35B/C across the DoD.

1.3 Document Structure

Section 1.0 introduced this study, while Section 2.0 describes the methodology used in the analysis. Section 3.0 provides the modeling data used and the noise exposure for existing conditions, Section 4.0 describes the No-Action Alternative, and Section 5.0 describes the two Proposed Action Alternatives. Section 6.0 summarizes the supplemental noise metrics used for single-event noise level analysis. The list of preparers is provided in Section 7.0. References are provided in Section 8.0.

2.0 Methodology

The DoD and the Federal Interagency Committee on Noise (1978), a member of the DoD, outline three types of metrics to describe noise exposure for environmental impact assessments:

1. **Maximum Sound Level (L_{max}):** A measure of the greatest sound level generated by single aircraft events.
2. **Sound Exposure Level (SEL):** A combination of the sound level and duration.
3. **Community Noise Equivalent Level (CNEL):** A cumulative measure of multiple flight and engine maintenance activity specified for use by the State of California for noise analysis, similar to Day-Night Average Sound Level (DNL) legislated for use in other states.

Human hearing sensitivity to differing sound pitch, measured in cycles per second or hertz, is not constant. To account for this effect, sound measured for environmental analysis utilizes A-weighting, which emphasizes sound roughly within the range of typical speech and de-emphasizes very low and very high frequency sounds. All decibels (dB) presented in this study utilize A-weighted (dBA or dB[A]) but are presented as dB for brevity.

Assessment of noise impacts for the various proposed permanent SUA alternatives requires prediction of future conditions that cannot be easily measured until after implementation. This is accomplished through the use of computer software to simulate the future conditions, as detailed in the following sections.

2.1 Primary Noise Metrics and Noise Modeling

DNL is a cumulative metric that includes all noise events occurring in a 24-hour period with a nighttime noise penalty applied to events occurring after 10:00 p.m. and before 7:00 a.m. The daytime period is defined as 7:00 a.m. to 10:00 p.m. An adjustment of 10 dB, equivalent to 10 times the number of events, is added to events occurring during the nighttime period to account for the added intrusiveness while people are most likely to be relaxing at home or sleeping and when background noise levels may be lower. Note that “daytime” and “nighttime” in calculation of DNL are sometimes referred to as “acoustic day” and “acoustic night” and always correspond to the times given above. This is often different from the “day” and “night” used commonly in military aviation, which are directly related to the times of sunrise and sunset and are important for military training in dark conditions. These times vary throughout the year, geographically, and with the seasonal changes. CNEL is a variation of DNL which adds an adjustment to evening events (7:00 p.m. to 10:00 p.m.) equivalent to three times the number of events. The State of

California and FAA specify the use of CNEL for community impact analysis in the State of California (California 1990, FAA 2020).[1]

In the SUA environment, the Onset Rate-Adjusted Monthly Community Noise Equivalent Level ($CNEL_{mr}$) serves as the primary noise metric for studies within the State of California. In the SUA environment, predicted noise levels are based on the month with the most aircraft activity in each airspace unit to account for the sporadic nature of operations. $CNEL_{mr}$ is the DoD standard for modeling and predicting the cumulative noise exposure and assessing community noise impacts in the SUA environment within the State of California. $CNEL_{mr}$ is identical to CNEL except that an additional penalty is applied to account for the startle effect due to the quick increase in sound level created by aircraft operating at low altitudes and high rates of speed (over 400 knots). The penalty is based on how quickly the sound increases when heard by an observer on the ground, described as "rise-time" rate, and can be up to 11 dB.

The DoD prescribes use of the NOISEMAP suite of computer programs (Wyle 1998; Wasmer Consulting 2019) containing the core computational programs called "NMAP" and "MRNMap." For this noise study, the NOISEMAP suite of programs refers to BASEOPS as the user input module and MRNMap as the noise model used to predict noise exposure in the proposed permanent SUA. MRNMap is an FAA-approved model, as identified in the FAA Order 1050.1F Desk Reference (FAA 2020). As indicated in Table 1, the grid spacing used for calculating noise exposure for each model was 2,000 feet.

Table 1 Noise Modeling Parameters

Software	**Analysis**	**Version**
BASEOPS	User input for all	7.368
MR_NMAP	Airspace Noise	Dated 10/22/2020
NOISEMAP	Single-Event	Dated 6/16/2021
Parameter	**Description**	
Receiver Grid Spacing	2,000 feet in x and y	
Primary Metrics	CNEL (AAD) $CNEL_{mr}$ (busiest month = +20 percent)	
Secondary Metrics	SEL, L_{max} (secondary)	
Basis	AAD Operations (CNEL) Busiest Month ($CNEL_{mr}$)	
Modeled Weather (Monthly Averages 2018; April selected)		
Temperature	77 degrees Fahrenheit	
Relative Humidity	20 percent	
Barometric Pressure	29.71 in inches Mercury	

Legend: AAD = Average Annual Day; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset Rate-Adjusted Monthly Community Noise Equivalent Level; L_{max} = maximum sound level; SEL = Sound Exposure Level.
Source: Cardno 2021.

This noise analysis assesses aircraft activity on a "busiest month" basis to better reflect flight activity during an average day of the "worst month" of the year, and to comply with the standard defined by the $CNEL_{mr}$. Additionally, flight activity in the airspace varies throughout the year, so using annual average day methodology would not be appropriate. For example, activity within the proposed CAX MOA and Turtle Low MOA would occur only during two annual training exercises, each occurring during a different month lasting a matter of days. Therefore, the busiest month modeling for CAX MOA and Turtle Low MOA contain sorties occurring during one training exercise event equal to one-half of the annual sorties. All other modeled airspace activity comprises many training events spread more evenly throughout the year. To

[1] FAA Order 1050.1F defines the CNEL evening adjustment as "a 4.77-dB adjustment added to noise events occurring during the evening from 7:00 p.m. and up to 10:00 p.m."

account for the additional operations that occur during the busier times of the year in those areas, a busiest month is calculated as the average month increased by 20 percent. To comply with FAA requirements, this study also includes CNEL computed on an annual average daily basis, which is the annual operations divided by 365 days per year to reflect an "average annual day."

2.2 Special Use Airspace

Noise modeling, using the MRNMap model contained in the NOISEMAP software suite, was accomplished by determining the use of each airspace unit and building each aircraft's flight profiles based on the aircraft's configuration (airspeed and power setting) and the amount of time spent at various altitudes throughout the airspace. This information drew upon the 2012 Final EIS noise modeling (Department of Navy 2012) and was reviewed and updated for this noise study by a team primarily made up of representatives from the Combat Center's airspace management office and Combat Center personnel. The data was compiled in a data validation package that was reviewed by and approved for use by Combat Center personnel prior to conducting the modeling (Cardno 2021; Marine Corps 2019a, 2019b).

2.3 Additional (Supplemental) Noise Metrics

While a cumulative metric such as CNEL is used to predict the overall noise environment, it can also be of interest to know more about the most impactful events in noise sensitive locations. The DoD Noise Working Group (DNWG) provides guidelines to supplement cumulative CNEL, as described in this section (DNWG 2009).

2.3.1 Maximum Sound Level

The highest A-weighted sound level measured during a single-event in which the sound changes with time is called the maximum A-weighted sound level or L_{max}. L_{max} is the maximum level that occurs over one-eighth of a second and denoted as "fast" response on a sound level meter (American National Standards Institute [ANSI] 1988). Although useful in determining when a noise event may interfere with conversation, television or radio listening, or other common activities, L_{max} does not fully describe the noise because it does not account for how long the sound is heard.

2.3.2 Sound Exposure Level

SEL combines both the intensity of a sound and its duration by providing the equivalent sound level that would contain the same sound energy of an event if occurring over 1 second. This means that SEL does not represent a sound level that is heard directly at any given time. However, SEL provides a much better metric for comparison of aircraft flyovers than L_{max} because it allows normalization of disparate events to their 1-second energy average. SEL value is larger than L_{max} for the same event because aircraft noise events last more than a few seconds.

2.4 Aircraft Training Calculations

The following aircraft flying activities can be described through different terminology, each with a distinct meaning.

- **Sortie**. A sortie consists of a single military aircraft from a take-off through a landing, which may include one or more training operations in between. For this study, a typical sortie involves training activity within the SUA and ATCAAs associated with the Combat Center for 30 to 120 minutes, concluded by a landing most often back at their place of origin. Helicopter sorties are an exception as they may land within designated areas throughout the Combat Center as part of a training event one or multiple times prior to returning and concluding the sortie.

- **Operation**. The term operation can apply to both airfield and airspace activities comprising one action such as a landing or a take-off. For airspace and ranges, an operation comprises the use of one airspace unit (e.g., RA, MOA, ATCAA) by one aircraft. Each time a single aircraft flies into a different airspace unit, one operation is counted for the unit. Thus, different installations could support the same number of sorties and same total flight time but generate different numbers of operations in the airspace due to the configuration of airspace and layout of training missions.
- **Event**. As a subset of operations, the term event is used to define specific training elements (e.g., a defensive countermeasure or ordnance delivery event). More than one event may be performed during the use of an airspace unit. During a single sortie, an aircraft could fly in several airspace units, conducting multiple operations and events. For these reasons, the number of operations and events often exceeds total sorties and are generally not additive to one another.

3.0 Existing Conditions

The following subsections detail the modeling data and the resultant noise exposure for the existing aircraft activity within the SUA and ATCAAs associated with the Combat Center.

3.1 Airspace Configuration

The existing conditions considers aircraft operations within existing SUA and ATCAAs associated with the Combat Center. The airspace is defined by a floor and ceiling described either in feet above ground level (AGL), mean sea level (MSL) or FL. In aviation, FL is an aircraft's altitude at standard air pressure, which is similar but not necessarily the same as the aircraft's actual altitude, either above MSL or AGL. Aircraft altitudes at or above 18,000 feet are referenced in FL and equate to approximately the same number of feet above MSL. Figure 2 depicts the Combat Center boundary along with currently utilized airspace with the following floors and ceilings:

- RAs:
  - R-2501A (surface to unlimited)
  - R-2501B (surface to unlimited)
  - R-2501C (surface to unlimited)
  - R-2501D (surface to unlimited)
  - R-2501E (surface to unlimited)
- MOAs:
  - Sundance (500 feet AGL to 10,000 feet MSL)
  - Bristol (5,000 feet MSL to 18,000 feet MSL)
  - Turtle (11,000 feet MSL to 18,000 feet MSL)
- ATCAAs:
  - Bristol (FL180 to FL220)
  - Turtle (FL180 to FL220)

All SUA ATCAA presented above are part of the existing Combat Center airspace complex except Turtle MOA/ATCAA, which are scheduled by the Yuma Range Complex. Analysis of Turtle MOA/ATCAA are included in the noise study existing conditions analysis because the Proposed Action would expand Combat Center airspace and training eastward underlying these areas.

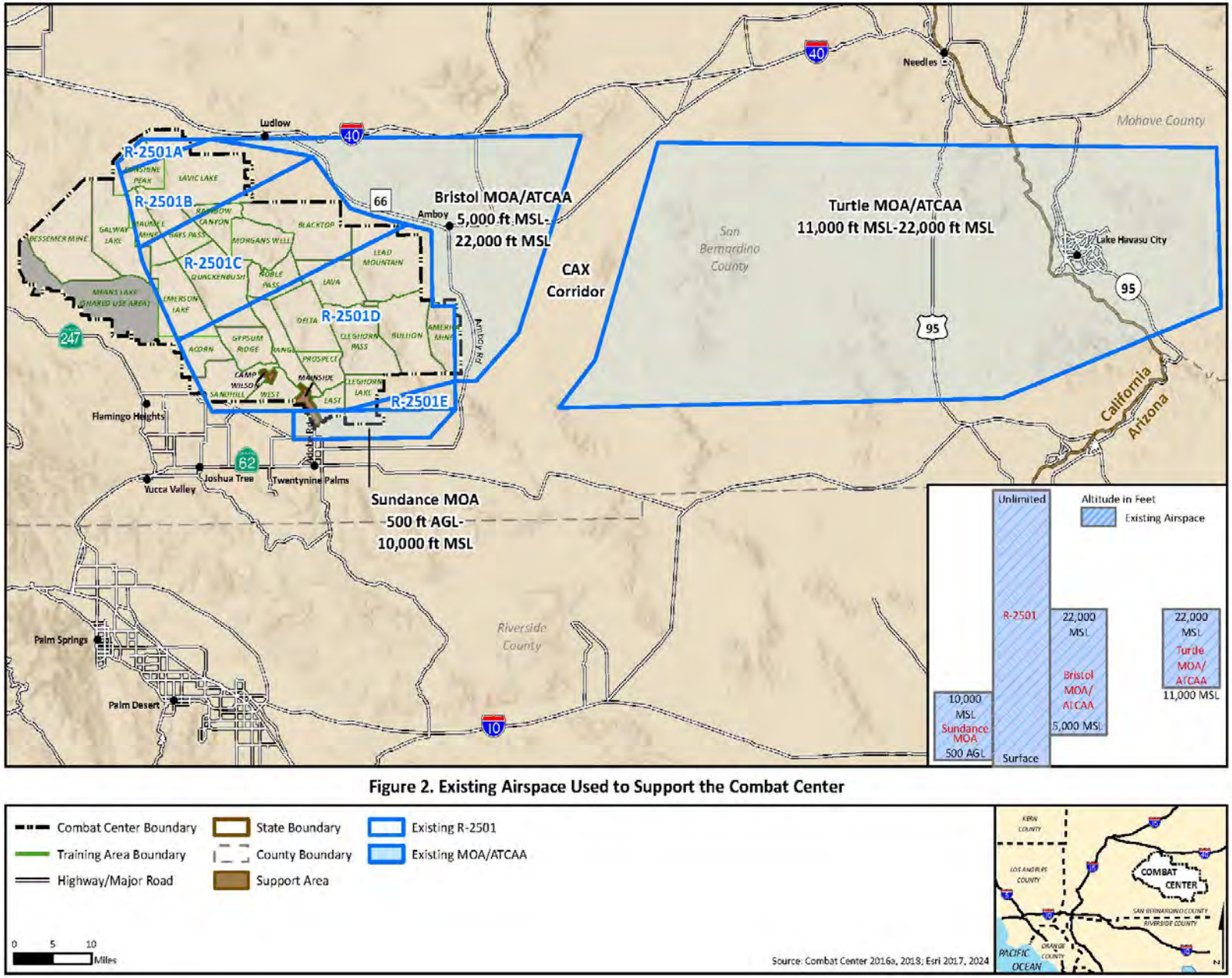


Figure 2. Existing Airspace Used to Support the Combat Center

3.2 Modeling Data

Annual airspace sortie data provided by the Combat Center is summarized in Table 2. A total of 5,991 sorties occur in R-2501 and Sundance MOA with AH-1 and UH-1 helicopters as the largest user comprising 37 percent of sorties, followed by FA-18 aircraft at 17 percent. Although R-2501 and Sundance MOA are generally utilized together, the KC-130 primarily and the unmanned aircraft systems (UAS) exclusively use R-2501. Bristol MOA and Bristol ATCAA overlay one another and are often used together with aircraft transitioning between each, depending upon required altitudes with FA-18 being the most frequent user at 31 percent.

Table 2 Combat Center SUA Existing Annual Airspace Sorties by Airspace Unit

Aircraft	R-2501A/B/C/D/E and Sundance MOA		Bristol MOA/ATCAA		Turtle MOA/ATCAA (Not originating at the Combat Center)	
	Total	Above FL270[(1)]	Total	Above FL180	Total	Above FL180
AV-8B	608	87	426	43	400	40
FA-18[(2)]	1,001	203	701	98	1,200	120
F-35	321	145	225	26	400	40
AH/UH-1	2,241	-	456	-	-	-
CH-53	682	-	43	-	-	-
MV-22	637	-	71	-	-	-
KC-130[(3)]	100	-	256	256	400	-
Joint Aerial Refueling	-	-	71	-	-	-
UAS[(4)]	401	20	-	-	-	-
Total	**5,991**	**455**	**2,249**	**423**	**2,400**	**200**

Notes: [(1)]Above FL270 is a subset of sorties; Above FL270 would not apply to Sundance MOA.
[(2)]Turtle MOA fighter jet sorties include F-15, F-16, and Navy FA-18 modeled as FA-18.
[(3)]Modeled as C-130H; 14 sorties in R-2501/Sundance MOA combined and remaining 84 in R-2501 exclusively.
[(4)]UAS primarily Group 1 type (90%) and the rest Group 2 to 4 (10%); UAS only operate in R-2501 but may transit through other airspace as allowed by FAA.

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aircraft System.

The UAS sorties listed in Table 2 includes various types, 90 percent of which are Group 1 and small enough to be launched and recovered by hand. The remaining types of UAS would be Group 2 through 4 but typically comprise the types powered by electric motors or piston engines smaller than household lawnmowers. Table 3 details the full list of UAS that can operate in R-2501. The minimal noise created by these most frequent types of UAS combined negligibly contribute to the noise environment at the Combat Center that is dominated by jet and helicopter aircraft, which generate SELs more than 20 dB greater. Therefore, the UAS sorties have not been modeled for noise analysis.

Table 3 UAS Capable of Operating at the Combat Center

Model Name	End Item Code	Description
AAI AEROSONDE	56487	UAS
AERO SENTINEL G1	G1	IDF POR (APPR COTS WAIVER W/MCWL)
ALBATROSS	23589	
BLACK HORNET	25931	UAS
CB3+	23985	COYOTE BLOCK III+ INERT
DJ1 PHANTOM 4	1287	UAS
DJI MAVIC	23584	UAS
ELBIT SYSTEMS MAGNI-X	MAGNI-X	IDF POR (APPR COTS WAIVER W/MCWL)

Model Name	End Item Code	Description
ELBIT SYSTEMS SKYLARK	SKYLARK	IDF POR (APPR COTS WAIVER W/MCWL)
ELBIT SYSTEMS THOR SEARCH AND FIND	THOR	IDF POR (APPR COTS WAIVER W/MCWL)
FLIGHTWAVE EDGE 130	EDGE	VTOL
FLIR R80D SKYRAIDER	23586	UAS
FREEFLY ALTA X	ALTA X	QUADCOPTER
GENEVA DAKOTA	3641	UAS
HARRIS AERIAL CARRIER H6 HE+	H6 HE+	HEXACOPTER (EV/GAS)
HARRIS AERIAL CARRIER H6 HYDRONE	H6 HYDRONE	HEXACOPTER (HYDROGEN)
HOVERFLY TETHERED UAS	12380	UAS
HYBRID TIGER	6521	UAS
INDAGO	12497	UAS
INSPIRED FLIGHT IF1200	IF1200	HEXACOPTER
INSPIRED FLIGHT IF750	IF750	QUADCOPTER
INSTANT EYE	21583	UAS
INTENSE EYE V2 MK3 GEN4-D	EYE	QUADCOPTER
JAWBREAKER	005	COTS
KA STURNUS	PART15	COTS
MQ-8C	010	SUAS
MQ-9 REAPER	MQ9	UAS
MQM-170 OUTLAW	12854	AERIAL TARGET UAS (LAAD UNITS USE)
NOVA 2	002	COTS
NOVA SKYDIO X2D	25893	UAS
OSPREY	2453	UAS
PARROT ANAFI	03258	QUADCOPTER
PARROT SENSEFLY	12356	PARROT SENSEFLY EBEE X
QUANTIX	004	COTS
RAFAEL FIREFLY	FIREFLY	IDF POR (APPR COTS WAIVER W/MCWL)
ROOSTER	ROOSTER	IDF POR (APPR COTS WAIVER W/MCWL)
RQ-11 B RAVEN	1209	UAS
RQ-12 A WASP	9814	UAS
RQ-20 A/B PUMA	4591	UAS
RQ-21 A BLACKJACK	2851	UAS
RQ-7 PREDATOR	6587	UAS
RQ-9 REAPER	RQ9	UAS
SANDFLY	7865	UAS
SCAN EAGLE	15487	UAS
SCHIEBEL S-100	56932	UAS
SENSEFLY EBEE	1493	UAS
SHADOW	15472	UAS
SHIELD AL NOVA AND HIVERMIND	25874	UAS
SKYDIO X2D	5435	QUADCOPTER
SKYRAIDER	12587	UAS
SKYRANGER	12586	UAS
STALKER XE	12058	UAS
SWITCHBLADE	23985	UAS
TEAL GOLDEN EAGLE	36271	QUADCOPTER
TRV-150	TRV	UAS
WINGTRA ONE	WINGTRA	VTOL
X-TEND HB-V1	HB-V1	IDF POR (APPR COTS WAIVER W/MCWL)

Model Name	End Item Code	Description
X-TEND HB-V2	HB-V2	IDF POR (APPR COTS WAIVER W/MCWL)
X-TEND HUNTER	HUNTER	IDF POR (APPR COTS WAIVER W/MCWL)
X-TEND X-TENDER	X-TENDER	IDF POR (APPR COTS WAIVER W/MCWL)

Similar to the Bristol MOA/ATCAA, Turtle MOA/ATCAA cover the same area at different altitude ranges but are scheduled by Yuma Range Control, which recorded 1,641 annual scheduled hours for 2018 with the following most frequent users:

- 144th Fighter Wing: F-15C
- 56th Fighter Wing: F-16C
- 755 Operational Support Squadron: C-130
- Integrated Training Exercise: KC-130 (or FA-18/AV-8)
- Strike Fighter Squadron 122: Navy FA-18
- Marine Attack Squadrons 211: F-35B from Yuma

This activity results in an estimated 2,400 annual sorties with FA-18 generating half of all sorties, followed by AV-8B, F-35B, and KC-130 each contributing one-sixth of the annual sorties.

Table 2 includes all annual sorties, some of which are listed multiple times because aircraft will fly between multiple areas during a single flight. For example, the sorties occurring in Bristol MOA/ATCAA are generally a subset of the R-2501/Sundance MOA with two-thirds of each sortie duration modeled in the R-2501/Sundance MOA areas and the remaining one-third in the Bristol MOA/ATCAA. The exceptions are the tankers (KC-130 and Joint Aerial Refueling), which primarily operate in Bristol MOA/ATCAA. The Turtle MOA/ATCAA sorties listed in Table 2 originate from locations other than the Combat Center and are consider separate sorties occurring completely in their respective airspace.

The higher altitude sorties categorized as “Above FL270” or “Above FL180” extend above to higher altitudes, where FL270 corresponds with approximately 27,000 feet and FL180 corresponds with approximately 18,000 feet MSL. These high-altitude sorties represent a subset of the total that extend into these higher altitude ranges a portion of the total time to provide perspective on operations that would be affected by the Proposed Action.

The CNEL and $CNEL_{mr}$ metrics require that aircraft activity be categorized by temporal period in order to apply weightings to events occurring during the evening (7:00 p.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.) periods. Based upon input from the Combat Center, 70 percent of sorties presented in Table 2 occur during daytime, 15 percent during evening, and 15 percent during nighttime (Cardno 2021). These are predefined acoustic periods and will differ from “daylight” and “darkness” periods, which rely upon light level for classification.

Aircraft activity must further be defined by profile (altitudes, speeds, and power settings) for noise analysis. Table 4 presents the aircraft profiles used for this study. Tanker aircraft (KC-130 and Joint Aerial Refueling) sortie duration is modeled at 120 minutes while all other aircraft at 60 minutes per sortie. Fighter aircraft (AV-8B, FA-18, and F-35) are estimated to perform close air support for 10 percent of sorties within RAs, which includes significant low altitude flight from 500 to 1,000 feet AGL. The high-altitude sorties above FL180 or FL270 are modeled to last 20 minutes each. The general altitude ranges presented in Table 4 have been compressed to fit within each airspace floor/ceiling as needed.

Table 4 Aircraft Modeled Speeds and Power Settings and General Altitude Ranges

Aircraft Type	Mission	Sortie Duration (mins)	Average Speed (knots)	Average Power Setting	Altitude Range[1]							
					50-500 AGL	200-500 AGL	500-1k AGL	1k-10k MSL	5k-10k MSL	10k-14k MSL	14k-27k MSL[2]	27k-40k MSL[2]
AV-8B	CAS (10% of Sorties)	78	300	85% RPM		20%	40%	30%		10%		
	All other (90%)	78	300	85% RPM					10%	60%	30%	20
FA-18 (modeled as F18/C/D)	CAS (10% of Sorties)	90	400	88% NC		20%	40%	30%		10%		
	All other (90%)	90	400	88% NC					10%	60%	30%	20
F-35	CAS (10% of Sorties)	90	400	90% ETR		20%	40%	30%		10%		
	All other (90%)	90	400	90% ETR					10%	60%	30%	20
AH/UH-1 (modeled as UH1N)		90	100	NA	50%		50%					
CH-53		90	120	NA	50%		50%					
MV-22	Low Helo-mode	80	110	NA	50%		50%					
	airplane-mode	40	220	NA			20%	80%				
KC-130 (modeled as C-130H)		180	250	850 C TIT					5%	5%	90%	
Joint Aerial Refueling (modeled as KC-10)		240	250	60%							100%	

Note: [1]General altitude ranges listed above were adjusted up or down to conform to the specific limits of each airspace.
[2]MSL equates approximately to FL for altitudes above 18,000 ft.

Legend: % = percent; AGL = above ground level; CAS = close air support; C TIT = Turbine Inlet Temperature in Celsius; ETR = engine thrust request; mins = minutes; MSL = mean sea level; NA = not applicable; NC = compressor speed; RPM = revolutions per minute.

As shown in Table 2, each sortie occurs in multiple SUA because each are often activated for use together as a larger contiguous volume of airspace. Sorties listed in the R-2501A/B/C/D/E and Sundance MOA column of Table 2 can operate in any of those areas. To model this condition, the ground area under each airspace was calculated and the aircraft sortie duration was divided among each of these SUA as a ratio of their areas.

3.3 Noise Exposure

The area in the vicinity of the proposed airspace where noise sensitive receptors could be located generally comprises rural or remote areas, which typically experience DNL of 45 to 50 dB (ANSI 2013) estimated at 49 dB DNL for the purposes of this analysis. In situations where the calculated military aircraft noise is slightly less than 49 dB DNL, the results are noted as the non-military sources of noise may exceed the predicted levels presented.

Consistent with the methodology described in Chapter 2 and aircraft operations detailed in Section 3.2, Table 5 presents the calculated $CNEL_{mr}$ and CNEL of the aircraft noise source rounded to whole decibels with notations for locations where non-military sources of noise may be greater. The greatest aircraft noise levels of 61 dB for $CNEL_{mr}$ and 58 dB for CNEL currently occur in R-2501. Sundance MOA experiences the next greatest noise levels at 58 dB for $CNEL_{mr}$ and 57 dB for CNEL. Existing noise exposure in Lake Havasu City due to military aircraft is calculated at less than 45 dB for both $CNEL_{mr}$ and CNEL as computed with the software model, so the existing levels from all sources of noise are likely greater, potentially closer to 49 dB. Additionally, the CNEL in Bristol MOA due to aircraft would be approximately the same as estimated level of non-aircraft noise sources of approximately 49 dB.

Table 5 Combat Center SUA Existing Noise Levels

Area	$CNEL_{mr}$	CNEL
R-2501	61	58
Sundance MOA	58	57
Bristol MOA/ATCAA	50	49(1)
Turtle MOA ATCAA	45(1)	45(1)

Note: (1) Ambient non-military noise for rural areas estimated at 49 dB, which may exceed existing military noise (ANSI 2013).

Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset Rate-Adjusted Community Noise Equivalent Level; MOA = Military Operations Area.

4.0 No-Action Alternative

4.1 Airspace Configuration and Modeling Data

Under the No-Action Alternative there would be no changes to the Combat Center airspace from the existing conditions reflected in Figure 2. The Combat Center does not anticipate changes to operational levels within the next 5 years relative to the existing condition. However, independent of this action, the AV-8B aircraft will be fully replaced by the F-35B/D across the DoD, which would replace the existing AV-8B sorties at the Combat Center with F-35B/D sorties on a 1 for 1 basis as summarized in Table 6. Under the No-Action Alternative, the airspace would be the same as depicted in Figure 2 and modeled flight profiles would be the same as existing, as described in Section 3.2.

Table 6 Combat Center SUA No Action Annual Airspace Sorties by Airspace Unit

Aircraft	R-2501A/B/C/D/E and Sundance MOA		Bristol MOA/ATCAA		Turtle MOA/ATCAA (Not originating at the Combat Center)	
	Total	Above FL270[1]	Total	Above FL180	Total	Above FL180
AV-8B	0	0	0	0	0	0
FA-18[2]	1,001	203	701	98	1,200	120
F-35	929	232	651	69	800	40
AH/UH-1	2,241	-	456	-	-	-
CH-53	682	-	43	-	-	-
MV-22	637	-	71	-	-	-
KC-130[3]	100	-	256	256	400	-
Joint Aerial Refueling	-	-	71	-	-	-
UAS[4]	401	20	-	-	-	-
Total	**5,991**	**455**	**2,249**	**423**	**2,400**	**200**

Notes: [1]Above FL270 is a subset of sorties; Above FL270 would not apply to Sundance MOA.
[2]Turtle MOA fighter jet sorties include F-15, F-16, and Navy FA-18 modeled as FA-18.
[3]Modeled as C-130H; 14 sorties in R-2501/Sundance MOA combined and remaining 84 in R-2501 exclusively.
[4]UAS primarily Group 1 type (90%) and the rest Group 2 to 4 (10%); UAS only operate in R-2501 but may transit through other airspace as allowed by FAA.

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aircraft System.

4.1.1 Noise Exposure

Table 7 presents the calculated average $CNEL_{mr}$ and CNEL on the ground within each airspace under the No-Action Alternative rounded to whole decibels. The greatest aircraft noise levels of 63 dB for $CNEL_{mr}$ and 62 dB for CNEL would occur in R-2501. Sundance MOA would experience the next greatest noise levels at 61 dB for $CNEL_{mr}$ and 60 dB for CNEL. Noise exposure in Lake Havasu City due to military aircraft is calculated at approximately 45 dB for both $CNEL_{mr}$ and CNEL, which is located below the eastern portion of Turtle MOA/ATCAA. Since the estimated ambient noise level in rural environments from non-military sources of noise is estimated at 49 dB, the non-military sources would likely continue to exceed the No-Action Alternative aircraft CNEL/CNELmr contributions in Lake Havasu City. Overall, CNEL/CNELmr would increase 2 to 4 dB from existing conditions due to the replacement of AV-8B with F-35.

Table 7 Combat Center Permanent SUA Noise Levels Under the No-Action Alternative

Area	Existing Conditions		No-Action Alternative		Change Relative to Existing	
	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL
R-2501	61	58	63	62	+2	+4
Sundance MOA/ATCAA	58	57	61	60	+3	+3
Bristol MOA/ATCAA	50	49[1]	53	52	+3	+3
Turtle MOA/ATCAA	45[1]	45[1]	45[3]	45[3]	0	0

Notes: [1]Ambient non-military noise for rural areas estimated at 49 dB, which may exceed existing military noise (ANSI 2013).
Legend: ATCAA = Air Traffic Control Assigned Airspace; CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset Rate-Adjusted Monthly Community Noise Equivalent Level; MOA = Military Operations Area.

5.0 Proposed Action Alternatives

The following section details the modeling data and the resultant noise exposure for the Alternative 1 and Alternative 2 Alternatives, which are compared to the No-Action Alternative.

5.1 Alternative 1 Scenario

5.1.1 Airspace Configuration

Alternative 1 scenario would establish R-2509 west of existing R-2501 and Johnson Valley MOA/ATCAA to the southwest, as depicted in Figure 3. The Sundance MOA upper altitude limit would be increased and Sundance ATCAA would be established. The Bristol MOA floor would be lowered and the existing Bristol ATCAA would be separated into Bristol North ATCAA and Bristol South ATCAA, each with different ceilings. A CAX MOA/ATCAA would be established east of Bristol MOA/ATCAA to connect to existing Turtle MOA/ATCAA and a Turtle Low MOA would be established under roughly half of the western portion of existing Turtle MOA. The altitude floors and ceilings of all established and modified SUA and ATCAA for these alternatives are listed below.

- Establish R-2509
  - A (surface to 6,000 feet MSL)
  - B (surface to 16,000 feet MSL)
  - C (surface to FL400)
  - D (surface to 8,000 feet MSL) excluding the airspace within a 3.4-nautical mile (nm) radius of lat. 34°25'03"N., long. 116°36'52"W., which would be surface to 1,500 feet AGL to accommodate Abraham Ranch, Kelly, and B&E private airports (Figure 3)
- Establish Johnson Valley
  - MOA (1,500 feet AGL to 18,000 feet MSL)
  - ATCAA (FL180 to FL400)
- Modify Bristol
  - MOA (2,000 feet AGL to 18,000 feet MSL)
  - North ATCAA (FL180 to FL220)
  - South ATCAA (FL180 to FL400)
- Modify Sundance
  - MOA (500 feet AGL to 17,999 feet MSL) excluding a 1-nm radius of the Dale Skyranch Airport surface to 1,500 feet AGL and a 1-mile-wide corridor, extending from the center of the airport on a straight line south to the edge of the Sundance MOA
  - ATCAA (FL180 to FL220)
- Establish CAX
  - MOA (2,000 feet AGL to 8,000 feet MSL)
  - ATCAA (FL180 to FL210)
- Establish Turtle Low
  - MOA (2,000 feet AGL to 11,000 feet MSL)

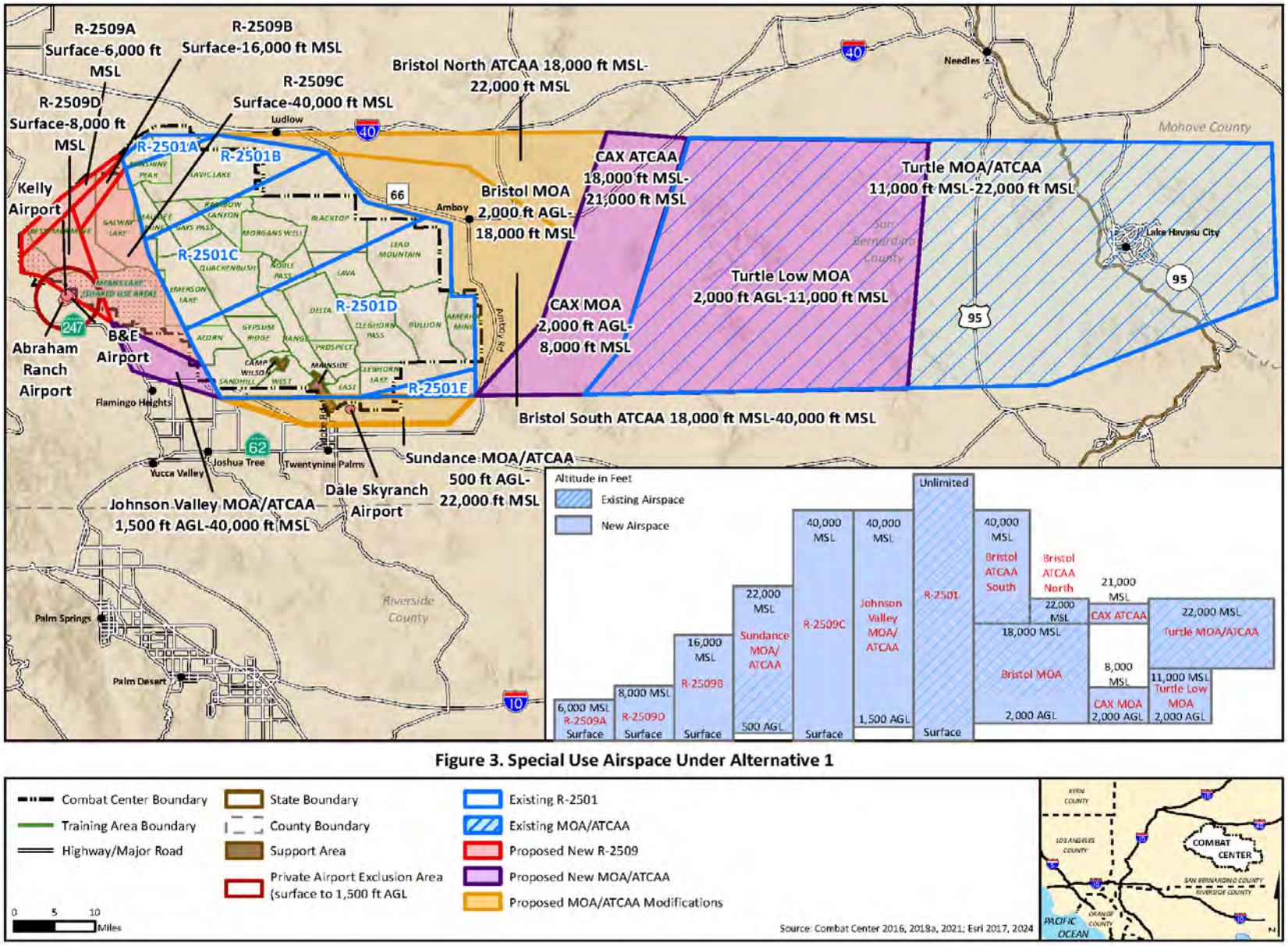


Figure 3. Special Use Airspace Under Alternative 1

5.1.2 Modeling Data

As detailed in Table 8, total annual sorties under the Alternative 1 scenario would remain the same as existing except the following:

- F-35 sorties would increase by approximately 3 to 4 times the existing operations (due to a combination of replacing all existing AV/8B and a portion of the existing FA-18)
- KC-130 sorties would increase by 120
- Joint Aerial Refueling would increase by 20
- Unmanned Aerial Systems sorties would increase up to 2,000
- 174 and 192 Sorties would be added to CAX MOA and Turtle Low MOA, respectively, generated from two Large-Scale Exercises (LSEs) per year

Under the Alternative 1 scenario, aircraft operations currently occurring in R-2501 and Sundance MOA would spread out across those SUA and the newly established R-2509, Sundance ATCAA, and Johnson Valley MOA/ATCAA. Existing operations in Bristol MOA/ATCAA would expand into newly established CAX MOA/ATCAA and Turtle Low MOA. Current training in the existing Turtle MOA/ATCAA may also utilize the new Turtle Low MOA.

Consistent with the existing, 70 percent of sorties presented in Table 8 would occur during daytime (7:00 a.m. to 7:00 p.m.), 15 percent during evening (7:00 p.m. to 10:00 p.m.), and 15 percent during nighttime (10:00 p.m. to 7:00 a.m.). Aircraft profiles (altitudes, speeds, and power settings) would remain unchanged from existing and the No-Action Alternative, as detailed in Table 4, except to adjust the upper and lower altitudes to fit within the SUA and ATCAA floors and ceilings. Consistent with existing and the No-Action Alternative, sorties listed in Table 8 would occur in multiple SUA and ATCAA because multiple areas would be activated for use together as larger contiguous volumes of space. The ground area under each airspace was calculated and the aircraft sortie duration was divided among each of these SUA as a ratio of their areas.

Table 8 Combat Center SUA Alternative 1 Annual Airspace Sorties

Aircraft	R-2501A/B/C/D/E R-2509A/B/C/D		Johnson Valley MOA/ATCAA		Sundance MOA/ATCAA		Bristol MOA/ATCAA		CAX MOA/ATCAA		Turtle LOW MOA		Turtle MOA/ATCAA (Not originating at the Combat Center)[6]	
	Total	Above FL270[1]	Total	Above FL270[1]	Total	Above FL270[1]	Total	Above FL270[1]	Total	Above FL270[1]	Total	Above FL270[1]	Total	Above FL270[1]
AV-8B	0	0	0		0		0	0			0		0	0
FA-18[2]	681[6]	33	681	-	681	-	285	57	-	-	95	-	1,200	120
F-35	1,249[6]	402	1,249	-	1,249	-	1,067	358	-	-	58	-	800	80
AH/UH-1	2,241	-	2,241	-	2,241	-	456	-	120	-	-	-	-	-
CH-53[7]	682	-	682	-	682	-	43	-	36	-	-	-	-	-
MV-22	637	-	637	-	637	-	71	-	18[7]	-	-	-	-	-
KC-130[3]	220[6]	-	220	-	220	-	256	256	-	-	21	-	400	-
Joint Aerial Refueling[4]	20	-	-	-	-	-	71	-	-	-	18	-	-	-
UAS[5]	2,000	40	-	-	-	-	-	-	-	-	-	-	-	-
Total	**7,730**	**475**	**5,710**	**-**	**5,710**	**-**	**2,249**	**671**	**174**	**-**	**192**	**-**	**2,400**	**200**

Notes: [1]Above FL270 is a subset of sorties; above FL270 would only apply to R-2501 and ATCAAs over Bristol MOA and Turtle MOA

[2]Turtle MOA fighter jet sorties include F-15, F-16, and Navy FA-18 modeled as FA-18.

[3]Modeled as C-130H.

[4]Joint Aerial Refueling would only occur in Johnson Valley MOA/ATCAA, Bristol MOA/ATCAA, CAX MOA/ATCAA, and Turtle MOA/ATCAA.

[5]UAS primarily Group 1 type (90%) and the rest Group 2 to 4 (10%); UAS would only operate in R-2501/R-2509 but may transit through other airspace as allowed by FAA. UAS not modeled (refer to Section 3.1.3.1 for explanation).

[6]Turtle MOA/ATCAA sorties estimated from 2018 airspace activation hours and types of aircraft based on most frequent units utilizing the airspace.

[7]CH-53 sorties include 24 designated as "Other Rotary Wing" in the April 2021 Airspace Proposal.

Legend: ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; UAS = Unmanned Aircraft System.

5.1.3 Noise Exposure

Consistent with the methodology described in Chapter 2 and aircraft operations detailed in Section 4.1.2, Table 9 presents the calculated greatest $CNEL_{mr}$ and CNEL, rounded to whole decibels, that would occur within each airspace, which generally corresponds to the center of each airspace area or the boundary between two adjacent airspace areas. Under Alternative 1, noise levels in R-2501 would be up to 64 dB $CNEL_{mr}$ and 63 dB CNEL. The noise level within each subarea of R-2509 would vary slightly with the greatest of 65 dB $CNEL_{mr}$ and 64 dB CNEL occurring in R-2509A.Noise levels in Sundance MOA/ATCAA would increase to 64 dB $CNEL_{mr}$ and 63 dB CNEL. Levels under the newly established CAX MOA/ATCAA and Turtle Low MOA (that includes Lake Havasu City) would be between 47 and 50 dB due to military aircraft noise for both $CNEL_{mr}$ and CNEL, which would be a similar level as is estimated from ambient non-military noise sources.

Table 9 Combat Center SUA Greatest Cumulative Noise Levels Under Alternative 1

Area	No-Action Alternative		Proposed		Change Relative to No-Action Alternative	
	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL
R-2501[(1)]	63	62	64	63	+1	+1
R-2509A	49[(2)]	49[(2)]	65	64	+16	+15
R-2509B	49[(2)]	49[(2)]	64	63	+15	+14
R-2509C	49[(2)]	49[(2)]	64	63	+15	+14
R-2509D	49[(2)]	49[(2)]	62	61	+13	+12
Sundance MOA/ATCAA	61	60	64	63	+3	+3
Johnson Valley MOA/ATCAA	49[(2)]	49[(2)]	61	60	+12	+11
Bristol MOA/ATCAA	53	52	56	55	+3	+3
CAX MOA/ATCAA	49[(2)]	49[(2)]	50[(3)]	50[(3)]	+1	+1
Turtle MOA/ATCAA	45	45	48[(3)]	47[(3)]	+3	+2
Turtle Low MOA	45	45	50	50	+5	+6

Notes: [(1)]R-2501 has been included in this table because flight operations would change but there would not be any changes to the R-2501 airspace dimensions.
[(2)]Minimal existing military aircraft activity, noise levels represent typical values for rural areas (ANSI 2013).
[(3)]Existing ambient non-military aircraft noise estimated at 49 dB DNL, which is similar to the calculated military noise under the Proposed Action (ANSI 2013).

Legend: CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset Rate-Adjusted Monthly Community Noise Equivalent Level.

Figure 4 depicts the proposed SUA at the Combat Center over land ownership data, and Figure 5 zooms in to residential land use that would newly be within SUA that are located along the southwestern side of the Combat Center. As shown in Figure 4 and 5, residential land use would occur within R-2509D, R-2509C, Johnson Valley MOA, Sundance MOA, Bristol North MOA, and CAX MOA. In the case of R-2509, the residential properties are located along the southern edge of the proposed SUA and would experience CNEL less than the maximum presented in Table 9, which would instead range from 61 to 62 dB within R-2509C and 57 to 60 dB within R-2509D residential areas. Other residential properties, such as within Sundance MOA and Johnson Valley are spread throughout those respective areas so the CNEL/$CNEL_{mr}$ presented in Table 9 would generally apply as listed.

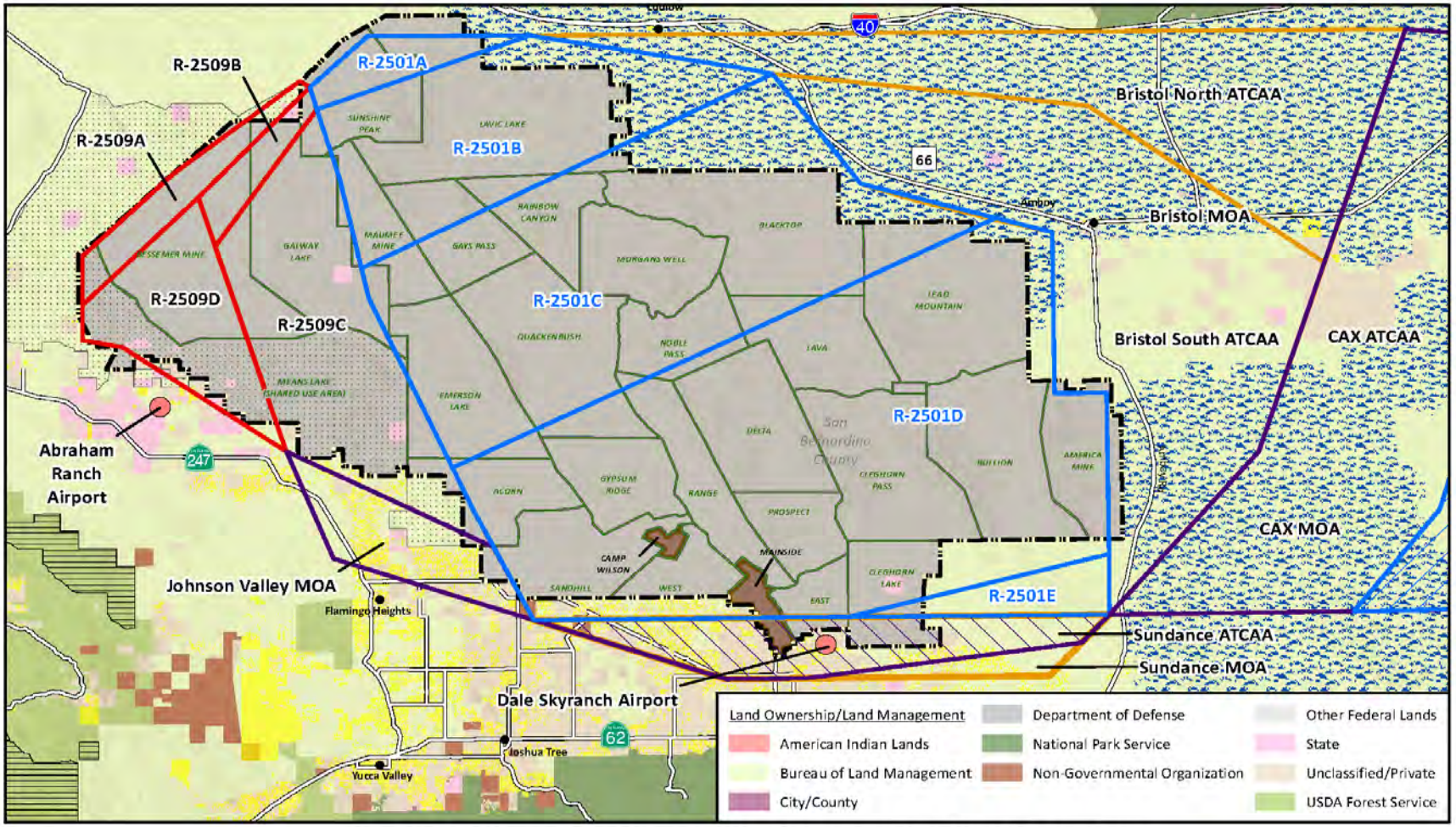
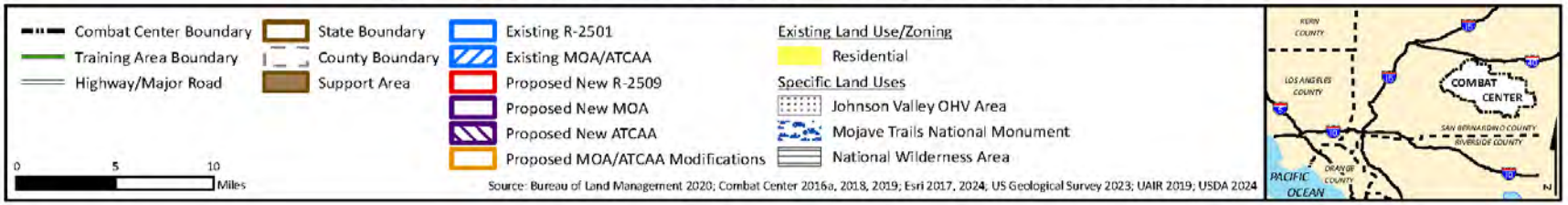


Figure 4. Special Use and Land Ownership/Land Management in Potential Impact Areas



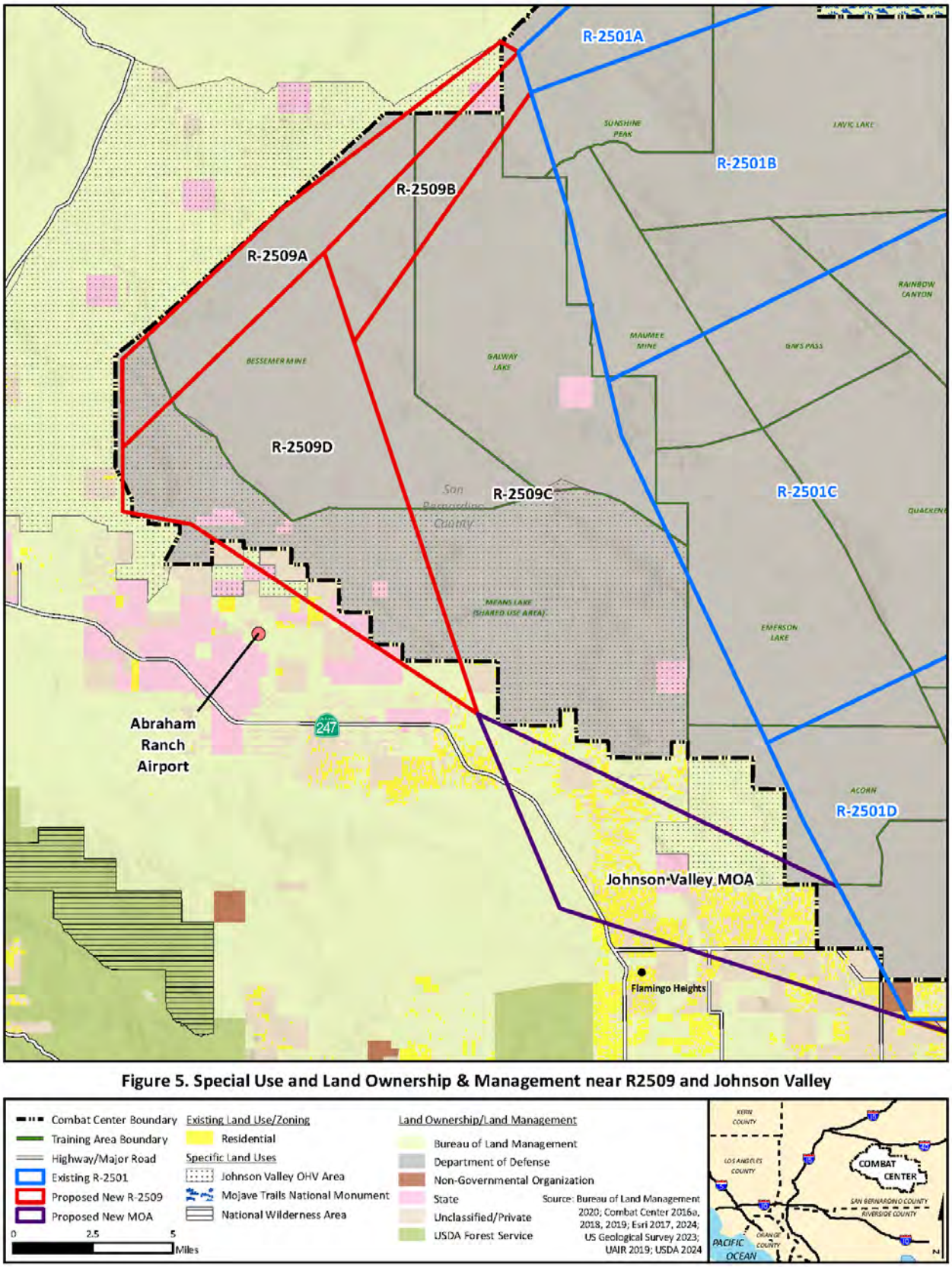


Figure 5. Special Use and Land Ownership & Management near R2509 and Johnson Valley

5.2 Alternative 2 Scenario

5.2.1 Airspace Configuration

Alternative 1 would establish R-2509 west of existing R-2501 and Johnson Valley MOA to the southwest, as depicted in Figure 3. The Sundance MOA upper altitude limit would be increased, and Sundance ATCAA would be established. The Bristol MOA floor would be lowered, and the existing Bristol ATCAA would be separated into Bristol North ATCAA and Bristol South ATCAA, each with different ceilings. A CAX MOA would be established east of Bristol MOA/ATCAA to connect to existing Turtle MOA/ATCAA, and a Turtle Low MOA would be established under roughly half of the western portion of existing Turtle MOA. The altitude floors and ceilings of all established and modified SUA and ATCAA under Alternative 2 are listed below.

- Establish R-2509
  - A (surface to 6,000 feet MSL)
  - B (surface to 16,000 feet MSL)
  - C (surface to 16,000 feet MSL)
  - D (surface to 8,000 feet MSL) excluding the airspace within a 3.4-nm radius of lat. 34°25'03"N., long. 116°36'52"W., which would be surface to 1,500 feet AGL to accommodate Abraham Ranch, Kelly, and B&E private airports (see Figure 6)
- Establish Johnson Valley
  - MOA (1,500 feet AGL to 16,000 feet MSL)
- Establish CAX
  - MOA (2,000 feet AGL to 8,000 feet MSL)
- Modify Bristol
  - MOA (2,000 feet AGL to 17,999 feet MSL)
  - ATCAA (FL180 to FL220)
- Modify Sundance
  - MOA (500 feet AGL to 17,999 feet MSL) excluding a 1-nm radius of the Dale Skyranch Airport surface to 1,500 feet AGL and a 1-mile wide corridor, extending from the center of the airport on a straight line south to the edge of the Sundance MOA
  - ATCAA (FL180 to FL220)
- Establish Turtle Low
  - MOA (2,000 feet AGL to 11,000 feet MSL)

5.2.2 Modeling Data

As detailed in Table 8, total annual sorties under Alternative 2 would remain the same as existing except the following:

- F-35 sorties would increase by approximately 3 to 4 times the existing operations (due to a combination of replacing all existing AV/8B and a portion of the existing FA-18)
- KC-130 sorties would increase by 120
- Joint Aerial Refueling would increase by 20
- Unmanned Aerial Systems sorties would increase up to 2,000
- 192 Sorties would be added to Turtle Low MOA generated from two LSEs per year

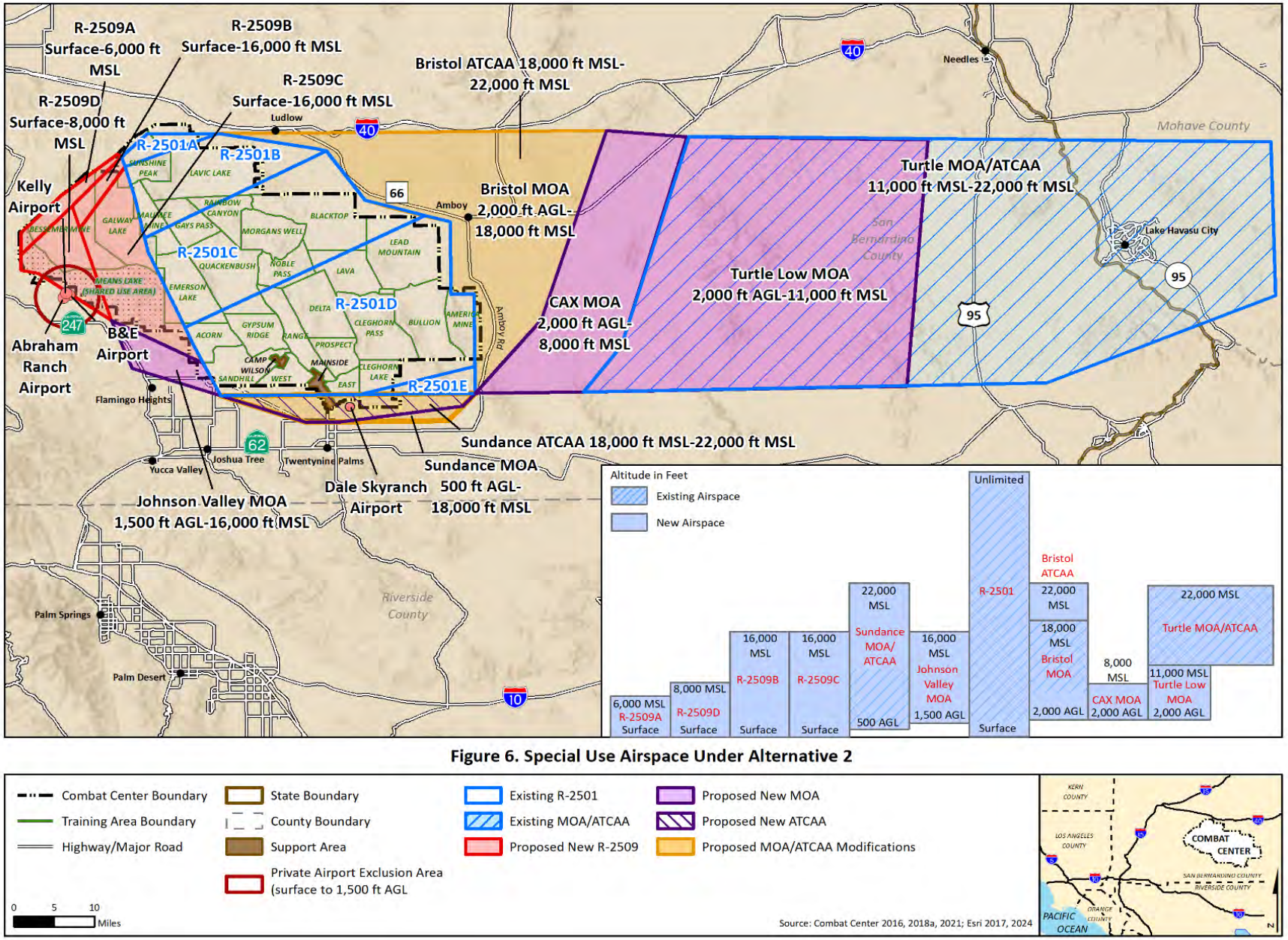


Figure 6. Special Use Airspace Under Alternative 2

Under the Alternative 2 scenario, aircraft operations currently occurring in R-2501 and Sundance MOA would spread out across those SUA and the newly established R-2509, Sundance ATCAA, and Johnson Valley MOA but no CAX MOA would be created and aircraft would transition through that area under FAA control. Consistent with existing, 70 percent of sorties presented in Table 8 would occur during daytime (7:00 a.m. to 7:00 p.m.), 15 percent during evening (7:00 p.m. to 10:00 p.m.), and 15 percent during nighttime (10:00 p.m. to 7:00 a.m.). Aircraft profiles (altitudes, speeds, and power settings) would remain unchanged from existing, as detailed in Table 4, except to adjust the upper and lower altitudes to fit within the SUA and ATCAA floors and ceilings. As described in existing conditions, sorties listed in Table 8 would occur in multiple SUA and ATCAA because multiple areas would be activated for use together as larger contiguous volumes of space. The ground area under each airspace was calculated and the aircraft sortie duration was divided among each of these SUA as a ratio of their areas.

5.2.3 Noise Exposure

Consistent with the methodology described in Chapter 2 and aircraft operations detailed in Section 5.2.2, Table 10 presents the calculated $CNEL_{mr}$ and CNEL rounded to whole decibels. Although the proposed changes to airspace under Alternative 2 would differ from Alternative 1 (i.e., lowered proposed ceilings in R-2509C, Johnson Valley, and Bristol ATCAA; no creation of CAX ATCAA), the difference in resulting noise levels would be negligible (i.e. +/- 0.1 dB) and round to the same values for both alternatives. This occurs because the portion of aircraft sorties that would operate at low altitudes (e.g., <10,000 ft MSL) would be the same and this activity more strongly influences the noise levels experienced at ground level than aircraft at high altitudes.

Consistent with Alternative 1, the greatest levels under Alternative 2 would occur in R-2501 and R-2509 ranging from 62 to 65 dB $CNEL_{mr}$ and 61 to 64 dB CNEL. Noise levels in Sundance MOA/ATCAA would increase to 64 dB $CNEL_{mr}$ and 63 dB CNEL, while levels under the newly established CAX MOA/ATCAA and Turtle Low MOA, as well as Lake Havasu City, would be between 47 and 50 dB due to military aircraft noise for both $CNEL_{mr}$ and CNEL. Ambient noise from non-military sources would continue to be similar to military noise under Alternative 2.

Table 10 Combat Center Permanent SUA Greatest Cumulative Noise Levels Under Alternative 2

Area	No-Action Alternative		Proposed		Change Relative to No-Action Alternative	
	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL	$CNEL_{mr}$	CNEL
R-2501[(1)]	63	62	64	63	+1	+1
R-2509A	49[(2)]	49[(2)]	65	64	+16	+15
R-2509B	49[(2)]	49[(2)]	64	63	+15	+14
R-2509C	49[(2)]	49[(2)]	64	63	+15	+14
R-2509D	49[(2)]	49[(2)]	62	61	+13	+12
Sundance MOA/ATCAA	61	60	64	63	+3	+3
Johnson Valley MOA/ATCAA	49[(2)]	49[(2)]	61	60	+12	+11
Bristol MOA/ATCAA	53	52	56	55	+3	+3
CAX MOA/ATCAA	49[(2)]	49[(2)]	50[(3)]	50[(3)]	+1	+1
Turtle MOA/ATCAA	45	45	48[(3)]	47[(3)]	+3	+2
Turtle Low MOA	45	45	50	50	+5	+6

Notes: [(1)]R-2501 has been included in this table because flight operations would change but there would not be any changes to the R-2501 airspace dimensions.
[(2)]Minimal existing military aircraft activity, noise levels represent typical values for rural areas (ANSI 2013).
[(3)]Existing ambient non-military aircraft noise estimated at 49 dB DNL, which may exceed the military noise under the Proposed Action (ANSI 2013).

Legend: CNEL = Community Noise Equivalent Level; $CNEL_{mr}$ = Onset Rate-Adjusted Monthly Community Noise Equivalent Level.

As depicted in Figures 4 and 5, residential land use would occur within R-2509D, R-2509C, Johnson Valley MOA, Sundance MOA, Bristol North MOA, and CAX MOA. In the case of R-2509, the residential properties along the southern edge of the proposed SUA are expected to experience CNEL less than the maximum presented in Table 10, which would instead range from 61 to 62 dB within R-2509C and 57 to 60 dB within R-2509D residential areas. Other residential properties, such as within Sundance MOA and Johnson Valley, are spread throughout those areas so the CNEL/CNELmr presented in Table 10 would generally apply.

6.0 Single-Event Noise Levels

This section presents single-event noise levels of aircraft overflights to supplement the cumulative $CNEL_{mr}$ and CNEL analysis. Aircraft are modeled at constant altitude at 500, 2,000, and 5,000 feet AGL at speed and power settings common for training in airspace associated with the Combat Center.

As shown in Table 11, the F-35B generates the greatest SEL of 117 dB and L_{max} of 114 dB at 500 feet AGL. The AV-8B and F-18A/C SEL and L_{max} would range from 100 to 104 dB. These greater noise levels only occur while fighter jets perform close air support. Over 90 percent of training occurs above 5,000 feet AGL generating SEL and L_{max} ranging from 69 to 94 dB.

Helicopter aircraft (CH-53 and AH-1) primarily operate between the ground and 1,000 feet AGL generating SEL between 97 and 99 and L_{max} between 85 and 95 while at 500 feet AGL. The MV-22 flies at similar altitudes as helicopters for training purposes but more frequently operates at altitudes above 2,000 feet AGL during transit with SEL of 82 dB and L_{max} of 75 dB.

Table 11 Aircraft Overflight Noise Levels

Aircraft	Speed	Power	500 feet AGL		2,000 feet AGL		5,000 feet AGL	
			L_{max}	SEL	L_{max}	SEL	L_{max}	SEL
AV-8B[(1)]	300	85% RPM	100	102	83	89	69	77
F-18A/C	400	88% NC	102	104	86	91	73	80
F-35B	400	90% ETR	114	117	98	105	86	94
CH-53	150	N/A	95	99	81	88	71	79
AH-1	100	N/A	85	97	71	87	60	78
MV-22	220	N/A	90	94	75	82	64	72

Note: [(1)]AV-8B modeled with F402-RR-408 engine.
Modeled weather conditions: 77 Fahrenheit, 20 percent Relative Humidity, 29.71 inches of Mercury.

Legend: % = percent; AGL = above ground level; ETR = engine thrust request; L_{max} = Maximum Sound Level; N/A = not applicable; NC = Compressor speed; RPM = Revolutions per minute; SEL = Sound Exposure Level.

7.0 List of Preparers

J. Scott Coombs, Project Manager, 25 years' experience
M.S., Marine Science

Christine Davis, *AICP, PMP*, QA/QC Review, 26 years' experience
M.S., Environmental Management

Patrick Kester, Noise, 15 years' experience
B.S., Mechanical Engineering

Geoff Olander, Senior Noise and Airspace Management Specialist, 25 years' experience
B.S., Mechanical Engineering

Stephanie Clarke, GIS Specialist, 9 years' experience
B.S. Biology and Environmental Studies

Gwen Vineyard, Technical Editing and Document Production, 40 years' experience

This page intentionally left blank.

8.0 References

ANSI. 1988. Quantities and Procedures for Description and Measurement of Environmental Sound. Part 1.

ANSI. 2013. Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present. ANSI/ASA S12.9-2013/Part 3.

California. 1990. Administrative Code Title 21.

Cardno. 2021. Permanent SUA EA – Twentynine Palms, CA. Noise Data Validation Package. June.

Combat Center. 2016a. Combat Center Boundary and Training Areas GIS Data. Marine Corps Air Ground Combat Center. Accessed on October 2, 2018.

Combat Center. 2018. Existing Airspace GIS Data. Marine Corps Air Ground Combat Center. Accessed on October 2, 2018.

DNWG. 2009. Technical Bulletin, Using Supplemental Noise Metrics and Analysis Tools. March.

Department of the Navy. 2012. Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. Prepared by TEC under the direction of MAGTF Training Command, MCAGCC Twentynine Palms, and NAVFAC Southwest. July 2012.

Esri. 2017. Generic GIS Data. Environmental Systems Research Institute. Accessed on October 2, 2018.

Esri. 2024. Terrain: Multi-Directional Hillshade (basemap, scale not given). Image Service date: June 12, 2024. Accessed on August 19, 2024. https://services.arcgisonline.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer.

FAA. 2020. 1050.1F Desk Reference, Version 2. February.

FAA. 2021. Joint Order 7400.2N, Air Traffic Organization Policy: Procedures for Handling Airspace Matters. Effective 17 June 2021.

Federal Interagency Committee on Noise. 1978. Environmental Protection – Planning the Noise Environment. 15 June 1978.

Marine Corps. 2019a. Electronic mail from Andy Chatelin, RE: Updated Sortie Count, Attachment: Updated Sortie Count.docx. 17 July 2019.

Marine Corps. 2019b. Electronic mail from Andy Chatelin, RE: Updated Sortie Count. 18 July 2019.

US GNIS. 2012.

Wasmer Consulting. 2019. BaseOps 7.365 User's Guide, Fred Wasmer and Fiona Maunsell, Wasmer Consulting.

Wyle.1998. Wyle Research Report: WR 98-13. NMAP 7.0 User's Manual. November.

This page intentionally left blank.

Appendix G
Airspace Management

This page intentionally left blank.

Appendix G
Airspace Management

1.0 Introduction

This airspace impact analysis is in support of an Environmental Assessment (EA) and a proposal to the Federal Aviation Administration (FAA) to establish new permanent Special Use Airspace (SUA) and modify existing SUA associated with the Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center" or the "installation"). The EA for Permanent Special Use Airspace Establishment and Modifications at Marine Corps Air Ground Combat Center, Twentynine Palms, CA is hereinafter, the "EA." The current SUA does not meet the criterion to support requisite live-fire training and aviation element integration year-round in all existing range areas. The Combat Center seeks to acquire only that airspace which is essential to support missions and use that airspace in a responsible manner. This analysis provides a detailed assessment of the potential impacts to civil aviation associated with the proposed establishment of new permanent SUA (R-2509, Johnson Valley Military Operations Area [MOA]/Air Traffic Control Assigned Airspace [ATCAA], CAX MOA/ATCAA, and Turtle Low MOA) and modifications to existing SUA (Bristol MOA/ATCAA and Sundance MOA/ATCAA) in the airspace located above, adjacent to, and to the east of the Combat Center existing airspace. The establishment of R-2509 and Johnson Valley MOA/ATCAA would also require a minor amendment to the existing R-2501 to avoid infringement on R-2501D.

1.1 National Airspace System

The National Airspace System is a network of both controlled and uncontrolled airspace, both domestic and oceanic. It includes air navigation facilities, equipment and services, airports and landing areas, aeronautical charts, information and services, rules and regulations, procedures and technical information, and manpower and material (FAA 2023a). Airspace management and use considers how airspace is designated, used, and administered in a manner that best accommodates the individual and common needs of military, commercial, general aviation, and other users of the airspace.

1.2 Guidance and Thresholds

The guidance and thresholds listed below are relevant in developing this section and determining whether, based on the totality of the circumstances, there may be significant impacts under National Environmental Policy Act (NEPA).

- FAA Joint Order (JO) 7400.2R, Procedures for Handling Airspace Matters (FAA 2025a)
- Department of Defense (DoD) Directive 5030.19, DoD Responsibilities of Federal Aviation (DoD 2023)
- 14 Code of Federal Regulations (CFR) section 91, General Operating and Flight Rules
- FAA JO 7400.10F, Special Use Airspace
- FAA JO 7400.11H, Airspace Designations and Reporting Points

1.3 Definition of Resource

Airspace is a three-dimensional resource defined by latitude, longitude, and altitude. There are six classes of airspace-A, B, C, D, E (controlled), and G (uncontrolled)-that are available to all users (civilian and

military) (Figure 1). The airspace classes dictate pilot qualification requirements, rules of flight that must be followed, and the type of equipment necessary to operate within that airspace (Table 1.3-1).

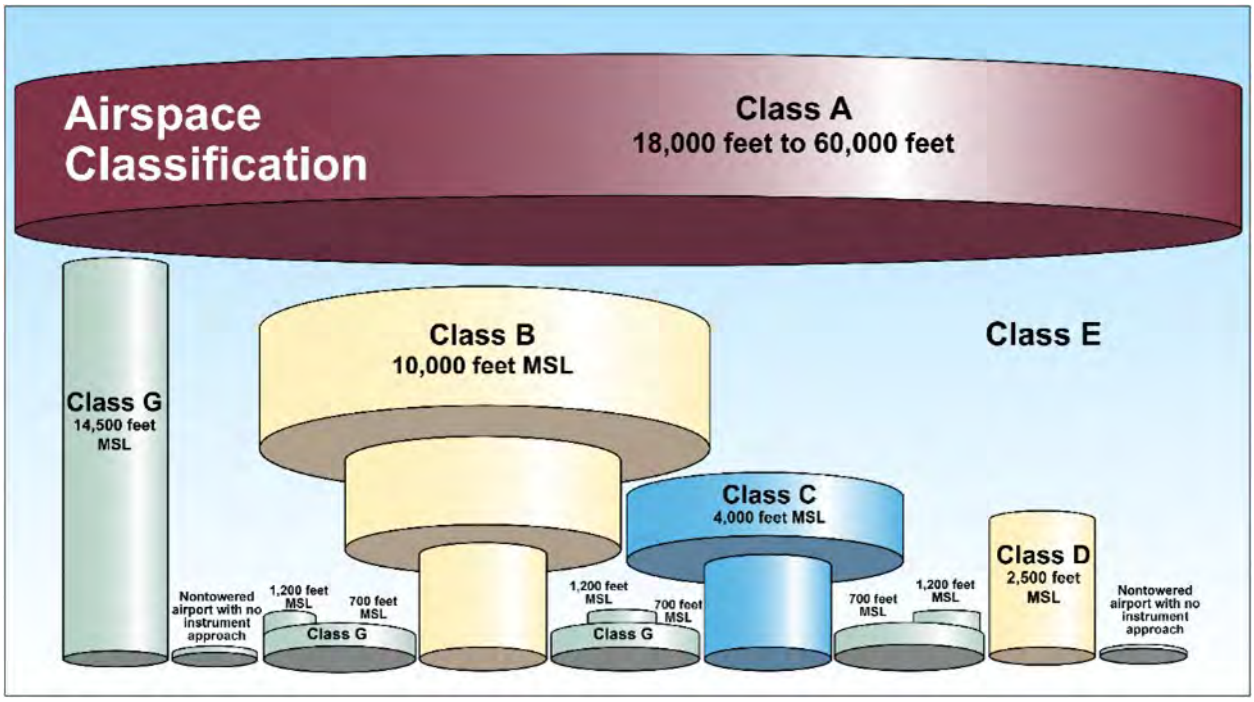


Figure 1 Airspace Classification

Controlled airspace is airspace of defined dimensions within which Air Traffic Control (ATC) service is provided (FAA 2023b). Controlled airspace is categorized into five separate classes, A through E. Controlled airspace is airspace that supports airport operations and includes airways supporting en-route transit from place-to-place.

Uncontrolled airspace is designated as Class G airspace. Within the continental United States (U.S.) and out to 12 nautical miles (nm) offshore, Class G airspace includes all airspace up to 14,500 feet mean sea level (MSL) that has not been designated as Class A, B, C, D, or E. Class G airspace has no specific prohibitions associated with its use. Class G airspace is described as uncontrolled because there are no entry requirements and ATC service is not guaranteed.

Table 1.3-1 Airspace Classification Requirements

Airspace	Class A	Class B	Class C	Class D	Class E	Class G
General Definition	Controlled airspace from 18,000 feet MSL up to and including FL600	Controlled airspace from the surface to 10,000 feet MSL surrounding the nation's busiest airports	Controlled airspace from the surface to 4,000 feet above the airport elevation (charted in MSL) surrounding those airports that have an operational control tower and are	Controlled airspace that extends upward from the surface to 2,500 feet above the airport elevation (charted in MSL) surrounding those airports that have an	Controlled airspace designated to serve a variety of terminal or en-route purposes. Class E airspace is often designated for an airport where	Uncontrolled airspace that has not been designated as Class A, B, C, D, or E

Airspace	Class A	Class B	Class C	Class D	Class E	Class G
			serviced by radar approach control	operational control tower	instrument procedures exist without the presence of a control tower and as extensions to Class B, C, D, and E surface areas	
Entry Requirements	Air Traffic Control Clearance	Air Traffic Control Clearance	Air Traffic Control Clearance for IFR. Two-way radio communication with Air Traffic Control required	Air Traffic Control Clearance for IFR. All require radio contact	None for VFR. Air Traffic Control Clearance and two-way radio for IFR	None
Two-Way Radio Communication	Required	Required	Required	Required	Required only under IFR flight plan[1]	Not required[1]
VFR Visibility Minimum[2]	NA	3 SM	3 SM	3 SM	Below 10,000 feet MSL: 3 SM At or above 10,000 feet MSL: 5 SM	Below 1,200 feet AGL (regardless of MSL): Day: 1 SM; Night: 3 SM Above 1,200 feet AGL and less than 10,000 feet MSL: Day: 1 SM; Night: 3 SM At or Above 10,000 feet MSL:5 SM
Traffic Advisories	Yes	Yes	Yes	Workload Permitting	Workload Permitting	Workload Permitting

Notes: [1]Unless a temporary tower is present.
[2]Minimum distance from clouds vary by airspace class and altitude.
Legend: AGL = above ground level, FL = Flight Level, IFR = Instrument Flight Rules; MSL = mean sea level; NA = Not Applicable; SM = Statute Mile; VFR = Visual Flight Rules.
Source: FAA 2023b.

Airspace in the National Airspace System is divided into two categories, regulatory and non-regulatory. The airspace described above and in Figure 1 (except Class G airspace) is regulatory. Non-regulatory airspace includes MOAs, Warning Areas, alert areas, controlled firing areas, and national security areas. Within these two categories of airspace, there are four subcategories: controlled, uncontrolled, SUA, and

other airspace (FAA 2023b). Procedures governing the use of training areas and airspace operated and controlled by the Marine Corps are included in Office of the Chief of Naval Operations Instruction 3770.2L, Department of the Navy Airspace Procedures and Planning (Department of the Navy [DON] 2017).

1.4 General Flight Rules and Resources

There are specific operational requirements for each class of airspace. Some airspace, such as Class A, requires users to operate under instrument flight rules (IFR), while other airspace allows for visual flight rules (VFR), and in many cases IFR/VFR operate within the same space. The FAA produces charts and publications to guide civil and military flights within the National Airspace System. Aviators can find specific information on airspace and regulatory requirements in VFR/IFR Navigation Charts, Planning Charts, and a variety of supplementary charts and publications (FAA 2023b). These aeronautical charts depict information necessary for flight operations such as Air Traffic Service (ATS) routes (victor airways and jet routes), military training routes (MTRs), aerial refueling tracks, public and private airports, and available aids to navigation.

FAA JO 7110.65BB, *Air Traffic Control*, establishes procedures for personnel who provide ATC services within the National Airspace System (FAA 2025b). The primary purpose of the ATC system is to prevent a collision involving aircraft operating in the system. The ATC system is designed to give first priority (duty priority) to separating aircraft and issuing safety alerts and provide support to national security and homeland defense activities. Behind duty priority is the ATC system's operational priority, which provides service to aircraft on a "first come, first served" basis with the following exceptions (list is not all inclusive): air ambulance flights, presidential aircraft and support elements, active air defense scrambles, and aircraft engaged in navigation aid checks (FAA 2023d).

1.5 Special Use Airspace

SUA is airspace of defined dimensions identified by an area where activities must be confined due to their nature, and/or where limitations are imposed on aircraft operations that are not a part of those activities (non-participating aircraft). This airspace is defined by designated altitude ceilings and floors and horizontal boundaries described in geographic coordinates. Information on SUA is contained in aeronautical charts and in FAA JO 7400.10E (FAA 2023c).

1.6 General Operating Procedures

Operations within SUA are generally conducted under VFR and with some exceptions IFR. MOAs are established to separate certain military activities from IFR traffic; non-participating IFR traffic may be cleared through the airspace if ATC can provide IFR separation. Pilots operating under VFR are not prohibited from transiting an active MOA but should exercise extreme caution when military activity is being conducted. Pilots can request the status of a MOA by contacting the flight service stations within 100 miles of the area or by contacting the using or controlling agency (FAA 2023b). Additionally, the FAA maintains an informational SUA website to assist pilots and aircrews with flight planning and familiarization (FAA 2023d).

2.0 Affected Environment

The region of influence (ROI) for this resource section includes the airspace and aircraft operational areas (e.g., Combat Center training areas, public and private civilian airports, and ATS routes) underlying or near the proposed Restricted Areas (RAs), MOAs, and ATCAAs. The existing published airspace, described in detail in Section 1.4.4 of the EA and shown in Figure 2-1 (below), is located above or within close proximity of the Combat Center. The airspace within the existing and proposed RAs and MOAs is classified as Class A, Class G, or Class E. The proposed ATCAAs lay in Class A airspace at and above Flight Level (FL) 180. The Los Angeles Air Route Traffic Control Center (ARTCC) controls the airspace associated with this Proposed Action area.

2.1 Existing Combat Center Airspace and Training Activities

2.1.1 Combat Center Airspace

The published SUA and their overlying ATCAAs are used daily by the Marine Corps to conduct live-fire training (RA only), fixed-wing, tilt-rotor, rotary-wing, and Unmanned Aerial Systems (UAS) operations to support training programs as presented in Table 2.1-1. VFR aircraft are permitted to transit the MOAs. When the SUA is inactive, it is returned to Los Angeles ARTCC in accordance with the 2017 Letter of Procedures (LOP) establishing procedures for Joint Use of R-2501.

Table 2.1-1 Existing Published SUA within the ROI

Airspace	Altitude		Published Hours of Use		Published Days of Use
	Minimum	Maximum	From	To	
Bristol MOA	5,000 feet MSL	Up to but not including FL180	7:00 a.m.	3:00 p.m.	Monday-Friday(1)
Bristol ATCAA	FL180	FL220	NA	NA	NA(2)
Sundance MOA	500 feet AGL	10,000 feet MSL(3)	NA	NA	Intermittent by NOTAM
Turtle MOA	11,000 feet MSL	Up to but not including FL180	7:00 a.m.(4)	7:00 p.m.(4)	Monday-Friday(1)
Turtle ATCAA	FL180	FL220	NA	NA	NA(2)
CAX Corridor ATCAA(5)	FL180	FL210	NA	NA	NA(5)
R-2501A/B/C/D/E	Surface	Unlimited	Continuous		Continuous

Notes: (1) Other times by NOTAM.
(2) Activated with the underlying MOA.
(3) Excludes 1-mile radius of the Dale Skyranch Airport surface to 1,500 feet AGL and 1-mile wide corridor, extending from the center of the airport on a straight line south to the edge of the MOA.
(4) Mountain Standard Time, as it is scheduled from Arizona.
(5) Used for transition to and from the Bristol ATCAA and Turtle ATCAA.

Legend: AGL = above ground level; ATCAA = Air Traffic Control Assigned Airspace; FL = Flight Level; MOA = Military Operations Area; MSL = mean sea level; NA = not applicable; NOTAM = Notice to Airmen; ROI = Region of Influence; SUA = Special Use Airspace.

2.1.2 Combat Center Training Activities

The existing SUA and ATCAAs are utilized by the Combat Center to support ground training, fixed-wing, tilt-rotor, rotary-wing, UAS, military flight activities and joint force training exercises. Existing training activities conducted within the MOAs and ATCAAs support the non-hazardous components of training, and RAs support the hazardous components of training (e.g., live and inert ordnance). Section 1.4 of the EA describes activities in the existing MOAs/ATCAAs and R-2501. Military activity consists of live-fire training associated with ground-based training and training by fixed-wing, rotary-wing and UAS aircraft. Temporary SUA/ATCAA has previously been approved by the FAA to support Marine Expeditionary Brigade (MEB)-sized exercises during the 2017 Large-Scale Exercise (LSE).

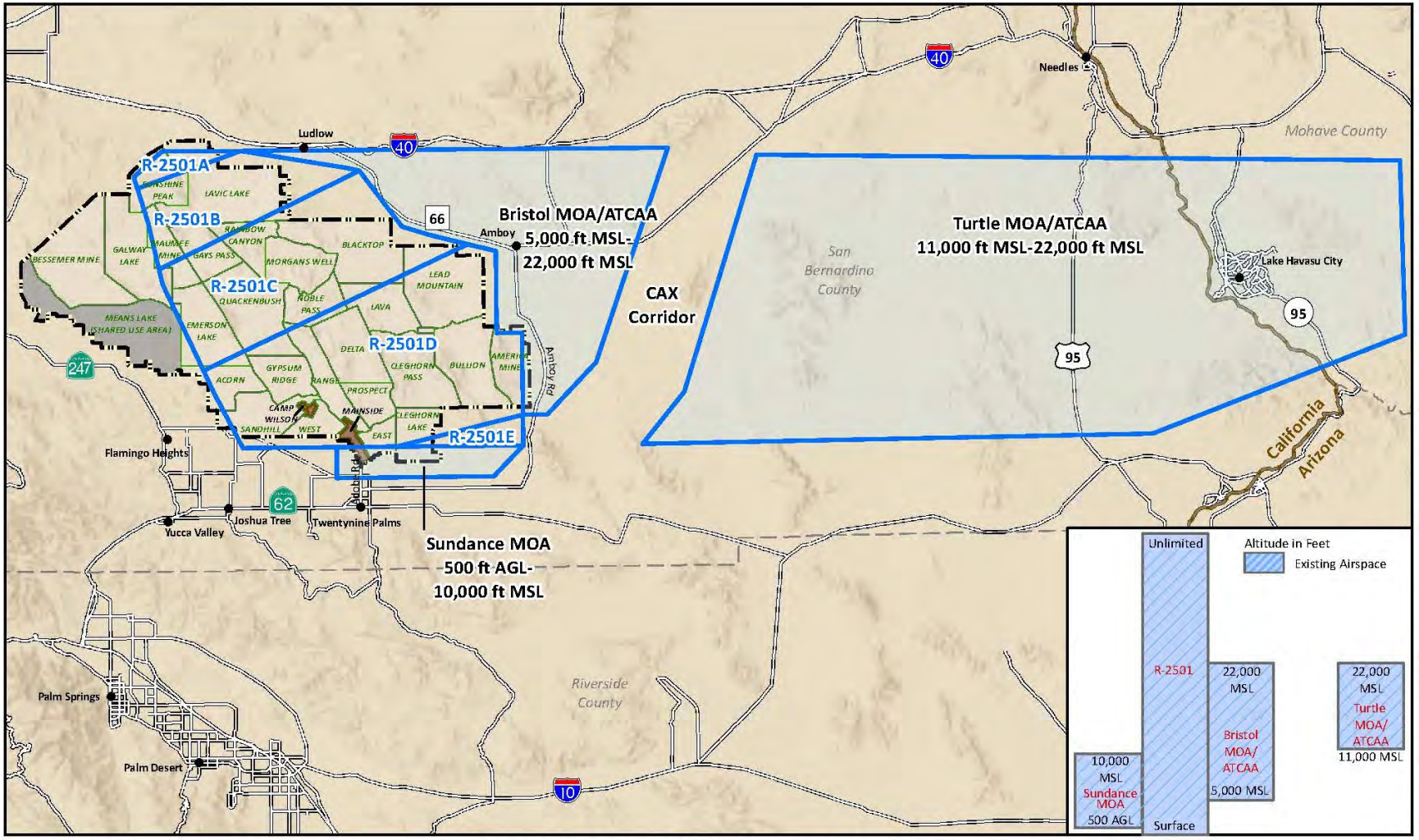


Figure 2-1. Existing Airspace Used to Support the Combat Center

The following sections describe representative baseline uses of all military and civilian airspace within the ROI to include those areas where SUA and ATCAA would be established/modified under the Proposed Action. Existing annual airspace sorties are in Table 1-2 of the EA. Table 2.1-2 (below) presents the days and hours the existing airspace was scheduled, used, and returned to the FAA (Marine Corps 2018). The Combat Center schedules, activates, and utilizes the RA to the altitudes necessary to ensure flight safety and do not normally encompass the entire vertical extent of the airspace. An LOP between Los Angeles ARTCC and the Combat Center defines the procedures for Joint Use of R-2501. The LOP defines responsibilities for control of the airspace. Under this agreement, the Combat Center has responsibility for control when the airspace is activated for military use, and Los Angeles ARTCC assumes control when it is released back to the NAS. Utilization reports for Fiscal Year 2018 in Table 2.1-2 (below) support the Joint Use concept where some portion of the SUA was returned to the FAA when not required for operations (Marine Corps 2018). The area between the Bristol MOA/ATCAA and Turtle MOA/ATCAA (sometimes referred to as the CAX Corridor) is used to transition joint force aircraft during training exercises. This area is not published but defined in a Letter of Agreement with the FAA, and use is limited to altitudes between FL190 to FL220.

Table 2.1-2 Annual Hours Scheduled/Used and Returned for Use by the FAA (2018)

Airspace	Scheduled (Days/Hours)	Used (Days/Hours)	Returned to FAA (Days/Hours)	Notes
R-2501A/B/C/D	365/8,760	363/8,639	2/121	Altitude Varied by Training Required
Bristol MOA/ATCAA	227/4,538	117/1,848	110/6,912	
Sundance MOA	173/3,667	173/3,667	0/0	
Turtle MOA/ATCAA	260/3,120(1)	134(2)/1,611	126/1,509	

Notes: (1) Published Times of Use.
(2) Estimated using published 12-hour day.
Legend: ATCAA = Air Traffic Control Assigned Airspace; FAA Federal Aviation Administration; MOA = Military Operations Area.
Source: Marine Corps 2018

2.1.3 Other Military Airspace

MTRs include Visual Routes (VR) and Instrument Routes (IR). There are seven MTRs that have been established near the Combat Center: IR-212, IR-213, IR-217, IR-250, IR-252, VR-289, and VR-296. The IRs are scheduled by the 3rd Marine Aircraft Wing at Marine Corps Air Station Miramar, California, and the VRs are scheduled by the 452nd Air Mobility Wing at March Air Reserve Base, California. Instrument Routes IR-212, IR-213, IR-217, IR-250, and IR-252 are used primarily by C-17 and F/A-18 aircraft on an average of one to two times per month. VR-289 is used by C-17 and fighter type aircraft on an average of six times per month. The proposed Combat Center flight activities are not anticipated to significantly affect the current use of these routes; therefore, they are dismissed from further discussion.

2.2 PUBLIC AND PRIVATE CIVILIAN AIRPORTS

As shown in Figure 2-2, there are no civilian airports located directly beneath the existing or proposed RA. Five civilian airports (two public and three private) lie beneath the existing and proposed MOAs, and four airports, one-glider area, and a parachute area lie just outside of the proposed MOAs.

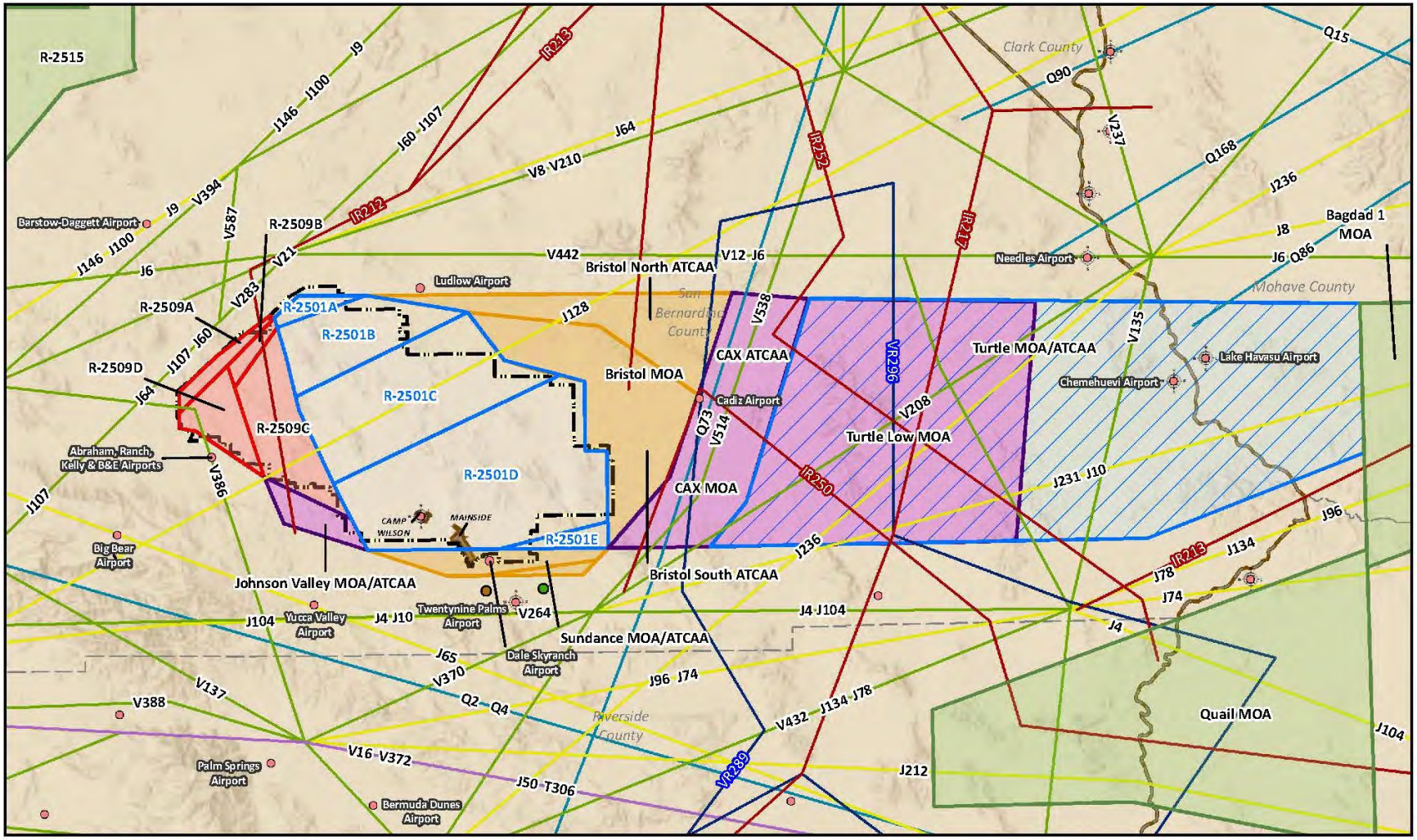
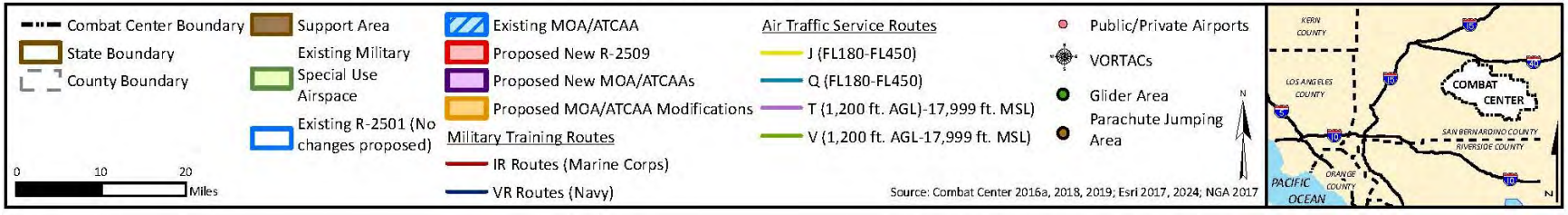


Figure 2-2. Airports and Air Traffic Service Routes



2.2.1 Public Airports

Table 2.1-3 provides information on annual operations and instrument approach procedures published for public and private airports located within and in close proximity to the ROI (Figure 2-2). Two airports, Lake Havasu City and Chemehuevi Valley, are located beneath the existing SUA (Turtle MOA/ATCAA); others are in close proximity to the proposed airspace. Analysis for airports found to have no direct impact in the 2012 Final Environmental Impact Statement are not included in this EA. Airports not discussed in this section were determined to be far enough away from the boundary of the SUA or did not have instrument approach capability requirement further analysis.

Table 2.1-3 Public Airport Annual Operations in the ROI

Airport (Identifier)	Instrument Approach Capabilities	Civilian Operations	Military Operations	Total	Daily Average
Palm Springs (PSP) (1)	Yes	55,866	1,626	57,512	158
Jacqueline Cochran (TRM)(1)	Yes	109,211	1,447	110,658	303
Bermuda Dunes (UDD)(1)	Yes	14,000	25	14,025	38
Barstow-Daggett (KDAG)	Yes	18,500	18,000	36,500	100
Yucca Valley (L22)	No	14,500	0	14,500	40
Twentynine Palms (TNP)(1)	Yes	17,500	500	18,000	49
Lake Havasu City (HII)	Yes	47,175	500	47,675	130
Chemehuevi Valley (49X)	No	4,000	0	4000	11
Needles (EED)	Yes	10,500	0	10,500	29
Big Bear City (L35)	Yes	28,000	2,000	30,000	82

Note: (1) Modified Arrival/Departure Procedures as a result of the SoCal Metroplex Project.
Source: SkyVector 2019.

2.2.2 Private Airports

There are several charted non-towered (uncontrolled) private airports located beneath, or near the existing and proposed SUA (see Figure 2-2). Each of the private airports in the vicinity of the Combat Center are considered in the overall review of potential effects of the proposed SUA on civil airspace.

The Dale Skyranch Airport is located inside the Sundance MOA boundary where an exclusion area has been established from the surface up to 1,500 feet above ground level (AGL) with a 1 nm corridor from the airport center south to the MOA boundary. The Crosswinds and Cones airports are located approximately 1 nm south of the existing Sundance MOA boundary. The Kelly, Valley Vista, B&E, and Abraham Ranch airports are located within 10 miles of the southern boundary of the proposed R-2509D. The Cadiz Airport is located along the eastern Bristol MOA boundary and beneath the proposed CAX MOA.

Other airfields located within 2 to 10 miles of the existing SUA but not beneath any of the proposed SUA include: Ludlow Airport, located north of Bristol MOA; Camino and Massey Airport, located north of the Turtle MOA; Iron Mountain and Gene Wash Reservoir Airports, located south of the Turtle MOA; and Sagebrush Trails Airport, located beneath the eastern edge of the Turtle MOA.

2.3 AIR TRAFFIC SERVICE ROUTES

ATS routes are used by the FAA to control IFR traffic throughout the airspace. Several of the larger public airports in the region have Area Navigation (RNAV) or Global Positioning System (GPS) instrument approach procedures established for navigating to the airport runway environment. RNAV and GPS routes outside of terminal airspace are not published. Figure 2-2 depicts the ATS routes in the vicinity of the existing and proposed airspace.

2.3.1 Victor (V) and Tango (T) ATS Routes

Victor ATS routes are designated on aeronautical charts with the letter "V" preceding the numbered route and the letter "T" designates Tango ATS routes. Unless otherwise specified, these ATS routes extend from 1,200 feet AGL up to but not including FL180.

- There are no T routes located in the vicinity of the existing or proposed airspace. Several V routes transit through or adjacent to the existing or proposed SUA, as shown in Figure 2-2 with lateral boundaries of 4 nm on each side of the centerline. The following describes the V routes relative to their proximity to the existing or proposed SUA (see Figure 2-2). V8-21 and V283-587 is a consolidated route between the Los Angeles area and Las Vegas. This ATS route lies to the west of R-2501 and would transit just west of proposed R-2509A/D.
- V386 transits between the Palmdale/Victorville area and Palm Springs. This route transects the proposed R-2509D and clips the southwest corner of proposed R-2509A. Aircraft flying on this route would be expected to be above 8,000 feet MSL, the ceiling of the proposed R-2509D.
- V12 and V442 is a consolidated route transiting between the Los Angeles area and Needles and runs parallel to the northern boundary of the existing Combat Center SUA. V442 also runs through the existing Turtle MOA. These routes would run parallel to the northern boundary of the proposed R-2509A, CAX MOA, and Turtle Low MOA.
- V264 transits between the Los Angeles area, Twentynine Palms, and Parker, south of and parallel to the existing Combat Center SUA. This route would remain clear of any of the existing or proposed airspace.
- V208 transits between the San Diego and Needles areas while crossing through the western portion of the existing Turtle MOA. This route would transit the southern portion of the proposed CAX MOA.
- V370 transits between Palm Springs and Twentynine Palms areas and would be clear of any of the existing or proposed airspace.
- V514-538 is a consolidated route transiting between Twentynine Palms and Las Vegas through the proposed CAX MOA.
- V442 and V135 transit between the Parker and Needles areas, crossing through the existing Turtle MOA.

2.3.2 Jet and Q ATS Routes

Figure 2-2 depicts several J and Q routes in the vicinity of the existing and proposed airspace. Jet routes extend from FL180 up to FL450 in Class A airspace and have no defined widths. Two RNAV or GPS routes are established within the ROI for enroute navigation and airport instrument procedures. RNAV routes, designated as "Q" routes on aeronautical charts, are established between FL180 and FL450. Jet and Q routes are generally within the same altitude range as the ATCAAs and the upper altitudes of RAs (FL180 and above).

Jet and Q routes in the ROI are used extensively by IFR air traffic transiting between Los Angeles basin airports and eastern destinations. As a result of the SoCal Metroplex Project, new arrival and departure procedures were established to be used for the transit of aircraft equipped with a Global Navigation Satellite System (FAA 2017). The real-time coordination between Los Angeles ARTCC, terminal ATC facilities, and the range scheduling agencies would continue to ensure the safe flow of air traffic through this region with little effect on either civil or military flight activities. Most IFR air traffic operates above the altitudes normally used in the airspace associated with the Combat Center. When higher altitudes are needed for military operations (i.e., above FL260), they are coordinated in advance with Los Angeles ARTCC for deconfliction.

The following describes the J and Q routes relative to their proximity to the existing and proposed ATCAAs. The minimum enroute altitude for these routes is FL180 unless otherwise indicated. These published minimum altitudes provide obstacle clearance, and navigational aid and radio communications reception (see Figure 2-2).

- J60-64-107 is a consolidated route between the Los Angeles basin area and Las Vegas that lies to the west of the existing R-2501. This ATS route would lie closer to, but is outside of the lateral and vertical boundaries of the proposed R-2509.
- J6 transits between Palmdale and Needles, running parallel to the northern boundary of existing R-2501 and the existing Bristol ATCAA and Turtle ATCAA. This route would run parallel to the northern boundary of the proposed R-2509 and the proposed CAX ATCAA. The CAX ATCAA is not established under Alternative 2, and J6 would be clear of the lateral and vertical limits of the proposed R-2509A.
- J128 has a minimum enroute altitude of 25,000 feet MSL and is normally unavailable Monday-Friday. J128 transits between Ontario and Peach Springs crossing through existing R-2501C and above the existing Bristol ATCAA. This ATS route would lie above the proposed R-2509D and Bristol North ATCAA, and within the proposed R-2509C. Under Alternative 2, the Bristol ATCAA remains at the existing altitude (FL220) and R-2509C is proposed from surface-16,000 MSL.
- J65 transits between Palmdale and Blythe and lies to the south, clear of the proposed Johnson Valley ATCAA. Under Alternative 2, the Johnson Valley ATCAA is not established.
- J4-10-104 transits between the Los Angeles basin area and Parker, south of and parallel to the existing Combat Center SUA. The modified Sundance MOA/ATCAA would be north of this ATS route.
- J236 transits between Thermal and Needles through the existing Turtle ATCAA. Under Alternative 1. The proposed CAX ATCAA would be west of this ATS route.
- J10-231 transits between Ferdo and Prescott through the existing Turtle ATCAA. The minimum enroute altitude for this route segment is FL230 and would transit above the southern border of the proposed CAX ATCAA under Alternative 1.
- Q2-4 transits between Palmdale and Blythe just south of the modified Sundance MOA/ATCAA. Q2-4 has a minimum enroute altitude of FL240, clear of the proposed airspace.
- Q73 transits through the proposed CAX ATCAA under Alternative 1.
- Q86 originates/terminates in the northeastern quadrant of the Turtle MOA at the TTRUE NAVAID where no SUA/ATCAA changes are proposed.

2.3.3 Standard Terminal Arrival Routes

A RNAV Standard Terminal Arrival Route (STAR) is a coded IFR air traffic control arrival route designed to streamline, organize, and simplify the transition of aircraft from the high-altitude enroute phase to the terminal area for landing at an airport. RNAV STARs provide repeatable, predictable lateral flight paths and safe and efficient descent profiles.

In the portion of the STAR that passes near the existing R-2501 complex, ANJLL4 is charted at FL190. When R-2501 is active above FL190, aircraft cannot remain on their published profile in that segment of ANJLL4. To remain clear of the active airspace, controllers must either direct aircraft to climb above R-2501 or route them laterally around it. Sequencing aircraft at higher altitudes can also create speed-compression effects, as arrival aircraft must descend more steeply once clear of the airspace. This steeper descent profile can make it more difficult to maintain spacing, occasionally resulting in rerouting and delays into LAX. Mitigation to civil aircraft using ANJLL4 when R-2501 is active above FL190 may also be done by routing aircraft from the northeast directly to the OTOOL portion of the STAR,

remaining clear to the north of the airspace, or they may follow the BRUEN 2 STAR instead from the southeast to remain clear to the south of the R-2501 complex.

2.3.4 General Aviation VFR Air Traffic

General aviation pilots operating under VFR procedures commonly use visual flight routes to minimize travel distances and provide safe clearance from obstacles and congested areas. To enhance flight safety, pilots use VFR flight following a radar traffic information service provided by ATC as radio and radar coverage and controller workload permit.

Some of the more commonly flown VFR routes are those providing the most direct routing between the higher use airports in the local area such as Lake Havasu City, Palm Springs, Barstow-Dagget, Hemet, Apple Valley, and Big Bear. Those areas where VFR flights are most prevalent are generally north, west, and south of the existing R-2501, within the CAX corridor between the existing Bristol MOA and Turtle MOA, and beneath the eastern portion of the existing Turtle MOA.

3.0 Environmental Consequences

Each of the action alternatives address the need to modify the existing SUA/ATCAA and establish new SUA/ATCAA, as described in Chapter 2 of the EA, to fully meet the exercise and training requirements for the Combat Center. The ROI is considered to be among the busiest in the nation for both civil and military aircraft operations. Historically and on a continuing basis, these operations have been reasonably compatible considering the airspace structure segregating these operations, effectiveness of the ATC system in managing the air traffic, and close cooperation between the military scheduling agencies and the FAA in coordinating airspace use (DON 2012). This section examines the Proposed Action and potential impacts the action would have on the airspace environment.

3.1 Approach to Analysis

This analysis considers potential effects on (1) IFR and VFR enroute operations; (2) public airports and charted private airports; (3) ATC services, (4) other airspace proposals and cumulative impacts in the region; and (5) measures to mitigate or lessen any impacts.

In addition to the EA and this Airspace Analysis, as part of the FAA's approval process, potential impacts on civil aviation were examined in greater depth during the aeronautical study process as prescribed by FAA JO 7400.2R. An aeronautical study is required before FAA approval of any change to SUA, including that analyzed in the EA. Because Alternative 2 is the Preferred Alternative, the FAA prepared the 2021 Aeronautical Study on airspace proposed under Alternative 2. Collectively, this airspace analysis and the 2021 Aeronautical Study will be used by the FAA to make an informed decision regarding the safe and efficient use of the airspace by all users. This process will ensure no significant impacts to airspace management and use would occur. If Alternative 1 is selected as the Preferred Alternative, the FAA will need to conduct the aeronautical study process specific to proposed airspace under Alternative 1.

3.2 Methodology

The potential consequences of the Proposed Action on all airspace users were assessed by overlaying the proposed airspace on the current airspace environment. A comparison of the existing and proposed SUA configuration for each alternative can be found in Appendix A of the EA. A depiction of the existing Combat Center SUA and Turtle MOA/ATCAA can be found in Figure 2-1 of this Appendix. Figure 2-1 in the EA depicts the proposed permanent SUA for Alternative 1 and Figure 2-3 in the EA depicts the proposed permanent SUA for Alternative 2. This analysis considered other competing aviation interests and requirements in the surrounding region. The number of annual sorties in the proposed airspace for Alternative 1 (EA Table 2-2) would be similar to the existing number of sorties presented in EA Table 1-2.

The amount of time the airspace would be activated for military use is not expected to change from current conditions. As described in Chapter 2 of the EA, individual MOAs/ATCAAs and RAs would frequently be used in conjunction with each other; therefore, the number of sorties shown are not cumulative and only represent use of the individual areas.

The FAA data presented in Figure 2-3 (below) depicts radar tracks for the ATS routes flown in the vicinity of the existing and proposed airspace (FAA 2021). This data provides a general basis for examining the potential effects of the proposed permanent SUA configuration and projected operations on the overall air traffic and airspace environment.

The evaluation criteria considered the extent to which the different action alternatives would have impacts on the safe, orderly, and expeditious flow of all air traffic within the ROI. Any effects on airway or jet route use, general aviation activities, airports/airfields, or ATC system capabilities that may affect air traffic flows in the region could be considered a potentially significant impact.

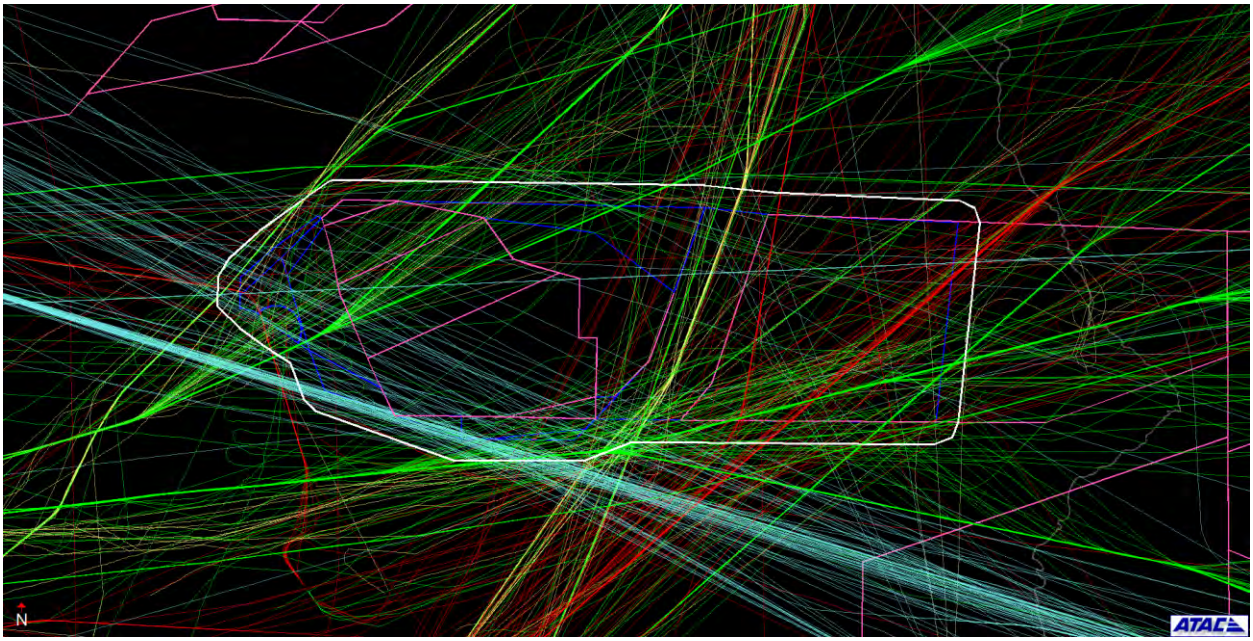


Figure 2-3 Graphic Detail of Air Traffic in the Vicinity of the Proposed Action

Notes: Green – Arrivals, Red – Departures, Blue – Overflights. Figure depicts 24 hours (August 2, 2019) of IFR traffic passing through or within 3 nm of the proposed SUA.
Source: FAA 2021.

The impact of the Proposed Action on the other airspace uses in the region are qualified as having a significant or no significant impact. For this EA, no significant impact is defined as the outcome where there would be minimal effects on civilian airspace users. Conversely, a significant impact would occur if there would be a high likelihood that airspace availability would be restricted for other users and/or there would be a decrease in flight safety that could not be mitigated through the FAA's aeronautical study process.

The airspace discussions refer to potential direct impacts on civil and military air traffic when the SUA is activated. Activation of SUA refers to those designated time periods the Marine Corps has coordinated and scheduled use of this airspace with the FAA Los Angeles ARTCC. Scheduled SUA activation periods are published in Notices to Airmen (NOTAMs) and provided as real-time ATC and Flight Service Station advisories to ensure public awareness of military activities in this airspace.

Any actions considered necessary aside from standard ATC procedures and practices to mitigate the potential impacts of an airspace proposal on all airspace uses would be examined by the FAA, Marine Corps, and other affected interests, as appropriate, as part of the aeronautical study review processes.

3.3 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the proposed establishment of new SUA and modifications to existing SUA would not occur at the Combat Center. No additional ATCAA would be requested. The existing airspace would not be able to support MEB-sized exercises and other LSEs planned for existing and recently acquired training lands at the Combat Center. The Marine Corps would continue operating within the existing airspace. To mitigate potential safety risks (e.g., midair collisions), the Combat Center's Range Control Office would continue to monitor training areas to determine whether non-participating aircraft are present and suspend military activities, if necessary, as a safety precaution.

3.4 ALTERNATIVE 1

3.4.1 Proposed SUA/ATCAA

As identified in the EA Section 2.1, *Screening Criteria and Alternatives Development*, the FAA and MAGTFTC coordinated to adjust the shape, location, altitude designations, and level of restrictions for the various blocks of airspace based on application of Screening Criterion. If Alternative 1 is selected as the Preferred Alternative, the FAA will need to conduct the aeronautical study process (FAA JO 7400.2P, Section 6) specific to proposed airspace under Alternative 1. This process will identify any additional conditions or measures specific to permanent SUA/airspace under Alternative 1. Any significant impacts found during a future aeronautical study process will be mitigated to ensure no significant impacts would occur under Alternative 1. The FAA will defer their decision on the Alternative 1 airspace establishment and modifications until the FAA has completed their own aeronautical study on proposed airspace under Alternative 1 (see EA Section 1.4.2).

3.4.2 Public and Private Civilian Airports

3.4.2.1 Public Airports

Figure 2-2 and Table 2.1-3 identify those public airports in the ROI and note those with instrument approach or departure procedures where mitigation measures may need to be considered, between the Marine Corps, airport operators, and the FAA. No additional public airports would be located beneath the proposed permanent SUA.

The Lake Havasu City (Class E airspace) and Chemehuevi Valley airports are located beneath the existing Turtle MOA in an area where no changes are proposed to the existing airspace. No impacts to IFR traffic into these airports would be expected as a result of Alternative 1. VFR aircraft that typically transition from the west below the floor of the existing Turtle MOA (11,000 feet MSL) could be affected by the proposed Turtle Low MOA and CAX MOA if pilots opt not to fly through an active MOA and choose to fly around the SUA. However, because VFR pilots are permitted to fly within an active MOA and due to the low traffic volumes in this area, implementation of Alternative 1 would have no significant impact on the overall air traffic at these airports.

The Needles Airport is located about 5 miles north of the existing Turtle MOA/ATCAA with approach and departure services provided by Los Angeles ARTCC. Published approaches to this airport are in an east/west direction and avoid the existing Turtle MOA/ATCAA, this would not change under Alternative 1. VFR air traffic would need to remain vigilant of military activity when flying within the Turtle MOA. There are no changes to the Turtle MOA/ATCAA that would affect air traffic at this airport; therefore, implementation of Alternative 1 would have no significant impacts at this airport.

Palm Springs Airport lies south of the proposed permanent SUA/ATCAA. Departures to the north and northwest would interact with proposed R-2509A and R-2509D beneath 8,000 feet MSL. The arrival procedures for this airport were modified as part of the SoCal Metroplex Project, and any additional modifications required to minimize effects on airport operations would occur as a result of the FAA's aeronautical study process. Thirty days of departure data were used to annualize and assess the impact of aircraft departing into the proposed SUA. Based on approximately eight departures monthly entering the proposed SUA, approximately 100 flights (0.2 percent of total flights) would be impacted annually under this action (FAA 2021). Any significant impacts found during a future aeronautical study process would be mitigated to ensure no significant impacts would occur under Alternative 1.

The Twentynine Palms Airport lies to the south of the existing Sundance MOA with approach and departure services provided by Los Angeles ARTCC. The instrument approaches to this airport do not interact with the Sundance MOA and would not be expected to be affected by Alternative 1. Establishment of the CAX MOA/ATCAA could affect civilian aircraft transiting the area. However, the corridor between the proposed CAX MOA and CAX ATCAA (8,000 feet MSL–FL210) was designed to allow civilian traffic to transit the area; therefore, implementation of Alternative 1 would have no significant impacts. Any significant impacts found during a future aeronautical study process would be mitigated to ensure no significant impacts would occur under Alternative 1.

Big Bear Airport is southwest of the proposed R-2509D and west of the proposed Johnson Valley MOA/ATCAA. Approach and departure services for Big Bear Airport are provided by Los Angeles ARTCC. This airport has one approach (GPS Runway 26) and one departure (OKACO RNAV) procedure that flow through the proposed R-2509A/D. The RNAV departure directs a climb on heading 076 (northeast) to reach the NAVAID OKACO at or above 11,000 feet MSL or as assigned by ATC. IFR aircraft continuing on this heading currently flow through R-2501C or are directed around the RA when active. This would not be expected to change under Alternative 1. When R-2905A and R-2509D are active, aircraft arrivals to Runway 26 using RNAV (GPS) through the NAVAID BRGET could be affected. Aircraft using this IFR approach would need to be routed around the RA when activated below 10,000 feet MSL. The number of aircraft affected would be dependent on the runway in use and direction of travel. Aircraft traveling south, southeast, and west would not be affected, whereas IFR aircraft traveling northeast and north would need to be routed around the RA. On an annual average, there are 41 arrivals and 41 departures each day, primarily by general aviation aircraft. The ability to use visual approaches to Runway 26, would be expected to minimize impacts. During the 2021 Aeronautical Study, the FAA attempted to redesign the RNAV Runway 26 approach, but due to terrain, alternative designs are not possible. As proposed, the airport would be limited to VFR operations when the SUA is active. When IFR approach or departure out of Big Bear Airport (west of the proposed Johnson Valley MOA/ATCAA) is required due to weather, the airspace would be released to Los Angeles ARTCC to minimize impacts to arrivals utilizing the Big Bear Airport Runway 26 RNAV (GPS) approach. This solution would be implemented through an LOP for Joint Use of the proposed R-2509, similar to that in place for Joint Use of R-2501. The procedures would provide for the use of R-2509 by civilian air traffic when not in use by the Combat Center and establish procedures for releasing the airspace as required by Los Angeles ARTCC for flight safety (e.g., hazardous weather conditions).

All other public airports listed in Table 2.1-3 are located at least 15 miles from the existing or proposed permanent SUA boundaries. The FAA's aeronautical study process would ensure the safe and efficient use of airspace associated with those airports so they would not be significantly affected by the Proposed Action. Therefore, implementation of Alternative 1 would have no significant impacts to public airports.

3.4.2.2 Private Airports

There are several charted private airports located beneath, or within close proximity to, the existing and proposed SUA as shown in Figure 2-2. Cadiz Airstrip is located under the proposed CAX MOA; no other additional private airfields would be located beneath the proposed permanent SUA under Alternative 1. Aircraft operating from these airports typically fly VFR and would be able to transit the proposed MOAs using see-and-avoid flight rules. Indirect impacts may include other conditions (e.g., inconvenience, fuel costs) involved with avoiding the SUA during time periods when it is active. The Abraham Ranch, Kelly, and B&E Airports are located near the southern boundary of the proposed R-2509D. To prevent impacts to use at these private airfields, an exclusion area was designated with a 3.4-nm radius of lat. 34°25'3.34"N., long. 116°36'52.12"W., which would be surface to 1,500 feet AGL to accommodate aircraft arriving and departing from these airfields. Therefore, implementation of Alternative 1 would have no significant impacts due to the typical low volume of flight activity at private airports.

The Marine Corps will continue to keep Fixed Base Operators, aviation groups, and other concerned stakeholders, informed of Combat Center airspace and aviation activities and seek to minimize effects on airport operations. FAA 7400.2P states that RAs shall exclude the airspace 1,500 feet and below within a 3-nm radius of airports available for public use. Where necessary, such avoidance requirements would help ensure military aircraft remain clear of all airports regardless of their proximity to the proposed SUA boundaries. Therefore, no significant impacts to private airports would be expected under Alternative 1.

3.4.3 ATS Routes

There is a significant amount of IFR civil aviation air traffic operating on ATS routes to and from airports in the SoCal Metroplex and an undetermined amount of VFR general aviation aircraft operating throughout this area. The extent to which the Alternative 1 permanent SUA proposal may affect these activities would vary with the SUA, altitudes, and times of day in which military flight activities are scheduled relative to those timeframes and routes in which the FAA's higher-density air traffic normally occur. As discussed in Appendix K of the EA, as part of the FAA's NextGen program, the FAA has begun to switch to a satellite-enabled navigation system that is more precise than traditional ground-based navigational aids (NAVAIDs). This precision reduces the required clearance for aircraft traveling through the airspace from 6 miles to 2 miles (FAA 2016) allowing ATC to place more aircraft in the same amount of airspace as previously done. The 2016 and 2017 revisions to airport flight procedures in the SoCal Metroplex were implemented and resulted in a determination by the FAA that there would be no impact to civilian aviation during activation of temporary SUA to support the 2017 LSE, which is similar to Alternative 1 (FAA 2017). As discussed above, the FAA will need to conduct the aeronautical study process specific to proposed airspace under Alternative 1 if it is selected as the Preferred Alternative. This process will identify any additional conditions or measures specific to impacts associated with ATS routes.

The following describes how each civil aviation activity may be affected by Alternative 1.

3.4.3.1 Victor ATS Routes

Victor routes potentially affected by Alternative 1 are described in Section 2.3.1 and shown in Figure 2-2. IFR traffic along these airways generally operates from 8,000 feet MSL to, but not including, FL180.

The following describes the potential direct impacts of the proposed Alternative 1 permanent SUA on each airway, taking into consideration the lateral 4 nm route width (on either side) and 3 nm safety buffer distance that would separate airway traffic and SUA operations. In each case, impacts and mitigation measures to be considered will be addressed by the FAA and Marine Corps during a future aeronautical study for the proposed Alternative 1 airspace. Reference to specific number of flights are only approximations based on

a 30-day sample size used to annualize data (FAA 2021). The number of flights throughout the year change as a result of seasonal factors and other considerations.

- V8-21 and V283-587 are to the west of the proposed R-2509. Under Alternative 1, the V-routes would penetrate the 3-nm safety buffer around the peripheral boundary of the proposed R-2509A. The proposed ceiling of 6,000 feet MSL would minimize impacts to aircraft flying above in higher altitudes. Impacts to aircraft flying above 7,000 feet MSL are not expected. Aircraft flying at lower altitudes may need to climb to ensure flight safety. Under Alternative 1, aircraft use of the lower altitudes would be affected, but no significant effects would be anticipated as aircraft could fly at higher altitudes and avoid the R-2509A.
- V386 would interact with the proposed R-2509A and R-2509D. The collective airway width and safety buffer for this ATS route would overlap the southwest corner of R-2509A and R-2509D. The airspace to the west of this boundary is used as a corridor to transit between the existing R-2501 and the San Bernadino Mountains. Thirty days of flight tracks were used to annualize data and assess the impact of aircraft flying through the proposed SUA. Based on approximately 39 flights entering the proposed SUA, approximately 336 flights would be impacted annually under this action (FAA 2021). When the proposed SUA is active, impacts to aircraft flying above 8,000 feet MSL are not expected. Although aircraft may need to fly off the centerline of this route or at higher altitudes, the proposed SUA would not be expected to affect aircraft transiting this ATS route; therefore, implementation of Alternative 1 would have no significant impacts.
- V264 runs parallel to the southern boundary of the proposed modified Sundance MOA and at approximately 3 nm south of the proposed CAX MOA. The collective airway width and safety buffer for this airway would overlap the southern border of the modified Sundance MOA as it does under existing conditions. The existing Sundance MOA's ceiling is 10,000 feet MSL and provides the separation that allows aircraft to fly this route above 10,000 feet MSL with the required 3-nm buffer when the MOA is active. The proposed modification to Sundance MOA would include airspace up to but not including FL180 with Sundance ATCAA from FL180 to FL220. This would not be expected to affect aircraft using this ATS route; therefore, implementation of Alternative 1 would have no significant impacts.
- V514-538 bisect the proposed CAX MOA and its collective route width and safety buffer would overlap the adjacent Bristol MOA, Turtle Low MOA, and Turtle MOA boundaries by 2 to 4 miles. Thirty days of flight tracks were used to annualize data and assess the impact of aircraft flying through the proposed SUA. Based on approximately 94 flights entering the proposed SUA, approximately 1,128 flights would be impacted annually under this action (FAA 2021). With the proposed CAX MOA only extending up to 8,000 feet MSL and the CAX ATCAA beginning at FL180, activation of CAX MOA and adjacent Bristol MOA, Turtle Low MOA, and Turtle MOA would not be expected to create a significant impact under Alternative 1, as civilian aircraft would be able to transit in airspace between 8,000 feet MSL and FL180.
- V12, V208, and V442 run parallel to the northern boundaries of R-2501, Bristol MOA, CAX MOA, Turtle Low MOA, and Turtle MOA with the collective route width/safety buffer overlapping these boundaries by approximately 2 to 3 miles. V208 crosses the southern portion of the proposed CAX MOA and through the middle of the proposed Turtle Low MOA. Activation of these existing and proposed SUA would have no significant impacts on the lower density air traffic on this airway under Alternative 1.

Overall, the proposed structure (area and altitude) of the SUA/ATCAA (area and altitudes) under Alternative 1 would be expected to have no significant impacts on those Victor routes transiting near or within the proposed Alternative 1 permanent SUA once the FAA completes their aeronautical study process.

3.4.3.2 Jet Routes

Jet routes potentially affected by the proposed RA and ATCAAs are described in Section 2.3.2 and shown in Figure 2-2. These routes are heavily used by IFR traffic transiting between the major airports serving the Los Angeles area and other airports across the country. Jet routes extend from FL180 to FL450, and much of the commercial traffic in the ROI is climbing or descending through those altitudes while approaching or departing the Los Angeles area airports. The need to conduct military flight activities above FL180 would have the potential for impacts on Jet route traffic. Table 2-2 from the EA indicates that only 25 percent of the sorties would occur between 14,000 feet MSL and FL400, with less than 4 percent occurring above FL270. Seventy-five percent of military flight operations would occur below 14,000 feet MSL and not be a factor for the Jet route traffic operating at those higher altitudes.

The following describes the potential direct impacts of the proposed permanent SUA on each Jet route, considering the lateral distances and safety buffers typically applied between these ATS routes and SUA. Where noted below, Los Angeles ARTCC currently employs those ATC standards and provides separation between Jet route traffic and military operations when the existing SUA is active. Based on the design of the proposed SUA and modifications to the procedures for arrivals and departures for air traffic in the SoCal Metroplex implemented in 2016 and 2017, no significant impact would be expected. However, in each case, any additional impacts on Jet and Q route traffic would be addressed by the FAA and Marine Corps before implementation of Alternative 1 and, if needed, appropriate mitigation measures adopted.

- J60-64-107 would not be affected by Alternative 1. This route would be above the 6,000 foot MSL ceiling proposed for R-2509A and the 8,000 foot ceiling proposed for R-2509D. Its lateral and vertical boundaries would be outside of the proposed R-2509 and well outside of the proposed Johnson Valley MOA/ATCAA. There are no enroute airways impacted by the proposed R-2509 airspace.
- J6 runs parallel to the northern boundaries of the existing SUA with the lateral distances that may be used by air traffic along this route extending into this SUA. The northern boundary of the SUA would not change and aircraft operating on this route as a result of higher ATCAA altitudes would not be expected to result in an effect on air traffic. Impacts to air traffic on this route would not be expected to change as a result of Alternative 1 and no significant impacts would be expected.
- J128 currently crosses R-2501 and the Bristol ATCAA and would transit the proposed R-2509C and modified Bristol North and South ATCAAs. J128 has a minimum enroute altitude of 25,000 feet MSL (FL250) and is currently published as normally being unavailable Monday through Friday in the vicinity of R-2501. R-2509 would be activated for use at the same times as the existing R-2501, though the altitudes in use may not be coincident. The proposed modification of the Bristol South ATCAA to 40,000 feet MSL could affect air traffic currently permitted to transit on J128 when R-2501 is activated below 25,000 feet MSL. The Bristol South ATCAA up to 40,000 feet MSL would only be used for LSEs and the lower blocks of airspace, up to FL220, would be used for all other training. Air traffic using this route would need to be routed above 22,000 feet MSL when the Bristol North and Bristol South ATCAAs are activated independently of R-2501. However, as this route is currently unavailable from Monday-Friday in the vicinity of R-2501, impacts associated with this proposed ATCAA would not be expected to change from current conditions. A Letter or Agreement with the FAA would dictate the conditions for this ATCAA to minimize effects on air traffic using this route. The times that this route is unavailable for commercial air traffic would not be expected to change under Alternative 1; therefore, implementation of Alternative 1 would have no significant impacts.
- J65 and its lateral distance would not be affected by Alternative 1 because this route and its lateral distances (6 miles either side of the centerline) would be outside of the proposed Johnson Valley MOA/ATCAA.

- J4-10-104 runs parallel to the southern boundary of the proposed Johnson Valley MOA/ATCAA, modified Sundance MOA/ATCAA, and the proposed CAX MOA/ATCAA. This route and its lateral distances (6 miles either side of the centerline) would be outside of the proposed Johnson Valley ATCAA, Sundance ATCAA, and CAX ATCAA and no impacts would be expected under Alternative 1.
- J236 and J10-231 both transit the existing Turtle ATCAA. No changes are proposed to the ceiling of the Turtle ATCAA; therefore, impacts to air traffic on these routes would not change from existing conditions. Therefore, implementation of Alternative 1 would have no significant impacts.
- Q2-4 transits between Palmdale and Blythe south of the modified Sundance MOA/ATCAA. Flight operations on Q2-4 would be outside of the required 3-nm buffer and would not be impacted by Alternative 1.
- Q73 transits through the proposed CAX ATCAA and flights on this route flying between FL180 and FL210 would be affected when the CAX ATCAA is activated. Approximately 360 annual flights transit via Q73 (FAA 2021). Use of the CAX ATCAA anticipated as daily between 0800 and 2200 (other times by NOTAM), which may change if other times of use are ultimately approved by the Los Angeles ARTCC. The limited altitudes (FL180 to FL210) associated with this proposed ATCAA would limit impacts to this ATS; therefore, implementation of Alternative 1 would be expected to have no significant impacts.
- Q86 originates/terminates in the northeastern quadrant of the Turtle MOA at the TTRUE NAVAID where no SUA/ATCAA changes are proposed. Therefore, implementation of Alternative 1 would have no significant impacts to aircraft using this route.

Overall, the R-2509, Johnson Valley ATCAA, Sundance ATCAA, Bristol North and South ATCAAs, and CAX ATCAA proposals were developed through coordination between the FAA and the Marine Corps. The subdivision of this airspace into lateral and/or vertical sectors would provide flexibility in scheduling the proposed SUA/ATCAA around those higher-density air traffic periods and airspace/altitude uses. These modifications, coupled with standing Marine Corps procedures for planning/scheduling SUA needs with the FAA and FAA practices for ensuring separation between military and IFR aircraft, would ensure no significant impacts to civilian air traffic under Alternative 1. The Marine Corps would continue to work with the FAA as a cooperating agency in resolving mutual concerns over the airspace proposal. The FAA will examine the potential impacts and resolutions required to ensure no significant impacts in a future aeronautical study of the proposal. Therefore, implementation of Alternative 1 would have no significant impacts on the J or Q routes transiting through or in the vicinity of the proposed permanent SUA under Alternative 1.

3.4.3.3 Standard Terminal Arrival Route

Under Alternative 1, the proposed Bristol South ATCAA and R-2509 would be located adjacent to R-2501 along the ANJLL4 STAR and could extend up to FL400. Because the Bristol South ATCAA and R-2509C would only be activated at times and altitudes consistent with R-2501, their operational effect on ANJLL4 STAR would be the same as current conditions when R-2501 is active above FL190. Therefore, Alternative 1 would not introduce any new impacts beyond those that currently occur due to existing R-2501 activation.

3.4.3.4 General Aviation VFR Air Traffic

VFR general aviation aircraft operating in the region typically fly at altitudes below 10,000 feet MSL along those routes providing the most direct routing between airports/airfields while remaining clear of high terrain, obstacles, and congested air traffic areas. Those areas where VFR flights are most prevalent are

generally north, west, and south of R-2501, within the existing corridor between the Bristol and Turtle MOAs (i.e., CAX Corridor) and beneath the eastern portions of the existing Turtle MOA.

When activated, the proposed R-2509 under Alternative 1 would limit the airspace in which VFR general aviation could operate in that region, depending upon the SUA being activated. When the R-2509 sectors are active, VFR aircraft would have to avoid this airspace, potentially increasing flight distances. The VFR traffic through this airspace would shift further to the west into an area that is already highly complex for ATC due to high terrain and the fact that it is a busy hand-off corridor for traffic transitioning between L.A. Center, Joshua Control Facility, and Southern California TRACON (FAA 2021).

VFR aircraft could operate within those areas proposed for the new or modified MOAs using standard see-and-avoid procedures exercised in all MOA airspace. Likewise, military pilots are also responsible for seeing and avoiding general aviation aircraft and using airborne radar systems to "see" civil aircraft well beyond visual range and initiate actions to avoid those aircraft. It is acknowledged that the MOA proposals, particularly the Turtle Low MOA to 2,000 feet AGL, may affect those pilots who generally elect to fly below or around an active MOA. The proposed Turtle Low MOA would only support MEB-sized exercises and other LSEs, they would not be activated continuously as would the other proposed SUA. The proposed CAX MOA provides a corridor between 8,000 feet MSL and FL180 that would minimize the effects to VFR traffic traveling north or south through the airspace by providing the airspace necessary to transit west of the Turtle Low MOA when active. VFR air traffic could also choose to travel east of the proposed Turtle Low MOA below 11,000 feet MSL. For example, private aircraft originating or arriving at the Iron Mountain Airport from points north could expect to add approximately 20 nm to their flight should they desire to fly around the MOA when active. This would create compression of traffic and increased congestion for V135 and V264 outside the southeast corner of Turtle Low MOA (FAA 2021). However, with the use of the Turtle Low MOA limited to support of MEB-sized exercises and other LSEs, activation of CAX MOA and Turtle Low MOA would be expected to have no significant impact on VFR traffic under Alternative 1.

VFR pilots can track the active status of SUA through ATC and Flight Service Station advisories and NOTAMs or can check the FAA's SUA website at https://sua.faa.gov/sua/siteFrame.app. Pilots may elect for VFR flight following services, as equipment capabilities, and controller workload permit. The Marine Corps outreach program would continue to inform general aviation pilots of the flight training activities to help maximize the joint and safe use of the SUA.

Overall, Alternative 1 would be expected to have no significant direct impacts on general aviation pilots who currently fly unrestricted through those areas proposed for the newly established or modified SUA. This may result in increased travel distances when this SUA is active and pilots either cannot enter restricted airspace or elect not to transit the MOAs. This could result in indirect impacts such as cancelled flights, inconvenience, increased time, and fuel costs associated with avoiding active SUA, and any expended efforts in tracking the SUA status through available advisory services.

3.4.4 Conclusion

Based on the above information and continued coordination with the FAA to minimize any impact to civilian air traffic, implementation of Alternative 1 would have no significant impacts on airspace management. Implementation of Alternative 1 would clearly designate airspace for its intended use (i.e., military training).

3.5 ALTERNATIVE 2

3.5.1 Proposed SUA/ATCAA

As identified in EA Section 2.1, *Screening Criteria and Alternatives Development*, the FAA and MAGTFTC coordinated to adjust the shape, location, altitude designations, and level of restrictions for the various blocks of airspace based on application of Screening Criterion. Additional coordination between the FAA and MAGTFTC (i.e., 2021 Working Group Meetings, 2023 Safety Risk Management Review) resulted in further modifications to the proposed airspace under Alternative 2. Compared to Alternative 1, the primary modifications to Alternative 2 are related to limiting altitudes to 16,000 feet MSL in the new R-2509 and Johnson Valley MOA; not creating a Johnson Valley ATCAA or CAX ATCAA or subdividing the Bristol North and South ATCAAs; and adjusting the eastern section of the southern boundary of Sundance ATCAA to accommodate commercial and civilian air traffic in the vicinity.

The FAA prepared the 2021 Aeronautical Study on airspace proposed under Alternative 2. As indicated in the 2021 Aeronautical Study, FAA Los Angeles ARTCC approved the proposed Alternative 2 airspace with the following modifications to times of use (FAA 2021):

- R-2509A Times of Use
  - *Proposed*: Continuous
  - *Modification*: By NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year (*Note*: To reduce confusion, the times of use definition for R-2509A needs to match the remainder of R-2509 airspace).
- R-2509B/C/D Times of Use
  - *Proposed*: Continuous
  - *Modification*: By NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year.
- Johnson Valley MOA Times of Use
  - *Proposed*: Intermittent by NOTAM
  - *Modification*: By NOTAM at least 6 hours in advance, not to exceed 60 days per calendar year.
- Turtle Low MOA Times of Use
  - *Proposed*: By NOTAM. Advance notice for NOTAM is 6 hours.
  - *Modification*: By NOTAM at least 6 hours in advance, not to exceed 40 days per calendar year.

Additionally, in 2023, the FAA conducted a Safety Risk Management Review of the Proposed Action which resulted in the following modifications to Alternative 2 (FAA 2023e):

- Limiting altitudes to 16,000 feet MSL in R-2509C and Johnson Valley MOA
- Not creating a Johnson Valley ATCAA or CAX ATCAA
- Limiting altitudes in Bristol ATCAA to FL 220 and not subdividing into Bristol North ATCAA and Bristol South ATCAA (no changes to the existing Bristol ATCAA)
- Modifying the southern boundary of Sundance ATCAA

3.5.2 Public and Private Civilian Airports

Impacts to public and private airports under Alternative 2 would be similar to that under Alternative 1.

3.5.3 ATS Routes

Impacts to the proposed airspace resulting from the proposed establishment and/or modification of R-2509A, R-2509B, R-2509C, R-2509D, Sundance MOA, CAX MOA, Turtle Low MOA, and the Bristol MOA/ATCAA would be similar to those identified under Alternative 1. The primary differences under Alternative 2 (limiting altitudes to 16,000 feet MSL in the new R-2509C and Johnson Valley MOA; not creating a Johnson Valley ATCAA or CAX ATCAA; and adjusting the eastern section of the southern boundary of Sundance ATCAA) would result in reduced impacts to Jet and Q routes that extend from FL180 to FL450. Under Alternative 2 the Bristol ATCAA would remain unchanged and the impacts would be as they exist today. Much of the commercial traffic in the ROI is climbing or descending through those altitudes while approaching or departing the Los Angeles area airports. With the lower altitudes of Bristol ATCAA (FL220) and R-2509C (16,000 feet MSL), there would be no impacts to civil aircraft using ANJLL4 into LAX. Together, the modifications to times of use proposed in the 2021 Aeronautical Study (FAA 2021) and the 2023 Safety Risk Management Review, would result in an overall reduced impact to airspace and ATS Routes, compared to Alternative 1.

3.5.4 Conclusion

Alternative 2 was the basis of the 2021 Aeronautical Study conducted by the FAA. As indicated above, FAA Los Angeles ARTCC approved the proposed Alternative 2 airspace with modifications to times of use for R-2509A/B/C/D, Johnson Valley MOA, and Turtle Low MOA. Although this restriction availability does not meet the purpose and need, MAGTFTC would accept these modifications with the request that impacts to NAS be evaluated during the first year of use and that additional days of use be considered based on this evaluation. Through adoption of these modifications and continued coordination with the FAA to minimize any impact to civilian air traffic, implementation of Alternative 2 would have no significant impacts on airspace management. Implementation of Alternative 2 would clearly designate airspace for its intended use (i.e., military training).

3.0 References

Department of Defense (DoD). 2023. Directive 5030.19. DoD Responsibilities on Federal Aviation. March 6.

DON. 2012. Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. July 2012. Available at: https://www.29palms.marines.mil/Staff-offices/Environmental-Affairs/ (under "Environmental Impact Statements").

DON. 2017. Department of the Navy Airspace Planning Procedures. March 16, 2017.

FAA. 2016. Final Environmental Assessment for the Southern California Metroplex Project. August 2016.

FAA. 2017. 29 Palms Written Re-evaluation for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California. June 2017.

FAA. 2021. Aeronautical Study: USMC 2021 Twentynine Palms Special Use Airspace Proposal. Prepared by Los Angeles ARTCC.

FAA. 2023a. National Airspace System. Available online: https://www.faa.gov/air_traffic/nas. Accessed on August 23, 2023.

FAA. 2023b. Aeronautical Information Manual: Official Guide to Basic Flight Information and ATC Procedures. Issued April 20, 2023.

FAA. 2023c. Special Use Airspace. Order JO 7400.10E. Issued February 9, 2023.

FAA. 2023d. Special Use Airspace Website. Available online: https://sua.faa.gov/sua/siteFrame.app. Accessed on October 25, 2023.

FAA. 2023e. USMC 2021 Twentynine Palms SUA Safety Risk Management Document (SRMD). December 14.

FAA. 2025a. FAA Joint Order 7400.2R, Procedures for Handling Airspace Matters. February 20, 2025. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.current/documentnumber/7400.2

FAA. 2025b. FAA Joint Order 7110.65BB - Air Traffic Organization Policy. February 20, 2025. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1043461

Marine Corps. 2018. FY17 Special Activity Airspace Utilization Report. November 14, 2018.

SkyVector. 2019. Airport Information. Available at: www.skyvector.com.

This page intentionally left blank.

Appendix H
Air Quality

This page intentionally left blank.

Appendix H
Air Quality Calculations

1.0 Introduction

Aircraft activities of concern for criteria pollutants are those that occur from ground level up to 3,000 feet above ground level (AGL). The 3,000 feet AGL ceiling is the default atmospheric mixing height above which any pollutant generated would not contribute to increased pollutant concentrations at ground level. An exception to this is greenhouse gases (GHGs), which are relevant across the entire flight profile. Therefore, aircraft emissions were also calculated for operations across the entire flight profile. All criteria pollutant emissions from aircraft generated at greater than 3,000 feet AGL are excluded from this analysis. The pollutant emission rate is a function of the engine's operating mode, the fuel flow rate, and the engine's overall efficiency. Emissions for one complete flight for a particular aircraft are calculated using the specific engine pollutant emission factors for each mode of operation (landing/take-off, low altitude flight, or destination flight above the mixing height).

The methodology for estimating aircraft emissions involves evaluating the types of aircraft, number of hours of operation, the engine model, and the mode of operation for each type of aircraft. Aircraft emissions were calculated based on the following inputs:

- Emissions were modeled using the emission factors from Aircraft Environmental Support Office memorandum reports for individual aircraft types, as well as from the United States Air Force Air Conformity Applicability Model (5.0.23a) for aircraft that are not covered by AESO Memoranda. Low-altitude sortie durations used were based on data from the Final Noise Study for the Permanent Special Use Airspace Establishment and Modifications at the Combat Center (Appendix F in EA).

- Additionally, the takeoff and landing operations at the Expeditionary Airfield (EAF) were calculated based on the same types of information and included annual departure, landing and pattern operation numbers provided by the Combat Center.

1.1 No-Action Alternative

The No-Action Alternative evaluation includes EAF activity and airspace activity beginning in 2028, as from this point forward the AV-8B would no longer be flown in the training activities. Data for the EAF activities were provided directly by Marine Corps Air Ground Combat Center (MCAGCC). Airspace activity data came from Table 6 in the Noise Study. Operations pre-2028 that applied to the AV-8B would move over to the F-35B, resulting in an operational increase for the F-35B aircraft. All helicopter flight time was assumed to be at or below 3,000 feet AGL. This includes the MV-22, which was conservatively assumed to fly in helicopter mode versus airplane mode.

To assess low-altitude flight for the remaining aircraft (F-35 and F-18), it was assumed that 10 percent of sorties would spend time at or below 3,000 feet AGL, which is also consistent with the Close Air Support Table 4 in the noise study. Additionally, the percentage of time spent at low altitude for these aircraft would be 69 percent, which is derived based on 20 percent of time at 50–500 feet AGL, 40 percent of time at 500–1,000 feet AGL, and 9 percent of time at 1,000–3,000 feet AGL as a subset of the 30 percent of time spent at 1,000–10,000 feet AGL (Table 1).

Table 1 General Altitude Ranges for FA-18 and F-35 Aircraft Conducting Close Air Support

Aircraft Type	Mission	Altitude Range							
		50-500 AGL	200-500 AGL	500-1k AGL	1k-3k AGL	3k-10k MSL	10k-14k MSL	14k-27k MSL	10k-14k MSL
FA-18	CAS (10% of Sorties)	-	20%	40%	9%	21%	10%	-	-
F-35	CAS (10% of Sorties)	-	20%	40%	9%	21%	10%	-	-

Legend: % = percent; AGL = above ground level; CAS = close air support; MSL = mean sea level.

2.1 Proposed Action

For the Proposed Action, which includes new Turtle Low Military Operations Area (MOA), additional traffic is anticipated to fly in this MOA from the Turtle MOA, which was calculated consistent with the other MOAs. Additionally, some sorties flown in Turtle MOA were identified in the Noise Study as being specifically associated with Large Scale Exercises, and these sorties were separately estimated to spend a portion of the low altitude flight at or below 3,000 feet AGL (the altitude profile of Turtle Low MOA is 2,000–11,000 feet AGL, so only 1,000 feet is below 3,000 feet AGL). A similar situation exists for CAX Low MOA, which ranges from 2,000–8,000 feet AGL. Low altitude flight for the KC-130 and Joint AR aircraft were also included in Turtle Low MOA Large Scale Exercises, with 10 percent of the total time spent in Turtle Low attributed to time at or below 3,000 feet AGL.

EAF operations also were based on changes to operations, with F-35B landing/takeoff and pattern activity increasing for both the No-Action Alternative and Alternatives 1 and 2. For Alternatives 1 and 2, F-35B operations would increase by 46.8 percent based on the increase in airspace sorties. Helicopter activities would be unchanged. KC-130 operations would increase by 33.7 percent, while F-18 C/D operations would decrease by 56.8 percent based on the reduction in airspace sorties.

DEPARTMENT OF DEFENSE
UNITED STATES MARINE CORPS

RECORD OF NON-APPLICABILITY FOR CLEAN AIR ACT CONFORMITY

ENVIRONMENTAL ASSESSMENT FOR PERMANENT SPECIAL USE AIRSPACE ESTABLISHMENT AND MODIFICATIONS AT MARINE CORPS AIR GROUND COMBAT CENTER, TWENTYNINE PALMS, CALIFORNIA

INTRODUCTION

Federal regulations state that "no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve any activity that does not conform to an applicable State Implementation Plan." It is the responsibility of the federal agency to determine whether a federal action conforms to the applicable State Implementation Plan before the action is taken (40 CFR section 51.850[a]). The proposed action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA.

PROPOSED ACTION

Action Proponent: Marine Air Ground Task Force Training Command (MAGTFTC)

Location: Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California

Affected Area: Mojave Desert Air Basin (MDAB)

Proposed Action Name: Permanent Special Use Airspace Establishment and Modifications at Marine Corps Air Ground Combat Center, Twentynine Palms, California

Proposed Action and Emissions Summary: The Proposed Action involves establishing new permanent Special Use Airspace (SUA) and modifying existing SUA associated with the training at the MCAGCC, Twentynine Palms, California (hereinafter, the "Combat Center"). The alternatives evaluated include the No-Action Alternative and two alternatives for the new SUA actions, both of which would generate the same quantity of annual low altitude flight emissions. Additionally, in order to provide a complete General Conformity update since the last complete update in 2012 with the Land Acquisition and Airspace Establishment Environmental Impact Statement (EIS) (DON 2012), emissions from aircraft operations (take offs and landings) at the Expeditionary Airfield were updated. These results, combined with the training emissions evaluated in the 2012 Final EIS, create a total emissions envelope for the installation. The No Action Alternative and Proposed Action Alternative training emission estimates were compared to the 2012 emissions envelope to determine the net change.

Effects from all training operations (use of military vehicles, equipment, ordnance, and aircraft), including the air quality effects, were previously analyzed in the 2012 Final EIS (Table 1). Because the Mojave Desert Air Basin (MDAB) is classified by United States Environmental Protection Agency (EPA) as a nonattainment for ozone and particulate matter less than or equal to 10 microns in diameter (PM_{10}), a Clean Air Act conformity analysis was prepared and the installation determined that the proposed training operations would generate emissions that would exceed the *de minimis* threshold for PM_{10} and ozone. Therefore, a conformity determination was completed, and the State Implementation Plan (SIP) was modified to comply with the Clean Air Act for PM_{10} and ozone. Overall, it was determined that the action would not result in an exceedance of the National Ambient Air Quality Standards (NAAQS) (DON 2012).

For this Environmental Assessment (EA), an analysis was performed to determine if the existing conformity determination is still valid. The analysis evaluates whether or not the proposed changes to aircraft operations will push the overall training operational emissions outside of scope of the existing emissions envelope for all ongoing training operations. Thereby, determining if proposed operations would warrant a new conformity determination.

Table 1 identifies the 2012 emissions envelope.

Table 1 2012 EIS Preferred Alternative Operation Emissions (Tons/Year)

	VOCs	CO	NO_x	SO_2	PM_{10}	$PM_{2.5}$
2012 Final EIS Baseline Training Emissions						
Aircraft Operations	59.05	267.41	152.88	6.8	60.40	60.11
Aircraft Fugitive Dust	-	-	-	-	0.67	0.27
Tactical Vehicle/Support Equipment	34.36	155.23	413.39	45.62	16.49	16.33
Tactical Vehicle/Equipment Fugitive Dust	-	-	-	-	6,591.79	660.83
Ordnance	3.33	165.16	2.25	-	0.89	0.05
Ordnance Fugitive Dust	-	-	-	-	22.00	22.00
Subtotal 2012 Final EIS Baseline Training Emissions	*96.74*	*587.80*	*568.52*	*52.42*	*6,692.24*	*759.59*
2012 Final EIS Preferred Alternative Training Emissions						
Aircraft Operations	25.55	72.87	39.77	1.91	17.25	17.25
Aircraft Fugitive Dust	-	-	-	-	42.36	16.94
Tactical Vehicles	5.29	23.73	64.39	7.35	2.33	2.33
Tactical Support Equipment	1.50	6.75	17.20	2.09	0.66	0.66
Tactical Vehicle/Equipment Fugitive Dust	-	-	-	-	565.25	86.56
Ordnance	1.82	132.88	0.28	-	-	-
Ordnance Fugitive Dust	-	-	-	-	1.30	0.07
Personnel On-Road Commuting	0.05	0.60	1.84	0.00	0.02	0.02
Subtotal 2012 Final EIS Preferred Alternative Training Emissions	*34.21*	*236.83*	*123.48*	*11.36*	*629.17*	*123.83*
Emission Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.90	-15.63	-0.93	-0.02	-141.59	-17.31
Increase in Training Emissions from Preferred Alternative	**32.31**	**221.20**	**122.55**	**11.34**	**487.58**	**106.52**
Total Training Operations Emissions (Emissions Envelope): Baseline + Preferred Alternative	**129.05**	**809.00**	**691.07**	**63.76**	**7,179.82**	**866.11**

Legend: CO = carbon dioxide; EIS = Environmental Impact Statement; NO_x = nitrogen oxides; SO_2 = sulfur dioxide; $PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compound

The general conformity analysis in the EA evaluated emissions of nonattainment pollutants associated with aircraft operations—volatile organic compounds (VOCs), nitrogen oxides (NO_x), and PM_{10}.

Effects

The No Action and Proposed Action Alternatives would only result in changes to aircraft operations but not to other training operations (such as use of military vehicles, equipment, and ordnance). Therefore, those emissions were assumed to remain the same, pulled from the 2012 Final EIS Preferred Alternative as detailed in Table 1. The following discussion focuses on aircraft operations emissions.

To assess emissions from the No Action Alternative and Proposed Action Alternative, emissions from the flights that would occur under the alternatives have been compared to the 2012 emissions envelope. While the airspace configuration differs between Alternatives 1 and 2, the total flight time below 3,000 feet above ground

level (AGL) is the same for both alternatives (6,612 hours annually), and therefore the emissions for the two alternatives are the same, and are presented as the Proposed Action.

Table 2 presents the net change in emissions of the No Action Alternative relative to the 2012 Final EIS Emissions Envelope, which were obtained from the Calendar Year 2009 Comprehensive Emissions Inventory Report for Marine Corps Air Ground Combat Center Twentynine Palms for all sources except aircraft operations (Naval Facilities Engineering Command Southwest 2010). Emissions for aircraft operations were estimated in the 2012 Final EIS for the emission envelope and by using the baseline noise data presented in the Noise Study for No Action (Appendix F). The 2012 Final EIS Preferred Alternative included land expansion that would prevent the public from accessing and using a portion of Johnson Valley and allow the military to train in the Shared Use Area for a portion of each year—resulting in a decrease in existing emissions associated with the Johnson Valley OHV Area. The proposed training operations were contingent upon the land expansion; therefore, the actions are connected and the reduction of emissions associated with the land expansion are accounted for and included under the 2012 Final EIS Preferred Alterative Training Emissions and listed in Table 2. Overall, the net change in VOC, NO_x, and PM_{10} emissions as a result of the No Action Alternative would all be less than the 2012 emissions envelope; emissions are wholly within the 2012 emissions envelope and so exempt from further general conformity analysis.

Table 2 No-Action Alternative Annual Aircraft Operation Emission Estimates for VOCs, NO_x and PM_{10} (Tons/Year) Compared to 2012 Final EIS Emissions Envelope

Description	VOCs	NO_x	PM_{10}
Total Training Operations Emissions (Emissions Envelope): Baseline + Preferred Alternative	**129.05**	**691.07**	**7,179.82**
No-Action Alternative EAF Operations	3.61	20.97	5.82
No-Action Alternative Airspace Operations	1.53	79.47	20.72
Total No-Action Alternative Aircraft Operations	**5.14**	**100.44**	**26.54**
Aircraft Fugitive Dust	-	-	42.36
Tactical Vehicles	5.29	64.39	2.33
Tactical Support Equipment	1.50	17.20	0.66
Tactical Vehicle/Equipment Fugitive Dust	-	-	565.25
Ordnance	1.82	0.28	-
Ordnance Fugitive Dust	-	-	1.30
Personnel On-Road Commuting	0.05	1.84	0.02
2012 Baseline Emissions (non-aircraft sources)	37.69	415.64	6,631.84
Emission Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.90	-0.93	-141.59
Total Operational Emissions – No Action Alternative	**49.59**	**598.86**	**7,128.71**
Difference	**-79.46**	**-92.21**	**-51.11**

Legend: EIS = Environmental Impact Statement; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compound

Table 3 presents the net change in emissions of the Proposed Action from the 2012 emissions envelope. Emissions for aircraft operations were estimated in the 2012 Final EIS for the emission envelope and by using the baseline noise data presented in the Noise Study for Alternative 1 (Appendix F). Data for non-aircraft sources of emissions obtained from the Calendar Year 2009 Comprehensive Emissions Inventory Report for Marine Corps Air Ground Combat Center Twentynine Palms for all sources except aircraft operations (Naval Facilities Engineering Command Southwest 2010). The net change in VOC, NO_x, and PM_{10} emissions that would result from implementation of the Proposed Action would all be less than the 2012 emissions envelope. Because the emissions are wholly within the 2012 emissions envelope, they would be exempt from further general conformity analysis.

Table 3 Alternative 1 Annual Aircraft Operation Emission Estimates for VOCs, NOx and PM10 (Tons/Year) Compared to 2012 Final EIS Emissions Envelope

Description	VOCs	NO_x	PM_{10}
Total Training Operations Emissions (Emissions Envelope): Baseline + Preferred Alternative	**129.05**	**691.07**	**7,179.82**
Alternative 1 EAF Operations	3.22	21.65	6.10
Alternative 1 Airspace Operations	1.53	79.47	20.72
Total No-Action Alternative Aircraft Operations	**4.75**	**101.12**	**26.82**
Aircraft Fugitive Dust	-	-	42.36
Tactical Vehicles	5.29	64.39	2.33
Tactical Support Equipment	1.50	17.20	0.66
Tactical Vehicle/Equipment Fugitive Dust	-	-	565.25
Ordnance	1.82	0.28	-
Ordnance Fugitive Dust	-	-	1.30
Personnel On-Road Commuting	0.05	1.84	0.02
2012 Baseline Emissions (non-aircraft sources)	37.69	415.64	6,631.84
Emission Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.90	-0.93	-141.59
Total Operational Emissions – Alternative 1	**49.20**	**599.54**	**7,128.99**
Difference	**-79.85**	**-91.53**	**-50.83**

Legend: EIS = Environmental Impact Statement; NO_x = nitrogen oxides; PM_{10} = particulate matter less than or equal to 10 microns in diameter; VOC = volatile organic compound

The result of this analysis concludes that the emissions associated with these activities and actions would conform under the Clean Air Act General Conformity requirements and no further evaluations under General Conformity are required, resulting in this RONA.

Date RONA Prepared: 26 March 2025

RONA Prepared By: Stantec

PROPOSED ACTION EXEMPTIONS

The Proposed Action is exempt from the General Conformity Rule requirements based on the determination that the emissions are wholly within the 2012 emissions envelope for all applicable pollutants.

EMISSIONS EVALUATION CONCLUSION

The USMC concludes that the 2012 emissions envelope for applicable criteria pollutants would not be exceeded as a result of implementation of the Proposed Action. The emissions data supporting that conclusion are shown in Tables 2 and 3, presented herein and are a summary of the calculations, methodology, and data contained in Section 3.3 (Air Quality) of the EA. Therefore, the USMC concludes that further formal conformity determination procedures are not required, resulting in this RONA.

RONA APPROVAL

To the best of my knowledge, the information presented in this RONA is correct and accurate, and I concur in the finding that the Proposed Action does not require a formal Clean Air Act conformity determination.

JAN 30 2026

Signature

Date

M. H. CLINGAN
Major General, United States Marine Corps
Commanding General
Marine Air Ground Task Force Training Command
Marine Corps Air Ground Combat Center

REFERENCES

DON. 2012. Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. July 2012. Available at: https://www.29palms.marines.mil/Staff-Offices/G-4-Installation-Support-Directorate/Environmental-Affairs.

Table H-1. General Conformity Applicability Analysis

	Tons/yr						
Activity	**VOC**	**CO**	**NOx**	**SO2**	**PM_{10}**	**$PM_{2.5}$**	**Data Source**
2012 Baseline Operational Emissions							
Aircraft Operations	59.05	267.41	152.88	6.8	60.40	60.11	2012 EIS Table 3.8-3
Aircraft Fugitive Dust	-	-	-	-	0.67	0.27	CY2009 CEIR (Table 31)
Tactical Vehicle/Support Equipment	34.36	155.23	413.39	45.62	16.49	16.33	CY2009 CEIR (Table 26)
Tactical Vehicle/Equipment Fugitive Dust	-	-	-	-	6,591.79	660.83	CY2009 CEIR (Table 28)
Ordnance	3.33	165.16	2.25	-	0.89	0.05	CY2009 CEIR (Table 23)
Ordnance Fugitive Dust	-	-	-	-	22.00	22.00	CY2009 CEIR (Table 24)
Subtotal Baseline Emissions	96.74	587.80	568.52	52.42	6,692.24	759.59	
2012 EIS Preferred Alternative Operational Emissions							
Aircraft	25.55	72.87	39.77	1.91	17.25	17.25	2012 EIS Table G-23
Aircraft Fugitive Dust	-	-	-	-	42.36	16.94	2012 EIS Table G-23
Tactical Vehicles	5.29	23.73	64.39	7.35	2.33	2.33	2012 EIS Table G-8
Tactical Support Equipment	1.50	6.75	17.20	2.09	0.66	0.66	2012 EIS Table G-8
Tactical Vehicle/Equipment Fugitive Dust	-	-	-	-	565.25	86.56	2012 EIS Table G-14 & G-15
Ordnance	1.82	132.88	0.28	-	-	-	2012 EIS Table G-29
Ordnance Fugitive Dust	-	-	-	-	1.30	0.07	2012 EIS Table G-29
Personnel On-Road Communting	0.05	0.60	1.84	0.00	0.02	0.02	2012 EIS Table G-11
Subtotal 2012 EIS Proposed Operational Emissions	34.21	236.83	123.48	11.35	629.17	123.83	
Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.9	-15.63	-0.93	-0.02	-141.59	-17.31	2012 EIS Table A1-49
Proposed Increase in Operational Emissions (i.e., net change)	32.31	221.20	122.55	11.33	487.58	106.52	
Total Training Emissions with implementation of the 2012 PA (Emissions Envelope)	**129.05**	**809.00**	**691.07**	**63.75**	**7,179.82**	**866.11**	

Table H-2. NEPA Analysis for the No Action Alternative

	Tons/yr		
Activity	**CO**	**SO2**	**$PM_{2.5}$**
Existing Conditions EAF Operations	24.57	2.25	5.76
Existing Conditions Airspace Operations	19.48	2.98	20.68
Annual Aircraft Operations -Existing Conditions	**44.05**	**5.23**	**26.44**
NAA EAF Operations	24.48	2.25	5.75
NAA Airspace Operations	18.42	3.73	20.72
Annual Aircraft Operations - NAA	**42.90**	**5.98**	**26.47**
Change Relative to Existing Operations	**-1.15**	**0.75**	**0.02**

Table H-3. NEPA Analysis for Alternative 1

	Tons/yr		
Activity	**CO**	**SO2**	**$PM_{2.5}$**
NAA EAF Operations	24.48	2.25	5.75
NAA Airspace Operations	18.42	3.73	20.72
Annual Aircraft Operations -NAA	**42.90**	**5.98**	**26.47**
Annual EAF Operations - Alt 1	23.16	3.05	5.99
Annual Airspace Operations - Alt 1	18.17	4.33	19.93
Annual Aircraft Operations - Alt 1	**41.33**	**7.38**	**25.92**
Change Relative to Existing Operations	**-1.57**	**1.40**	**-0.55**

Table H-4. General Conformity Analysis for the No Action Alternative

	Tons/yr		
Activity	**VOC**	**NOx**	**PM_{10}**
Total Training Emissions with implementation of the 2012 PA (Emissions Envelope)	**129.05**	**691.07**	**7,179.82**
Annual EAF Operations	3.61	20.97	5.82
Annual Airspace Operations	1.53	79.47	20.72
Total Annual Aircraft Operations - NAA	**5.14**	**100.44**	**26.54**
Aircraft Fugitive Dust	-	-	42.36
Tactical Vehicles	5.29	64.39	2.33
Tactical Support Equipment	1.50	17.20	0.66
Tactical Vehicle/Equipment Fugitive Dust	-	-	565.25
Ordnance	1.82	0.28	-
Ordnance Fugitive Dust	-	-	1.30
Personnel On-Road Communting	0.05	1.84	0.02
2012 Baseline Emissions (minus aircraft operations)	**37.69**	**415.64**	**6,631.84**
Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.90	-0.93	-141.59
Total Training Emissions - NAA	**49.59**	**598.86**	**7,128.71**
Difference	**-79.46**	**-92.21**	**-51.11**

Table H-5. General Conformity Analysis for the Preferred Alternative

	Tons/yr		
Activity	**VOC**	**NOx**	**PM_{10}**
Total Training Emissions with implementation of the 2012 PA (Emissions Envelope)	**129.05**	**691.07**	**7,179.82**
Annual EAF Operations	3.22	21.65	6.10
Annual Airspace Operations	1.53	79.47	20.72
Total Annual Aircraft Operations - Alt 1	**4.75**	**101.12**	**26.82**
Aircraft Fugitive Dust	-	-	42.36
Tactical Vehicles	5.29	64.39	2.33
Tactical Support Equipment	1.50	17.20	0.66
Tactical Vehicle/Equipment Fugitive Dust	-	-	565.25
Ordnance	1.82	0.28	-
Ordnance Fugitive Dust	-	-	1.30
Personnel On-Road Communting	0.05	1.84	0.02
2012 Baseline Emissions (minus aircraft operations)	**37.69**	**415.64**	**6,631.84**
Reduction Associated with Implementing 2012 Final EIS Preferred Alternative	-1.90	-0.93	-141.59
Total Training Emissions - Alt 1	**49.20**	**599.54**	**7,128.99**
Difference	**-79.85**	**-91.53**	**-50.83**

Table H-6. Airspace Ops - NAA and PA

Data used from:
Noise Study Table 6. No Action Alternative Annual Airspace Sorties

Low Altitude						All Altitudes (for GHGs)				
Aircraft	R-2501 A/B/C/D/E and Sundance MOA	Bristol MOA/ATCAA	Turtle MOA/ATCAA (Not originating at the Combat Center)	Time (min)/sortie	Total time (hrs)	Time (min)/sortie	Total time (hrs)			
	Total	Total	Total							
AV-8B (moved to F-35)	0	0	0	0	0	-	-			
FA-18	1,001	701	1,200	62	176	90	4,353			
F-35	929	651	800	62	164	90	3,570	1580	total sorties	158 sorties
AH/UH-1	2,241	456	-	90	4,046	90	4,046			
CH-53	682	43	-	90	1,088	90	1,088			
MV-22	637	71	-	80	944	80	944			
KC-130	100	256	400	0	-	180	2,268	756	total sorties	
Joint AR		71	-	0	-	240	284			

UAS not included due to large number of UAS being small battery-operated units

Noise Study Table 8. Combat Center SUA Alternative 1 Annual Airspace Sorties
Proposed Action

Low Altitude Flight							All Altitudes (for GHGs)					
Aircraft	R-2501A/B/C/D/E R-2509A/B/C/D(6) Sundance MOA/ATCAA Johnson Valley MOA/ATCAA	Bristol MOA/ATCAA CAX MOA/ATCAA	Turtle Low MOA	Turtle MOA/ATCAA (Not originating at the Combat Center)	Time (min)/sortie	Total time (hrs)	Time (min)/sortie	Total time (hrs)				
	Total	Total		Total								
FA-18	681	285	95	1,200	62	110	90	3,347				
F-35	1,249	1067	58	400	62	246	90	4,134	2,316	sorties		237
AH/UH-1	2,241	456		-	90	4,046	90	4,046		Calc for ACAM (KC-130)		
CH-53	682	43		-	90	1,088	90	1,088		2,641	hrs total	
MV-22	637	71		-	80	944	80	944		158,436	minutes total	
KC-130	220	256	21	400	18	6.3	180	2,634		181	minutes for 876 ops	
Joint AR	20	71	18	-	24	7.2	240	371		Calc for ACAM (KC-10)		
										378	hrs total	
										22704	minutes total	
										249	minutes for 91 ops	

UAS not included due to large number of UAS being small battery-operated units

Emissions Calculations

Table H-7. Emissions for Criteria Pollutants - No Action Alternative

[1]Flight Operation	[1]Total Hr/yr below 3K	# Engines	Total Pounds/hr: Fuel used lb/hr	[1]VOC	CO	NOx	SO2	$PM_{10/2.5}$	CO2e	Total Tons/yr: VOC	CO	NOx	SO2	$PM_{10/2.5}$	references	
F-18 C/D	176	2	7,870	4.62	19.20	53.04	2.91	50.04	24,822	0.41	1.69	4.67	0.26	4.41	9933E	For all SO2: 2012-01 Revision H
F-35	164	1	-	-	-	-	-	-	-	0.00	0.79	24.30	1.41	1.73	ACAM	
F-16	0	1	9,679	20.1	8.3	332.2	10.36	8.8	31,108	0.00	0.00	0.00	0.00	0.00		
AH-1	2,023	2	850	0.55	8.96	4.72	0.31	3.57	2,734	0.56	9.06	4.77	0.32	3.61	9824C	For SO2: 2012-01 Revision H
UH-1	2,023	1	692	0.10	0.70	4.01	0.23	2.91	1,955	0.10	0.71	4.06	0.23	2.94	9904C	search and rescue
CH-53E	1,088	3	4,464	0.81	9.5	36.1	1.65	9.9	14,380	0.44	5.17	19.63	0.90	5.38	9822D	
MV-22	944	2	3,540	0.04	2.13	46.70	1.31	5.60	11,363	0.02	1.00	22.04	0.62	2.64	9965C	
									Total	**1.53**	**18.42**	**79.47**	**3.73**	**20.72**		

[1] Recommended Best Practice for Quantifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines, EPA 2009.

Table H-8. Emissions for Criteria Pollutants - Proposed Action Alt 1

[1]Flight Operation	[1]Total Hr/yr below 3K	# Engines	Total Pounds/hr: Fuel used lb	VOC	CO	NOx	SO2	$PM_{10/2.5}$	CO2e	Total Tons/yr: VOC	CO	NOx	SO2	$PM_{10/2.5}$	references	
F-18 C/D	110	2	7,870	5	19	53	3	50	24,822	0.25	1.05	2.91	0.16	2.75	9933E	For all SO2: 2012-01 Revision H
F-35	246	1	-	-	-	-	-	-	-	0.00	1.18	36.40	2.11	2.60	ACAM	
AH-1	2,023	2	850	0.55	8.96	4.72	0.31	3.57	2,734.47	0.56	9.06	4.77	0.32	3.61	9824C	For SO2: 2012-01 Revision H
UH-1	2,023	1	692	0.10	0.70	4.01	0.23	2.91	1,955	0.10	0.71	4.06	0.23	2.94	9962B	search and rescue
CH-53E	1,088	3	4,464	0.81	9.50	36.10	1.65	9.90	14,380	0.44	5.17	19.63	0.90	5.38	9822D	
MV-22	944	2	3,540	0.04	2.13	46.70	1.31	5.60	11,363	0.02	1.00	22.04	0.62	2.64	9965C	
									Total	**1.37**	**18.17**	**89.81**	**4.33**	**19.93**		

[1] Recommended Best Practice for Quantifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines, EPA 2009.

Table H-8. Emissions for GHGs - No Action Alternative - entire sortie period in airspace

[1]Flight Operation	Total sortie Hr/yr	# Engines	Fuel used lb	Total lb/hr CO2e	Total tons/yr CO2e	
F-18 C/D	4,353	2	7,870	24,822	54,025	
F-35	3,570	1	-	-	61,209	ACAM
AH-1	2,023	2	850	2,734	2,766	
UH-1	2,023	1	610	1,955	1,977	
CH-53E	1,088	3	4,464	14,380	7,819	
MV-22	944	2	3,540	11,363	5,364	
KC-130	2,268	4	-	-	31,146	
KC-10	284	3	-	-	21,466	ACAM
				Total airspace operations	185,771	
				EAF Ops	7,969	
				Total for all aircraft operations	**193,740**	**175,758** metric tons

Table H-9. Emissions for GHGs - Proposed Action - entire sortie period in airspace

[1]Flight Operation	Total sortie Hr/yr	# Engines	Fuel used lb	Total lb/hr CO2e	Total tons/yr CO2e	
F-18 C/D	3,347	2	7,870	24,822	41,544	
F-35	4,134	1	-	-	105,217	ACAM
AH-1	2,023	2	850	2,734	2,766	
UH-1	2,023	1	610	1,955	1,977	
CH-53E	1,088	3	4,464	14,380	7,819	
MV-22	944	2	3,540	11,363	5,364	
KC-130	2,641	4	-	-	36,291	ACAM
KC-10	378	3	-	-	28,544	ACAM
				Total airspace operations	229,521	
				EAF Ops	8,186	
				Total	**237,707**	**215,644** mtons

39,886 797,717
20.59%

Table H-10. Airspace Ops - Existing Conditions

Data used from:

Noise Study Table 2. Existing Annual Airspace Sorties

Low Altitude						All Altitudes (for GHGs)		
Aircraft	**R-2501 A/B/C/D/E and Sundance MOA**	**Bristol MOA/ATCAA**	**Turtle MOA/ATCAA (Not originating at the Combat Center)**	**Time (min)/sortie**	**Total time (hrs)**	**Time (min)/sortie**	**Total time (hrs)**	
	Total	Total	Total					
AV-8B	608	426	400	54	93	78	1,864	
FA-18	1,001	701	1,200	62	176	90	4,353	
F-35	321	225	400	62	56.51	90	1,419	946 total sorties
AH/UH-1	2,241	456	-	90	4,046	90	4,046	
CH-53	682	43	-	90	1,088	90	1,088	
MV-22	637	71	-	80	944	80	944	
KC-130	100	256	400	0	-	180	2,268	756 total sorties
Joint AR		71	-	0	-	240	284	

UAS not included due to large number of UAS being small battery-operated units

Existing Emissions Calculations

Table 11. Emissions for Criteria Pollutants - Exsiting Conditions

[1]Flight Operation	[1]Total Hr/yr below 3K	# Engines	Total Pounds/hr: Fuel used lb/hr	[1]VOC	CO	NOx	SO2	$PM_{10/2.5}$	CO2e	Total Tons/yr: VOC	CO	NOx	SO2	$PM_{10/2.5}$	references	
F-18 C/D	176	2	7,870	4.62	19.20	53.04	2.91	50.04	24,822	0.41	1.69	4.67	0.26	4.41	9933E	For all SO2: 2012-01 Revision H
F-35	57	1	-	-	-	-	-	-	-	0.00	0.27	8.46	0.49	0.60	ACAM	
AV-8B	93	1	9,442	3.80	33.98	119.90	3.78	23.60	29,756	0.18	1.58	5.56	0.18	1.09	9963C	Day low level flying
AH-1	2,023	2	850	0.55	8.96	4.72	0.31	3.57	2,734	0.56	9.06	4.77	0.32	3.61	9824C	For SO2: 2012-01 Revision H
UH-1	2,023	1	692	0.10	0.70	4.01	0.23	2.91	1,955	0.10	0.71	4.06	0.23	2.94	9904C	search and rescue
CH-53E	1,088	3	4,464	0.81	9.5	36.1	1.65	9.9	14,380	0.44	5.17	19.63	0.90	5.38	9822D	
MV-22	944	2	3,540	0.04	2.13	46.70	1.31	5.60	11,363	0.02	1.00	22.04	0.62	2.64	9965C	
									Total	**1.70**	**19.48**	**69.19**	**2.98**	**20.68**		

[1] Recommended Best Practice for Quantifying Speciated Organic Gas Emissions from Aircraft Equipped with Turbofan, Turbojet, and Turboprop Engines, EPA 2009.

Table 12. Emissions for GHGs - Exsiting Conditions - entire sortie period in airspace

[1]Flight Operation	Total sortie Hr/yr	# Engines	Fuel used lb	Total lb/hr CO2e	Total tons/yr CO2e	
F-18 C/D	4,353	2	7,870	24,822	54,025	
F-35	1,419	1	-	-	21,152	ACAM
AV-8B	1,864	1	9,442	29,756	27,736	
AH-1	2,023	2	850	2,734	2,766	
UH-1	2,023	1	692	1,955	1,977	
CH-53E	1,088	3	4,464	14,380	7,819	
MV-22	944	2	3,540	11,363	5,364	
KC-130	2,268	4	-	-	31,146	ACAM
KC-10	284	3	-	-	21,466	ACAM
				Total airspace operations	173,450	
				EAF Ops	7,969	
				Total for all aircraft operations	**181,419**	**164,581** metric tons

Table 13. Data from ACAM

Existing

Existing F-35B from ACAM

Pollutant	Emissions Per Year (TONs)
VOC	0
CO	0.27
NO_x	8.46
SO_x	0.49
PM 10	0.60
PM 2.5	0.54

Existing F-35B GHGs
21,152

Existing KC-130 GHG
31,146

Exsiting KC-10 GHG
21,466

NAA

NAA F-35B from ACAM

Pollutant	Emissions Per Year (TONs)
VOC	0
CO	0.79
NO_x	24.30
SO_x	1.41
PM 10	1.73
PM 2.5	1.56

NAA F-35B GHGs
61,209

NAA KC-130 GHG
31,146

NAA KC-10 GHG
21,466

ALT 1

ALT 1 Low Altitude F-35B from ACAM

Pollutant	Emissions Per Year (TONs)
VOC	0
CO	1.18
NO_x	36.4
SO_x	2.11
PM 10	2.6
PM 2.5	2.34

F-35 All Altitudes GHGs
105,217

KC-130 All Altitude GHGs
36,291

KC-10 flight for GHGs
28,544

Appendix I
Biological Resources

This page intentionally left blank.

1.1 Introduction

This appendix provides additional details on biological resources in support of an Environmental Assessment (EA) for the proposed establishment of new permanent Special Use Airspace (SUA) and modification of existing SUA associated with the Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center" or the "installation"). Biological resources include plant and animal species, and the habitats within which they occur. The information in this appendix is focused on wildlife in the biological resources region of influence (ROI) in support of affected environment and environmental consequences presented in Sections 3.4 and 4.2.4 of the EA.

1.2 Wildlife

1.2.1 Overview

Numerous vertebrate and invertebrate species have been recorded or have the potential to occur in the ROI. Wildlife species at the Combat Center, and neighboring lands in the ROI, are typical of Mojave Desert fauna with the exception of a wide variety of species only found to occur at the golf course or sewage ponds at Mainside, including the California toad, desert cottontail, common raccoon, and 126 species of primarily migrant birds (Cutler et al. 1999). Much of the analysis for biological resources presented below is based on survey/report information for the Combat Center, with the assumption that the neighboring lands in the ROI contain similar species and resources.

As is typical of most desert systems, large mammal species (e.g., bobcat, coyote, desert bighorn sheep) are uncommon and widely dispersed. Small mammals (e.g., round-tailed ground squirrel, kangaroo rat) and reptiles (e.g., side-blotched lizard, desert horned lizard) are highly suited to harsh desert conditions and are much more common but are often secretive, nocturnal, or active for only short periods of the year. Birds are among the most conspicuous species, usually occurring in greatest concentration in the vicinity of washes and springs where more structures and complex vegetative assemblages occur. With some exceptions, wildlife species (such as birds and larger mammals) are generally more mobile and not limited to a single habitat type. Some species (e.g., fish, amphibians, and some reptiles and mammals) are highly suited to one habitat type and restricted to these specialized areas (Combat Center 2018).

Wildlife species found at the Combat Center include 2 amphibian, 28 reptile, 41 mammal, and 211 bird species (University of California, Riverside 1993; Fromer and Dodero 1982; Brown and Berry 1998; Cutler et al. 1999; Circle Mountain Biological Consultants 2010; LaRue 2013; Stepek et al. 2013). The most recent wildlife surveys at the Combat Center were conducted in 2013 at sites that were widely distributed in training areas across the Combat Center (LaRue 2013; Stepek et al. 2013). The majority of species that were identified in the survey are commonly observed on the Combat Center. The results are representative of the areas within the ROI and are summarized below.

Up to 87 resident bird species (i.e., those that spend the entire year, breeding season, or winter months at the Combat Center) have been identified at the Combat Center, with the remainder of species being migrants or vagrants (Cutler et al. 1999; Circle Mountain Biological Consultants 2010; LaRue 2013). Birds are among the most commonly seen species at the Combat Center and occur throughout the installation. With no known perennial seeps or springs on the Combat Center, most bird sightings occur in developed areas of Mainside, including the golf course and wastewater treatment ponds.

Special consideration is given to bird species protected under the Migratory Bird Treaty Act (MBTA) and Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*. The MBTA provides for the protection of designated birds excluding non-native species such as the English house

sparrow, European starling, and the rock dove. Otherwise, all native bird species that occur on the Combat Center are protected under the MBTA. The MBTA prohibits many actions that may have negative effects on migratory birds, most notably the killing, collection, or transport of birds. The Combat Center maintains plans and actions to comply with the MBTA and Executive Order 13186 while meeting mission objectives.

1.2.2 Special Status Species

Special status animal species that are known to occur within the ROI are listed in Table 3.4-1 of the EA. Species observation data is shown on Figure 3.4-1 of the EA. Many of these species are migratory or seasonal residents that tend to occur at or near anthropogenically created water sources. Under the Proposed Action, no ground disturbing activities would occur and plant communities would not be impacted by the project. Additionally, the Proposed Action would not have any measurable impact on fish species. Therefore, fish and plant communities are not discussed further in this EA.

The endangered Yuma Ridgway's rail (*Rallus obsoletus yumanensis*) has only been documented in the ROI at the north end of Lake Havasu (California Department of Fish and Wildlife [CDFW] 2019).

The Monarch Butterfly (*Danaus plexippus*) is found infrequently at or near the Combat Center and is a candidate for Endangered Species Act listing as threatened. It may fly at altitudes exceeding 300 meters (Gibo and Pallett 1979), but many may remain much closer to the ground (Brower et al. 2011) where critical food plants (e.g., milkweed [*Asclepias* spp.]) occur. Overwintering clusters of the monarch butterfly coincide with the least hazardous vertical temperatures in the Oyamel Forest (Brower et al. 2011). The United States Fish and Wildlife Service (USFWS) and Department of Defense are developing a Species Action Plan under a Recovery and Sustainment Partnership for Monarch Butterflies.

The threatened Agassiz's desert tortoise (*Gopherus agassizii*) (hereafter 'desert tortoise') is the only resident Endangered Species Act-listed species documented throughout the ROI and is described in further detail below.

The desert tortoise was listed as threatened by the State of California in 1989, and the Mojave Desert population (all tortoises north and west of the Colorado River in Arizona, Utah, Nevada, and California), now known as Agassiz's desert tortoise, was federally listed as threatened by the USFWS in 1990. Desert tortoises on the Combat Center occur predominantly in creosote scrub habitat at elevations below 4,300 feet (1,311 meters) above mean sea level. The desert tortoise spends much of the year underground to avoid extreme temperatures during summer and winter, with most above ground activity occurring in spring, summer, and autumn when daytime temperatures are below 90 degrees Fahrenheit (Combat Center 2018; MAGTFTC 2023; USFWS 2023).

The Combat Center is within the southern Mojave subdivision of the Western Recovery Unit for the desert tortoise. The Combat Center contains no designated critical habitat. However, it shares a 6-mile boundary with the Ord-Rodman Critical Habitat Unit to the northwest, and the Pinto Mountain Critical Habitat Unit is 6 miles southeast of the installation (Combat Center 2018).

In 2014, estimated adult desert tortoise density in the Western Mojave Recovery Unit ranged from 6.5 to 12.2 individuals per square mile, with an overall average density of 7.3 tortoises per square mile, the result of an overall downward trend in the population of adult tortoises (Allison and McLuckie 2018). More recently, 2020 surveys estimated desert tortoise density in the Western Mojave Recovery Unit to range from 2.6 to 7.6 individuals per square mile (Allison 2022). The low tortoise density in the Western Mojave Recovery Unit in general is of particular concern as the USFWS has determined that the minimum adult tortoise density necessary to sustain a viable population is 10 adults per square mile (USFWS 1994, 2016).

To offset the impacts from ongoing training and protect natural and cultural resources, two biological resources Restricted Areas (*Note*: this is different from an airspace "RA"), which have moderate to high densities of desert tortoises, were established in the Sandhill Training Area (approximately 6,672 acres) and in the Bullion Training Area (approximately 5,483 acres) (Department of the Navy 2017). Both of these biological resources RAs occur underneath the existing R-2501D airspace. Desert tortoises benefit from these biological resources RA designations, as training is restricted in these areas. Desert tortoises also receive some degree of protection near the edges of the Combat Center because live-fire activities are not permitted within approximately 3,280 feet (1,000 meters) of their boundaries (MAGTFTC 2023). In addition to establishing biological resources Ras, the Combat Center maintains a Desert Tortoise Recovery and Sustainment Partnership with the USFWS as the means for prioritizing tortoise conservation off-installation (where high value returns are available) and decrease low value efforts for most areas of MCAGCC because of the low densities of tortoises.

1.2.2.1 Other Federally Listed Species

The western snowy plover (*Charadrius alexandrinus nivosus*), willow flycatcher (*Empidonax traillii*), and Bell's vireo (*Vireo bellii*) are uncommon migrants that have been observed at water sources and landscaped areas associated with Mainside and adjacent training areas (Cutler et al. 1999; Combat Center 2018). The subspecies/populations of these three birds are very difficult to distinguish outside of their breeding habitat, and observations at the Combat Center have only identified these birds to the species level (Combat Center 2018). All subspecies of willow flycatcher are state listed as endangered, but only the southwestern subspecies (*Empidonax traillii extimus*) is federally listed as endangered. The Pacific coast population of the western snowy plover is federally listed as threatened, while both the coastal and interior populations are California species of special concern. There are two subspecies of Bell's vireo known to occur in California, but only the least Bell's vireo (*Vireo bellii pusillus*) is federally and state listed as endangered.

1.2.2.2 Other Special Status Species

Other special status species that have the potential to be impacted by the Proposed Action are described below.

Burrowing Owl

The burrowing owl is a California species of special concern and lives in dry, open areas with no trees and short grass. The Combat Center continues to monitor burrowing owl populations and their habitat (Combat Center 2018). As shown on Figure 3.4-1 of the EA, burrowing owls generally occur sporadically throughout the ROI.

Golden Eagle

The golden eagle is protected under the Bald and Golden Eagle Protection Act, is a USFWS Bird of Conservation Concern, and is a fully protected species in California. Golden eagles require relatively inaccessible cliff dwellings in steep, rugged terrain. LaRue (2013) observed 11 golden eagles between March 15 and June 28, 2011, including three in Quackenbush, two in Noble Pass, and one each in Sunshine Peak, Maumee Mine, Gypsum Ridge, Blacktop, West, and Bullion Training Areas. Golden eagle surveys conducted in 2012 and 2013 found that golden eagle nesting activity was concentrated in the west-northwest area of the Combat Center; no nesting was documented in the eastern portions. In addition to this concentration of nesting in the more western regions of the Combat Center, there was also a considerable variation in eagle breeding activity between the 2012 and 2013 seasons. Of the five active territories that were located during 2012, only one territory attempted nesting in 2013 (MAGTFTC 2014). The San Diego

Natural History Museum is performing golden eagle surveys in 2023 and 2024 to determine the number, location, and productivity of golden eagle nests (Combat Center 2024).

Prairie Falcon

The prairie falcon is a California watch-listed species and breeds from Canada south through the western half of the U.S. into Mexico and winters throughout its breeding range. Prairie falcon habitat includes sagebrush, desert, prairie, some agricultural fields, and alpine meadows up to about 11,000 feet (3,353 meters) elevation (Cornell Laboratory of Ornithology 2019). Prairie falcons usually nest in a scrape on a sheltered ledge of a cliff overlooking a large, open area, and are found throughout the western Mojave Desert (CDFW 2010). Prairie falcons reside at the Lead Mountain Training Area on the Combat Center (Cutler et al. 1999), are expected to be residents as well as winter visitors on the Combat Center, were observed 32 times by LaRue (2013) and were the most commonly observed special status raptor species during LaRue's study. Human disturbance at certain prairie falcon nest sites is a threat. Urbanization surrounding an area historically occupied by falcons gradually degrades the foraging habitat and increases disturbance at nest sites. New mining projects also occasionally threaten certain nest sites.

Mojave Fringe-toed Lizard

The Mojave fringe-toed lizard is a California species of concern. Its habitat is restricted to areas ranging from 300–3,000 feet (91–914 meters) in elevation and must contain fine windblown sand, such as dunes on the margins of dry lakebeds, desert washes and hillsides. As shown on Figure 3.4-1 of the EA, the largest areas on the Combat Center occupied by Mojave fringe-toed lizards are in the Emerson Lake and Acorn Training Areas. Smaller occupied areas occur in the central Lavic Lake, southeastern Quackenbush, northeastern Gypsum Ridge, eastern West, southeastern Delta, northern Lead Mountain, and central East Training Areas; some individuals have been seen on asphalt roads south of Camp Wilson (Brian Henen, pers. obs.). This species is highly vulnerable to OHV activity and the establishment of windbreaks that affect how windblown sand is deposited (Nafis 2019). The Combat Center continues its objectives to monitor Mojave fringe-toed lizard populations and the condition of their habitat, minimize mortality and injury from off-road maneuvers, and maintain a proactive management program (Combat Center 2018).

Desert Bighorn Sheep

In 1991, as part of a reintroduction program, the CDFW and the Combat Center relocated 20 desert bighorn sheep (5 rams and 15 ewes) to the Bullion Mountains on the Combat Center. The Combat Center, CDFW, and the Society for the Conservation of Bighorn Sheep have formed a partnership for the monitoring of this population. Surveys in 2016 estimated the population to be 36 individuals, with updated results expected in 2024 (Combat Center 2024). The population is believed to be stable and the Combat Center and CDFW have plans to jointly monitor the status, distribution, and abundance of the installation's bighorn sheep (Combat Center 2024)

1.3 References

Allison, L. 2022. Range-wide monitoring of the Mojave Desert Tortoise (Gopherus agassizii): 2020 annual reporting. Desert Tortoise Recovery Office, U.S. Fish and Wildlife Service, Reno, Nevada. 36 pp.

Allison, L.J. and A.M. McLuckie. 2018. Population trends in Mojave Desert tortoises (*Gopherus agassizii*). *Herpetological Conservation and Biology* 13(2):433–452.

Brower, L.P, E.H. Williams, L.S. Fink, D.A. Slayback, M.I. Ramirez, M.V. Garcia, R.R. Zubieta, S.B. Weiss, W.H. Calvert and W. Zuchowski. 2011. Overwintering clusters of the monarch butterfly coincide with the least hazardous vertical temperatures in the Oyamel Forest. *Journal of the Lepidopterists' Society* 65: 27-46.

Brown, P. and R. Berry. 1998. Bat Survey at Marine Corps Air Ground Combat Center, Twentynine Palms, California. Draft unpublished report. 19pp.

CDFW. 2010. Species Explorer Details for Prairie Falcon. Updated on 11 March 2010. Available at: https://nrm.dfg.ca.gov/taxaquery/SpeciesDetail.aspx?taxonid=878&STitle=Falco+mexicanus&PTitle=prairie+falcon.

CDFW. 2019. California Natural Diversity Database Species Observations. California Department of Fish and Wildlife. Accessed on June 25, 2019.

Circle Mountain Biological Consultants. 2010. Final Biological Resources Survey Report: 81 Aerial Maneuver Zone (AMZ) Sites at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center (MAGTFTC, MCAGCC), Twentynine Palms, California, San Bernardino County, California. March.

Combat Center. 2018. Integrated Natural Resources Management Plan, Fiscal Years 2018 through 2022. Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, CA.

Combat Center. 2024. Integrated Natural Resources Management Plan. Marine Air Ground Task Force Training Command Marine Corps Air Ground Combat Center.

Cornell Laboratory of Ornithology. 2019. All About Birds: Prairie Falcon. https://www.allaboutbirds.org/guide/Prairie_Falcon/overview. Accessed on May 7, 2019.

Cutler, T.L., D.J. Griffin, and P.R. Krausman. 1999. A Wildlife Inventory and Management Recommendations for the Marine Corps Air Ground Combat Center, Twentynine Palms, California. Prepared for Department of the Navy. April.

Department of the Navy. 2017. Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. Prepared by Cardno under the direction of MAGTFTC, MCAGCC Twentynine Palms, and NAVFAC Southwest. January.

Fromer, Jr., P.S. and M. Dodero. 1982. Twentynine Palms Marine Corps Air Ground Combat Center Reptile Inventory.

Gibo, D.L. and M.J. Pallett. 1979. Soaring flight of monarch butterflies, *Danaus plexippus* (Lepidoptera: Danaidae), during the late summer migration in southern Ontario. Canadian Journal of Zoology 57: 1393-1401.

LaRue, Edward L. Jr. 2013. Vertebrate Inventory, Human Impacts Analysis, and Management Recommendations for the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California.

MAGTFTC. 2014. Golden Eagle (*Aquila chrysaetos canadensis*) Surveys at Marine Corps Air Ground Combat Center (MCAGCC), Twentynine Palms, California. Draft Project Summary Report. Prepared for NREA, MCAGCC Twentynine Palms, CA by BioResource Consultants, Ojai, CA. October.

MAGTFTC. 2023. Supplemental Environmental Assessment for Ongoing and Future Military Training, Support Operations, and Resource Management at the Marine Corps Air Ground Combat Center. June 2023.

Nafis, G. 2019. California Herps - A Guide to the Amphibians and Reptiles of California Mohave Fringe-toed Lizard - *Uma scoparia.* Available at: http://www.californiaherps.com/lizards/pages/u.scoparia.html. Accessed on May 7, 2019.

Stepek, M.A., S.B. Tremor, L. Hargrove, D.C. Stokes, and B.D. Hollingsworth. 2013. Vertebrate Inventory of the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California. June.

University of California, Riverside. 1993. Marine Corps Air Ground Combat Center Natural Resources Management Plan, 1992. Departments of Earth Science and Botany and Plant Sciences, Riverside, CA. Prepared for Marine Corps Air Ground Combat Center, Twentynine Palms, CA through Naval Facilities Engineering Command, Southwestern Division, San Diego, CA. 16 pp + app.

USFWS. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, OR. Available at: U.S. Fish and Wildlife Service website.

USFWS. 2016. Summary of U.S. Fish and Wildlife Service Translocation Guidance for the Marine Corps Air Ground Combat Center Land Acquisition, Twentynine Palms, California. September 12, 2016. U.S. Fish and Wildlife Service, Palm Springs, CA.

USFWS. 2023. Biological Opinion for the Recovery and Sustainment Partnership Initiative and Ongoing and Future Military Training Activities and Support Operations at the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California. 64 pp.

Appendix J
Land Use and Recreation

This page intentionally left blank.

1.1 Introduction

This appendix provides additional details on land use and recreation in support of an Environmental Assessment (EA) for the proposed establishment of new permanent Special Use Airspace (SUA) and modification of existing SUA associated with the Marine Air Ground Task Force Training Command (MAGTFTC), Marine Corps Air Ground Combat Center, Twentynine Palms, California (hereinafter, the "Combat Center" or the "installation"). Land use refers to the various ways in which land might be used or developed (i.e., military training, parks and preserves, agriculture, commercial), the kinds of activities allowed (i.e., residences, hiking, off highway vehicle [OHV] use), and the type and size of structures permitted (i.e., towers, single-family homes, multi-story office buildings. The information in this appendix is focused on land use and recreation within the region of influence (ROI) in support of affected environment and environmental consequences presented in Sections 3.6 and 4.2.6 of the EA.

1.2 Special Interest Areas

As listed in Table 3.6-1 of the EA, there are several special interest areas within the ROI, including the Mojave Trails National Monument, Amboy Crater, Johnson Valley OHV Area, and 10 wilderness areas. These are described in detail below.

1.2.1 Mojave Trails National Monument

The Mojave Trails National Monument is located north and east of the Combat Center and sits underneath existing and proposed SUA. It encompasses approximately 1.6 million acres of federal lands currently managed by the Bureau of Land Management (BLM) between Barstow and Needles, California (BLM 2019), and contains approximately 358,000 acres of established wilderness areas and 84,400 acres as the Cady Mountains Wilderness Study Area. The monument also protects irreplaceable historic resources including ancient Native American trading routes, World War II-era training camps, and the longest remaining undeveloped stretch of Route 66. The designation preserves and enhances public access, but motorized vehicle use is limited to roads existing as of the date of the proclamation.

The Presidential Proclamation that established the Mojave Trails National Monument does not specify any military airspace restrictions and does not prohibit low-level overflights by military aircraft (Federal Register 2016).

1.2.2 Amboy Crater

Amboy Crater is located near the eastern border of the Combat Center (BLM 2019). Designated a National Natural Landmark in 1973, Amboy Crater was recognized for its visual and geological significance, particularly for volcanic features. Hiking, wildlife viewing, and photography are other examples of recreational activities that occur at Amboy Crater.

1.2.3 Johnson Valley OHV Area

The Johnson Valley OHV Area sits to the west and north of the Combat Center (BLM 2019). The area is a 96,000-acre OHV riding area and approximately 53,000 acres of this is a Shared Use Area with the Combat Center. Recreational activities listed by the BLM include biking, camping, hiking, horseback riding, hunting, recreational vehicles, wildlife viewing, and photography (BLM 2019).

1.2.4 Wilderness Areas

Wilderness Areas are managed in accordance with the Wilderness Act of 1964 to retain their untouched natural state and provide, among other important characteristics, "opportunities for solitude or a primitive and unconfined type of recreation." The Wilderness Act of 1964 prohibits the use of mechanized or

motorized vehicles in wilderness areas, except under special provisions described under the Act. The California Desert Protection Act includes provisions that allow military aircraft to operate over wilderness lands without restrictions or prohibitions (16 U.S. Code sections 410aaa through 410aaa-83, October 31, 1994). Wilderness areas under existing or proposed SUA are listed in Table 3.6-1 of the EA and described in detail in Table J-1 below.

Table J-1 Wilderness Areas Under Existing or Proposed SUA

Area	Description
Bristol Mountains Wilderness	The Bristol Mountains Wilderness contains the tilted and bisected old volcanic plain called Old Dad Mountains and the northern portion of the Bristol Mountains (BLM 2019). The broad Budweiser Wash drains into the eastern portion of the wilderness. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Cadiz Dunes Wilderness	The Cadiz Dunes Wilderness is on State Route 62 and includes a major portion of the Cadiz Dune system and desert shrub lowlands just east of the dunes (BLM 2019). Due to the remote location of these dunes, they received very little OHV use before their designation as wilderness. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Cleghorn Lakes Wilderness	Cleghorn Lakes Wilderness is named for the dry lakes found near its center (BLM 2019). The east portion is mountainous while the west portion is a vast alluvial slope or bajada. Elevations range from 1,400 feet at the desert floor to the rugged Bullion Mountains, which rise more than 4,100 feet across a 4-mile stretch. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Clipper Mountain Wilderness	The Clipper Mountain Wilderness consists of rugged yellow and dark brown, horizontally striped mesas; narrow canyons with hidden springs; and sparsely vegetated alluvial fans (BLM 2019). The small cluster of volcanic mountains is oriented northeast to southwest. In the center, the most prominent ridge, Clipper Mountain, reaches an elevation of 4,625 feet before it dramatically drops off in a series of sharp cliffs overlooking the Clipper and Fenner Valleys. Castle Dome, a local landmark, can be clearly seen from historic Route 66 to the south and east. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
The Old Woman Mountains Wilderness	The Old Woman Mountains Wilderness consists of bajadas, extensive flat aprons of alluvium, and the fault-lifted Old Woman Mountains that extend some 35 miles north-south and up to 28 miles in an east-west direction (BLM 2019). The elevations within the wilderness range from 800 feet in the drainage bottoms to over 5,300 feet at the top of Old Woman Peak. The Old Woman Mountains were the discovery site of the Old Woman Meteorite. This meteorite was discovered in 1975 and is the largest meteorite found in California and the second largest in the U.S. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.

Area	Description
Piute Mountains Wilderness	The northern boundary of the Piute Mountains Wilderness follows historic Route 66 (BLM 2019). This wilderness area consists of the Piute Mountains and the surrounding bajadas and extensive flat aprons of alluvium. The elevations within the wilderness range from 2,000 feet to 4,132 feet. The Piute Mountains form a dramatic landscape of rocks of contrasting colors, textures, and shapes. Very angular, jagged volcanics and rounded, smooth granite hills are cut by numerous canyons and washes. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Sheephole Valley Wilderness	Sheephole Valley Wilderness is located on State Route 62 and contains the basin and range topography typical in the Mojave Desert (BLM 2019). The area consists of the northwest to southeast trending Sheep Hole and Calumet Mountains. The Sheep Hole Mountains rise to an elevation of 4,613 feet, while the Calumets rise to 3,732 feet. Sheephole Valley is located between the two ranges. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Stepladder Mountains Wilderness	The Stepladder Mountains Wilderness is located east of the Combat Center and approximately 17 miles southwest of Needles, California (BLM 2019). The wilderness contains a total of 83,204 acres of land managed by the BLM. It became part of the National Wilderness Preservation System in 1994. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness.
Trilobite Wilderness	The Trilobite Wilderness covers the Marble Mountains, a narrow volcanic range extending 12 miles in a northwest-southwest direction. Hiking, horseback riding, hunting, camping, rock hounding, photography, and backpacking are examples of activities that occur in this wilderness (BLM 2019).
Turtle Mountains Wilderness	The Turtle Mountain Wilderness is located east of the Combat Center just west of Highway 95 (BLM 2019). It contains 177,209 acres and is managed by the BLM. The Turtle Mountain range has been recognized for its natural values and a large portion of the range has been designated as a National Natural Landmark. Camping, hiking, horseback riding, hunting, wildlife viewing, and photography are examples of activities that occur in this wilderness.

Legend: BLM = Bureau of Land Management; OHV = off highway vehicle; U.S. = United States

1.3 References

BLM. 2019. Explore Your Public Lands. Search Areas: Mojave Trails National Monument, Amboy Crater, Johnson Valley OHV Area, Bristol Mountains Wilderness, Cadiz Dunes Wilderness, Cleghorn Lakes Wilderness, Clipper Mountain Wilderness, Old Woman Mountains Wilderness, Piute Mountains Wilderness, Sheephole Valley Wilderness, Stepladder Mountains Wilderness, Trilobite Wilderness, Turtle Mountains Wilderness. Available at: https://www.blm.gov/visit.

Federal Register 2016. Establishment of the Mojave Trails National Monument. Accessed on August 22, 2024.

This page intentionally left blank.

Appendix K
Relevant Past, Present, and/or Reasonably Foreseeable Future Actions

This page intentionally left blank.

Table K-1 Relevant Past, Present, and/or Reasonably Foreseeable Future Actions

Project	Relevant Details	Status
Project 1: West Coast Basing of the F-35B	Proposed Action. An EIS was prepared to analyze potential impacts from the proposed West Coast basing of 184 F-35B aircraft. The F-35B aircraft would replace 126 legacy FA-18A/B/C/D Hornet and 56 AV-8B Harrier aircraft in the Third Marine Air Wing and Fourth Marine Air Wing. The EIS addressed five action alternatives for basing, and the No-Action Alternative, none of which are at the Combat Center. However, the action includes occasional use of airspace overlaying the Combat Center: R-2501, Bristol MOA/ATCAA, and Sundance MOA. The frequency of airspace use would be equivalent to or less than current use by the aircraft that would be replaced by the F-35B. The Notice of Intent was published in the Federal Register on January 15, 2009, and the public comment period on the Draft EIS occurred from May 21 to July 6, 2010. The NOA for the Final EIS was published in the Federal Register on October 22, 2010 (DON 2010) with a ROD signed on December 15, 2010. Relevancy. Use of Combat Center/regional airspace.	Past
Project 2: West Coast Basing of the MV-22	Proposed Action. West Coast Basing of the MV-22 Osprey tilt-rotor (MV-22) aircraft would require construction of expanded apron space and hangar upgrades at Marine Corps Air Station Miramar and Marine Corps Air Station Camp Pendleton. The Marine Corps estimates these MV-22s would fly about 3,900 operations annually at the Twentynine Palms Expeditionary Airfield and in the associated airspaces, replacing transient helicopter traffic. Transition from the helicopters to the MV-22 is scheduled to occur between 2010 and 2020. A Final EIS was prepared for this action with a ROD signed on November 19, 2009 (DON 2009). Relevancy. Use of Combat Center/regional airspace.	Past
Project 3: Aerial Maneuver Zones for MV-22 and Rotary-Wing Training	Proposed Action. An EA has been completed to analyze the impacts associated with the use of aerial maneuver zones by MV-22 aircraft and rotary-wing aircraft at the Combat Center. Under the Proposed Action, up to eight MV-22 aircraft squadrons (12 aircraft per squadron) would be integrated into the existing/ongoing tactical and ground training activities. Established SUA would not be expanded or modified with implementation of the Proposed Action. The EA addressed two action alternatives and the No-Action Alternative. Resources evaluated for impact include biological resources, cultural resources, air quality, and noise. The FONSI for this project was signed in May 2010. Relevancy. Use of Combat Center airspace.	Past
Project 4: Land Acquisition/Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training	Proposed Action. As described in Section 1.4.3, an EIS (“2012 Final EIS”) was prepared to evaluate the impacts from the proposed extension of existing installation operating areas through acquisition of additional training lands, modification and establishment of military SUA, and implementation of MEB-level sustained, combined-arms, live-fire, and maneuver training exercises within current and proposed operating areas at the Combat Center. Proposed training activities	Past/Present

Project	Relevant Details	Status
	would occur within existing training areas and within proposed land acquisition areas located along the border of the Combat Center. The expansion areas are located to the west, south, and east of the Combat Center. Major resource areas of concern included biological resources, cultural resources, air quality, socioeconomics, recreation, land use, health and safety, and airspace management. A Final EIS was published in July 2012 (DON 2012). The ROD concluded that there would be a significant impact on the desert tortoise; however, it would not result in jeopardy of the species (DON 2013). Upon conclusion of Endangered Species Act section 7 consultations, the USFWS concluded in the 2012 Land Acquisition BO that take would occur due to military operations and concentrated OHV usage in the Johnson Valley area (USFWS 2012). The 2013 ROD committed the Marine Corps to various measures to protect resident desert tortoises by moving them from areas where they would be exposed to impacts from the MEB training to nearby areas that would not be affected by the MEB training. The approach to translocation of the desert tortoises had changed over time due to various factors and new information. The Combat Center prepared a Supplemental EIS for implementing a Desert Tortoise Translocation Program and to analyze these changes. As part of this analysis, the USFWS issued a revised BO (USFWS 2017). The Combat Center conducted desert tortoise translocation in April 2017. Relevancy. Airspace modification/establishment and aircraft operations.	
Project 5: 2018 Ongoing Training at the Combat Center	Proposed Action. An EA was prepared in 2018 to evaluate the potential environmental impacts associated with the proposed expansion of landing zones within existing training areas to support ongoing training activities at the Combat Center. The EA also analyzed impacts associated with the use of current and future technologies, tactics, and equipment. The EA is needed to enhance training capabilities and flexibility to ensure that Marines can conduct the training necessary for mission and battlefield readiness. Based on the results of the analysis, it was determined that there would be no significant impacts on the environment with implementation of the Proposed Action. A FONSI was signed for the EA on February 9, 2018 (DON 2018). Relevancy. Use of Combat Center airspace.	Past
Project 6: 2003 and 2023 Ongoing Training at the Combat Center	Proposed Action. Historically, in 2003 the Programmatic EA addressed ongoing and future training at the combat center at that time (DON 2003). In 2012, proposed changes to training were captured in the 2012 Final EIS (Project 4). Since then, a supplemental EA was prepared in 2023 to evaluate the continuation of ongoing actions, changes to ongoing actions, and future actions related to training activities at the Combat Center that evolved since the 2012 Final EIS. Based on the results, it was determined that a Mitigated FONSI was appropriate because the 2023 Supplemental EA relies on prior effects analyses, including the 2012 Final EIS (Project 4) that addressed the land expansion with some significant impacts; the past disclosed effects would continue to occur into the future as part of ongoing actions (e.g., military training activities that occur); MAGTFTC is	Past/Present

Project	Relevant Details	Status
	offering improved and increased desert tortoise and cultural resource mitigation to better address and resolve past, present, and future effects; and climate change reduction efforts by the DON, Marine Corps, and MAGTFTC would lead to reductions in Combat Center criteria air pollutant and greenhouse gas emissions. A Mitigated FONSI was signed for the EA on June 23, 2023 (MAGTFTC 2023). Relevancy. Use of Combat Center airspace.	
Project 7: Temporary Special Use Airspace to Support Large-Scale Exercises at the Combat Center	Proposed Action. The Combat Center submitted three temporary SUA proposals to the FAA from 2016–2020 and the Combat Center obtained approval for temporary SUA from the FAA to support an LSE in 2017. The intent was to seek temporary SUA for MEB-sized exercises/LSEs at the Combat Center while approval of a permanent SUA is being coordinated with the FAA (i.e., the Proposed Action in this EA). If and once permanent SUA is approved for the Combat Center, the temporary SUA would no longer be needed. Relevancy. Use of Combat Center/regional airspace	Past
Project 8: Mojave Trails National Monument	Proposed Action. As described in Appendix J of the EA, the Mojave Trails National Monument Management Plan was designated to protect cultural, natural resources, and recreational resources. The Presidential Proclamation – Establishment of the Mojave Trails National Monument – notes that "the area contains some of the Mojave Desert's best habitat for the threatened desert tortoise and provides important corridors for the fragile species." Therefore, the desert tortoise is considered by BLM to be one of the values for which the monument was determined. The BLM is currently developing a Mojave Trails National Monument Management Plan and will prepare appropriate NEPA analysis. Relevancy. Land use management and recreation under modified/proposed new airspace.	Past/Present
Project 9: Desert Renewable Energy Conservation Plan (DRECP)	Proposed Action. The DRECP is a collaborative, interagency landscape-scale planning effort covering 22.5 million acres in seven California counties: Imperial, Inyo, Kern, Los Angeles, Riverside, San Bernardino, and San Diego. The plan was conceived and developed through a collaborative effort by the BLM, USFWS, California Energy Commission, and CDFW that identifies areas in the California desert appropriate for the utility-scale development of wind, solar, and geothermal energy projects. The comprehensive plan also provides for the long-term conservation and management of covered species and preserves the natural resources, recreational Relevancy. Land use management under modified/proposed new airspace.	Past/Present
Project 10: San Bernardino County General Plan	Proposed Action. San Bernardino County prepared a General Plan in 2007 and amended it in 2014. The policies and programs of the General Plan are intended to underlie most land use decisions. The General Plan provides a blueprint that guides the "physical development of the county or city, and any land outside its boundaries which bears relation to its planning" (California Government Code section 65300). A General Plan must address the seven elements of land use, circulation,	Past/Present

Project	Relevant Details	Status
	housing, conservation, open space, safety, and noise. In addition, San Bernardino County has chosen to address economic development, which is an optional element (San Bernardino County 2014). Relevancy. Land use management under modified/proposed new airspace.	
Project 11: Southern California Metroplex Project	Proposed Action. The FAA completed an EA for the SoCal Metroplex Project as part of the FAA's NextGen program (FAA 2016). The FAA signed a FONSI and ROD for the SoCal Metroplex Project on August 31, 2016. This project replaces dozens of existing conventional ATC procedures with new satellite-based procedures. The FAA began phasing in use of the procedures between November 2016 and April 2017. The project encompasses most of Southern California and includes six major airports and 15 satellite airports. The FAA undertook the project to improve airspace safety and efficiency by allowing for more optimized and efficient routing of aircraft into and out of Southern California. Relevancy. Management of regional airspace.	Past
Project 12: Water Treatment Plant at the Combat Center	Proposed Action. A Final Supplemental EA and FONSI have been prepared for environmental impacts associated with additional land area needed for construction, operation, and maintenance of a new drinking water treatment plant and ancillary infrastructure improvements at the Combat Center. The Supplemental EA expands the Proposed Action from the 2018 EA to include 98.82 additional acres of impact. The purpose of the Proposed Action is to ensure continued availability of safe, regulatory compliant potable water for Marines, civilian personnel, and on-base residents and to sustain the Combat Center's mission. The Proposed Action is needed because the Combat Center has been reliant on a single groundwater source (Surprise Springs Aquifer) to provide all potable water for over 60 years. This reliance is not sustainable and requires the use of an additional aquifer (Deadman) to reduce overdrafting of the Surprise Springs Aquifer. Potential impacts for geological resources, water resources, public health and safety, and utilities are included by reference from the 2018 EA. Potential environmental consequences for biological resources, cultural resources, and air quality are analyzed in detail. No significant environmental impacts are expected to result from any of the action alternatives. Relevancy. Construction project at the Combat Center.	Past
Project 13: West Mojave Plan and West Mojave Route Network Project and Plan Amendment	Proposed Action. In February 2015, the BLM published the Draft Supplemental EIS for the West Mojave Route Network Project and Plan Amendment (BLM 2015). The West Mojave Route Network Project is a travel management planning effort covering 9.24 million acres in the West Mojave area of the California desert that supplements the 2006 West Mojave Plan (BLM 2006). The BLM requested an extension of the planning schedule to include the publication of a new Draft Supplemental EIS to conform to the DRECP land use amendment. Following public comment on the Draft Supplemental EIS for the West Mojave Route Network Project and Plan Amendment, the	Present

Project	Relevant Details	Status
	BLM published a new Draft Supplemental EIS in January 2018 to conform to the DRECP land use amendment. The BLM published the Final Supplemental EIS in April 2019 with the ROD in October 2019. Relevancy. Land use management under modified/proposed new airspace.	
Project 14: Establishment of Restricted Area R-2511 at Naval Air Weapons Station China Lake	Proposed Action. The Navy prepared an EA to evaluate the potential impacts on the natural and human environments associated with the establishment of an RA needed to continue military testing and training operations between two range areas at the Naval Air Weapons Station China Lake, California. The new SUA would connect the existing R-2505 and R-2524 RAs. The new RA would be titled R-2511 and would have the same dimensions as the existing Trona Controlled Firing Area. As the Proposed Action involves the modification of SUA, the FAA is a cooperating agency in this EA. The FAA issued a Final Rule on October 10, 2022, that amends 14 CFR part 73 by establishing RA R-2511 with an effective date of December 29, 2022. Relevancy. Management of regional airspace.	Past
Project 15: King of the Hammers OHV Race Event (2023 to 2027)	Proposed Action. King of the Hammers is an off-road race that combines desert racing and rock crawling. This race is held in February on Means Dry Lake at Johnson Valley. The race is authorized by a BLM Special Recreation Permit and the temporary closure is necessary to facilitate public safety and provide an enhanced recreation experience for event participants and spectators. The BLM has approved a 5-year public land closure for up to 10 days a year through 2027. The temporary closure complies with the management plan for the area. A minimum of three staging areas within the Johnson Valley OHV Recreation Area will remain open to the public for both weekends of the temporary closure period. Relevancy. Land use and recreation under proposed new airspace.	Present/ Reasonably Foreseeable
Project 16: Off-Installation Transit and Training Activities Within the Marine Corps Installations West Area of Operations	Proposed Action. The Proposed Action would involve the establishment of an off-installation training program and include land use agreements with regional landowners or land managers to facilitate that training in the Marine Corps Installations West Area of Operations. These agreements would allow the Marine Corps to utilize off-installation land in the southwestern U.S. for training purposes consistent with the rights and interests of the landowners and land managers. The purpose of the Proposed Action is to provide Marines with reliable and consistent access to off-installation transit routes and training sites within the region. This access is crucial for enabling Marine Corps forces to fulfill their existing and evolving training needs, thereby ensuring their Title 10 readiness. Relevancy. Marine Corps training within and in the vicinity of the Combat Center and existing/modified/proposed new airspace.	Reasonably Foreseeable

Project	Relevant Details	Status
Project 17: Twentynine Palms Downtown Specific Plan	Proposed Action. The City of Twentynine Palms is creating a new Downtown Specific Plan which will guide development for downtown over a 20-to-25-year horizon. The plan will define goals, policies, and implementation actions for economic development and employment, land use and zoning, housing, landscaping, open space, transportation and mobility, and parking (City of Twentynine Palms 2023). To gather public input into the plan, the city has held two public workshops, two online surveys, interviews with business and property owners, and numerous study sessions with the Planning Commission. Relevancy. Land use and development in the ROI.	Present/ Reasonably Foreseeable

Legend: ATCAA = Air Traffic Control Assigned Airspace; BLM = Bureau of Land Management; BO = Biological Opinion; CDFW = California Department of Fish and Wildlife; CFR = Code of Federal Regulations; DON = Department of the Navy; DRECP = Desert Renewable Energy Conservation Plan; EA = Environmental Assessment; EIS = Environmental Impact Statement; FAA = Federal Aviation Administration; FONSI = Finding of No Significant Impact; LSE = Large-Scale Exercise; MAGTFTC = Marine Air Ground Task Force Training Center; MEB = Marine Expeditionary Brigade; MOA = Military Operations Area; NEPA = National Environmental Policy Act; NexGen = Next Generation Air Transportation System; NOA = Notice of Availability; OHV = off highway vehicle; RA = Restricted Area; ROD = Record of Decision; ROI = Region of Influence; SoCal = Southern California; SUA = Special Use Airspace; U.S. = United States; USFWS = United States Fish and Wildlife Service

Appendix L
List of Preparers, Contributors, and Agencies Contacted

This page intentionally left blank.

1.1 List of Preparers

The following Stantec personnel prepared this EA under the direction of Naval Facilities Engineering Systems Command (NAVFAC) Southwest.

Stella Acuna, AICP, CEP, PMP, Project Director, 28 years' experience, *B.A., Environmental Design and Planning*

Peer Amble, NEPA Review, 33 years' experience, *B.S., Geography*

Cameryn Brock, Public Involvement, 8 years' experience, *M.E.S.M., Conservation Planning*

Jackie Clark, Public Involvement, 10 years' experience, *B.S., Business Administration*

Stephanie Clarke, GIS Analyst, 7 years' experience, *B.S., Biology and Environmental Studies*

Raul Castillo, Air Quality, 5 years' experience, *M.U.P., Urban Planning*

J. Scott Coombs, Project Manager, 23 years' experience, *M.S., Marine Science*

Josh De Guzman, Biological Resources, 8 years' experience, *B.S., Wildlife Management and Conservation*

Lesley Hamilton, Air Quality, 32 years' experience, *B.A., Chemistry*

Yuri Innis, Airspace Analyst, 23 years' experience, *M.S., Aeronautical Science*

Caitlin Jafolla, AICP, Air Quality, 12 years' experience, *B.A., Urban Studies and Planning*

Patrick Kester, Acoustical Engineer, 17 years' experience, *B.S., Mechanical Engineering*

Chad Nedeau, Military and Commercial Licensed Pilot, Airspace Analyst, 24 years' experience, *M.B.A, Strategic Leadership*

Isla Nelson, Cultural Resources, 18 years' experience, *B.A., Anthropology*

Geoff Olander, Senior Noise and Airspace Management Specialist, 22 years' experience, *B.S., Mechanical Engineering*

Clint Scheuerman, Biological Resources, 18 years' experience, *M.A., Biological Sciences*

Gwen Vineyard, Technical Editing and Document Production, 40 years' experience

Steve Wenderoth, NEPA, Quality Assurance, 36 years' experience, *Juris Doctorate, Environmental Law*

Lisa Woeber, QAQC Review, 27 years' experience, *B.B.A., Business Administration*

1.2 List of Contributors

1.2.1 Department of the Navy

Ryan Maynard, NAVFAC Southwest Environmental Core, *NEPA Project Manager*

1.2.2 Combat Center

Erin Adams, Government and External Affairs, *Director*

Kristina Brown, Government and External Affairs, *Deputy Director*

Andy Chatelin, Range Management and Development Division MAGTFTC, *Director*

Lt. Col. Duckworth, Environmental Affairs, *Director*

Lillian Dugan, Environmental Affairs, *NEPA Program Manager*

Dean Duryea, Environmental Affairs, *Archaeologist*

Andres Fuentes, Range Management and Development Division MAGTFTC, *Deputy Director*

Brian Henen, Ph.D., Environmental Affairs, *Conservation Branch Head*

Ernest James, Office of General Counsel, *Legal Counsel*

Jonell Kosa, Government and External Affairs, *Range Sustainability Program Manager, GEA*

Scott Larson, GS11 TECOM Range Control, *Operation Officer*

Raymond Luzier, Environmental Affairs, *Deputy Director*

Cindy Smith, Government and External Affairs, *Land Management Specialist*

1.2.3 Marine Corps Installations West

Jeff Meeker, Airspace Encroachment/Sustainment, *Assistant Regional Airspace Coordinator*

1.2.4 Headquarters Marine Corps

Lisa Graham, Environmental Core, *NEPA and Cultural Resources Program Manager*

Jennifer Scarborough, Environmental Core, *Environmental Specialist*

1.2.5 Federal Aviation Administration

Lonnie Covalt, Operations Support Group (AJV-W25), *Lead Environmental Protection Specialist*

Dwain Klein, Western Service Center, Air Traffic Organization, *Air Traffic Representative, So. NV, UT, CO, ID, WY, MT, SD*

Michael Schoelen, Los Angeles Air Route Traffic Control Center, *NATCA ZLA Airspace Representative*

Emily Sturnfield, National Airspace System Analytics and Environmental, *Environmental Protection Specialist*

LtCol Mark "Salsa" Woodard, *Department of the Navy Representative*

Steven "EZ" York, Western Service Center, Air Traffic Organization, *Air Traffic Representative, CA and AZ*

1.3 Agencies Contacted

State Agencies

- California State Historic Preservation Officer

Federal Agencies

- Federal Aviation Administration
- Bureau of Land Management

Tribal Nations

- Twentynine Palms Band of Mission Indians
- Cahuilla Band of Mission Indians of the Cahuilla Reservation
- Agua Caliente Band of Cahuilla Indians
- Augustine Band of Cahuilla Mission Indians
- Cabazon Band of Mission Indians
- Chemehuevi Indian Tribe
- Colorado River Indian Tribes
- Fort Mojave Indian Tribe
- Morongo Band of Mission Indians
- San Manuel Band of Mission Indians
- Torres-Martinez Desert Cahuilla Indian

This page intentionally left blank.

Appendix M
References

This page intentionally left blank.

Appendix M
References

American National Standards Institute. 2013. Quantities and Procedures for Description and Measurement of Environmental Sound – Part 3: Short-term Measurements with an Observer Present. ANSI/ASA S12.9-2013/Part 3.

Battis, J.C. 1983. Seismo-Acoustic Effects of Sonic Booms on Archaeological Sites, Valentine Military Operations Area. Air Force Geophysical Laboratory. Report AFGL-TR-83-0304.

Battis, J.C. 1988. The Effect of Low Flying Aircraft on Archaeological Sites, Kayenta, Arizona. Air Force Geotechnical Laboratory. Technical Memorandum No. 146.

Black, J.L, I.D. MacLeod, and B.W. Smith. 2017. Theoretical effects of industrial emissions on colour change at rock art sites on Burrup Peninsula, Western Australia. *Journal of Archaeological Science*: Reports 12 (2017) 1457-462.

BLM. 2019. Explore Your Public Lands. Search Areas: Mojave Trails National Monument, Amboy Crater, Johnson Valley OHV Area, Bristol Mountains Wilderness, Cadiz Dunes Wilderness, Cleghorn Lakes Wilderness, Clipper Mountain Wilderness, Old Woman Mountains Wilderness, Piute Mountains Wilderness, Sheephole Valley Wilderness, Stepladder Mountains Wilderness, Trilobite Wilderness, Turtle Mountains Wilderness. Available at: https://www.blm.gov/visit.

BLM. 2022. Final Environmental Assessment for the King of the Hammers Competitive Offroad Race Event - Special Recreation Permit (2023 to 2027). December 2022. Available at: https://eplanning.blm.gov/eplanning-ui/project/2019169/510.

Bowles, A. E. 1995. Responses of wildlife to noise. *Wildlife and Recreationists: Coexistence through Management and Research (RL Knight and KJ Gutzwiller, Eds.). Island Press, Washington, DC*, 109-156.

Bowles, A.E., S. Eckert, L. Starke, E. Berg, L. Wolski, and J. Matesic Jr. 1999. Effects of Flight Noise From Jet Aircraft and Sonic Booms on Hearing, Behavior, Heart Rate, and Oxygen Consumption of Desert Tortoise (*Gopherus agassizii*). AFRL- HE-WP-TR-1999-0170. Sea World Research Institute, Hubbs Marine Research Center, San Diego, CA. 131 pages.

Brackenbury, J.H. 1979. Power capabilities of the avian-producing system. *Journal of Experimental Biology* 78:163-166.

Brown, P. and R. Berry. 1998. Bat Survey at Marine Corps Air Ground Combat Center, Twentynine Palms, California. Draft unpublished report. 19pp.

Bureau of Labor Statistics. 2023. Local Area Unemployment Statistics. State of California and San Bernardino County Estimates for July of 2023. Available at: https://www.bls.gov/lau/.

California Department of Conservation. 2014. CA Farmland Mapping and Monitoring Program. Available at: https://www.arcgis.com/home/item.html?id=6586b7d276d84581adf921de7452f765

California Office of Historic Preservation. 2024. California Historic Landmarks located in San Bernardino County. Available online at: http://www.ohp.parks.ca.gov/?page_id=21476. Accessed on April 1, 2024.

CDFW. 2019. California Natural Diversity Database Species Observations. California Department of Fish and Wildlife. Accessed on June 25, 2019.

Circle Mountain Biological Consultants. 2010. Final Biological Resources Survey Report: 81 Aerial Maneuver Zone (AMZ) Sites at the Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center (MAGTFTC, MCAGCC), Twentynine Palms, California, San Bernardino County, California. March.

Combat Center. 2010. Species Observation Points GIS Data. Marine Corps Air Ground Combat Center. Accessed on June 25, 2019.

Combat Center. 2018a. Existing Airspace GIS Data. Marine Corps Air Ground Combat Center. Accessed on October 2, 2018.

Combat Center. 2018b. Integrated Natural Resources Management Plan, Fiscal Years 2018 through 2022. Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, CA.

Combat Center. 2020. Integrated Cultural Resources Management Plan, Marine Air Ground Task Force Training Command, Marine Corps Air Ground Combat Center, Twentynine Palms, California, FY21 through FY25.

Combat Center. 2024. Integrated Natural Resources Management Plan. Marine Air Ground Task Force Training Command Marine Corps Air Ground Combat Center.

Conomy, J.T., J.A. Dubovsky, J.A. Collazo, and W.J. Fleming. 1998. Do black ducks and wood ducks habituate to aircraft disturbance? *Journal of Wildlife Management* 62:1135-1142.

Cutler, T.L., D.J. Griffin, and P.R. Krausman. 1999. A Wildlife Inventory and Management Recommendations for the Marine Corps Air Ground Combat Center, Twentynine Palms, California. Prepared for Department of the Navy. April.

Defense Noise Working Group (DNWG). 2009. Improving Aviation Noise Planning, Analysis and Public Communication with Supplemental Metrics Guide to Using Supplemental Metrics. December . Available at: https://www.denix.osd.mil/dodnoise/resources/

DNWG. 2013. Speech Interference from Aircraft Noise. December. Available at: https://www.denix.osd.mil/dodnoise/resources/

DNWG. 2018. Community and Environmental Noise: A Guide for Military Installations and Communities. December. Available at: https://www.denix.osd.mil/dodnoise/resources/

DoD. 2022. Meeting the Climate Challenge, Department of Defense Budget Fiscal Year (FY) 2023. Office of the Under Secretary of Defense (Comptroller) (April 2022). Available at: https://safe.menlosecurity.com/doc/docview/viewer/docNFB2AEBF9140232887423b619c138c150c709d19 ea59ed6197979e8e2697bf6d27b55ca640ef4 (accessed January 19, 2023).

DON. 2003. Programmatic Environmental Assessment, Ongoing and Proposed Training Activities at Marine Corps Air Ground Combat Center Twentynine Palms, CA. May.

DON. 2009. Final Environmental Impact Statement for the West Coast Basing of the MV-22. 3 volumes. Prepared by Science Applications International Corporation for NAVFAC Southwest, San Diego, CA. October.

DON. 2010. Record of Decision for the U.S. Marine Corps West Coast Basing of the F-35B Aircraft. Federal Register 75:78229-78230.

DON. 2012. Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. July 2012. Available at: https://www.29palms.marines.mil/Staff-Offices/G-4-Installation-Support-Directorate/Environmental-Affairs (under "Environmental Impact Statements").

DON. 2013. Final Environmental Assessment for the Adult Medical Care Clinic Replacement, Marine Corps Air Ground Combat Center, Twentynine Palms, California. February.

DON. 2017. Supplemental Environmental Impact Statement for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center Twentynine Palms, CA. Prepared by Cardno under the direction of MAGTFTC, MCAGCC Twentynine Palms, and NAVFAC Southwest. January.

DON. 2018. Environmental Assessment for Ongoing Training, Marine Corps Air Ground Combat Center, Twentynine Palms, California. February.

DON. 2022. Climate Action 2030. Available at: https://www.navy.mil/Portals/1/Documents/Department%20of%20the%20Navy%20Climate%20Action%202030.pdf.

Efroymson, R.A., W.H. Rose, S. Nemeth, and G.W. Suter II. 2000. Ecological Risk Assessment Framework for Low-Altitude Overflights by Fixed-Wing and Rotary-Wing Military Aircraft. Research sponsored by the Strategic Environmental Research and Development Program of the U. S. Department of Defense. Publication No. 5010, Environmental Sciences Division.

EPA. 2023. EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. November.

EPA. 2024a. Overview of Greenhouse Gases. Available at: https://www.epa.gov/ghgemissions/overview-greenhouse-gases. Accessed September 2, 2024.

EPA. 2024b. Greenhouse Gas Equivalencies Calculator - Calculations and References. Available at: https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator-calculations-and-references#vehicles. Accessed November 18, 2024.

EPA. 2025a. 2020 National Emissions Inventory (NEI) Data. Accessed at https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data. 14 January.

EPA. 2025b. Understanding Global Warming Potentials. Available online at: https://www.epa.gov/ghgemissions/understanding-global-warming-potentials. Accessed March 25, 2025.

Epps, C.W., D.R. McCullough, J.D. Wehausen, V.C. Bleich, and J.L. Rechel. 2004. Effects of Climate Change on Population Persistence of Desert-dwelling Mountain Sheep in California. *Conservation Biology* 18: pp. 102-113.

Esri. 2017. Generic GIS Data. Environmental Systems Research Institute. Accessed on October 2, 2018.

Esri. 2019. World Hillshade Web Service. Environmental Systems Research Institute. Accessed on October 2, 2018.

Esri. 2024. Terrain: Multi-Directional Hillshade (basemap, scale not given). Image Service date: June 12, 2024. Accessed on August 19, 2024. https://services.arcgisonline.com/arcgis/rest/services/Elevation/World_Hillshade/MapServer.

FAA. 2004. Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas. Advisory Circular. September 17, 2004.

FAA. 2016. Final Environmental Assessment for the Southern California Metroplex Project. August 2016.

FAA. 2017. 29 Palms Written Re-evaluation for Land Acquisition and Airspace Establishment to Support Large-Scale Marine Air Ground Task Force Live-Fire and Maneuver Training at Marine Corps Air Ground Combat Center, Twentynine Palms, California. June 2017.

FAA. 2018. Modification to Restricted Areas R-2501E, R-2501N, R-2501W, and R-2501S; Bullion Mountains, CA. 14 CFR Part 73. March 20, 2018.

FAA. 2020. 1050.1F Desk Reference, Chapter 11 - Noise and Noise-Compatible Land Use. February 2020. Available at: https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref.

FAA. 2021. Aeronautical Study: USMC 2021 Twentynine Palms Special Use Airspace Proposal. Prepared by Los Angeles ARTCC.

FAA. 2025a. FAA Joint Order 7400.2R, Procedures for Handling Airspace Matters. February 20, 2025. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.current/documentnumber/7400.2

FAA. 2025b. FAA Order 1050.1G, FAA National Environmental Policy Act Implementing Procedures. June 30, 2025. Available at Order 1050.1G - FAA National Environmental Policy Act Implementing Procedures

FAA. 2025c. FAA Joint Order 7610.4Y - Sensitive Procedures and Requirements for Special Operations. July 8, 2025. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1044044.

FAA. 2025d. FAA Joint Order 7110.65BB - Air Traffic Organization Policy. February 20, 2025. Available at: https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/1043461.

Federal Register 2016. Establishment of the Mojave Trails National Monument. Accessed on August 22, 2024.

Federal Interagency Committee on Aviation Noise. 2002. "FICAN on the findings of the Minneapolis-St. Paul International Airport (MSP) low-frequency noise (LFN) expert panel." FICAN, Washington, DC.

Fidell, S., Silvati, L., Pearsons, K., Lind, S., & Howe, R. 1999. "Field study of the annoyance of low-frequency runway sideline noise." *J Acoust Soc Am.* 106(3), pp. 1408-1415.

Fields, J.M., & Powell, C.A. 1987. "Community reactions to helicopter noise: Results from an experimental study." *J Acoust Soc Am*. 82(2), pp. 479-492.

Fromer Jr., P.S. and M. Dodero. 1982. Twentynine Palms Marine Corps Air Ground Combat Center Reptile Inventory.

Hammerking Productions. 2023. Economic Impact of the King of the Hammers. Available at: https://sanbern-prod.s3.amazonaws.com/uploads/TE-KOH-2023-Impacts_8.3.23.pdf.

Hodgdon, K., Atchley, A., & Bernhard, R. 2007. *Low frequency noise study*. PARTNER-COE-2007-001 Federal Aviation Administration, Washington DC.

King, W.K. 1985. Seismic and Vibration Hazard Investigations of Chaco National Historic Park. U.S. Department of the Interior, Geological Survey. Washington D.C. Open-File Report 85-529.

King, W.K., D.L. Carver, and D.M. Worley. 1988. Vibration Investigation of the Museum Building at White Sands National Monument, New Mexico. U.S. Department of the Interior, Geological Survey. Open-File Report 88-544.

Krausman, P.R., M.E. Weisennberger, M.C. Wallace, B. Czech, D.W. DeYoung, and O.E. Maughan. 1996. Behavioral responses of mule deer and mountain sheep to simulated aircraft noise. *Desert Bighorn Council Transactions* 40:1-7.

Lake Havasu City. 2024. *Lake Havasu City Zoning*. GIS Data. *LHC zoning districts* shapefile. Accessed on August 16, 2024. https://mcgis.mohave.gov/arcgis/rest/services/LHC_Zoning/MapServer

Larkin, R.P. 1996. Effects of Military Noise on Wildlife : a Literature Review. Available at: https://www.nrc.gov/docs/ML0511/ML051150109.pdf.

LaRue, Edward L. Jr. 2013. Vertebrate Inventory, Human Impacts Analysis, and Management Recommendations for the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California.

Laver, Marilyn E., and Ian N.M. Wainwright. 1995. An investigation of the dissolution of a marble petroglyph site by acidic precipitation, *Studies in Conservation* 40:4, 265-273, DOI: 10.1179/sic.1995.40.4.265.

MAGTFTC. 2023. Supplemental Environmental Assessment for Ongoing and Future Military Training, Support Operations, and Resource Management at the Marine Corps Air Ground Combat Center. June 2023.

MAGTFTC. 2024a. Data on the proposed number of sorties that would be flown in established/modified SUA. Provided via email on April 10, 2024, and August 8, 2024.

MAGTFTC. 2024b. Combat Center PSUA EA Restart Kickoff. Provided via email on June 3, 2024.

MAGTFTC. 2024c. 29 Palms - Air Quality modeling assumptions. Provided via email on August 1, 2024.

Marine Corps. 2020. Force Design 2030. March. Available at: https://www.hqmc.marines.mil/Portals/142/Docs/CMC38%20Force%20Design%202030%20Report%20Phase%20I%20and%20II.pdf.

Marine Corps. 2022. Environmental Assessment for Home Basing of the MQ-9 Marine Unmanned Aerial Vehicle Squadron and KC-130J Marine Aerial Refueler Transport Squadron at Marine Corps Base Hawaii Kaneohe Bay Oahu, Hawaii. December.

Marine Corps. 2024. Johnson Valley Shared Use Area. Accessed on August 22, 2024.

McGee, E. 2018. Acid Rain and Our Nation's Capital. [edition unavailable]. Perlego. Available at: https://www.perlego.com/book/1717707/acid-rain-and-our-nations-capital-a-guide-to-effects-on-buildings-and-monuments-pdf. Accessed: April 1, 2024.

Mohave County. 2024. *Mohave County Zoning*. GIS Data. *PARCELS - Zoning Symbolized* shapefile. Accessed on August 16, 2024. https://mcgis.mohave.gov/arcgis/rest/services/PARCELS/MapServer/18

Mojave Desert Air Quality Management District (MDAQMD). 2023. Comprehensive Emissions Inventory Guidelines.

Multi-MAC JV. 2021. Calendar Year 2020, Comprehensive Emissions Inventory Report for Marine Corps Air Ground Combat Center, Twentynine Palms, CA (September 2021).

Nagy, K.A., and P.A. Medica. 1986. Physiological ecology of desert tortoises in southern Nevada. *Herpetologica* 42: pp. 73-92.

National Geospatial Intelligence Agency. 2017. Air Traffic Service Routes GIS Data. National Geospatial Intelligence Agency. Accessed on July 12 2019.

NPS. 1994. Report of Effects of Aircraft Overflights on the National Park System. Report to Congress.

NPS. 2023. National Register of Historic Places Program: Research Data Downloads. Spatial Data (GIS) and List of Properties current up to March 7, 2023.

OFFROAD Lifestyle. 2025. King of the Hammers 2025: The Edition That Rewrote Offroad History. February 17. Available at: https://www.offroadlifestyle.com/2025/02/17/king-of-the-hammers-2025-the-edition-that-rewrote-offroad-history/.

Peterson, D.L., D.L. Scholdt, J.M. Eilers, R.W. Fisher, R.D. Doty. 1992. Guidelines for evaluating air pollution impacts on class I wilderness areas in California. Gen. Tech. Rep. PSW-GTR-136. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture; 34 p.

Powell, C.A., & Shepherd, K.P. 1989. "Aircraft noise induced building vibration and effects on human response." *InterNoise '89*. Newport Beach, CA, (December 1989):567-572.

San Bernardino County. 2021. San Bernardino County Regional Greenhouse Gas Reduction Plan.

San Bernardino County. 2023. 2023 County-Level Economic Forecast. Available at: chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/data-analytics-services/transportation-economics/socioeconomic-forecasts/2023/2023-pdf/sanbernardino-2023-a11y.pdf.

San Bernardino County. 2024. San Bernardino County Parcel Data GIS Data. San Bernardino County. Accessed on April 4, 2024.

San Bernardino County FLICS. 2023. San Bernardino County Film office FLICS. Location list. Available from https://ca.reel-scout.com/jur_detail.aspx?id=1755. Accessed on April 15, 2023.

Schomer, P.D., & Neathammer, R.D. 1985. *The role of vibration and rattle in human response to helicopter noise.* CERL N-85/14 , 1-162. USA-CERL.

Schomer, P.D., & Neathammer, R.D. 1987. "The role of helicopter noise-induced vibration and rattle in human response." *J Acoust Soc Am*. 81(4), pp. 966-976.

Stepek, M.A., S.B. Tremor, L. Hargrove, D.C. Stokes, and B.D. Hollingsworth. 2013. Vertebrate Inventory of the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California. June.

Sutherland, L.C. 1990. Assessment of Potential Structural Damage From Low Altitude Subsonic Aircraft. Wyle Labs. WR 89-16.

Sutherland, L.C., Fidell, S., & Harris, A. 2000. *Finding of the low-frequency noise expert panel*. September 30, 2000.

U.S. Census Bureau. 2010. 2010 United States Census. Accessed through Quick Facts at: https://www.census.gov/quickfacts/fact/table/US/PST045218.

U.S. Census Bureau. 2020. 2020 United States Census. Accessed through Quick Facts at: https://www.census.gov/quickfacts/fact/table/US/PST045218

U.S. Census Bureau. 2021. 2020 United States Census. Accessed through Quick Facts at: https://www.census.gov/quickfacts/fact/table/US/PST045218

U.S. Department of State and U.S. Executive Office of the President. 2021. The Long-Term Strategy of the United States: Pathways to Net-Zero Greenhouse Gas Emissions by 2050 (Nov. 2021), available at: https://www.whitehouse.gov/wp-content/uploads/2021/10/70 (accessed January 10, 2023).

United States Forest Service. 1992. Report to Congress: Potential Impacts of Aircraft Overflights of National Forest System Wilderness. U.S. Government Printing Office 1992-0-685-234/61004. Washington, D.C.

USFWS. 2002. Biological Opinion for the Base-wide Training Operations and Routine Maintenance Program at the United States Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California (1-8-99-F-41). Ventura Field Office, Ventura, CA.

USFWS. 2011. Revised Recovery Plan for the Mojave Population of the Desert Tortoise (*Gopherus agassizii*). Region 8, Pacific Southwest Region, Sacramento, CA. May 6.

USFWS. 2012. Biological Opinion for Land Acquisition and Airspace Establishment to Support Large-scale Marine Air Ground Task Force Live-fire and Maneuver Training, Twentynine Palms, California (8-8-11-F-65). Ventura Fish and Wildlife Office, Ventura, CA. July 17.

USFWS. 2017. Biological Opinion for Land Acquisition and Airspace Establishment, Twentynine Palms, California (8-8-11-F-65R). Carlsbad Fish and Wildlife Office, Carlsbad, CA. January 31.

USFWS. 2023. Biological Opinion for the Recovery and Sustainment Partnership Initiative and Ongoing and Future Military Training Activities and Support Operations at the Marine Corps Air Ground Combat Center, Twentynine Palms, San Bernardino County, California. 64 pp.

U.S. Geographic Names Information System. 2012. Cities GIS Data. USGS Geographic Names Information System. Accessed on October 2, 2018.

U.S. Geological Survey. 2023. *Protected Areas Database of the United States (PAD-US) 4* GIS Data. *PADUS4_0Comb_DOD_Trib_NGP_Fee_Desig_Ease_State_CA* and *PADUS4_0Comb_DOD_Trib_NGP_Fee_Desig_Ease_State_AZ* Feature Classes. Accessed on August 22, 2024. https://www.sciencebase.gov/catalog/item/65294599d34e44db0e2ed7cf

University of Arizona Institutional Repository. 2019. Arizona Land Ownership GIS Data. University of Arizona Institutional Repository. Accessed on July 3, 2019.

University of Montana. 2016. Wilderness Areas GIS Data. University of Montana. Accessed on July 1, 2019.

University of California, Riverside. 1993. Marine Corps Air Ground Combat Center Natural Resources Management Plan, 1992. Departments of Earth Science and Botany and Plant Sciences, Riverside, CA. Prepared for Marine Corps Air Ground Combat Center, Twentynine Palms, CA through Naval Facilities Engineering Command, Southwestern Division, San Diego, CA. 16 pp + app.

West, J.J., C.G. Nolte, M.L. Bell, A.M. Fiore, P.G. Georgopoulos, J.J. Hess, L.J. Mickley, S.M. O'Neill, J.R. Pierce, R.W. Pinder, S. Pusede, D.T. Shindell, and S.M. Wilson, 2023: Ch. 14. Air quality. In: *Fifth National Climate Assessment*. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA.

Western Regional Climate Center. 2019. Twentynine Palms, California (049099) - Period of Record Monthly Climate Summary. Period of Record: 7/1/1948 to 12/31/2005. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?catwen+sca. Accessed on July 9, 2019.