DRAFT
ENVIRONMENTAL ASSESSMENT
FOR THE
TEMPORARY RELOCATION OF SIXTEEN C-17AS
FROM JOINT BASE LEWIS-MCCHORD, WASHINGTON
TO MARCH AIR RESERVE BASE, CALIFORNIA

Prepared for:

Department of the Air Force
62d Airlift Wing
Joint Base Lewis-McChord, Washington

December 2018

<This page was intentionally left blank>

Cover Sheet

Responsible Agency: United States Air Force

Proposed Action: The Air Force proposes to temporarily relocate 16 C-17s (with 331 personnel) from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California.

Point of Contact:

Ms. Jean Reynolds, AFCEC/CZN, 2261 Hughes Ave Ste 155, JBSA Lackland TX 78236-9853.

Report Designation: Draft Environmental Assessment (EA)

Abstract: The Air Force prepared an EA addressing potential environmental impacts from the temporary relocation of sixteen (16) C-17As from JBLM, Washington to March ARB, California while the runway at McChord Field is closed for repairs between March and June of 2019. The environmental impact analysis process for this EA was conducted in accordance with the Council on Environmental Quality regulations pursuant to the requirements of the National Environmental Policy Act (NEPA) of 1969.

Under the Proposed Action, March ARB would provide ramp and runway space for the temporary relocation and operation of sixteen (16) C-17As and assigned to the 62d Airlift Wing (AW) at JBLM while the runway is closed for repairs. The Proposed Action also includes the relocation of approximately 331 personnel during this time. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, the temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019. The aircraft and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

These sixteen (16) aircraft would be relocated for parking and flight operations only, and would include an additional five (5) landings and takeoffs per day at March ARB. All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States, Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. As such, operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No training would be conducted under the Proposed Action.

All public comments received on the Draft EA were considered in drafting the Final EA. The Air Force addressed all substantive comments, which include comments that challenge the environmental analysis, methodologies, or information in the Draft EA as being inaccurate or inadequate; identify impacts not analyzed, or mitigations not considered. Non-substantive comments are considered those that express a conclusion, an opinion, or a vote for or against the proposal or some aspect of it, state a political position, or otherwise state a personal preference.

PRIVACY ADVISORY

DRAFT FINDING OF NO SIGNIFICANT IMPACT (FONSI)

THE TEMPORARY RELOCATION OF SIXTEEN (16) C-17As FROM JOINT BASE LEWIS-MCCHORD, WASHINGTON TO MARCH AIR RESERVE BASE, CALIFORNIA

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (U.S.C.) Sections 4321 to 4347, implemented by Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR) §§1500-1508, and 32 CFR §989, Environmental Impact Analysis Process, the U.S. Air Force (Air Force) assessed the potential environmental consequences associated with the Temporary Relocation of Sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), Riverside County, California.

The purpose of the Proposed Action is to ensure that there is no interruption in the mission of the 62d Airlift Wing (AW). The 62d AW needs to operate from an alternative runway location while the McChord Field runway is closed for repairs between March and June of 2019.

The Environmental Assessment (EA) analyzes the potential environmental consequences of activities associated with March ARB providing the ramp and runway space, as well as access to their fuel cell, wash rack, and hangar, during the temporary relocation and operation of the 62d AW C-17As.

The EA considers all potential impacts of Alternative 1 and the No Action Alternative. The EA also considers cumulative environmental impacts with other projects in the Region of Influence.

Alternative 1: Proposed Action (Preferred Alternative)

Under the Proposed Action, March ARB would provide the ramp and runway space, as well as access to their fuel cell, wash rack, and hangar, the 62d AW needs to operate from an alternative runway location during the time the McChord Field runway is closed. The Air Force would temporarily relocate sixteen (16) C-17As and 331 personnel to March ARB. Operation of the C-17A aircraft and associated personnel would use existing structures used by March ARB C-17As for their Hangar, Fuel Cell, and Wash Rack. No construction, renovations, or other projects would be required to support the temporary relocation of aircraft.

While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, the temporary relocation of these C-17A at March ARB would be from approximately February 22 through June 15, 2019, dependent upon the weather at JBLM.

The aircraft would be relocated for parking and flight operations only. The temporary relocation would include an additional five (5) landings and takeoffs per day for the 62d AW C-17A aircraft relocated to March ARB. Operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No new airspace or additional airfield requirements would be generated as a result of the temporary relocation.

All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installations(s) within the contiguous United States, Alaska, and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. No training would be conducted under the Proposed Action.

Alternative 2: No Action Alternative

The CEQ regulation, 40 CFR §1502.14(d), requires the inclusion of a No Action Alternative in the NEPA analysis. Under the No Action Alternative, the Air Force would not temporarily relocate sixteen (16) C-17A aircraft from JBLM to March ARB. Alternative strategies, including the No Action Alternative, were assessed in the EA.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Preferred Alternative presented in the EA concluded that by implementing standing environmental protection measures and operational planning, the Air Force would be in compliance with all items and conditions and reporting requirements.

The Air Force has concluded that the following resources would not be affected by the Proposed Action: land use, earth resources, water resources, hazardous materials and wastes, infrastructure and utilities, and environmental justice. Based on the findings in this EA, no significant adverse impacts would result to the following resources as a result of the Preferred Alternative: noise, airspace management, air quality, biological resources, cultural resources, socioeconomic resources, or safety. No significant adverse cumulative impacts would result from activities associated with Preferred Alternative when considered with past, present, or reasonably foreseeable future projects.

FINDING OF NO SIGNIFICANT IMPACT BY THE AIR FORCE

Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR §989, I conclude that the Preferred Alternative would not have a significant environmental impact, either by itself or cumulatively with other known projects. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.

_____ _____

MATTHEW J BURGER, Colonel, USAF Date
Commander

TABLE OF CONTENTS

Section **Page**

CHAPTER 1: PURPOSE OF AND NEED FOR THE PROPOSED ACTION 1-1

1.1 Introduction 1-1
1.2 Location Of the proposed action 1-1
1.3 Purpose of and Need For the Proposed Action 1-1
1.4 Decision to be Made 1-5
1.5 Applicable Regulatory Requirements and Intergovernmental Coordination 1-5
1.5.1 Interagency and Intergovernmental Coordination 1-5
1.5.2 Government-to-Government Consultation 1-5
1.5.3 Public Involvement 1-6
1.5.4 Other Regulatory Requirements 1-6

CHAPTER 2: DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES 2-1

2.1 Selection Standards 2-1
2.2 Description and Screening of Alternatives 2-1
2.2.1 Alternative 1: Proposed Action (Preferred Alternative) 2-1
2.2.2 Alternative 2: No Action Alternative 2-7
2.3 Alternatives Considered but Eliminated from Further Consideration 2-7

CHAPTER 3: AFFECTED ENVIRONMENT 3-1

3.1 Scope of Analysis 3-1
3.2 Resource Topics Eliminated from Detailed Analysis 3-1
3.3 Description of the Affected Environment 3-2
3.3.1 Noise 3-2
3.3.1.1 Definition of the Resource 3-2
3.3.1.2 Existing Conditions at March ARB 3-7
3.3.2 Airspace Management 3-11
3.3.3 Air Quality 3-12
3.3.3.1 Regional Air Quality 3-14
3.3.3.2 Greenhouse Gases 3-14
3.3.4 Biological Resources 3-15
3.3.4.1 Vegetation 3-15
3.3.4.2 Wildlife 3-15
3.3.4.3 Special Status Species 3-16
3.3.5 Cultural Resources 3-20
3.3.5.1 Archaeological Resources 3-20
3.3.5.2 Architectural Resources 3-21
3.3.5.3 Traditional Cultural Properties 3-21
3.3.6 Socioeconomic Resources 3-21
3.3.6.1 Population 3-21

3.3.6.2 Emergency Services 3-22
3.3.6.3 Hotels and Lodging 3-22
3.3.7 Safety 3-23
3.3.7.1 Aircraft Mishaps at March ARB 3-23
3.3.7.2 Clear Zones and Accident Potential Zones 3-23
3.3.7.3 BASH-related Safety 3-24

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES 4-1

4.1 Introduction 4-1
4.2 Description of the Effects of All Actions on the Affected Environment 4-1
4.2.1 Noise 4-1
4.2.1.1 Alternative 1: Proposed Action 4-1
4.2.1.2 Alternative 2: No Action Alternative 4-5
4.2.2 Airspace Management 4-5
4.2.2.1 Alternative 1: Proposed Action 4-5
4.2.2.2 Alternative 2: No Action Alternative 4-6
4.2.3 Air Quality 4-6
4.2.3.1 Alternative 1: Proposed Action 4-6
4.2.3.2 Alternative 2: No Action Alternative 4-7
4.2.4 Biological Resources 4-7
4.2.4.1 Alternative 1: Proposed Action 4-8
4.2.4.2 Alternative 2: No Action Alternative 4-9
4.2.5 Cultural Resources 4-9
4.2.5.1 Alternative 1: Proposed Action 4-9
4.2.5.2 Alternative 2: No Action Alternative 4-10
4.2.6 Socioeconomic Resources 4-10
4.2.6.1 Alternative 1: Proposed Action 4-10
4.2.6.2 Alternative 2: No Action Alternative 4-11
4.2.7 Safety 4-11
4.2.7.1 Alternative 1: Proposed Action 4-11
4.2.7.2 Alternative 2: No Action Alternative 4-11
4.3 Other NEPA Considerations 4-11
4.3.1 Unavoidable Adverse Effects 4-11
4.3.2 Relationship of Short-Term Uses and Long-Term Productivity 4-11
4.3.3 Irreversible and Irretrievable Commitments of Resources 4-12

CHAPTER 5: CUMULATIVE IMPACTS 5-1

5.1 Noise 5-3
5.2 Airspace Management 5-3
5.3 Air Quality 5-3
5.4 Biological Resources 5-4

5.5 Cultural Resources 5-4
5.6 Socioeconomic Resources 5-4
5.7 Safety 5-4
CHAPTER 6: LIST OF PREPARERS 6-1
CHAPTER 7: REFERENCES 7-1

LIST OF TABLES

Table **Page**

Table 2-1. Screening of Alternatives 2-8
Table 3-1. Existing Annual Aircraft Operations Summary at March ARB 3-8
Table 3-2. Existing Day-Night Average Sound Level (DNL) Acreage Affected at March ARB 3-11
Table 3-3. Annual Flight Operations by Aircraft for March ARB 3-12
Table 3-4. National Ambient Air Quality Standards 3-13
Table 3-5. Federally Listed Species with the Potential to Occur on March ARB 3-17
Table 3-6. California State Listed Bird Species 3-19
Table 3-7. Population in March ARB ROI 3-22
Table 3-8. Estimated Hotel Capacity for Riverside County 3-23
Table 4-1. Proposed Action Annual Aircraft Operations Summary at March ARB 4-2
Table 4-2. Proposed High Noise Scenario Day-Night Average Sound Level (DNL) Acreage Affected on and Surrounding March ARB 4-5
Table 4-3. Results of ACAM Assessment 4-7
Table 5-1. Past, Present, and Reasonably Foreseeable Future Actions 5-1

LIST OF FIGURES

Figure **Page**

Figure 1-1. Regional Location of March ARB 1-3
Figure 2-1. Proposed Action Area 2-3
Figure 2-2. Proposed C-17A Building Use at March ARB 2-5
Figure 3-1. Typical A-weighted Sound Levels of Common Sounds 3-4
Figure 3-2. Maximum Sound Level (L_{max}) and Sound Exposure Levels (SEL) Comparison 3-5
Figure 3-3. Example of $L_{eq(24)}$, DNL, and CNEL Computed from Hourly Equivalent Sound Levels 3-7
Figure 3-4. Existing Day-Night Average Sound Level (DNL) Contours at March ARB 3-9
Figure 4-1. Proposed Action Day-Night Average Sound Level (DNL) Contours at March ARB 4-3

LIST OF APPENDICES

Appendix A Interagency/Government to Government Coordination and Consultations
Appendix B Public Notifications
Appendix C Air Quality Assessment

<This page was intentionally left blank>

LIST OF ABBREVIATIONS / ACRONYMS

ACAM	Air Conformity Applicability Model
AFI	Air Force Instruction
AFB	Air Force Base
AFM	Air Force Manual
AGE	Aerospace Ground Equipment
AICUZ	Air Installation Compatible Use Zones
Air Force	United States Air Force
AIRFA	American Indian Religious Freedom Act
AMOC	Air Mobility Operations Command
ANGB	Air National Guard Base
APE	Area of Potential Effect
APZ	Accident Potential Zone
AW	Airlift Wing
ARB	Air Reserve Base
ARPA	Archaeological Resources Protection Act
BASH	Bird/Wildlife Aircraft Strike Hazard
CAA	Clean Air Act
CANG	California Air National Guard
CDFW	California Department of Fish and Wildlife
CNEL	Community Noise Equivalent Level
CEQ	The President's Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2eq	Carbon Dioxide Equivalent
CONUS	Contiguous United States
CZ	Clear Zone
dB	decibels
dBA	A-weighted decibels
DNL	Day-Night Average Sound Level
DoD	Department of Defense
DoDI	Department of Defense Instruction
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FONSI	Finding of No Significant Impact
FTU	Flying Training Unit
GHG	Greenhouse Gas
HFC	Hydrofluorocarbon
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
JBLM	Joint Base Lewis-McChord
JPA	Joint Powers Authority

L_{eq}	Equivalent Sound Level
$L_{eq(h)}$	Hourly Average Noise Levels
$L_{eq(24)}$	Equivalent Sound Level for 24 hours
L_{max}	Maximum Sound Level
LTO	Landings and Takeoffs
MBTA	Migratory Bird Treaty Act
MFHD	March Field Historic District
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAS	National Airspace System
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_x	Nitrogen Oxides
NO_2	Nitrogen Dioxide
NRHP	National Register of Historic Places
O_3	Ozone
PAA	Primary Aerospace Vehicles Authorized
PFC	Perfluorocarbons
PL	Public Law
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
PM_{10}	Particulate Matter less than 10 microns in diameter
ppb	parts per billion
ppm	parts per million
ROI	Region of Influence
SEL	Sound Exposure Levels
SF_6	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur Oxides
SO_2	Sulfur Dioxide
TACC	Tanker/Airlift Control Center
TCP	Traditional Cultural Property
THPO	Tribal Historic Preservation Office
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOCs	Volatile Organic Compounds

CHAPTER 1: PURPOSE OF AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The runway at Joint Base Lewis-McChord (JBLM), Washington must be closed for repairs for a period of approximately 94 days between March and June of 2019. In order to continue their mission the 62d Airlift Wing (AW) at JBLM must operate from an alternative runway location during this time period. This Environmental Assessment (EA) is being prepared to evaluate any potential environmental impacts, which may result from the temporary relocation of aircraft from the 62d AW.

The Proposed Action would temporarily relocate approximately sixteen (16) C-17A aircraft and 331 personnel to March Air Reserve Base (ARB), California. The Proposed Action would occur during the period that JBLM's runway is closed for construction.

The 1969 National Environmental Policy Act (NEPA), as amended, requires federal agencies to consider environmental consequences in their decision-making process. The President's Council on Environmental Quality (CEQ) has issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental impact analysis. The Air Force Environmental Impact Analysis Process (EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] §§1500-1508) and 32 CFR §989 (*Air Force Environmental Impact Analysis Process*). These federal regulations establish both the administrative process and substantive scope of the environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action.

The information presented in this document serves as the basis for deciding whether the Proposed Action would result in a significant impact to the human environment, requiring the preparation of an environmental impact statement (EIS), or whether no significant impacts would occur, in which case a finding of no significant impact (FONSI) would be appropriate.

1.2 LOCATION OF THE PROPOSED ACTION

March ARB **(Figure 1-1)** is located approximately 70 miles east of Los Angeles in the western part of Riverside County, California.

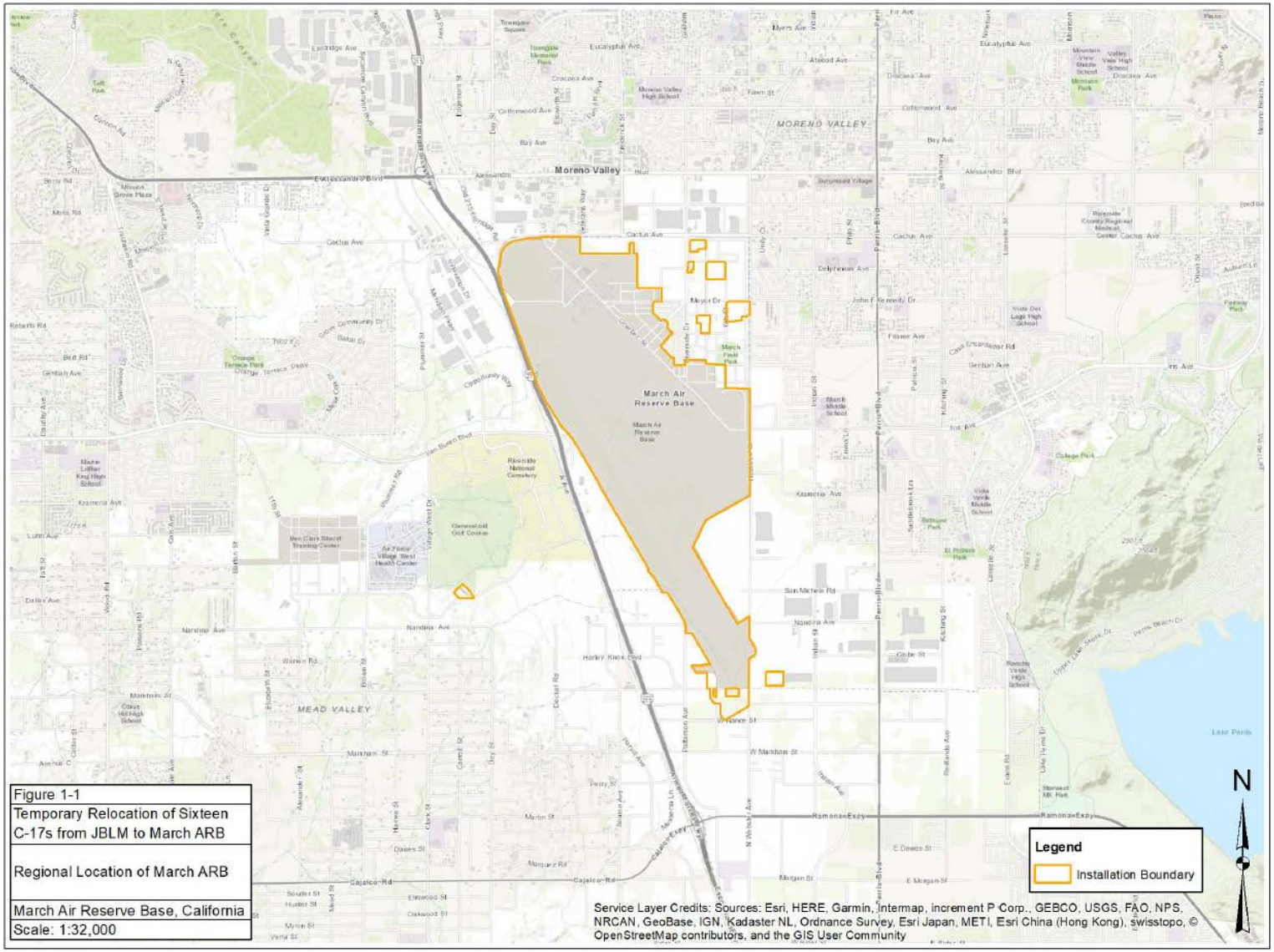
1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The CEQ regulations implementing the NEPA require that an EA specify the underlying purpose of and need to which an agency is responding in proposing actions and alternatives (40 CFR 1502.13).

The purpose of the Proposed Action is to ensure that there is no interruption in the mission of the 62d AW. The 62d AW needs to operate from an alternative runway location during the time that the JBLM runway is closed for repairs between March and June of 2019.

<This page was intentionally left blank>

Figure 1-1. Regional Location of March ARB



<This page was intentionally left blank>

1.4 DECISION TO BE MADE

The analysis in this EA evaluates the potential environmental consequences of the proposed and alternative actions. Based on this information, the Air Force would determine whether to implement the Proposed Action or take no action (No Action Alternative). The decision to be made is to either temporarily relocate 16 C-17A Aircraft and 331 personnel from JBLM to March ARB, or implement the No Action Alternative to ground the Aircraft until runway repairs have been completed at McChord Field, JBLM. As required by NEPA and its implementing regulations, preparation of an environmental document must precede final decisions regarding the proposed action, and be available to inform decision-makers of the potential environmental impacts of selecting the Proposed Action or the No Action Alternative. If significant impacts are identified, the Air Force would undertake mitigation to reduce impacts to below the level of significance, undertake the preparation of an EIS addressing the Proposed Action, or abandon the Proposed Action.

1.5 APPLICABLE REGULATORY REQUIREMENTS AND INTERGOVERNMENTAL COORDINATION

The following paragraphs describe the laws and regulations that apply, or may apply, to the Proposed Action, as well as the different levels of consultation required by federal law.

1.5.1 Interagency and Intergovernmental Coordination

The Air Force, as the responsible agency has implemented the Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process. Through the IICEP process, the Air Force notifies relevant federal, state, and local agencies about the Proposed Action and alternatives. The IICEP process provides the Air Force the opportunity to coordinate with and consider state and local views in implementing the Proposed Action or alternatives. A discussion of the Proposed Action was provided to federal, state, and local agencies as well as other stakeholders identified in the IICEP process that provides the means to comment on the Proposed Action and alternative.

The comment period lasted for 30 days. Agency responses were considered in developing the final EA. IICEP materials for this EA are included in **Appendix A**.

1.5.2 Government-to-Government Consultation

The National Historic Preservation Act (NHPA) requires federal agencies to consult with federally recognized Indian tribes on proposed undertaking that have the potential to affect Properties of cultural, historical, or religious significance to the tribes. Because many tribes were displaced from their original homelands during the historical period, tribes with cultural roots in an area might not currently reside in the region where the undertaking is to occur. Effective consultation requires identification of tribes based on ethnographic and historical data and not simply a tribe's current proximity to a project area. The goal of the tribal consultation process is not to simply consult on a particular undertaking but rather to build constructive relationships with appropriate Native American tribes.

On 7 November 2018, the Wing Commander at March ARB sent letters to the tribes culturally affiliated with the installation, requesting government-to-government consultation to identify any traditional cultural properties that may be present. To date, the Air Force has received responses from the Agua Caliente Band of Cahuilla Indians, Morongo Band of Mission Indians (Tribal Historic Preservation Office [THPO]), San Manuel Band of Mission Indians, and the Twenty-Nine Palms Band of Mission Indians (THPO). None of these tribes were interested in entering into a formal consultation for this Proposed

Action. The THPO of the Morongo Band of Mission Indians requested a copy of the Final EA once it becomes available. The Air Force will continue to follow-up with Tribes that were contacted and have not responded. Final correspondence will be provided in the Final version of this EA. Tribal consultations and copies of correspondences are included in **Appendix A**.

1.5.3 Public Involvement

The Notice of Availability (NOA) for the Draft EA was published in *The Press-Enterprise* and *Desert Star Weekly*. The Draft EA was available to the public, including the March ARB community, for a 30-day review and comment period beginning 26 December 2018. A hardcopy of the Draft EA was made available at the Riverside Main Library. The Draft EA was also made available on the March ARB website at: http:// www.march.afrc.af.mil

1.5.4 Other Regulatory Requirements

The EA considers all applicable laws and regulations, including but not limited to the following:

- NEPA of 1969 (Public Law [PL] 91-190, 42 United States Code [U.S.C.] §4321-4347)
- 32 CFR §989, *Environmental Impact Analysis Process*
- 40 CFR §1500-1505, CEQ's Regulations on Implementing NEPA
- 50 CFR §402, *Interagency Cooperation - Endangered Species Act of 1973*, as amended
- U.S. Army Corps of Engineers wetlands policy
- Endangered Species Act (ESA) of 1973 (16 U.S.C. §1531-1542)
- Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. §703-712; Ch. 128; July 13, 1918; 40 Stat. 755)
- Archaeological Resources Protection Act (ARPA) of 1979
- National Historic Preservation Act (NHPA) of 1966 (36 CFR §800)
- Native American Graves Protection and Repatriation Act of 1991 (25 U.S.C. §3001 et seq.)
- Executive Order (EO) 11988 - Floodplain Management
- EO 11990 - Protection of Wetlands
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Air Force Instruction (AFI) 32-7064, Integrated Natural Resources Management
- AFI 32-7065, Cultural Resources Management
- AFI 32-7066, Environmental Baseline Surveys in Real Property Transactions
- Clean Air Act of 1970 (42 U.S.C. §7401 et seq.)
- AFI 32-7040, Air Quality Compliance and Resource Management Program
- *United States Air Force Air Quality EIAP Guide* found online at http://aqhelp.com.
- Clean Water Act of 1972 (33 U.S.C. §1251 et seq.)
- Pollution Prevention Act of 1990 (42 U.S.C. §13101 and §13102 et seq.)
- Air Force Air Quality EIAP Guide – Fundamentals, Volume 1 of 2
- Considering Cumulative Effects under the National Environmental Policy Act, Council on Environmental Quality, January 1997
- CEQ document "Environmental Justice, Guidance Under the National Environmental Policy Act"
- Air Force Guide for Environmental Justice Analysis under the EIAP

CHAPTER 2: DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This section provides detailed information on the Proposed Action and Alternatives, including the No Action Alternative. As discussed in **Section 1.4**, the NEPA process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action. Reasonable alternatives must satisfy the purpose of and need for a Proposed Action, as defined in **Section 1.3**. In addition, CEQ regulations also specify the inclusion of a No Action Alternative against which potential effects can be compared. While the No Action Alternative would not satisfy the purpose of or need for the Proposed Action, it is analyzed in accordance with CEQ regulations.

2.1 SELECTION STANDARDS

Identifying and analyzing alternatives is one of the core elements NEPA and the Air Force's implementing regulations. The Air Force may expressly eliminate alternatives from detailed analysis based on reasonable selection standards (32 CFR 19 §989.8[c]). This section describes the Air Force process and the application of this process to identify alternative temporary runway locations. The process applied operational and other criteria to identify reasonable alternatives for the temporary relocation of 16 C-17A aircraft.

In order to be viable, the alternative runway location(s) must:

- Be located within the Western half of the contiguous United States (CONUS), Alaska, and Hawaii;
- Possess an existing C-17A unit with the capacity to support 16 additional aircraft while effectively continuing its own mission;
- Be able to provide adequate security to support the C-17A mission; and
- Possess adequate facilities and infrastructure, such as C-17A hangars, part supplies, and ground equipment, sufficient to support the 62d AW without the need for construction or renovations.

2.2 DESCRIPTION AND SCREENING OF ALTERNATIVES

NEPA and the CEQ regulations mandate the consideration of reasonable alternatives for the Proposed Action. Reasonable alternatives are those that could be used to meet the purpose of and need for the Proposed Action. The following alternatives were identified and screened against the selection standards.

2.2.1 Alternative 1: Proposed Action (Preferred Alternative)

Under the Proposed Action, March ARB would provide the 62d AW with the ramp and runway space they need to operate from an alternative runway location during the time McChord Field, JBLM is closed **(Figure 2-1)**. Based on the selection standards described above March ARB was the only installation that met the minimum requirements necessary for the temporary relocation of 16 C-17A aircraft and 331 personnel. The Proposed Action would allow the 62d AW to continue its mission without the need for construction or renovations and without disrupting the existing mission at March ARB.

The Air Force proposes to temporarily relocate 16 C-17As and 331 personnel to March ARB in order to satisfy the Purpose and Need for the Action described above. There are currently eight (8) C-17A aircraft permanently assigned to March ARB. The operation of the C-17A aircraft and associated personnel would use existing structures used by March ARB C-17As for their Hangar (Building 2312), Fuel Cell (Building 423), and Wash Rack (Building 1242) **(Figure 2-2)**. No construction, renovations, or other projects would be required to support the proposed temporary relocation of aircraft. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-

down operations at March ARB. Therefore, the temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019, dependent upon the weather at JBLM.

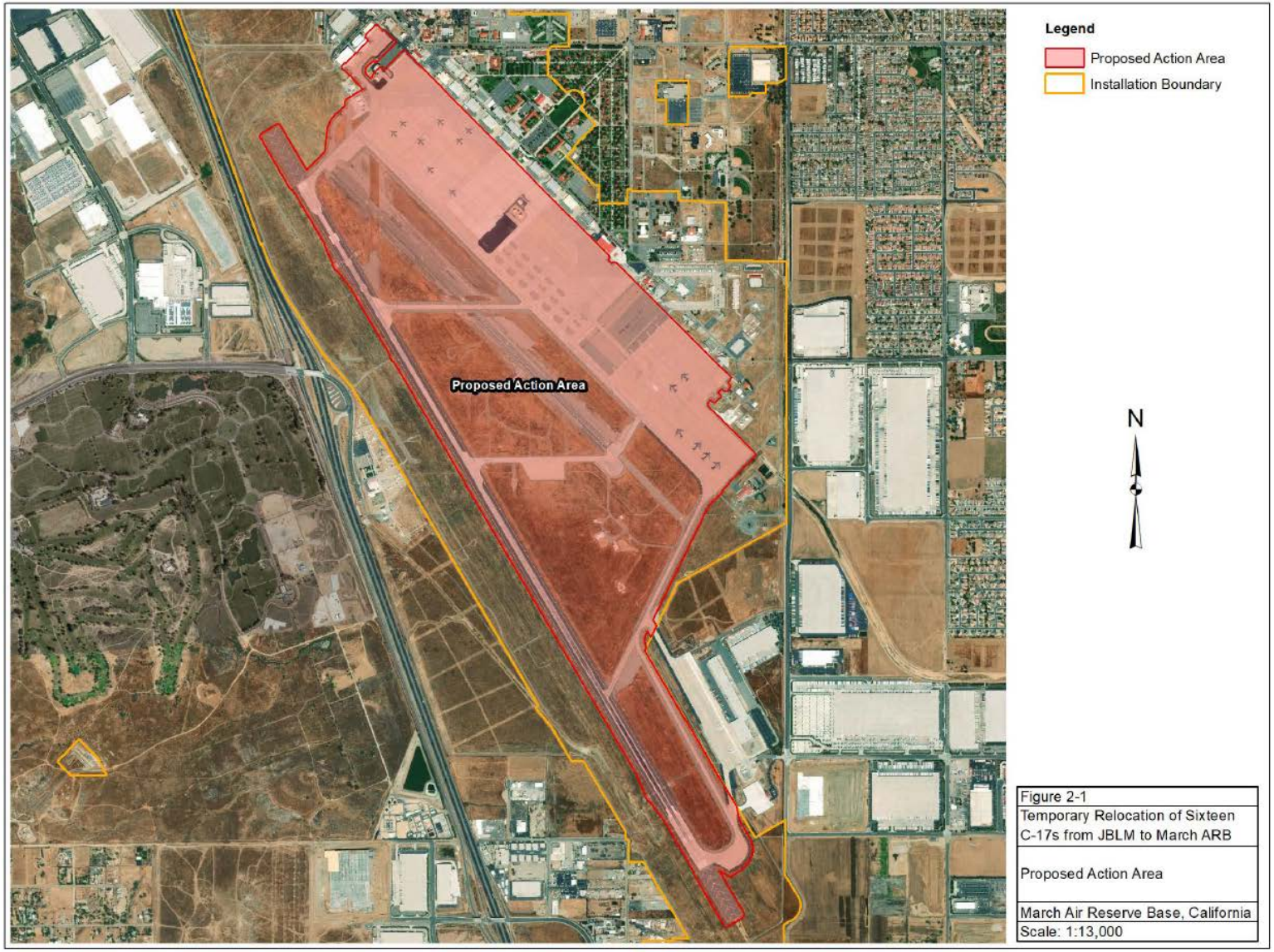
The aircraft would be relocated for parking and flight operations only. The temporary relocation would include an additional five (5) landings and takeoffs (LTOs) per day for the 62d AW C-17A aircraft relocated to March ARB. Operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft curently use for departures and arrivals at the airfield. No new airspace or additional airfield requirements would be generated as a result of the temporary relocation.

All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center (TACC)-directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States (CONUS), Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. No training would be conducted under the Proposed Action.

The aircraft would use fuel and hazardous materials from existing storage sites at March ARB. All hazardous materials required would be identical to materials already required for operations at March ARB.

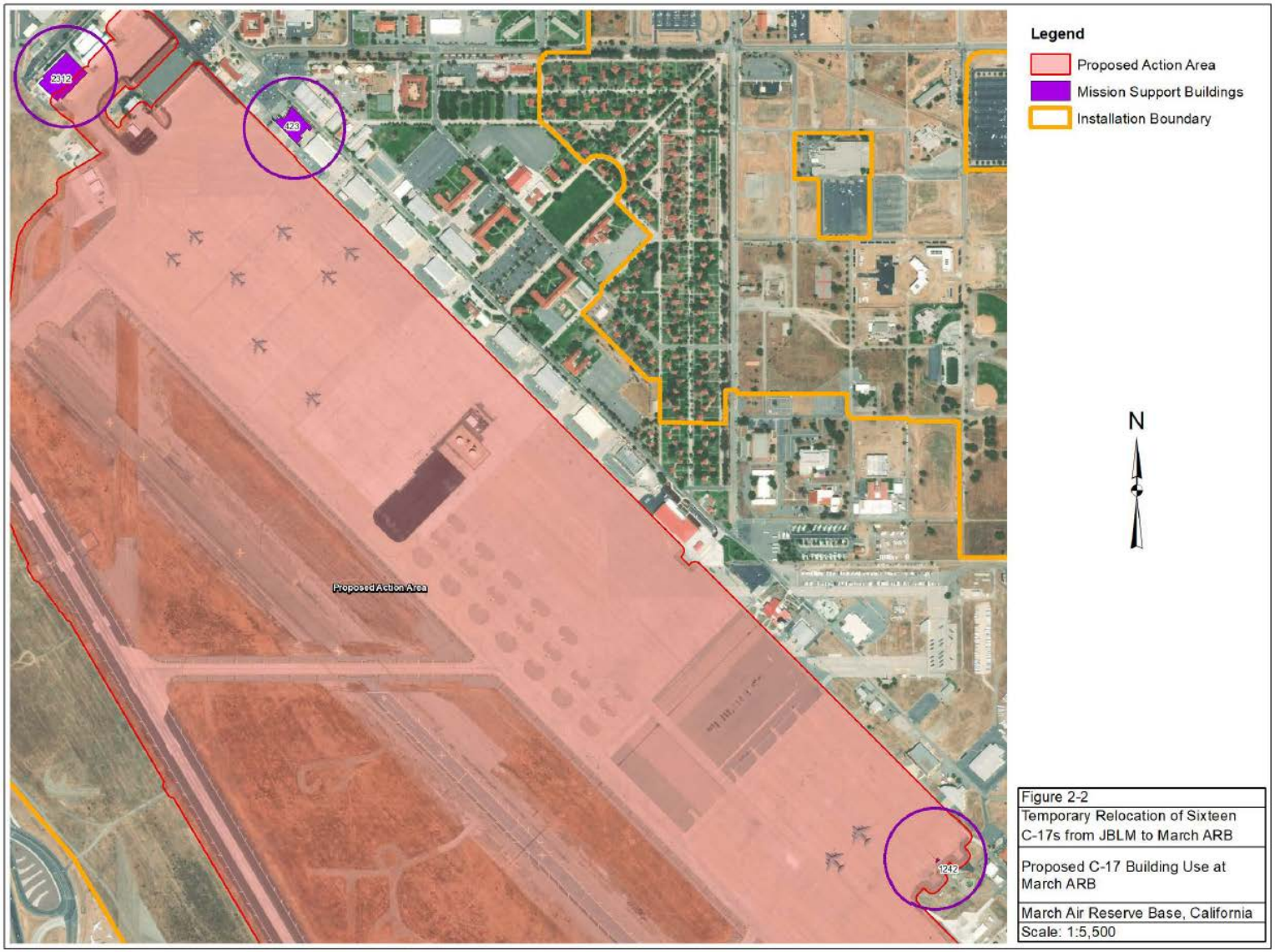
March ARB would have an approximate temporary increase of 331 personnel to support the 16 aircraft. Personnel would rotate every two (2) to four (4) weeks between JBLM and March ARB. All personnel would be temporarily housed on base; however, off base lodging would be required for a minimum of two (2) weekends each month for the duration of the temporary relocation due to planned reservist training activities. Personnel would not be accompanied by spouses or dependents.

Figure 2-1. Proposed Action Area



<This page was intentionally left blank>

Figure 2-2. Proposed C-17A Building Use at March ARB



<This page was intentionally left blank>

2.2.2 Alternative 2: No Action Alternative

The CEQ regulation, 40 CFR §1502.14(d), requires the inclusion of a No Action Alternative in the NEPA analysis. Under the No Action Alternative, the Air Force would not temporarily relocate the 16 C-17As from JBLM to March ARB, but would instead ground the aircraft until runway repairs have been completed at McChord Field. The No Action Alternative will serve as the baseline for the evaluation of the Proposed Action and alternatives for adverse impacts to the affected environment. The effected environment and environmental resources analyzed in this EA will be discussed in **Chapter 3**.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

Seven (7) installations were considered as alternative locations for this Proposed Action during the selection process. After collecting operational and locational data and screening these installations against the selection standards provided in **Section 2.1**, March ARB was the only installation that met the minimum requirements necessary to meet the purpose and need for this Proposed Action. Other installations considered for this Proposed Action include Fairchild Air Force Base (AFB), Washington; Travis AFB, California; Portland Air National Guard Base (ANGB), Oregon; Former Moses Lake AFB / Grant County International Airport, Washington; Paine Field / Snohomish County Airport, Washington; and McConnell AFB, Kansas. None of the other installations considered had the capacity to support sixteen additional C-17A aircraft while effectively continuing their own mission. Construction would also have been required in order to accommodate these sixteen C-17As at Travis AFB. Neither the Former Moses Lake AFB, now Grant County International Airport, nor Paine Field / Snohomish County Airport could provide adequate security for the C-17A mission. All installations considered are screened against the selection standards in **Table 2-1**. Therefore, only March ARB and the No Action Alternative are being carried forward for detailed analysis within the EA.

Table 2-1. Screening of Alternatives

Alternatives Considered	Selection Standards			
	(1) CONUS, Alaska, & Hawaii	(2) Existing C-17A Unit & Capacity	(3) Adequate Security	(4) No Construction Required
Alternative 1 – March ARB (Preferred Alternative)	Yes	Yes	Yes	Yes
Alternative 2 – Fairchild AFB	Yes	No	Yes	Yes
Alternative 3 – Travis AFB	Yes	No	Yes	No
Alternative 4 – Portland ANGB	Yes	No	Yes	Yes
Alternative 5 –Moses Lake AFB / Grant County International Airport	Yes	No	No	Yes
Alternative 6 – Paine Field / Snohomish County Airport	Yes	No	No	Yes
Alternative 7 – McConnell AFB	Yes	No	Yes	Yes
Alternative 8 – No Action Alternative	No	No	Yes	Yes

CHAPTER 3: AFFECTED ENVIRONMENT

This chapter describes the current conditions of the environmental resources, either man-made or natural, that would be affected by implementation of the Proposed or No Action Alternatives. **Section 3.2** focuses on the conditions at March ARB and the location of the action. The baseline conditions presented in this chapter are described to the level of detail necessary to support analysis of potential impacts presented in **Chapter 4**, Environmental Consequences.

3.1 SCOPE OF ANALYSIS

Federal regulations (40 CFR §§1500 et seq.) require certain topics be addressed as part of a NEPA analysis. Resource areas that could be affected by the Proposed or No Action Alternatives have been selected to allow for a comprehensive analysis of potential impacts. The following resource areas are discussed in detail in the EA:

- Noise
- Airspace Management
- Air Quality
- Biological Resources
- Cultural Resources
- Water Resources
- Socioeconomic Resources
- Environmental Justice
- Safety

3.2 RESOURCE TOPICS ELIMINATED FROM DETAILED ANALYSIS

Some resources would not be affected by the Proposed or No Action Alternatives. Resources that have been eliminated from further analysis in this document and the rationale for eliminating them are presented below.

- Land Use. Land Use describes the appearance and activities that take place in a specific area, and consider any land use changes or incompatibilities. The Proposed Action would not change any land use designation at March ARB. Since 62d AW C-17As would operate using existing ramp/runway space and buildings used by March ARB C-17s, the Proposed Action would not result in any incompatible land use. Therefore, Land Use was not considered for detailed analysis in this EA. Any potential impacts to non-compatible land use areas under the March ARB airfield environment are analyzed under the Noise discussion in **Section 3.3.1** and **Section 4.2.1.**

- Earth Resources. Earth Resources include geology, topography, and soils within the proposed action area. The Proposed Action would have no impact on these resources, as there is no construction, demolition, or renovations that would result in ground-disturbing activity associated with the temporary relocation of C-17A aircraft. Therefore, Earth Resources were not considered for detailed analysis in this EA.

- Water Resources. Water resources include surface water, ground water, wetlands, and floodplains. The Proposed Action would not result in impacts to the water resources at March ARB. There would be no adverse effects to surface or ground water because no new construction or ground disturbing actives are proposed. There are no wetlands or floodplains within or adjacent to the proposed action area. Therefore, Water Resources were not considered for detailed analysis in this EA.

- Hazardous Materials and Wastes. Hazardous Materials and Wastes consider the generation, use, and disposal of hazardous materials or hazardous wastes. Any hazardous materials required for the Proposed Action would be the same as materials already required for C-17A operations at March ARB. While the Proposed Action would result in an increase in the accumulation of hazardous wastes at March ARB, the C-17A aircraft would create less waste at this temporary location than would be created if operating from their home station (Waters 2018b). The March ARB accumulation point for hazardous materials has sufficient capacity for this temporary increase in accumulation (Waters 2018b). Implementation of the Proposed Action would not result in the generation of new hazardous waste streams, and hazardous materials would be disposed of in accordance with March ARB's existing Hazardous Materials and Wastes management processes. Therefore, Hazardous Materials and Wastes were not carried forward for detailed analysis in this EA.

- Infrastructure and Utilities. Infrastructure and Utilities considers the existence/construction of, access to, and capacity of an installation's built infrastructure and utilities, such as water, sewage, electrical, and communications lines. All Infrastructure and Utilities required for implementation of the Proposed Action are in-place and currently used for C-17A operations at March ARB. No construction, renovations, or other projects are associated with this Proposed Action. Therefore, Infrastructure and Utilities were not carried forward for detailed analysis in this EA.

- Environmental Justice. Environmental Justice considers potentially disproportionate human health or environmental risks resulting from an action on minority or low-income populations, and assesses health and safety risks that may disproportionately affect children. Although communities with high percentage minority and low-income populations reside in the areas surrounding March ARB, human populations would not be subjected to adverse environmental impacts as a result of this Proposed Action. The relocated C-17As would utilize existing flight path routings and operating hours at March ARB and are not expected to significantly impact existing noise conditions or any sensitive receptors surrounding the installation. Children would not be exposed to increased health and safety risks as a result of the Proposed Action. Therefore, this resource area was not considered for detailed analysis in this EA.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.3.1 Noise

3.3.1.1 Definition of the Resource

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound becomes noise when it is unwelcome and interferes with normal activities, such as sleep or conversation. Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects, such as hearing loss or damage to structures, or subjective judgments (community annoyance). The response of different individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the

sensitivity of the individual. Noise also may affect wildlife through disruption of nesting, foraging, migration, and other life-cycle activities.

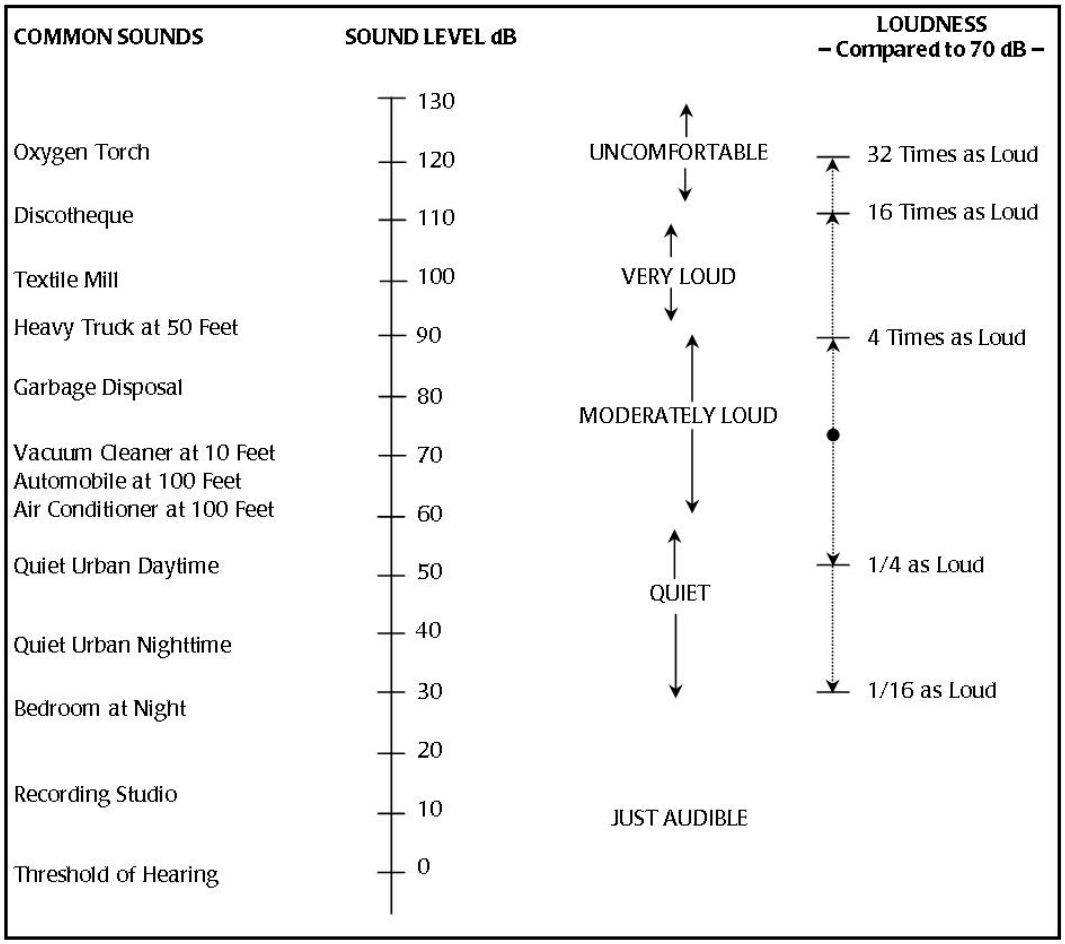
Sound is expressed in logarithmic units of decibels (dB). A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995). The minimum change in the sound level of individual events that an average human ear can detect is approximately 3 dB.

All sounds have a spectral content, which means their magnitude or level changes with frequency, where frequency is measured in cycles per second, or hertz. To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements usually employ an "A-weighted" scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement was made with this filtering process, for instance dBA. In this document, the dB unit refers to A-weighted sound levels unless otherwise noted.

Figure 3-1 is a chart of A-weighted sound levels from common sources (Harris 1979). Some sources, like the air conditioner and vacuum cleaner, are continuous sounds whose levels are constant for some time. Some sources, like the automobile and heavy truck, are the maximum sound during an intermittent event like a vehicle pass-by. Some sources like "urban daytime" and "urban nighttime" are averages over

extended periods. A variety of noise metrics have been developed to describe noise over different time periods.

Figure 3-1. Typical A-weighted Sound Levels of Common Sounds



Single Event Noise Metrics: Maximum Sound Level (L_{max}) and Sound Exposure Levels (SEL)

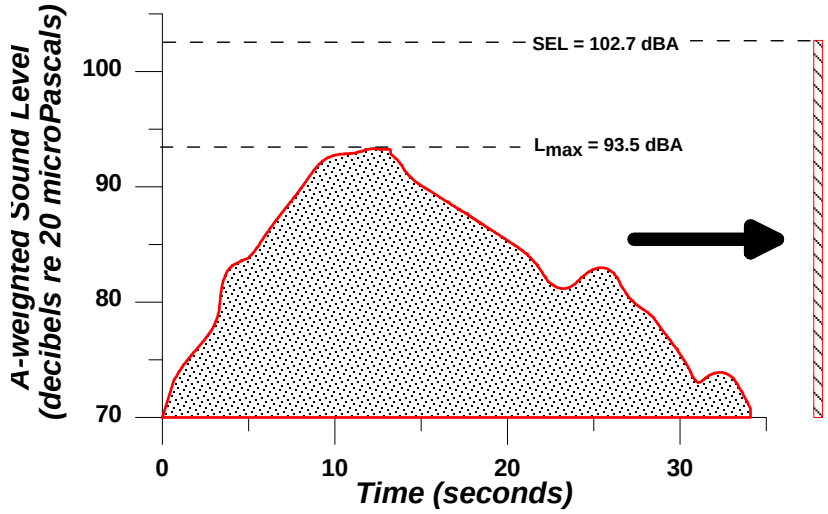
Noise metrics quantify sounds so they can be compared with each other, and with their effects, in a standard way. There are a number of metrics that can be used to describe a range of situations, from a particular individual event to the cumulative effect of all noise events over a long time. This section describes the metrics relevant to environmental noise analysis.

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 Maximum Sound Level (L_{max}). The L_{max} is depicted for a sample event in **Figure 3-2**.

L_{max} is the maximum level that occurs over a short amount of time. Slowly varying or steady sounds are generally measured over 1 second, denoted "slow" response. L_{max} is important in judging if a noise event will interfere with conversation, TV or radio listening, or other common activities. Although it provides some measure of the event, it does not fully describe the noise, because it does not account for how long the sound is heard.

SEL combines both the intensity of a sound and its duration. For an aircraft flyover, SEL includes the maximum and all lower noise levels produced as part of the overflight, together with how long each part lasts. It represents the total sound energy in the event. **Figure 3-2** indicates the SEL for an example event, representing it as if all the sound energy were contained within 1 second.

Figure 3-2. Maximum Sound Level (L_{max}) and Sound Exposure Levels (SEL) Comparison



Source: Wyle Laboratories

Because aircraft noise events last more than a few seconds, the SEL value is larger than L_{max}. It does not directly represent the sound level heard at any given time, but rather the entire event. SEL provides a much better measure of aircraft flyover noise exposure than L_{max} alone.

Cumulative Noise Metrics: Equivalent Sound Level (L_{eq}), Day-Night Average Sound Level (DNL) and Community Noise Equivalent Level (CNEL)

Equivalent Sound Level (L_{eq}) is a "cumulative" metric that combines a series of noise events over a period of time. L_{eq} is the sound level that represents the decibel average SEL of all sounds in the time period. Just as SEL has proven to be a good measure of a single event, L_{eq} has proven to be a good measure of series of events during a given time period.

The time period of an L_{eq} measurement is usually related to some activity, and is given along with the value. The time period is often shown in parenthesis (e.g., $L_{eq(24)}$ for 24 hours). The L_{eq} from 7 a.m. to 3 p.m. may give noise exposure for a school day.

Figure 3-3 gives an example of $L_{eq(24)}$ using notional hourly average noise levels ($L_{eq(h)}$) for each hour of the day as an example. The $L_{eq(24)}$ for this example is 61 dB.

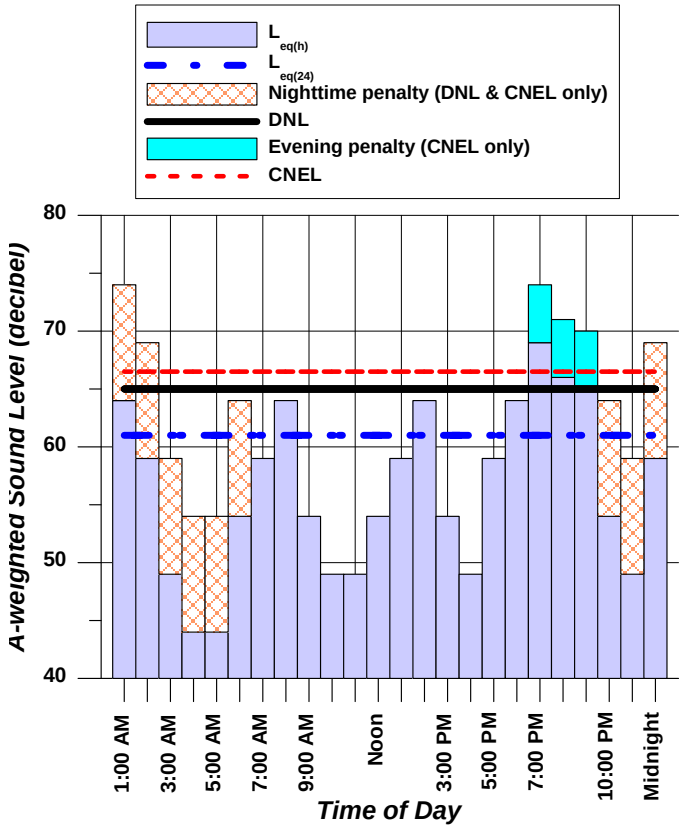
Day-Night Average Sound Level (DNL) is a cumulative metric that accounts for all noise events in a 24-hour period. However, unlike $L_{eq(24)}$, DNL contains a nighttime noise penalty. To account for our increased sensitivity to noise at night, DNL applies a 10 dB penalty to events during the nighttime period, defined as 10:00 p.m. to 7:00 a.m. The notations DNL and L_{dn} are both used for Day-Night Average Sound Level and are equivalent. For airports and military airfields, DNL represents the average sound level for annual average daily aircraft events.

Figure 3-3 gives an example of DNL using notional hourly average noise levels for each hour of the day as an example. Note the $L_{eq(h)}$ for the hours between 10 p.m. and 7 a.m. have a 10 dB penalty assigned. DNL for the example noise distribution shown in **Figure 3-3** is 65 dB.

CNEL is a variation of DNL specified by law in California (California Code of Regulations Title 21, Public Works) (Wyle Laboratories 1970). CNEL has the 10 dB nighttime penalty for events between 10:00 p.m. and 7:00 a.m. but also includes a 4.8 dB penalty for events during the evening period of 7:00 p.m. to 10:00 p.m. The evening penalty in CNEL accounts for the added intrusiveness of sounds during that period.

DNL and CNEL do not represent a level heard at any given time, but represent long term exposure. Scientific studies have found good correlation between the percentages of groups of people highly annoyed and the level of average noise exposure measured in DNL (Schultz 1978; USEPA 1978).

Figure 3-3. Example of $L_{eq(24)}$, DNL, and CNEL Computed from Hourly Equivalent Sound Levels



Noise Modeling Software

Analyses of aircraft noise exposure and compatible land uses around Department of Defense (DoD) airfield-like facilities are normally accomplished using a group of computer-based programs, collectively called NOISEMAP (Czech and Plotkin 1998; Wasmer and Maunsell 2006a, 2006b). The core computational program of the NOISEMAP suite is NMAP. In this report NMAP Version 7.3 was used to analyze aircraft operations and to generate noise contours.

3.3.1.2 Existing Conditions at March ARB

The most recent noise analysis performed for March ARB was the 2017 Air Installation Compatible Use Zones (AICUZ) study. The AICUZ noise modeling updated the airfield noise contours in order to reflect the most recent and accurate aircraft operations and flying conditions.

As is normal for military installations with a flying mission, the primary driver of noise at March ARB is aircraft operations. Standard aircraft operations include take-offs, landings, closed patterns, and static run-ups. In addition to aviation noise, some additional noise results from the day-to-day activities associated with operations, maintenance, and the industrial functions associated with the operations of the airfield. These noise sources include the operations of ground-support equipment, and other transportation noise from vehicular traffic. Noise resulting from aircraft operations remains the dominant noise source.

Aircraft operations at March ARB consist of based military aircraft, civilian aircraft, and a variety of transient aircraft. Existing annual aircraft operations at March ARB total 52,172, as summarized in **Table**

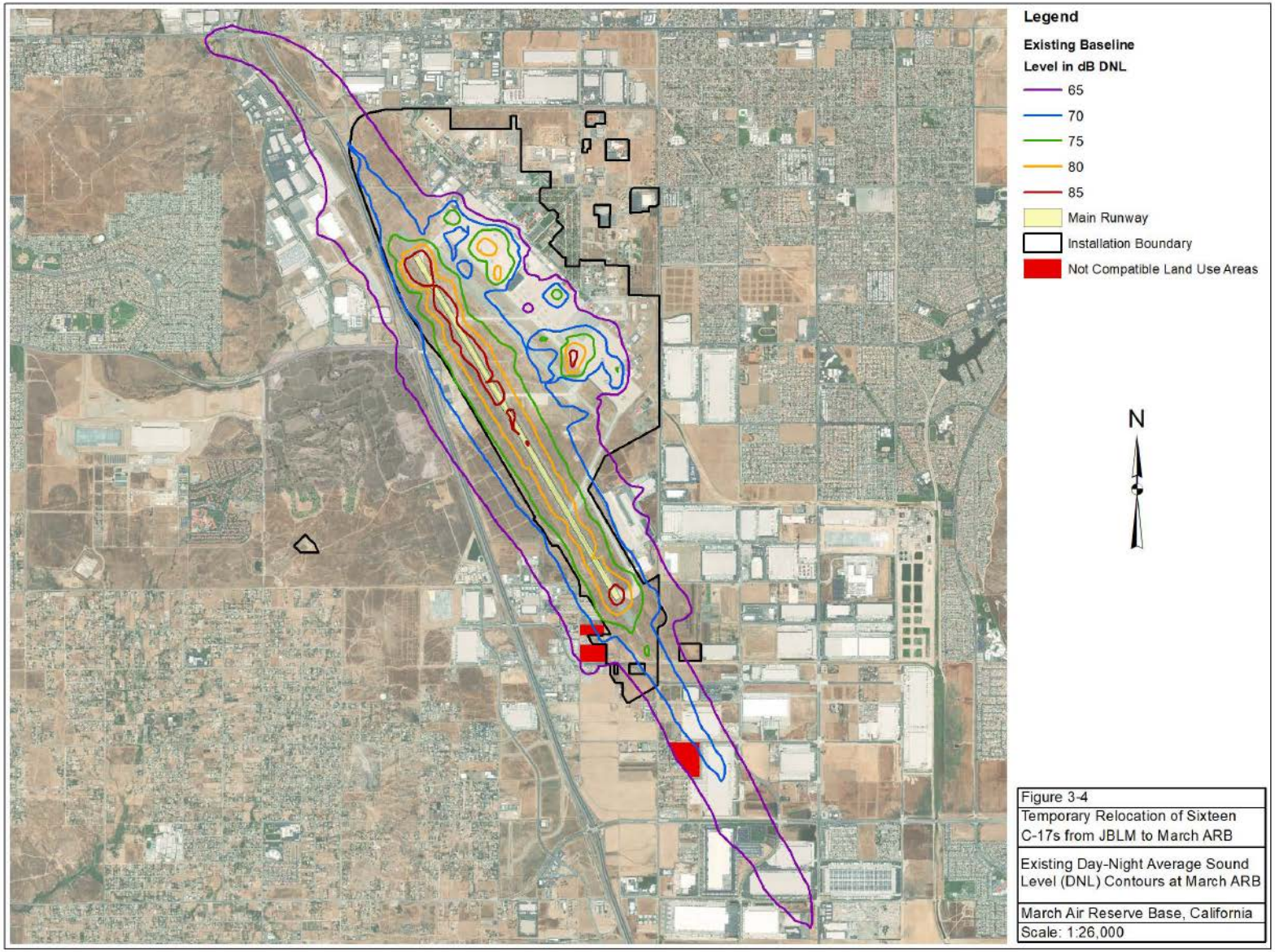
3-1. An operation is defined as a single takeoff or landing. Closed patterns consist of 2 operations, 1 departure and 1 arrival (e.g., 2 closed pattern circuits consist of 4 total operations). The table pattern numbers are operation counts, not pattern circuit counts. The majority of aircraft operations at March ARB are performed by civilian aircraft and based C-17 aircraft.

Table 3-1. Existing Annual Aircraft Operations Summary at March ARB

Aircraft	Departures	Arrivals	Closed Patterns	Total
C-17	729	729	12,620	14,078
F-16	416	416	384	1,216
KC-135R	693	693	4,424	5,810
Other Based	1,876	1,876	3,412	7,164
Civilian	10,500	10,500	0	21,000*
Transients	668	668	1,568	2,904
Grand Total	**14,882**	**14,882**	**22,408**	**52,172**
***Represents maximum number of operations allowed under the March Joint Use Agreement.				

Figure 3-4 shows the resultant 65 dB to 85 dB DNL contours in 5 dB increments for the existing daily flight events at March ARB and identifies areas of non-compatible land use under these contours, including a few small residences and a small residential area to the south of the March ARB runway. The 65 dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations. It should be emphasized that these noise levels, which are often shown graphically as contours on maps, are not discrete lines that sharply divide louder areas from land largely unaffected by noise. Instead, they are part of a planning tool that depicts the general noise environment around the installation based on typical aviation activities. Areas beyond 65 dBA DNL can also experience levels of appreciable noise depending upon training intensity or weather conditions. In addition, DNL noise contours may vary from year to year due to fluctuations in operational tempo due to unit deployments, funding levels, and other factors. Static run-up operations, such as maintenance and pre/post-flight run-ups, were also modeled.

Figure 3-4. Existing Day-Night Average Sound Level (DNL) Contours at March ARB



<This page was intentionally left blank>

The prominent features from **Figure 3-4** are the extent of the DNL contours along the extended centerline of Runway 14/32. The 65 dB contour line shown in purple extends beyond the base boundary, approximately 2.0 miles to the north and approximately 2.3 miles to the south from the end of the runway. The 70 dB DNL contour line shown in blue extends approximately 1.4 miles to the north and 1.6 miles to the south from the end of the runway. The 75 to 85 dB DNL contour lines shown in green, orange and red respectively remain within close proximity to the runway and do not extend beyond the March ARB boundary.

Table 3-2 below shows the acreage within each DNL noise contour lines for the existing operations conditions shown in **Figure 3-4**.

Table 3-2. Existing Day-Night Average Sound Level (DNL) Acreage Affected at March ARB

Noise Level (dBA DNL)	Area Within Noise Contour (acres)
>65	2,730
>70	1,264
>75	605
>80	292
>85	71

3.3.2 Airspace Management

Airspace management generally refers to the manner in which the Federal Aviation Administration (FAA), DoD, and other responsible agencies coordinate and integrate use of the nation's navigable airspace so as to ensure all aviation activities are conducted safely and efficiently. The National Airspace System (NAS) is classified and regulated to meet both military and civil aviation needs.

Federal Aviation Regulations (FARs) define navigable airspace as airspace at and above the minimum flight altitudes prescribed by U.S.C. Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the takeoff and landing of aircraft. Management of the NAS considers how this limited resource is designated, used, and administered to best accommodate the individual and common needs of military, commercial, and general aviation pilots. The FAA considers multiple and competing demands for aviation airspace and other special needs to determine how the NAS can best be structured and regulated to address all user requirements. Management of the navigable airspace also considers, as appropriate, those conditions where flight restrictions or other measures may be needed for avoidance of obstacles and other sensitive land use areas.

For the purpose of this proposed action airspace management refers to the coordination and scheduling of the March ARB airfield environment, including ramp and runway space and flight operations. The March ARB apron has the capacity to accommodate approximately 60 C-130 sized aircraft (March ARB 2017a). Currently March ARB operates fourteen (14) KC-135s, eight (8) C-17s, four (4) F-16s, and three (3) Customs and Border Patrol aircraft in assigned spots. This equates to approximately 36 C-130 sized spaces. An additional fifteen (15) spaces are designated for transient aircraft, leaving approximately ten (10) empty spaces on the March ARB apron. **Table 3-3** shows projected annual flight operations by aircraft for March ARB in 2018. While final operations counts for 2018 are not yet available, C-17 and KC-135 operations at March ARB have remained fairly consistent over the past five years (March ARB 2017a).

Table 3-3. Annual Flight Operations by Aircraft for March ARB

Aircraft	Total
C-17	14,078
F-16	1,216
KC-135R	5,810
Other Based	7,164
Civilian	21,000*
Transients	2,904
Grand Total	**52,172**
***Represents maximum number of operations allowed under the March Joint Use Agreement.	

Source: March ARB 2017a.

3.3.3 Air Quality

The Clean Air Act ([CAA],42 U.S.C. 7401- 7671q), as amended, assigns the United States Environmental Protection Agency (USEPA) the responsibility to establish the primary and secondary National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that specify acceptable concentration levels of six criteria pollutants: particulate matter (measured as both particulate matter less than 10 microns in diameter [PM_{10}] and particulate matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide (SO_2), carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), and lead. Therefore, generally a Net Change Emissions Assessment is required to quantify the emissions of these criteria pollutant and to evaluate if a proposed action poses a significant impact to air quality.

The CAA specifies two sets of standards – primary and secondary – for each regulated air pollutant. Primary standards define levels of air quality necessary to protect public health, including the health of sensitive populations such as people with asthma, children, and the elderly. Secondary standards define levels of air quality necessary to protect against decreased visibility and damage to animals, crops, vegetation, and buildings. Federal air quality standards are currently established for six pollutants (known as criteria pollutants), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x), commonly measured as sulfur dioxide (SO_2), lead, particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}) and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$). Although O_3 is considered a criteria pollutant and is measurable in the atmosphere, it is often not considered as a pollutant when reporting emissions from specific sources, because O_3 is not typically emitted directly from most emissions sources. O_3 is formed in the atmosphere from its precursors – nitrogen oxides (NO_x) and volatile organic compounds (VOCs) – that are directly emitted from various sources. Thus, emissions of NO_x and VOCs are commonly reported instead of O_3. The NAAQS for the six criteria pollutants are shown in **Table 3-4**.

Table 3-4. National Ambient Air Quality Standards

Pollutant	Standard Value	Standard Type
CO		
1-hr average	35 ppm	Primary
8-hr average	9 ppm	Primary
NO_2		
1-hr average	1100 ppb[a]	Primary
8-hr average	53 ppb	Primary and Secondary
O^3		
8-hr average[b]	0.075 ppm	Primary and Secondary
Lead Rolling		
3 month Average	0.15 □g/m^3	Primary
Quarterly Average	1.5 □g/m^3	
PM_{10}		
24-hr average[d]	150 □g/m^3	Primary and Secondary
$PM_{2.5}$		
24-hr average[d]	35 □g/m^3	Primary and Secondary
Annual average[e]	12 □g/m^3	Primary
SO_2		
1-hr average	75 ppb[f]	Primary
3-hr average	0.5 ppm	Secondary

Source: 42 U.S.C. §§7401 et seq.
Notes:
CO = carbon monoxide
μg/m^3 = microgram per cubic meter
NO_2 = nitrogen dioxide
O_3 = ozone
SO_2 = sulfur dioxide
$PM_{2.5}$ = particulate matter equal or less than 2.5 micrometers in diameter
PM_{10} = particulate matter equal or less than 10 micrometeres in diameter
ppb = parts per billion
ppm = parts per million
[a] The 98th percentile, averaged over 3 years
[b] To attain the 8-hour ozone standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm
[c] The 24-hour standard for PM_{10} is not exceeded more than once per year on average over 3 years
[d] The $PM_{2.5}$ 24-hour standards is based on the 3-year average 98th percentile of 24-hour concentrations at each population-oriented monitor
[e] The $PM_{2.5}$ annual standard is based on 3-year average of weighted annual mean concentration from single or multiple community monitors
[f] The 99th percentile of 1-hour daily maximum concentration, averaged over 3 years

A Net Change Emissions Assessment compares all net (increases and decreases) of direct (caused by the action and occur at the same time & location of the action) and indirect (caused by the action but occur at a different time or location than the action) emissions against significance indicators. For proposed actions occurring within nonattainment/maintenance areas, the General Conformity de minimis values (40 CFR 93.153) are used as General Conformity Determination thresholds (if exceeded, a General

Conformity Determination is required). For proposed actions occurring within an area that is in attainment with all NAAQSs, the lowest severity General Conformity de minimis values (40 CFR 93.153) are used as conservative indicators of potential significance.

Additionally, depending upon the severity of criteria pollutant air concentrations, the USEPA may designate an area as "nonattainment". If this occurs, the state (within which the nonattainment area is located in) must develop a State Implementation Plan (SIP) which outlines the steps the state will take to meet the NAAQS. The purpose of General Conformity is to ensure that any federal action does not interfere with any applicable SIP. Nonattainment areas that achieve attainment with the NAAQS and redesignated attainment by the EPA are considered "maintenance areas". States must develop maintenance plans (or maintenance SIPs) for maintenance areas to ensure continued compliance with the NAAQSs for two consecutive ten-year probationary periods.

The CAA requires federal actions to conform to any applicable SIP. USEPA has promulgated regulations implementing these conformity requirements in 40 CFR §51 and §93. General conformity refers to federal actions other than those conducted according to specified transportation plans (which are subject to the Transportation Conformity Rule). Therefore, the General Conformity rule applies only to non-transportation actions in non-attainment or maintenance areas. Such actions must perform a determination of conformity if the emissions resulting from the action exceed applicability thresholds specified for each pollutant and classification of nonattainment. Both direct emissions from the action itself and indirect emissions that may occur at a different time or place but are an anticipated consequence of the action must be considered. The Transportation Conformity Rule does not apply to this Proposed Action.

3.3.3.1 Regional Air Quality

March ARB is located in Riverside County, California. The county is in nonattainment and maintenance areas for Ozone, CO, NO_x, PM 10 and PM 2.5 (40 CFR §§6, 51 and 93) and as a result, General Conformity is applicable to this action. A General Conformity Applicability Analysis has been performed using the Air Conformity Applicability Model (ACAM).

3.3.3.2 Greenhouse Gases

There are six primary Greenhouse Gases (GHGs) of concern: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6).

Only three of the GHGs are considered in the emissions from the Proposed Action. CO_2, CH_4, and N_2O, represent the majority of carbon dioxide equivalent (CO_2eq) associated with the Proposed Action operations. The other GHGs were not considered in the potential emissions from the Proposed Action as they are presumed to be not emitted. HFCs are most commonly used in refrigeration and air conditioning systems; PFCs and SF_6 are predominantly emitted from various industrial processes including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting, none of which are a part of the Proposed Action.

Direct emissions of CO_2, CH_4 and N_2O occur naturally to the atmosphere but human activities have increased global GHG atmospheric concentrations. The 2011 total U.S. GHG emissions were 6,702,300,000 metric tons of CO_2eq (USEPA 2013). U.S. total GHG emissions have risen 8.4 percent from 1990 to 2011 (USEPA 2013).

3.3.4 Biological Resources

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, and wetlands) in which they exist. For this analysis, biological resources are divided into the following categories: vegetation, wildlife, and special status species. Vegetation and wildlife refer to the plant and animal species, both native and introduced, which characterize the region. Special status species include species listed as threatened, endangered or proposed under the ESA of 1973 as designated by the United States Fish and Wildlife Service (USFWS), and species that are protected by laws or programs of states or other agencies. Critical habitat for special status species include areas designated by USFWS as critical habitat protected by the ESA and as sensitive ecological areas designated by state or other federal rulings.

The Federal ESA of 1973 (16 U.S.C. §1531-1542) prohibits any action that causes a "taking" of any federally listed plants or wildlife (i.e., killing, harming, harassment, or any action that may damage their habitat). The ESA requires that a discretionary Federal action not put into jeopardy the continued existence of a listed species, and not destroy or adversely modify their critical habitat. The USFWS maintains a list of species considered to be threatened with extinction or in danger of becoming extinct, as well as species' critical habitat designation.

The Bald and Golden Eagle Protection Act (16 U.S.C. §668a; 50 CFR §22) prohibits the take, possession, sale, purchase, barter, offer to sell, transport or import of the bald eagle (*Haliaeetus leucocephalus)* or the golden eagle (*Aquila chrysaetos*), including any part, nest, or egg, unless allowed by permit.

The MBTA (16 U.S.C. §703-712) and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, prohibits any "attempt at hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof" (USFWS 2013).

The California Department of Fish and Wildlife (CDFW) maintains a list of state-identified threatened and endangered species. CDFW (contained within chapters 1 and 1.5 of the California Fish and Game Code and § 670.1 of the California Code of Regulations) prohibits the importing, taking, exporting, possessing, purchasing, or selling, any species, or any part or product thereof that is endangered or threatened. https://www.wildlife.ca.gov/Conservation.

3.3.4.1 Vegetation

March ARB is located approximately 70 miles east of Los Angeles in the western part of Riverside County, California. The region of influence (ROI) is within the main cantonment area that is paved where planes will be taking off and landing, and the existing buildings where personnel would operate and aircraft would be maintained. Five general vegetation communities and land cover types exist on March ARB and are described below: grasslands, seasonal wetlands/vernal pools, disturbed, landscaped, and developed. Most of the Proposed Project Area is routinely mowed, which has affected the composition of the remaining vegetation. The original vegetation on the eastern half of the main cantonment area has been removed or significantly altered by development, construction, landscaping, and other disturbances from urbanization. Few native plant communities occur within the main cantonment area (March ARB 2012). The dominant plant community within the main cantonment area of March ARB is non-native grasslands.

3.3.4.2 Wildlife

Despite the fact that some of the native vegetation at March ARB has been disturbed or modified throughout the years with changing landscapes, much of the native plant species do persist and a variety of mammals inhabit or use the habitat that is provided. The ROI is within the main cantonment area

described in **Section 3.3.4.1**. Therefore no ground disturbing activity would occur, which narrows the potential impacts to the aviation species. The striped skunk (*Mephitis mephitis*) and western spotted skunk (*Spilogale gracilis*) are abundant on the Base due to their generalist ecological niche. Coyote (*Canis latrans*) is the most common mammalian predator at March ARB. The long-tailed weasel (*Mustela frenata*) has also been documented on the Base. Birds comprise the most diverse taxonomic group of animals on Base. Non-native European Starlings (*Sturnus vulgaris*) and native House Finches (*Carpodacus mexicanus*) are found throughout the Base. Mourning Dove (*Zenaida macroura*), Black Phoebe (*Sayornis nigricans*), Common Raven (*Corvus corax*), Northern Mockingbird (*Mimus polyglottos*), and Brewer's Blackbird (*Euphagus cyanocephalus*) are common species (March ARB 2012). The grasslands attract many seasonal songbirds such as White-crowned Sparrow (*Zonotrichia leucophrys*), Western Meadowlark (*Sturnella neglecta*), and Savannah Sparrow (*Passerculus sandwichensis*). Some of the common raptors that utilize the grasslands of March ARB include American Kestrel (*Falco sparverius*), Northern Harrier (*Circus cyaneus*), Prairie Falcon (*Falco mexicanus*), Ferruginous Hawk (*Buteo regalis*), Burrowing Owl (*Athene cunicularia*), and Golden Eagle (protected under The Bald and Golden Eagle Protection Act). Amphibians and reptiles commonly found on the installation include the side-blotched lizard (*Uta stansburiana*), western fence lizard (*Sceloporus occidentalis*), granite spiny lizard (*S. orcutti*), southern alligator lizard (*Elgaria multicarinata*), gopher snake (*Pituophis catenifer*), and southern Pacific rattlesnake (*Crotalus viridis helleri*).

3.3.4.3 Special Status Species

The 2012 March ARB Integrated Natural Resource Management Plan (INRMP) and the USFWS's Information for Planning and Consultation (IPaC) System were reviewed to determine if any federally-listed species potentially occur in the vicinity of the Proposed Action. Additionally a letter was sent to the USFWS to ask for their input on this project. The following species are federally listed and have the potential to occur on March ARB (**Table 3-5**). The species included in this list are based on habitat on base identified in the March ARB INRMP. The USFWS's IPaC System list is available in **Appendix A** and includes threatened, endangered, proposed and candidate species that may occur within Riverside County. The 2012 March INRMP was then used to determine species with the potential to occur on March ARB. The Federally Listed Endangered and Threatened Animals of California document was used to create **Table 3-6**, to identify other aviation species that were taken into consideration (CNRA 2018).

Table 3-5. Federally Listed Species with the Potential to Occur on March ARB

Common Name	Scientific Name	Status*	Preferred Habitat
Federal			
Quino Checkerspot Butterfly	*Euphydryas editha quino*	E	Occurs in open coastal sage scrub, chaparral and grassland habitats.
Riverside Fairy Shrimp	*Streptocephalus woottoni*	E	Occurs in tectonic swales/earth slump basins in grassland and coastal sage scrub habitats. Inhabits seasonally astatic pools filled by winter/spring rains and hatches in warm water later in the season.
Arroyo Southwestern Toad	*Anaxyrus californicus*	E	Found in freshwater washes, streams, arroyos, and adjacent uplands in riparian woodlands with shallow gravelly pools with sandy terraces.
Least Bell's Vireo	*Viero bellii pusillus*	E	Resides in low riparian areas close to the water or dry riverbeds. Nests are usually constructed in bushes or within the branches of mesquite, willows, and mule fat. Found below 2000 ft in elevation.
Southwestern Willow Flycatcher	*Empidonax traillii*	E	Restricted to willow thickets and shrubby areas found in moist riparian zones, broad valleys, canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes.
San Bernardino Merriam's Kangaroo Rat	*Dipodomys merriami parvus*	E	Occurs in alluvial floodplains and adjacent upland habitats within the San Bernardino, Menifee, and San Jacinto valleys in Riversidean alluvial fan sage scrub.
Stephen's Kangaroo Rat	*Dipodomys stephensi*	E	Occurs in sparsely vegetated annual grassland and sage-scrub communities.
Munz's Onion	*Allium munzii*	E	Grows in wet clay soils within grassland and sage scrub habitats, or juniper woodland communities. Blooms from March to May.
Nevin's Barberry	*Berberis nevinii*	E	Found in a variety of topographical conditions ranging from nearly flat sandy washes, terraces, and canyon floors to ridges and mountain summits. Also associated with mesic habitats and plant communities.
San Diego Ambrosia	*Ambrosia pumila*	E	Occurs primarily on upper terraces of rivers and drainages as well as in open grasslands, openings in coastal sage scrub, and occasionally in areas adjacent to vernal pools. May also be found in disturbed sites such as fire fuel breaks and edges of dirt roadways.

Common Name	Scientific Name	Status*	Preferred Habitat
San Jacinto Valley Crownscale	*Atriplex coronate var. notatior*	E	Restricted to highly alkaline, silty-clay soils. Occurs in alkali sink scrub, alkali playa, vernal pools, and, to a lesser extent, in annual alkali grassland communities.
Santa Ana River Woolly-star	*Eriastrum densifolium ssp. Sanctorum*	E	Found on higher elevation floodplain terraces. Occurs in full sunlight in the sandy-silty soils of fan-shaped alluvial deposits.
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	T	Inhabits cool-water vernal pools and vernal pool-like habitats. Endemic to California and the Agate Desert of southern Oregon.
California Red-legged Frog	*Rana draytonii*	T	Occurs primarily near ponds in humid forests, woodlands, grasslands, and streamsides with plant cover. Most commonly found in lowlands or foothills and in woods adjacent to streams. Breeding habitat includes lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.
Coastal California Gnatcatcher	*Polioptila californica californica*	T	Local, uncommon, obligate resident of arid coastal sage scrub vegetation on mesas, hillsides and in washes. Nests almost exclusively in California sage brush.
Santa Ana Sucker	*Catostomus santaanae*	T	Occurs in small, permanent streams that include gravel, rubble, and boulder substrates.
Spreading Navarretia	*Navarretia fossalis*	T	Primarily found in vernal pool, alkali grasslands, alkali playas, and alkali sinks.
Thread-leaved Brodiaea	*Brodiaea filifolia*	T	Occurs in open ground such as floodplains, grasslands, and gentle hillsides, particularly near vernal pools.
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	C	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, near slow-moving watercourses, backwaters, or seeps. Willow species are almost always a dominant component of the vegetation.
Mountain Plover	*Charadrius montanus*	PT	Occurs in short grasslands and plowed and burned fields, often in areas of surface disturbance, such as rodent burrows and areas with concentrated cattle; uses the ground depressions for roosting.

*T = Threatened, E = Endangered, C = Candidate, PT = Proposed Threatened

Table 3-6. California State Listed Bird Species

Common Name	Scientific Name	Status*
Swainson's hawk	*Buteo swainsoni*	T
California condor	*Gymnogyps californianus*	E
Belding's savannah sparrow	*Passerculus sandwichensis beldingi*	E
California towhee	*Melozone crissalis eremophilus Inyo*	E
Bank swallow	*Riparia riparia*	T
Arizona Bell's vireo	*Vireo bellii arizonae*	E
Willow flycatcher	*Empidonax traillii*	E
Gilded (=Gilded northern) flicker	*Colaptes chrysoides*	E
Gila woodpecker	*Melanerpes uropygialis*	E
Elf owl	*Micrathene whitneyi*	E
Great gray owl	*Strix nebulosa*	E
Northern spotted owl	*Strix occidentalis caurina*	T
Guadalupe murrelet (=Xantus's murrelet)	*Synthliboramphus hypoleucus*	T
Scripps's murrelet (=Xantus's murrelet)	*Synthliboramphus scrippsi*	T
Marbled murrelet	*Brachyramphus marmoratus*	E
California least tern	*Sternula antillarum browni*	E
Greater sandhill crane	*Grus canadensis tabida*	T
Yuma Ridgway's rail	*Rallus obsoletus yumanensis*	T
California Ridgway's rail	*Rallus obsoletus obsoletus*	E
Light-footed Ridgway's rail	*Rallus obsoletus levipes*	E
California black rail	*Laterallus jamaicensis coturniculus*	T

T= Threatened, E = Endangered

Surveys conducted at March ARB between 1995 and 2010 documented the presence of Least Bell's Vireo, Stephen's Kangaroo Rat, and Mountain Plover on portions of the installation. Least Bell's Vireo was documented on the former West March ARB property in 1996 but has not been documented on the current installation, and very little suitable habitat is present on the installation. Multiple surveys for the Stephen's Kangaroo Rat have been conducted on March ARB between 1996 and 2008, but presence of

this species was documented only in 2000. The most recent surveys completed at March ARB have not found the presence of the Stephen's Kangaroo Rat (March ARB 2012). Grasslands are the habitat for the state-listed species of special concern and federally proposed as threatened Mountain Plover (*Charadrius montanus*). Mountain Plover's have been observed as a transient species on March ARB since 2005; however, marginal habitat does exist on the installation. Historic populations of fairy shrimp of the genus *Sreptocephalus* were also documented in vernal pools on March ARB in a 1995 survey, however only a few of the existing pools have been surveyed. Vernal pool surveys are scheduled at be completed at March ARB by the summer of 2019. March ARB has a Programmatic Agreement with USFWS under the Sikes Act which excluded designation of critical habitat for fairy shrimp as a result of species management within March ARB's INRMP (March ARB 2012).

While no Quino Checkerspot Butterfly, Southwestern Willow Flycatcher, Vernal Pool Fairy Shrimp, or Spreading Navarretia have been documented on March ARB, minimal habitat for these species are present on the installation. Suitable habitat and/or soils for the remaining species are not present on March ARB. The ROI is the main cantonment where planes will be taking off and landing, therefore the majority of the area is paved. There are several areas that have open grasslands within the ROI.

3.3.5 Cultural Resources

Cultural resources are prehistoric and historic sites, districts, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. A historic district is an area that "possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development" (NPS 1997).

Numerous laws and regulations require that possible effects on cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies. In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analysis are the NHPA (especially Sections 106 and 110), the Archaeological Resources Protection Act (ARPA), the American Indian Religious Freedom Act (AIRFA), and the Native American Graves Protection and Repatriation Act (NAGPRA).

Section 106 of the NHPA requires that federal agencies give the Advisory Council on Historic Preservation a "reasonable opportunity to comment" on proposed actions. Federal agencies must consider whether their activities could affect historic properties that are already listed, determined eligible, or not yet evaluated under the National Register of Historic Places (NRHP) criteria. Properties that are either listed on or eligible for listing in the NRHP are provided the same measure of protection under Section 106.

The area of potential effect (APE) for cultural resources is the geographic area or areas within which an undertaking (project, activity, program or practice) may cause changes in the character or use of any historic properties present. The APE is influenced by the scale and nature of the undertaking and may be different for various kinds of effects caused by the undertaking. For the Proposed Action, the Air Force determined that the APE includes March ARB airfield and cantonment area as depicted in **Figure 2-1**.

3.3.5.1 Archaeological Resources

Archaeological sites on and in the vicinity of March ARB date to the late prehistoric period. The entire base has been surveyed for surface archaeological resources. To date, 56 archaeological studies have been

conducted within the current boundaries of March ARB (March ARB 2011). A 1996 survey identified one turn of the century archaeological site/artifact on March ARB.

A 2006 Programmatic Agreement between the Air Force and State of California SHPO notes that "the Air Force, in consultation with the California SHPO and Regional Native American Tribes, has conducted archaeological surveys and ethnographic and ethnohistoric studies to determine the presence of NHRP-listed or –eligible prehistoric or historic archaeological sites or traditional cultural properties within the boundary of March ARB (March ARB 2011).

3.3.5.2 Architectural Resources

March ARB has been fully surveyed for historic properties by a number of cultural resources studies (March ARB 2011). The only historic property identified during these studies that is currently within the boundary of the base is the March Field Historic District (MFHD), which encompasses a total of 158 acres comprised of a group of buildings and landscape elements built between 1928 and 1943. MFHD includes a total of 228 buildings, structures and objects with 199 of them contributing to the historical significance of the site, only 71 of which are currently within the base boundary (March ARB 2011).

The MFHD was nominated and listed in the NRHP at the state level of significance under Criterion A for its significance in the areas of military history and under Criterion C for its architectural significance. The period of significance of the district is 1928-1943, the period during which the buildings were constructed and generally laid out according to the 1928 master plan for the base. In addition, the district is an important example of the work of architect Myron Hunt, being the only known military base designed by him. Lastly, March Field represents an extraordinarily large assemblage of buildings constructed using hollow wall concrete construction methods, illustrating the range of applications for that technology better than any other property in California. MFHD was listed in the NRHP in 1994 (#94001420) (March ARB 2011). Additional architectural resource surveys are currently being conducted at March ARB and are expected to be completed and incorporated into an updated ICRMP by summer 2019.

3.3.5.3 Traditional Cultural Properties

No Indian tribes culturally affiliated with March ARB have, to date, identified any sacred sites to which they would like access to under AIRFA, or any properties of religious and cultural significance (March ARB 2011). No Traditional Cultural Properties (TCPs) have been identified at March ARB.

3.3.6 Socioeconomic Resources

Socioeconomics comprises the basic attributes and resources associated with the human environment, particularly population and economic activity. Socioeconomic impacts would be considered significant if the Proposed Action resulted in a substantial shift in population trends or notably affected regional employment, earnings, or community resources.

The ROI for Socioeconomic Resources is typically the county where the base is located. However, March ARB is located in western Riverside County which is relatively sprawling county with the most easternmost border being approximately 172 mi. away from March ARB. Within the context of this analysis, the county is too large a geographic unit to utilize. Therefore, the ROI for socioeconomics is defined as an approximately 20 mi. radius surrounding the base. Data from Riverside City, CA, Moreno Valley, CA, and Perris, CA are provided to establish baseline conditions within the ROI.

3.3.6.1 Population

The U.S. Census Bureau estimated the population of Riverside City, CA in 2017 was 327, 728 which represents a 7.8 percent increase since 2010. Population estimates for Moreno Valley, CA in 2017 was

207, 226 which represents a 7.2 percent increase since 2010. Population estimates for Perris, CA in 2017 was 68, 550 which represents a 13.6 percent increase since 2010. Total population for the three cities in 2017 is estimated at 612, 728 which represents an 8.3 percent change for the ROI.

Table 3-7. Population in March ARB ROI

Geographic Area	2010	2017	Percent Change (2010-2017)
Riverside City, CA	303, 985	327, 728	7.8
Moreno Valley, CA	193, 312	207, 226	7.2
Perris, CA	68, 550	77, 879	13.6
ROI Total:	565, 847	612, 833	8.3

Sources: USCB 2018
Notes: The 2017 total population data are estimates from the 2012-2016 American Community Survey.

3.3.6.2 Emergency Services

March ARB has its own Fire Department. The Kaiser Permanente Meridian Medical Offices on the Former March ARB do not offer urgent care (Meridian Medical Offices 2018). However, there are 12 clinics in the ROI which offer urgent care and could provide emergency services. The Loma Linda University Hospital is approximately 22 miles from March ARB (Google 2018) where personnel could be transported from urgent care if hospital care is needed.

3.3.6.3 Hotels and Lodging

The city of Riverside has approximately 949 hotel rooms and 904 inn/motel rooms available for a total of 1, 853 lodging rooms (COR 2018). The city of Moreno Valley has approximately 774 total hotel guestrooms available (COMV 2018). Both cities have several hotels currently under development which may also be available for use by spring of 2019.

To find an estimated number of hotel rooms currently available in Perris, Google Maps was utilized to determine approximately how many hotels/motels are located within the city. An estimated average number of guest rooms per hotel was then applied. Based on national trends, the majority of hotels/motels within America contain between 75 and 149 guest rooms (AHLA 2015). Therefore, an average of 112 guest rooms per hotel was applied to determine an estimate of total lodging rooms available in Perris. The maximum hotel occupancy rate for several cities analyzed in California during any month in 2018 occurred in August 2018 and was 80 percent (STR Inc. 2018). Therefore, a conservative estimate of 20 percent vacancy rate was applied to determine an estimate of 695 hotel rooms available in the ROI at any given time between February and May of 2019.

Table 3-8. Estimated Hotel Capacity for Riverside County

Location	# of Lodging Rooms	Vacancy Rate	Estimated Rooms Vacant at Full Capacity
Riverside, CA	1, 853[a]	20%[d]	370
Moreno Valley, CA	774[b]	20%[d]	155
Perris, CA	448[c]	20%[d]	90
Total	3, 472	20%	615

[a] Source: City of Riverside (COR 2018)
[b] Source: City of Moreno Valley (COMV 2018)
[c] Source: Google Maps areas surrounding March ARB (Google 2018a)
[d]Source: California Lodging Report (STR Inc. 2018)

3.3.7 Safety

3.3.7.1 Aircraft Mishaps at March ARB

The objective of the flight safety program at March ARB is to protect the public, airspace participants, and military and civilian property from the risk associated with aircraft operations. Such mishaps, while rare, may occur as a result of midair collisions, collisions with manmade structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird/wildlife aircraft collisions.

Aircraft mishaps are classified as A, B, C, D, or E with Class A mishaps being the most severe, with total property damage of $2 million or more, total aircraft loss, and a fatality and/or permanent total disability. Class E mishaps include occurrences that do not meet reportable mishap classification criteria, but are deemed important to investigate and/or report for mishap prevention. Based on historical data on mishaps at all installations, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. Combat losses are excluded from these mishap statistics.

In the most recent five-year period beginning October 2010 and ending October 2015, March ARB had 1 Class A mishap, 128 Class E Bird/Wildlife Aircraft Strike Hazard (BASH) events across multiple airframes (KC-135R, C-17A, and F-16), 4 Class E Controlled Movement Area Violations (i.e., vehicles on taxiways/runways without clearance) events, and 7 Class E Hazardous Air Traffic Reports events. There were no Class B, C, or D flight mishaps reported during this timeframe. (March ARB 2017b).

3.3.7.2 Clear Zones and Accident Potential Zones

Airfield clearance requirements are designed to minimize the potential for accidents during take-offs and landings. Airfield clearance zones consist of two and three-dimensional areas which are associated with specific runways. Restrictions also center on taxiways and parking aprons. The Air Force and the FAA regulate airfield clearances for the facilities under their jurisdictions. Applicable regulations criteria may be found in the following documents: Air Force Manual (AFM) 32-1123, Airfield and Heliport Planning Criteria; FAA Advisory Circular 150/5300-13, Airport Design; and FAR Part 77, paragraph 77.28. (March ARB 2017b).

Runways 14/32 and 13/31 and their associated clear zones are both located adjacent to facilities at March ARB. Building setbacks are required to protect aircraft moving under their own power on runways, taxiways, and aircraft parking aprons. Development in Clear Zones (CZs) and Accident Potential Zones (APZs) 1 and 2 are restricted to prevent property damage and limit flightline obstructions related to airfield operations (March ARB 2004).

The CZ is historically known to have the highest accident potential of the three zones; it does not allow for any development within its boundaries. March ARB does not have facilities located within the CZ (March ARB 2004).

3.3.7.3 BASH-related Safety

BASH is defined as the threat of aircraft collision with birds or wildlife during flight operations and it is a safety concern at all airfields due to the frequency of aircraft operations and the possibility of encountering birds at virtually all altitudes. In particular, bird-strikes present an operational constraint along migratory bird flyways during peak migration periods (i.e., mid- November through March). The Pacific Flyway is the principal flyway in closest proximity to March ARB. Many species of waterfowl, passerines, and raptors migrate through this flyway, with migration altitudes varying by species, migration distance, time of day, and weather (Lincoln et al. 1998).

March ARB has an effective, on-going Integrated BASH Program that tries to deter airfield attractiveness to birds so the species will less likely impact flying operations. The Integrated BASH Program includes maintenance specifications for grass mowing on the airfield to be between 7 and 14 inches; seasonal inspection requirements for grain type grasses that attract high-threat avian species; and periodic inspection requirements for ponding and proper drainage on the airfield whenever possible to reduce insect breeding. Insects are a major food source for birds during much of the year (March ARB 2012). The Integrated BASH Program also established a Bird Hazard Warning System to provide a means for immediate exchange of information between the ground agencies and air crews concerning the existence of birds which pose a hazard. BASH reduction techniques currently listed in the March ARB Integrated BASH Program include abating nuisance avian species, pyrotechnics, and depredation when necessary.. Class E BASH incidents at March ARB include: 4 mishaps in 2010, 9 mishaps in 2011, 15 mishaps in 2012, 30 mishaps in 2013, 44 mishaps in 2014, and 26 mishaps in 2015 (March ARB 2017b).

CHAPTER 4: ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This section describes the direct and indirect impacts of the Proposed and No Action Alternative. The direct and indirect impacts are discussed within each resource section. The potential impacts are discussed in relation to the ROI, as defined in **Chapter 3**, Affected Environment. The No Action Alternative provides a baseline against which the impacts of the Proposed Action can be compared. If the actions result in irreversible or irretrievable results, it is noted within the sections below. Criteria and assumptions used to evaluate potential impacts are discussed at the beginning of each section.

4.2 DESCRIPTION OF THE EFFECTS OF ALL ACTIONS ON THE AFFECTED ENVIRONMENT

4.2.1 Noise

Noise impact analysis typically evaluates potential changes to existing noise environments that would result from implementation of the proposed or alternative actions. Potential changes in the noise environment can be beneficial (i.e., if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (i.e., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (i.e., if they result in increased noise exposure to unacceptable noise levels). Projected noise impacts were evaluated qualitatively for the proposed temporary relocation of 16 C-17A aircraft, support staff, and operations from JBLM, Washington to March ARB, California.

The Proposed Action includes the temporary relocation of 16 additional C-17A aircraft flying an estimated 630 operations at March ARB.

4.2.1.1 Alternative 1: Proposed Action

The proposed additional C-17 aircraft would fly up to a projected 90 percent of the estimated total 630 additional operations during environmental daytime hours (7:00 am to 7:00 pm local time), ten percent of operations during evening hours (7:00 pm to 10:00 pm), and only infrequent operations during nighttime hours (10:00 pm to 7:00 am). Runway utilization, flight tracks, and flight track utilization for the proposed additional C-17 aircraft would be similar to the existing C-17 operations. **Table 4-1** summarizes proposed annual departure, arrival, and closed pattern aircraft operations at March ARB with the additional C-17 aircraft. The proposed C-17 aircraft would also preform static run-up operations, such as pre- and post-flight run-ups.

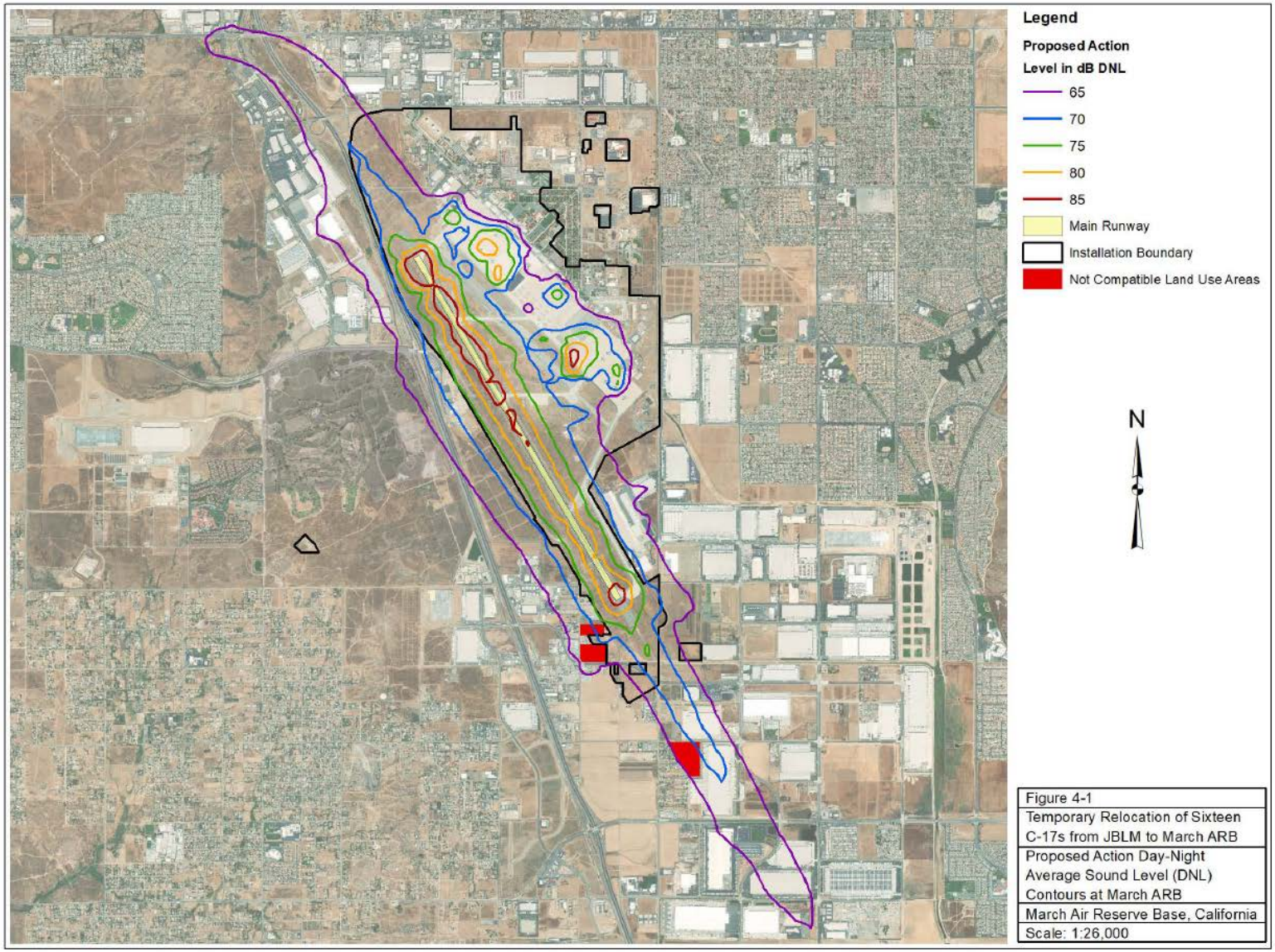
Table 4-1. Proposed Action Annual Aircraft Operations Summary at March ARB

Aircraft	Departures	Arrivals	Closed Patterns	Total
Based C-17s	729	729	12,620	14,078
F-16	416	416	384	1,216
KC-135R	693	693	4,424	5,810
Other Based	1,876	1,876	3,412	7,164
Civilian	10,500	10,500	0	21,000*
Transients	668	668	1,568	2,904
Baseline Total	**14,882**	**14,882**	**22,408**	**52,172**
Proposed C-17s	315	315	0	630
Proposed Total	**15,197**	**15,197**	**22,408**	**52,802**
***Represents maximum number of operations allowed under the March Joint Use Agreement.				

As described in **Section 3.3.1.1**, NOISEMAP was used to model military aircraft noise. Civilian aircraft operational noise levels were taken directly from the 2017 AICUZ, which were generated by the FAA's Aviation Environmental Design Tool.

Figure 4-1 shows the resultant 65 dB to 85 dB DNL contours in 5 dB increments for the daily flight events at March ARB under the Proposed Action and identifies areas of non-compatible land use under these resultant contours. The 65 dBA DNL is the noise level below which generally all land uses are compatible with noise from aircraft operations. It should be emphasized that these noise levels, which are often shown graphically as contours on maps, are not discrete lines that sharply divide louder areas from land largely unaffected by noise. Instead, they are part of a planning tool that depicts the general noise environment around the installation based on typical aviation activities. Areas beyond 65 dBA DNL can also experience levels of appreciable noise depending upon training intensity or weather conditions. In addition, DNL noise contours may vary from year to year due to fluctuations in operational tempo due to unit deployments, funding levels, and other factors.

Figure 4-1. Proposed Action Day-Night Average Sound Level (DNL) Contours at March ARB



<This page was intentionally left blank>

The primary changes in noise contour features between the proposed action and the existing conditions is the slight elongation of the DNL noise level contours along the extended centerline of Runway 14/32 and the slight expansion perpendicular to the runway. This minor and insignificant increase in noise level is a result of the proposed increase in C-17A flight operations.

Under the proposed action, the amount of area within noise contours increases slightly (**Table 4-2**). These increases are unlikely to lead to any significant impacts in these areas.

Table 4-2. Proposed High Noise Scenario Day-Night Average Sound Level (DNL) Acreage Affected on and Surrounding March ARB

Noise Level (dBA DNL)	Area Within Noise Contour (acres)		
	Existing	Proposed Action	Increase
>65	2730	2758	28
>70	1264	1285	21
>75	605	615	10
>80	292	297	5
>85	71	73	2

Comparing the 65 dBA noise contour lines for the existing noise levels versus noise levels under the proposed action indicates that the proposed action will have an insignificant impact on the existing noise environment. This minor impact will not be perceptible to the noise sensitive receptors within the area surrounding March ARB. These imperceptible changes to the noise contours as a result of this Proposed Action would not result in any greater impacts to the few residences and small residential area identified south of the March ARB runway than these non-compatible land use areas are already experiencing.

As a result of the implementation of the proposed action, the increased DNL noise levels in the vicinity of March ARB would not be noticeable, will have no long term impacts, and not be perceptible to noise sensitive receptors within the area. Based upon a review of the existing noise levels and Proposed Action noise level contours, increase noise impacts to the noise environment due to the Proposed Action are negligible and will not be perceptible to noise sensitive receptors.

4.2.1.2 Alternative 2: No Action Alternative

Under the No Action Alternative, the additional C-17A aircraft would not perform operations at March ARB. Under the No Action Alternative, there would be no impacts to the noise environment.

4.2.2 Airspace Management

Impacts to airspace management depend on the degree to which the proposed aircraft and their operations would affect the structure, use, or management of the March ARB airfield environment. Significant impacts could result if the Proposed Action would exceed March ARB's apron capacity, or would significantly increase operations at the March ARB airfield.

4.2.2.1 Alternative 1: Proposed Action

The Proposed Action would temporarily relocate sixteen (16) C-17A aircraft for operation at March ARB. Between the approximately ten (10) vacant apron spaces and the fifteen (15) spaces designated for transient aircraft, the March ARB apron has sufficient space to accommodate these sixteen (16) aircraft during the timeframe of the Proposed Action.

The Proposed Action would add five (5) operations per day to the March ARB airfield environment, totaling approximately 630 total operations during the temporary relocation. 62d AW C-17As would operate using existing flight path routings and operating hours that March ARB C-17A aircraft curently use for departures and arrivals at the airfield. Since 62d AW C-17As would operate only under TACC-directed missions and no training would occur, there would be no impacts to the special use airspace March ARB aircraft use for training.

March ARB has projected approximately 52,171 annual operations to occur at their airfield in 2018 **(Section 3.3.2)**. Based on this number, approximately 16,438 of those operations would occur during the timeframe of the Proposed Action. The 630 added operations from the Proposed Action represents approximately four (4) percent of projected operations at March ARB during this timeframe, and approximately one (1) percent of total annual operations at March ARB.

No significant impacts would be expected as a result of the Proposed Action.

4.2.2.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in Airspace Management at March ARB.

4.2.3 Air Quality

The emissions associated with the increase in air operations and the additional personnel were accounted for in the air quality analysis. The air pollutant emission calculations for the Proposed and No Action Alternative included in the sections below are detailed in **Appendix C.**

4.2.3.1 Alternative 1: Proposed Action

4.2.3.1.1 Regional Air Quality

The Proposed Action would result in short-term emissions increases as a result of the additional flight operations and the temporary increase in personnel. A maximum of 630 air operations would be conducted during the temporary relocation of aircraft and 331 personnel. There would be no long-term significant increases in air emissions, as the additional operations are not indefinite.

A General Conformity Applicability Analysis was conducted in accordance with the guidance in the Air Force Air Quality EIAP Guide and 32 CFR Part 989.30 which refers to AFI 32-7040. Under the Air Force guidance, a Net Change Emissions Assessment was performed which compared all net (increases and decreases caused by the federal action) direct and indirect emissions against General Conformity de minimis values (40 CFR 93.153 specific to the nonattainment and maintenance areas applicable to March ARB. Since the emissions generated as a result of the proposed action are below the applicable General Conformity de minimis Thresholds, a Conformity Determination is not required and no further air analysis is necessary.

The Net Change Analysis was performed using the Air Force's ACAM for criteria pollutant (or their precursors) and GHGs. The results of the ACAM assessment are summarized in **Table 4-3** (see **Appendix C** for details).

Table 4-3. Results of ACAM Assessment

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.671	10	No
NOx	7.334	10	No
CO	5.019	100	No
SOx	0.403	100	No
PM 10	1.900	100	No
PM 2.5	1.609	100	No
Pb	0.000		
NH3	0.012	100	No
CO2e	1224.9		

4.2.3.1.2 Greenhouse Gases

Under the Proposed Action approximately 1224.9 metric tons of CO_2eq would be released due to the temporary operation of these aircraft at March ARB. The amount of CO_2eq released under the Proposed Action represents less than 0.00006 percent of the 2011 U.S. anthropogenic emissions of CO_2eq. This is a limited amount of emissions that would not contribute significantly to climate change, but any emission of GHGs represents an incremental increase in global GHG concentrations. The Air Force is poised to support climate-changing initiatives globally, while preserving military operations, sustainability, and readiness by working, where possible, to reduce GHG emissions.

Activities under the Proposed Action are not subject to the requirements of the USEPA National Greenhouse Gas Reporting Rule.

4.2.3.1.3 Summary of Findings

No significant short-term or long-term impacts to regional air quality would be expected from the Proposed Action. Additionally, no impacts to GHGs would result from the Proposed Action.

4.2.3.2 Alternative 2: No Action Alternative

There would be no new emissions associated with the No Action Alternative and conditions would remain as described in **Chapter 3**.

4.2.4 Biological Resources

Evaluation of impacts is based upon: 1) the importance (legal, commercial, recreational, ecological, or scientific) of the resource, 2) the rarity of a species or habitat regionally, 3) the sensitivity of the resource to proposed activities, and 4) the duration of the impact. Impacts to biological resources would be considered significant if priority species or habitats are adversely affected over relatively large areas and/or disturbances cause reductions in population size or distribution of a priority species. The analysis and conclusion is provided below.

4.2.4.1 Alternative 1: Proposed Action

4.2.4.1.1 Vegetation

As part of the Proposed Action, there would be no permanent loss of herbaceous cover over the entire Proposed Action area. The Proposed Action identifies that the aircrafts and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. Therefore no ground disturbing activity would occur. There would be no significant impacts to vegetation as a result of the Proposed Action.

4.2.4.1.2 Wildlife

Wildlife living within the Proposed Action area would not be permanently displaced. The Proposed Action *may affect, but is not likely to adversely affect* federally listed species. The Proposed Action area is limited to the main cantonment area where planes will be taking off and landing, therefore, there would be no ground disturbing activities. Since the Proposed Action only includes five (5) added flight operations per day to March ARB, the Proposed Action is not likely to affect listed mammal, fish, crustacean, or plant species, or the minimal habitat for these species present on March ARB. Bird species are most likely to be impacted by the addition of flight operations, which is unlikely since the Proposed Action would occur in compliance with the existing Integrated BASH Program at March ARB as described in **Section 3.3.7.3**.

Therefore, there would be no significant impacts to wildlife as a result of the Proposed Action.

4.2.4.1.3 Special Status Species

As mentioned in the 2012 March ARB INRMP, there are eleven (11) special-status wildlife species determined to have a low or moderate potential for occurrence on March ARB. Of these eleven (11) species the only species that the Proposed Action *may affect, but is not likely to adversely affect* would be the bird species. Even though the Golden Eagle is not a bird of conservation concern it should be noted here that it is one of the species most likely to be impacted by the addition of flight operations. The Least Bell's Vireo, Southwestern Willow Flycathcer, and the Coastal California Gnatsnatcher have not been observed on March ARB. The only potential habitat for these species on March ARB is outside the perimeter fence in the drainage way along Heacock Avenue. Neither species have been observed along Heacock Avenue and no nest structures indicative of this species were observed during surveys (March ARB 2012). March ARB has an existing Integrated BASH Program designed to minimize the potential impact to bird species from flight operations by establishing procedures for reporting hazardous bird activity and altering or discontinuing flying operations and to reduce the environmental conditions that attract birds to the airfield.

Least Bell's Vireo. The Least Bell's Vireo resides in low riparian areas close to the water or dry riverbeds. Nests are usually constructed in bushes or within the branches of mesquite, willows, and mule fat. Found below 2000 ft in elevation. Least Bell's Vireo were documented on the former West March ARB property in 1996 but have not been documented on the current installation, and very little suitable habitat is present on the installation (March ARB 2012). Therefore, the Least Bell's Vireo is not likely to occur in the Proposed Action area.

Southwestern Willow Flycatcher. The Southwestern Willow Flycatcher is restricted to willow thickets and shrubby areas found in moist riparian zones, broad valleys, canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes (March ARB 2012). None of the restricted habitats previously stated are found at The Proposed Action area, therefore, the Southwestern Willow Flycatcher is not likely to occur in the Proposed Action area.

Coastal California Gnatcatcher. The Coastal California Gnatcatcher is a local, uncommon, obligate resident of arid coastal sage scrub vegetation on mesas, hillsides and in washes (March ARB 2012. Nests almost exclusively in California sage brush. The Proposed Action area mostly consists of non-native grasslands that are routinely mowed. Therefore, the Coastal California Gnatcatcher is not likely to occur in the Proposed Action area. Therefore, the Air force has determined the temporary relocation of sixteen (16) C-1A7s from JBLM to March ARB *may affect, but is not likely to adversely affect*, federally listed species on March ARB.

4.2.4.1.4 Summary of Findings

The Air Force has determined that the temporary relocation of sixteen (16) C-17A aircraft from JBLM to March ARB may affect, but is not likely to adversely affect federally-listed species on March ARB. A letter was sent to the USFWS on November 2, 2018 requesting that they concur with these findings. The USFWS replied with a letter on November 20, 2018 with concurrence on the determination of *may affect, but not likely to adversely affect* federally-listed species on March ARB (see **Appendix A**). Therefore, there would be no significant impacts to special status species as a result of the Proposed Action.

4.2.4.2 Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no change in the baseline conditions and therefore no impacts to biological resources.

4.2.5 Cultural Resources

4.2.5.1 Alternative 1: Proposed Action

4.2.5.1.1 Archaeological Resources

Archaeological sites on and in the vicinity of March ARB would not be adversely affected by the Proposed Action because no ground disturbing activities would occur. The Air Force sent the California SHPO a letter on November 2, 2018 requesting concurrence on their finding that the proposed action would not negatively affect any archaeological resources. An email from the California SHPO dated December 19 stated that they concurred with the Air Force's finding of no historic properties affected. All correspondence with the California SHPO is provided in **Appendix A**.

4.2.5.1.2 Architectural Resources

The Proposed Action does not include any modifications to existing structures, or the construction of any new structures at March ARB. The Air Force sent the California SHPO a letter on November 2, 2018 requesting concurrence on their finding that the proposed action would not negatively affect any architectural resources. An email from the California SHPO dated December 19 stated that they concurred with the Air Force's finding of no historic properties affected. All correspondence with the California SHPO is provided in **Appendix A**.

4.2.5.1.3 Traditional Cultural Properties

Consistent with that executive order, Department of Defense Instruction (DoDI) 4710.02, *DoD Interactions with Federally-Recognized Tribes*, and AFI 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, federally-recognized tribes that are historically affiliated with the March ARB geographic region were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. The Air Force invited the following tribes for consultation: Agua Caliente Band of Cahuilla Indians, Agua Caliente Cupeño Tribe, Cabazon Band of Mission Indians, Cahuilla Band of Indians, Morongo Band of Mission Indians, Pala

Band of Mission Indians, Pechanga Temecula Band of Luiseño Mission Indians, Ramona Band of Cahuilla, San Manuel Band of Mission Indians, Santa Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Twenty-Nine Palms Band of Mission Indians, and the Yocha Dehe Wintun Nation.

To this date, the Air Force has received replies from the Agua Caliente Band of Cahuilla Indians, Cahuilla Band of Mission Indians, Morongo Band of Mission Indians (THPO), San Manuel Band of Mission Indians, and the Twenty-Nine Palms Band of Mission Indians (THPO). None of the tribes that have responded have expressed concern that the Proposed Action would adversely affect any TCPs, however the Morongo Band of Mission Indians THPO did request a copy of the Final EA once it becomes available. The Air Force will continue to follow up with the Tribes that were contacted and did not respond. Final correspondence will be provided in the Final version of this EA. Tribal consultations and copies of correspondences are included in **Appendix A**. ***Paragraph to be updated as additional tribal responses are received.***

4.2.5.1.4 Summary of Findings

There would be no effect on archaeological or architectural resources as a result of this Proposed Action. Impacts to TCPs are not anticipated because the Air Force would follow the same procedures and flight patterns currently used by March ARB C-17A aircraft. Therefore, there would be no effect on Cultural Resources as a result of this Proposed Action.

4.2.5.2 Alternative 2: No Action Alternative

Since the No Action Alternative would not involve the temporary relocation of C-17As to March ARB, the existing conditions would not change and there would be no impact to cultural resources.

4.2.6 Socioeconomic Resources

Socioeconomic impacts would be considered significant if the Proposed Action resulted in a substantial shift in population trends or notably affected employment, earnings, or community resources within the ROI.

4.2.6.1 Alternative 1: Proposed Action

Under the Proposed Action, 331 personnel would be relocated to March ARB for the duration of the temporary C-17A relocation. The short-term addition of 331 personnel would constitute a 0 .0005 percent increase on the population in the ROI, which is negligible. It is not expected that this minor addition to the population would adversely impact existing community or emergency services in the ROI. Spouses or dependents would not be accompanying the personnel for this temporary relocation, so permanent housing capacity and school capacity was not analyzed.

The personnel would likely be housed on-base for the majority of the duration of the relocation. However planned reservist training at March ARB would require the personnel to lodge off-base a minimum of two weekends per month at hotels in the nearby vicinity of March ARB. It is estimated that two personnel would occupy each room. Therefore approximately 166 hotel rooms would be needed to lodge the personnel a minimum of two weekends per month during February through May of 2019. In the 20 mile radius surrounding the base, there are an estimated 3,075 total hotel guest rooms. A conservative estimate of 20percent vacancy rate was applied to this number to determine an estimated 615 hotel guest rooms would be available within an approximate 20 mile radius at any given time, even if hotels were at max capacity. This exceeds the approximately 166 rooms that would be required to house the personnel. Additionally, several new hotel guestrooms are under development in both Riverside and Moreno Valley, some of which may be available by the spring of 2019 (COR 2018; COMV 2018). While available

lodging in the ROI would decrease slightly during the temporary relocation of these aircraft, it is not expected that the short-term addition of 331 personnel to March ARB would result on any capacity strain to hotels in the ROI.

It is expected that revenue would be generated in the ROI as a result of base personnel lodging a minimum of two weekends per month and purchasing meals and incidentals within the ROI for the duration of the temporary relocation. Since the temporary addition of 331 personnel would increase the population in the ROI by less than .01 percent, the benefits of this increased revenue would be minor in comparison to baseline economic activity. Therefore, the local economy in the ROI would experience temporary, beneficial, minor impacts as a result of the Proposed Action which would be negligible over the long-term.

4.2.6.2 Alternative 2: No Action Alternative

Under the No-Action Alternative, the 331 personnel would not be temporarily relocated, baseline socioeconomic conditions would not be affected, and minor beneficial impacts to socioeconomics in the ROI would not occur.

4.2.7 Safety

4.2.7.1 Alternative 1: Proposed Action

Under the Proposed Action, there would be no change to the safety procedures and activities conducted at March ARB. Safety policies and procedures currently in place are designed to ensure that the potential for aircraft mishaps is reduced to the lowest possible level. These safety policies and procedures would be adhered to under the Proposed Action. The Proposed Action would not require changes to any CZs or APZs at the March ARB airfield. All operation of 62d AW C-17A aircraft would be in accordance with existing clearance requirements and the March ARB Integrated BASH Program. Therefore, no significant effects to safety would be anticipated as a result of the Proposed Action.

4.2.7.2 Alternative 2: No Action Alternative

If the No-Action Alternative were selected, 62d AW would not temporarily relocate the C-17As and there would be no changes to the current operations at March ARB.

4.3 OTHER NEPA CONSIDERATIONS

4.3.1 Unavoidable Adverse Effects

This EA identifies any unavoidable adverse impacts that would be required to implement the Proposed Action and the significance of the potential impacts to resources and issues. Title 40 of CFR §1508.27 specifies that a determination of significance requires consideration of context and intensity. The temporary relocation of sixteen (16) C-17As from JBLM would not significantly impact the Proposed Action area at March ARB. Unavoidable adverse impacts are not expected from the Proposed Action.

4.3.2 Relationship of Short-Term Uses and Long-Term Productivity

The relationship between short-term uses and the enhancement of long-term productivity from implementation of the Proposed Action is evaluated from the standpoint of short-term effects and long-term effects.

The purpose of the Proposed Action is to ensure that there is no interruption in the mission of the 62d AW. The 62d AW needs to operate from an alternative runway location during the time that the McChord Field runway is closed for repairs between March and June of 2019. This would be a short-term effect since the Proposed Action would be temporary. March ARB has the capacity to absorb the activities evaluated under the Proposed Action.

4.3.3 Irreversible and Irretrievable Commitments of Resources

This EA identifies any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action if implemented. An irreversible effect results from the use or destruction of resources (e.g. energy) that cannot be replaced within a reasonable time. An irretrievable effect results from loss of resources (e.g. endangered species) that cannot be restored as a result of the Proposed Action. The short-term irreversible commitments of resources would include the costs associated with the temporary relocation of aircraft and personnel from JBLM to March ARB. No long-term irretrievable commitments of resources would result.

CHAPTER 5: CUMULATIVE IMPACTS

This EA also considers the effects of cumulative impacts as required in 40 CFR §1508.7 and concurrent actions as required in 40 CFR §1508.25(1). A cumulative impact, as defined by the CEQ (40 CFR §1508.7) is the "…impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future action regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time."

A list of past, present, and reasonably foreseeable future actions at March ARB and the surrounding area that could result in cumulative impacts with the implementation of this Proposed Action are shown in **Table 5-1**. Since the Proposed Action includes only the use of the March ARB airfield and existing structures, there would be no potential for cumulative impacts for actions occurring outside of March ARB. Therefore, any such action was not included for consideration in this cumulative impacts analysis. However, non-Air Force actions that are occurring or would occur on March ARB were included for analysis (March ARB 2018).

Table 5-1. Past, Present, and Reasonably Foreseeable Future Actions

Action #	Action	Proponent/ Location	Timeframe	Description
1	Repair Runway 14/32 and Taxiways A and C	March ARB	Ongoing	Repair of Runway 14/32 at 14 end, repair of Taxiways A and C, and construction of a batch plant and laydown yard locations
2	Renovate Satellite Fire Station	March ARB	Ongoing	Renovate Satellite Fire Station, Building 2313
3	Repair Sidewalks / Curbs	March ARB	Ongoing	Repair of sidewalks, curbs, and gutters base-wide
4	New Lighting at Running Track	March ARB	Ongoing	Construct new lighting at running track
5	Repair Ground Control Approach Facility	March ARB	Ongoing	Repair Ground Control Approach Facility, Building 1210
6	Repair Storm Drain	March ARB	Ongoing	Repair Storm Drain at MacDill Drive
7	MQ-9 Beddown	California Air National Guard (CANG) / March ARB	Ongoing	Construction of a new training center, towers, and renovation of a hangar to support the beddown of 17 MQ-9 aircraft

Action #	Action	Proponent/ Location	Timeframe	Description
8	Flying Training Unit (FTU) Building	CANG / March ARB	Ongoing	Construct new building for CANG FTU
9	Ground Data Terminal (GDT) Site	CANG / March ARB	Ongoing	Construct site for GDT to include concrete equipment pads, asphalt paving, addition of fire suppression, utilities, and fencing
10	Construct Aerospace Ground Equipment (AGE) / Renovate Building 2339	CANG / March ARB	Ongoing	Construct AGE and renovate Building 2399 to include construction of pavements and covered storage, addition of fire suppression, utilities, and fencing
11	Repair Parking for MQ-9 Aircraft	CANG / March ARB	Ongoing	Repair parking for 2 Primary Aerospace Vehicles Authorized (PAA) MQ-9s, construct aircraft maintenance avionics shop in Building 1246, add connection to existing pumphouse, and construct utilities and communications
12	Renovate Building 1244	CANG / March ARB	Ongoing	Complete repairs to Building 1244 to include additional parking for 3 PAA MQ-9s and construction of a parking lot
13	Construct Naval Operations Support Center	Navy / March ARB	Ongoing	Construction of approximately 40,000 square foot Naval Operations Center
14	Air Mobility Operations Center (AMOC)	US Customs and Border Patrol / March ARB	Future	Construct a new building and perform minor renovations to existing buildings to complete the AMOC expansion.
15	Water Pipeline Replacement Project	Western Water Management District / March ARB	Future	Replace approximately 7,000 linear feet pipeline owned by the Western Water Management District and located mainly along Graeber Street, including new alignments in Graeber Street

Action #	Action	Proponent/ Location	Timeframe	Description
16	Amazon Flight Operations	March Joint Powers Authority (JPA) / March ARB	Future	Allow Amazon to complete flight operations using March ARB
17	New Construction	March JPA / March ARB	Future	New construction adjacent to Interstate 215
18	Construction of Parking	March JPA / March ARB	Future	Construction of additional parking

For this EA analysis, these other actions listed in the tables are addressed from a cumulative perspective and are analyzed in this section. Future actions would be evaluated under separate NEPA documentation, if required, by the appropriate federal agency. This analysis considers potential impacts from outside projects based on the best available information for these proposals. Descriptions of potential cumulative impacts for each resource area analyzed within this EA are presented in the following sections.

5.1 NOISE

The Proposed Action analyzed within this EA would not result in significant impacts to noise levels and noise sensitive receptors at and around March ARB during the temporary relocation of C-17A aircraft. Flight operations associated with the MQ-9 Beddown and Amazon Flight Operations would not yet be occurring during the timeframe of the Proposed Action, so there is no potential for cumulative impacts to airfield noise at March ARB. Since the Proposed Action does not include construction, any noise impacts resulting from construction activities associated with the other projects identified in **Table 5-1** would not be cumulative to this Proposed Action. All projects identified in **Table 5-1** have been or will be analyzed for potential environmental impacts individually (Waters 2018a). There would be no cumulative noise impacts resulting from this the Proposed Action in conjunction with other identified actions.

5.2 AIRSPACE MANAGEMENT

The Proposed Action analyzed in this EA would not result in significant impacts to Airspace Management at March ARB. Only the MQ-9 Beddown and Amazon Flight Operations included in **Table 5-1** have the potential to cumulatively impact Airspace Management, as the other projects involve only construction and would not use the March ARB airfield. Because the MQ-9s being added in the beddown action and the Amazon aircraft would not yet be operating during the timeframe of the Proposed Action, there is no potential for cumulative impacts to Airspace Management.

5.3 AIR QUALITY

No significant short-term or long-term impacts to regional air quality or GHGs would result from implementation of the Proposed Action. Flight operations associated with the MQ-9 Beddown and Amazon Flight Operations, as well as construction activities from the other projects identified in **Table 5-1** would also impact regional air quality, which would result in cumulative impacts. However, the MQ-9s associated with the beddown action and the Amazon aircraft would not yet be operating during the timeframe of the Proposed Action. Since the Proposed Action does not include construction, any impacts

to Air Quality resulting from construction activities associated with the other projects identified in **Table 5-1** would not be cumulative to this Proposed Action. All projects identified in **Table 5-1** have been or will be analyzed for potential environmental impacts individually (Waters 2018a).Due to the fact that no additional flight operations would occur during this timeframe, and as a result of differing times and locations of construction, cumulative air quality impacts resulting from this the Proposed Action in conjunction with other identified actions would be short-term and would not be significant.

5.4 BIOLOGICAL RESOURCES

The Proposed Action analyzed in this EA would not result in significant impacts to vegetation, wildlife, or special status species. There is no potential for cumulative impacts to vegetation, wildlife, or special status species from flight operations associated with the MQ-9 Beddown or Amazon Flight Operations as those operations would not occur during the timeframe of the Proposed Action. Since the Proposed Action does not include construction, any impacts to vegetation, wildlife, or special status species resulting from construction activities associated with the other projects identified in **Table 5-1** would not be cumulative to this Proposed Action. All projects identified in **Table 5-1** have been or will be analyzed for potential environmental impacts individually (Waters 2018a). Therefore, no cumulative impacts to biological resources would result from the implementation of the Proposed Action in conjunction with the other projects identified in **Table 5-1**.

5.5 CULTURAL RESOURCES

The Proposed Action analyzed within this EA would not impact archaeological resources, architectural resources, or traditional cultural properties at March ARB because none exist within the Proposed Action area. Since the Proposed Action does not include construction, any impacts to archaeological resources, architectural resources, or traditional cultural properties resulting from construction activities associated with the other projects identified in **Table 5-1** would not be cumulative to this Proposed Action. All projects identified in **Table 5-1** have been or will be analyzed for potential environmental impacts individually (Waters 2018a). Therefore, no cumulative impacts to cultural resources would result from the implementation of the Proposed Action in conjunction with other projects identified.

5.6 SOCIOECONOMIC RESOURCES

The Proposed Action analyzed within this EA would result in short-term, minor beneficial impacts to socioeconomic resources within the ROI. The need for construction supplies and workers to complete the other projects identified in **Table 5-1** would also result in minor, short-term, beneficial impacts to socioeconomic resources in the area. For all projects, these impacts would cease once construction and operational phases were complete. Therefore, there would be no long-term cumulative impacts to socioeconomic resources resulting from the Proposed Action in conjunction with other identified actions.

5.7 SAFETY

The Proposed Action analyzed within this EA would not result in significant impacts to safety at March ARB. Flight operations associated with the MQ-9 Beddown and Amazon Flight Operations would not yet be occurring during the timeframe of the Proposed Action, so there is no potential for cumulative impacts to airfield safety at March ARB. All construction activities for other actions identified in **Table 5-1** are following / would follow the appropriate laws, regulations, and best management practices to ensure that safety and occupational health is maintained at all times. Therefore, no cumulative impacts to safety would be anticipated to result from this the Proposed Action in conjunction with the other actions identified in **Table 5-1**.

CHAPTER 6: LIST OF PREPARERS

Name / Company	Organization	Degree	Resource Area(s)	Years of Experience
Luke Cawley / KBRwyle	AFCEC/CZN	BS, Mechanical Engineering, Noise & Vibration	• Noise	8
Taylor Janise / AGEISS	AFCEC/CZN	BS, Environmental Science	• Biological Resources	1
Grace Keesling / AGEISS	AFCEC/CZN	MS, Environmental Policy & Management BA, Geosciences	• Consultation/ Coordination • Airspace Management • Land Use • Earth Resources • Cumulative Impacts • Overall QA/QC	5
Helen Kellogg / AGEISS	AFCEC/CZN	BS, Geography, Urban and Regional Planning	• Socioeconomics • Environmental Justice	3
David Martin / BB&E	AFCEC/CZN	MS, Applied Geography BA, Anthropology	• Description of Proposed Action and Alternatives • Cultural Resources • Water Resources • Overall EA Review	20
Austin Naranjo / Solutio	AFCEC/CZTQ	MBA BS, Mechanical Engineering	• Air Quality	2
Patricia Reyes / AGEISS	AFCEC/CZN	MPA, Management BS, Biology	• Hazardous Materials/ Waste • Infrastructure & Utilities • Safety & Occupational Health	20
Jean Reynolds / Air Force	AFCEC/CZN	MA, Management BA, Urban & Regional Planning	• Project Manager • USAF Overall QA/QC	27
Derek Stadther / KBRwyle	AFCEC/CZN	MS, Acoustics BS, Physics	• Noise	6
Julianne Turko / AGEISS	AFCEC/CZN	MA, Geology BS, Geological Sciences	• Overall QA/QC	33

<This page was intentionally left blank>

CHAPTER 7: REFERENCES

AHLA (American Hotels & Lodging Association). 2015. Lodging Industry Trends, accessed 15 November 2018. Available at: http://www.ahla.com/sites/default/files/Lodging_Industry_Trends_2015.pdf.

Berglund, B., and T. Lindvall, eds. 1995. Community Noise, Jannes Snabbtryck, Stockholm, Sweden.

CNRA (State of California Natural Resources Agency). 2018. State and Federally Listed Endangered and Threatened Animals of California, August 2018. Available at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109405&inline.

COMV (City of Moreno Valley). 2018. Personal communication with the City of Moreno Valley Economic Development Department. 21 November 2018.

COR (City of Riverside). 2018. Personal communication with the City of Riverside Economic Development Department. 15 November 2018.

Czech, J.J. and K.J. Plotkin. 1998. NMAP 7.0 User's Manual. Wyle Research Report WR 98-13. Wyle Laboratories, Inc. November.

DOD. 1978. "Environmental Protection, Planning in the Noise Environment", Air Force Manual AFM 19-10, Technical Manual TM 5-803-2, NAVFAC P-870, Departments of the Air Force, the Army and the Navy. 15 June.

Google. 2018. Hospital near March ARB. Accessed 15 November 2018. Available at: https://www.google.com/maps/search/march+ARB+hospitals/@33.9313918,-117.4283083,11z/data=!3m1!4b1.

Google. 2018a. Hotels in Perris, CA. Accessed 15 November 2018. Available at: https://www.google.com/maps/search/hotels+in+Perris,+CA/@33.787026,-117.3716121,11z/data=!3m1!4b1.

Harris, C.M. 1979. Handbook of Noise Control. McGraw-Hill Book Co.

Lincoln, F.C., S.R. Peterson, and J.L. Zimmerman. 1998. Migration of Birds. DOI, USFWS, Washington, D.C. Available at: http://www.npwrc.usgs.gov/resource/birds/migratio/index.htm.

March ARB. 2004. March Air Reserve Base General Plan Update. August 2004.

March ARB. 2011. Final Integrated Cultural Resources Management Plan March Air Reserve Base, California. April 2011.

March ARB. 2012. Final Integrated Natural Resources Management Plan March Air Reserve Base, California. June 2012.

March ARB. 2017a. March Aircraft Information. August 2017.

March ARB. 2017b. Environmental Assessment for MQ-9 Reaper Launch and Recovery Element. March 2017.

March ARB. 2018. Ongoing and Future Projects at March ARB. October 2018.

Meridian Medical Offices. 2018. Meridian Medical Offices. Accessed 15 November 2018. Available at: https://healthy.kaiserpermanente.org/southern-california/facilities/Meridian-Medical-Offices-308781.

NPS (National Park Service). 1997. How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. Washington, D.C.: U.S. Department of the Interior, National Park Service, Interagency Resources Division, accessed 19 November 2018. Available at: https://www.nps.gov/nr/publications/bulletins/nrb15/.

Schultz, T.J. 1978. "Synthesis of social surveys on noise annoyance," J. Acoust. Soc. Am., Vol. 64, No. 2, pp. 377-405, August.

STR (Smith Travel Research) Inc. 2018. Visit California. California Lodging Report, accessed 14 November 2018. Available at: https://industry.visitcalifornia.com/Research/Report/California-Lodging-Report-Aug-2018.

USCB (United States Census Bureau). 2018. Quick Facts Perris City, Moreno Valley City, Riverside City, California, accessed 14 November 2018. Available at: https://www.census.gov/quickfacts/fact/table/perriscitycalifornia,morenovalleycitycalifornia,riversidecitycalifornia/PST045217.

USEPA. 1974. "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare With an Adequate Margin of Safety," U.S. Environmental Protection Agency Report 550/9-74-004, March.

USEPA. 1978. "Protective Noise Levels," Office of Noise Abatement and Control, Washington, D.C. U.S. Environmental Protection Agency Report 550/9-79-100, November.

USEPA. 2013. Inventory of US Greenhouse Gas Emissions and Sinks: 1990-2011, EPA 430-R-13-001. April 2013, accessed 28 Jun 2018. Available at: https://www.epa.gov/sites/production/files/2015-12/documents/us-ghg-inventory-2013-main-text.pdf.

USFWS (U.S. Fish and Wildlife Service). 2018. IPaC Resource List, October 2018. Available at: http://fws.gov/ipac/location/S774O3CMSNGU5HZ3XLIOQKGLZQ/resources.

Wasmer, F. and F. Maunsell. 2006a. BaseOps 7.3 User's Guide. Wasmer Consulting.

Wasmer, F. and F. Maunsell. 2006b. NMPlot 4.955 User's Guide. Wasmer Consulting.

Waters, Doug. 2018a. Personal communication with Doug Waters, March ARB. 19 October 2018.

Waters, Doug. 2018b. Personal communication with Doug Waters, March ARB. 13 December 2018.

Wyle Laboratories. 1970. "Supporting Information for the Adopted Noise Regulations for California Airports," Wyle Report WCR 70-3(R).

Appendix A

Interagency / Government to Government Coordination and Consultations

Agency Notification *Recipients and Example Letter*	A-3
Agency Notification *Responses*	A-11
Interagency Consultation *Recipients and Example Letter*	A-15
Interagency Consultation *Responses*	A-41
Government to Government Consultation *Recipients and Example Letter*	A-45
Government to Government Consultation *Responses*	A-51

Appendix A will be updated as inputs are received.

<This page was intentionally left blank>

Agency Notification
Recipients and Example Letter

<This page was intentionally left blank>

The following stakeholders were notified of the Proposed Action and invited to comment.

Federal Agencies	
U.S. EPA, Southwest Office Mike Stoker, Regional Administrator	U.S. Army Corps of Engineers, LA District Col Aaron Barta, District Commander
U.S. Fish and Wildlife Service, Carlsbad F&W Office Stewart Mendel, Field Supervisor	U.S. Fish and Wildlife Service, Carlsbad F&W Office Nancy Ferguson, Sykes Act Coordinator
FAA Western Service Center Kevin Stewart, Acting Director	
State Agencies	
State Historic Preservation Office Julianne Polanco, State Historic Preservation Officer	State Historic Preservation Office Ed Carrol, State Historian II
State of California Clearinghouse, Governor's Office Ken Alex, OPR Director	California Environmental Protection Agency Matt Rodriguez, Secretary of Environmental Protection
California Department of Fish and Wildlife Charlton H. Bonham, Director	
Native American Tribes / Tribal Agencies	
Agua Caliente Band of Cahuilla Indians Patricia Garcia-Plotkin, Director-Historic Preservation	Agua Caliente Cupeño Tribe Chairman William J. Pink
Cabazon Band of Mission Indians, CA Judy Stapp, Director of Cultural Affairs	Cahuilla Band of Indians Bobby Ray Esparza, Cultural Director
Cahuilla Band of Mission Indians Chairman Daniel Salgado	Morongo Band of Cahuilla Mission Indians Cultural Heritage Program
Morongo Band of Mission Indians Denise Torres, Cultural Heritage Program	Pala Band of Mission Indians Chairman Robert Smith
Pechanga Band of Luiseño Mission Indians Chairman Mark A. Macarro	Pechanga Temecula Band of Luiseño Mission Indians Tuba Ebru Ozdil, Cultural Analyst
Ramona Band of Cahuilla Chairman Joseph D. Hamilton	Ramona Band of Cahuilla John Gomez, Cultural Resources Manager
San Manuel Band of Mission Indians Lee Clauss, Director of Cultural Resources	Santa Rosa Band of Cahuilla Indians Chairman Steven Estrada
Santa Rosa Band of Cahuilla Indians Vanessa Minott, Tribal Administrator	Soboba Band of Luiseno Indians Chairman Scott Cozart
Pala Band of Luiseño Mission Indians Tribal Historic Preservation Office	Twenty-Nine Palms Band of Mission Indians Anthony Madrigal, Historic Preservation Officer
Yocha Dehe Wintun Nation Marilyn Delgado, Cultural Resources Director	
Other Stakeholders	
City of Riverside Mayor Rusty Bailey	City of Perris Mayor Michael M. Vargas
Santa Ana Regional Water Quality Control Board Hope Smythe, Executive Officer	South Coast Air Quality Management District Derrick Alatorre, Deputy Executive Officer
Mojave Air Quality Management District Brad Poiriez, Executive Director	Western Riverside Council of Governments Rick Bishop, Executive Director

Other Stakeholders	
City of Moreno Valley Community Development Dept Richard Sandzimier, Community Development	March Joint Powers Authority Danielle Wheeler, Executive Director
Southern California Logistics Airport Eric Ray, Airport Manager	Perris Valley Airport Pat Conatser, Airport Manager
Southern California TRACON Barry Davis, Manager	

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

2 November 2018

Renae Fischer, REM, Chief
AFCEC/CZN
2261 Hughes Ave Ste 155
JBSA Lackland TX 78236-9853

The Honorable Rusty Bailey
City of Riverside
3900 Main Street
Riverside, CA 92501

Dear Mayor Bailey

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with the Temporary Relocation of Sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California. The EA is being prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality regulations implementing NEPA, and the Air Force NEPA regulations.

The runway at McChord Field, JBLM will be closed for repairs for a period of approximately 94 days between March and June of 2019. As part of the Proposed Action, March ARB would provide ramp and runway space for the temporary relocation and operation of sixteen (16) C-17As and assigned to the 62d Airlift Wing (AW) at JBLM while the runway is closed for repairs. The Proposed Action also includes the relocation of approximately 331 personnel during this time. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, the temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019. The aircraft and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

These sixteen (16) aircraft would be relocated for parking and flight operations only, and would include an additional five (5) landings and takeoffs per day at March ARB. All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States, Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. As such, operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No training would be conducted under the Proposed Action.

The Temporary Relocation of Sixteen C-17As from JBLM, Washington to March ARB, California EA will assess the potential environmental impacts associated with this Proposed Action, and examine the cumulative effects when combined with past, present, and any future proposals. As a part of the Air Force's Environmental Impact Analysis Process (EIAP), we request your input in identifying general or specific issues or areas of concern you feel should be addressed in the environmental analysis.

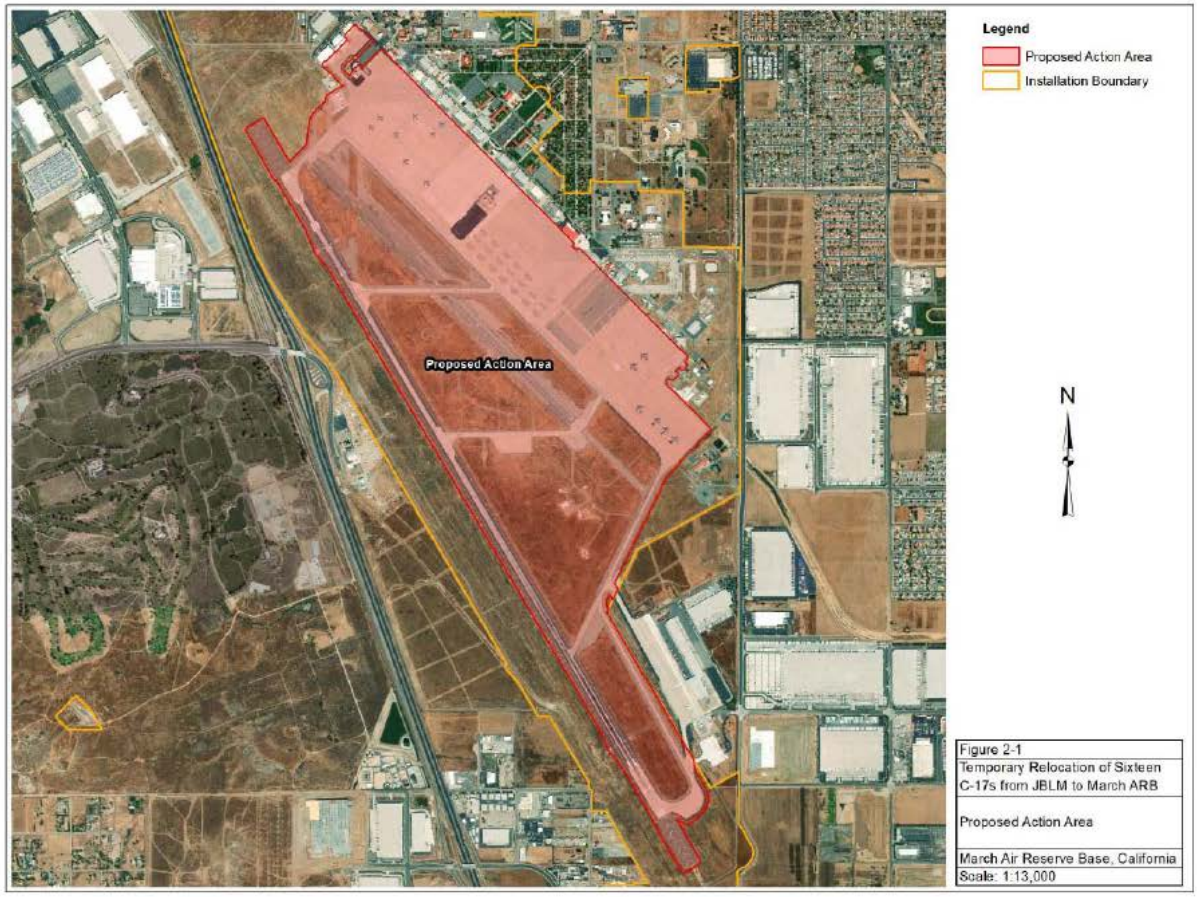
To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA, please forward written issues or concerns to Ms. Jean Reynolds, Environmental Program Manager, Air Force Civil Engineer Center (AFCEC), NEPA Division within 30 days of receipt of this letter. If you have any questions, please contact Ms. Jean Reynolds at jean.reynolds@us.af.mil; or AFCEC/CZN, Attn: Jean Reynolds - Bldg 171, 2261 Hughes Ave Ste 155, JBSA Lackland TX 78236-9853. Thank you in advance for your assistance in this effort.

Sincerely,

RENAE FISCHER, REM
Chief, AF NEPA Division
Environmental Directorate

Attachment:
1. Map of Proposed Action Area

Attachment 1: Map of Proposed Action Area



<This page was intentionally left blank>

Agency Notification
Responses

<This page was intentionally left blank>

Mojave Desert Air Quality Management District
14306 Park Avenue, Victorville, CA 92392-2310
760.245.1661 • fax 760.245.2699
Visit our web site: http://www.mdaqmd.ca.gov
Brad Poiriez, Executive Director

November 14, 2018

Ms. Jean Reynolds, Environmental Program Manager
Air Force Civil Engineer Center
National Environmental Policy Act Division (AFCEC/CZN)
2261 Hughes Ave. Bldg. 171, Ste 155
JBSA Lackland TX 78236-9853

Project Title: Temporary Relocation of Sixteen (16) C-17As

Dear Ms. Reynolds:

The Mojave Desert Air Quality Management District (MDAQMD) has received the request for comments for the proposed Temporary Relocation of Sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California. As the runway at McChord Field, JBLM will be closed for repairs for a period of approximately 94 days between March and June 2019, the temporary operations of these relocated sixteen (16) C-17As at March ARB would be from approximately February 22, 2019 through June 15, 2019. The aircraft and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

We have reviewed the project and, based on the information available to us at this time, we have no comments.

Thank you for the opportunity to review these planning documents. If you have any questions regarding this letter, please contact me at (760) 245-1661, extension 6726, or Kevin Hendrawan at extension 4007.

Sincerely,

Alan J. De Salvio
Deputy Director – Mojave Desert Operations

AJD/kh C-17As at MARB

<This page was intentionally left blank>

Interagency Consultation
Recipients and Letters

The following agencies were consulted with in preparation of this EA and their input solicited.

Agencies
U.S. Fish and Wildlife Service, Carlsbad Fish & Wildlife Office Nancy Ferguson, Sykes Act Coordinator
.S. Fish and Wildlife Service, Carlsbad F&W Office Stewart Mendel, Field Supervisor
State Historic Preservation Office Julianne Polanco, State Historic Preservation Officer
State Historic Preservation Office Ed Carrol, State Historian II

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

2 November 2018

Renae Fischer, REM
Air Force Civil Engineer Center
National Environmental Policy Act Division (AFCEC/CZN)
2261 Hughes Ave, Ste 155
JBSA Lackland TX 78236-9853

Nancy Ferguson, Sykes Act Coordinator
USFWS Carlsbad Fish and Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008

Dear Ms. Ferguson

The United States Air Force (Air Force) is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with the temporary relocation of sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California. Pursuant to Section 7 of the Endangered Species Act (ESA) of 1973 (16 USC 1531-1544), the USAF has determined that the temporary relocation of sixteen (16) C-17As from JBLM to March ARB *may affect, but is not likely to adversely affect* federally listed species.

Proposed Action

The runway at McChord Field, JBLM will be closed for repairs for a period of approximately 94 days between March and June of 2019. As part of the Proposed Action, March ARB would provide ramp and runway space for the temporary relocation and operation of sixteen (16) C-17As and assigned to the 62d Airlift Wing (AW) at JBLM while the runway is closed for repairs. The Proposed Action also includes the relocation of approximately 331 personnel during this time. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, the temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019. The aircraft and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

These sixteen (16) aircraft would be relocated for parking and flight operations only, and would include an additional five (5) landings and takeoffs per day at March ARB. All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States, Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. As such, operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No training would be conducted under the Proposed Action.

Threatened, Endangered, and Candidate Species and Critical Habitat

The March ARB Integrated Natural Resource Management Plan (INRMP) and the USFWS Information for Planning and Consultation System (Attachment 2) were reviewed to determine if any federally-listed species potentially occur in the vicinity of the Proposed Action. The following species are federally listed and have the potential to occur on March ARB (Table 1). The species included in this list are based on habitat on base identified in the March ARB INRMP.

Table 1: Federally Listed Species with the Potential to Occur on March ARB

Common Name	Scientific Name	Status*	Preferred Habitat
		Federal	
Quino Checkerspot Butterfly	*Euphydryas editha quino*	E	Occurs in open coastal sage scrub, chaparral and grassland habitats.
Arroyo Southwestern Toad	*Anaxyrus californicus*	E	Found in freshwater washes, streams, arroyos, and adjacent uplands in riparian woodlands with shallow gravelly pools with sandy terraces.
Least Bell's Vireo	*Viero bellii pusillus*	E	Resides in low riparian areas close to the water or dry riverbeds. Nests are usually constructed in bushes or within the branches of mesquite, willows, and mule fat. Found below 2000 ft in elevation.
Southwestern Willow Flycatcher	*Empidonax traillii*	E	Restricted to willow thickets and shrubby areas found in moist riparian zones, broad valleys, canyon bottoms, around mountain-side seepages, or at the margins of ponds and lakes.
San Bernardino Merriam's Kangaroo Rat	*Dipodomys merriami parvus*	E	Occurs in alluvial floodplains and adjacent upland habitats within the San Bernardino, Menifee, and San Jacinto valleys in Riversidean alluvial fan sage scrub.
Stephen's Kangaroo Rat	*Dipodomys stephensi*	E	Occurs in sparsely vegetated annual grassland and sage-scrub communities.
Munz's Onion	*Allium munzii*	E	Grows in wet clay soils within grassland and sage scrub habitats, or juniper woodland communities. Blooms from March to May.
Nevin's Barberry	*Berberis nevinii*	E	Found in a variety of topographical conditions ranging from nearly flat sandy washes, terraces, and canyon floors to ridges and mountain summits. Also associated with mesic habitats and plant communities.
San Diego Ambrosia	*Ambrosia pumila*	E	Occurs primarily on upper terraces of rivers and drainages as well as in open grasslands, openings in coastal sage scrub, and occasionally in areas adjacent to vernal pools. May also be found in disturbed sites such as fire fuel breaks and edges of dirt roadways.

Common Name	Scientific Name	Status*	Preferred Habitat
San Jacinto Valley Crownscale	*Atriplex coronate var. notatior*	E	Restricted to highly alkaline, silty-clay soils. Occurs in alkali sink scrub, alkali playa, vernal pools, and, to a lesser extent, in annual alkali grassland communities.
Santa Ana River Woolly-star	*Eriastrum densifolium ssp. Sanctorum*	E	Found on higher elevation floodplain terraces. Occurs in full sunlight in the sandy-silty soils of fan-shaped alluvial deposits.
Vernal Pool Fairy Shrimp	*Branchinecta lynchi*	T	Inhabits cool-water vernal pools and vernal pool-like habitats. Endemic to California and the Agate Desert of southern Oregon.
Riverside Fairy shrimp	*Streptocephalus woottoni*	E	Critically imperiled, is restricted to deep seasonal vernal pools, vernal pool like ephemeral ponds, and stock ponds. Found in various pools in Western Riverside, Orange and San Diego Counties
California Red-legged Frog	*Rana draytonii*	T	Occurs primarily near ponds in humid forests, woodlands, grasslands, and streamsides with plant cover. Most commonly found in lowlands or foothills and in woods adjacent to streams. Breeding habitat includes lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps.
Coastal California Gnatcatcher	*Polioptila californica californica*	T	Local, uncommon, obligate resident of arid coastal sage scrub vegetation on mesas, hillsides and in washes. Nests almost exclusively in California sage brush.
Santa Ana Sucker	*Catostomus santaanae*	T	Occurs in small, permanent streams that include gravel, rubble, and boulder substrates.
Spreading Navarretia	*Navarretia fossalis*	T	Primarily found in vernal pool, alkali grasslands, alkali playas, and alkali sinks.
Thread-leaved Brodiaea	*Brodiaea filifolia*	T	Occurs in open ground such as floodplains, grasslands, and gentle hillsides, particularly near vernal pools.
Western Yellow-billed Cuckoo	*Coccyzus americanus occidentalis*	C	Inhabits extensive deciduous riparian thickets or forests with dense, low-level or understory foliage, near slow-moving watercourses, backwaters, or seeps. Willow species are almost always a dominant component of the vegetation.
Mountain Plover	*Charadrius montanus*	PT	Occurs in short grasslands and plowed and burned fields, often in areas of surface disturbance, such as rodent burrows and areas with concentrated cattle; uses the ground depressions for roosting.

3

Surveys conducted at March ARB between 1995 and 2010 documented the presence of Least Bell's Vireo, Stephen's Kangaroo Rat, and Mountain Plover on portions of the installation. Least Bell's Vireo were documented on the former West March ARB property in 1996 but have not been documented on the current installation, and very little suitable habitat is present on the installation. Multiple surveys for the Stephen's Kangaroo Rat have been conducted on March ARB between 1996 and 2008, but presence of this species was documented only in 2000. Subsequent surveys have not found the presence of the Stephen's Kangaroo Rat on March ARB. Mountain Plover's have been observed as a transient species on March ARB since 2005; however, marginal habitat does exist on the installation.

Streptocephalus woottoni cysts were documented on March ARB in 2009. There has never been a full extent survey of fairy shrimp on March ARB. The previous surveys done were extremely minimal and not a good representation of what really exists throughout the base. Extensive surveys were initiated in 2018 and will continue through the year and into spring of 2019. This will be the first thorough survey that has ever been done. However, all habitat for the Riverside Fairy Shrimp and the Vernal Pool Fairy shrimp would not be disturbed by the additional flight activities since these would be limited to the aircraft movement area only, and there are no vernal pools within this area.

While no Quino Checkerspot Butterfly, Southwestern Willow Flycatcher, or Spreading Navarretia have been documented on March ARB, minimal habitat for these species are present on the installation. Suitable habitat and/or soils for the remaining species are not present on March ARB.

The Proposed Action *may affect, but is not likely to adversely affect* federally listed species noted in Table 1 (above). The Proposed Action area is limited to the March ARB airfield (Attachment 1), and no construction or demolition would occur. Since the Proposed Action only includes five (5) added flight operations per day to March ARB, the Proposed Action is not likely to affect listed mammal, fish, crustacean, or plant species, or the minimal habitat for these species present on March ARB. Bird species are most likely to be impacted by the addition of flight operations; however, the Least Bell's Vireo, Southwestern Willow Flycathcer, and the Coastal California Gnatsnatcher have not been observed within the current March ARB boundaries. Minimal habitat for the Least Bell's Vireo and the Southwestern Willow Flycatcher does exist within the vicinity of March ARB, but the habitat for both species is outside the perimeter fence. March ARB has an existing Integrated Bird/Wildlife Aircraft Strike Hazard (IBASH) Program designed to minimize the potential impact to bird species from flight operations by establishing procedures for reporting hazardous bird activity and altering or discontinuing flying operations and to reduce the environmental conditions that attract birds to the airfield.

Therefore, the Air force has determined the temporary relocation of sixteen (16) C-17As from JBLM to March ARB *may affect, but is not likely to adversely affect*, federally listed species on March ARB. We request written concurrence with our determination as part of the informal consultation process. If you have any questions or concerns, please contact Jean Reynolds, Environmental Program Manager at jean.reynolds@us.af.mil; or AFCEC/CZN, Attn: Jean Reynolds - Bldg 171, 2261 Hughes Ave Ste 155, JBSA Lackland TX 78236-9853. Thank you in advance for your assistance in this effort.

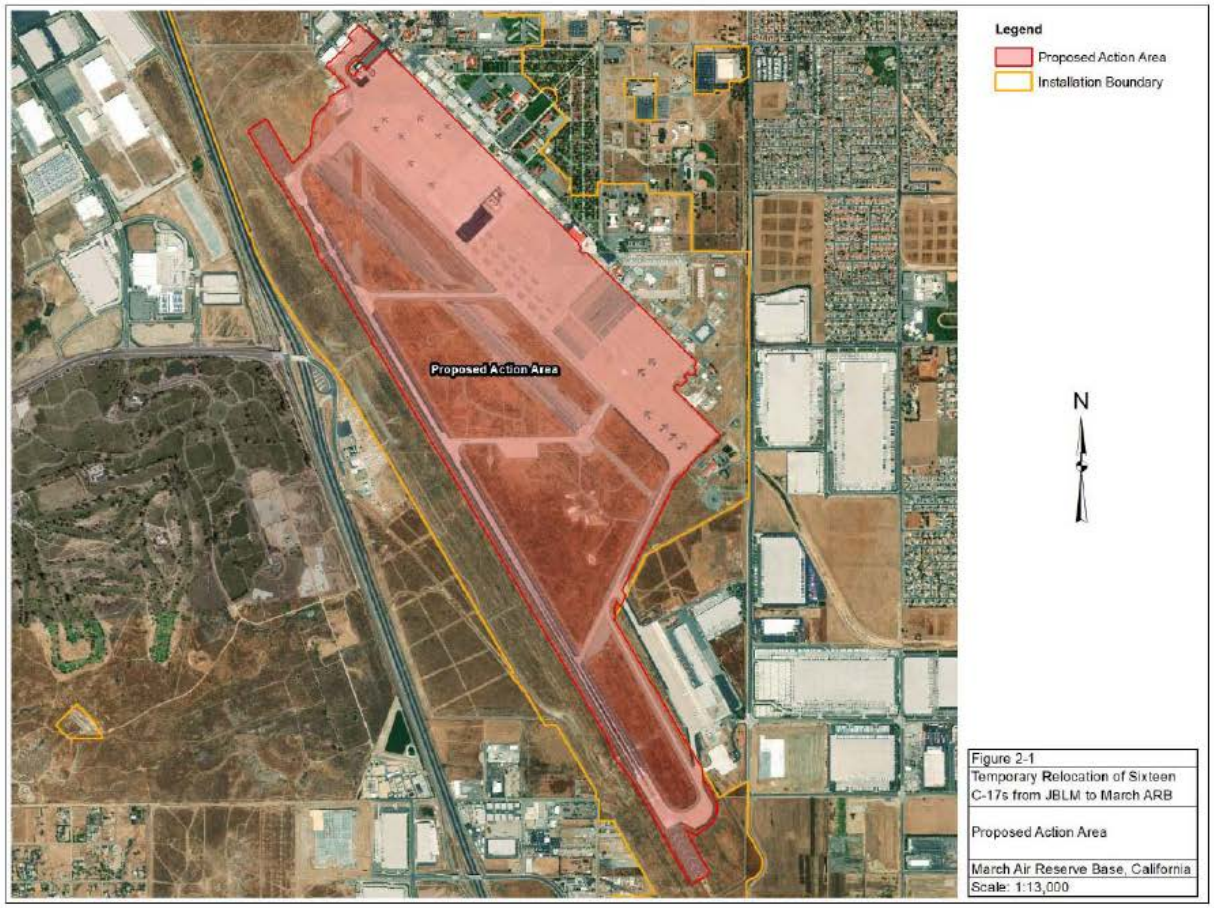
Sincerely,

RENAE FISCHER, REM, GS-14, DAF
Chief, AFCEC NEPA Division

Attachments:
1. Map of Proposed Action Area
2. USFWS Information for Planning and Consultation System Report

5

Attachment 1: Map of Proposed Action Area



6

Attachment 2: USFWS Information for Planning and Consultation System Report

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Riverside County, California

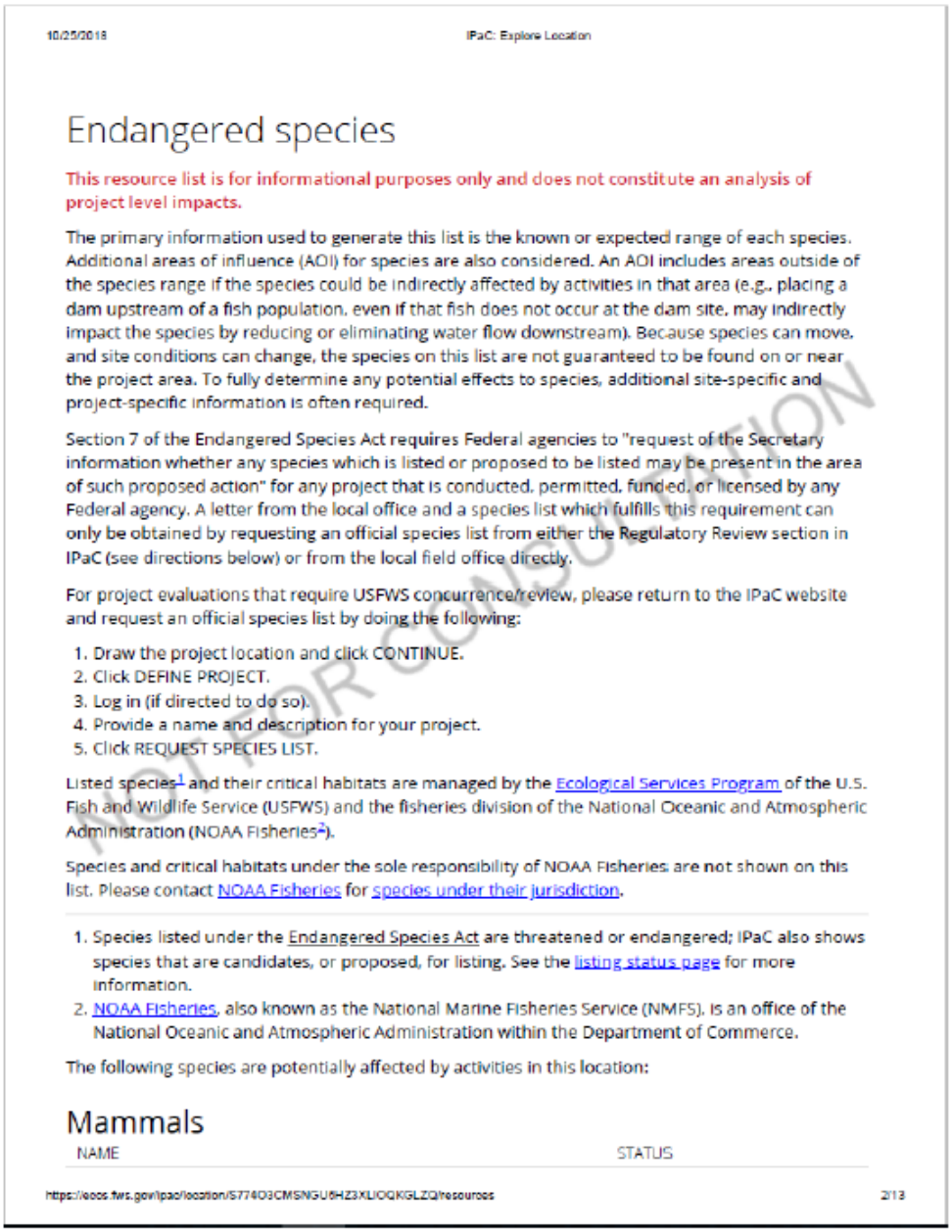
Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/



10/25/2018 IPaC: Explore Location

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

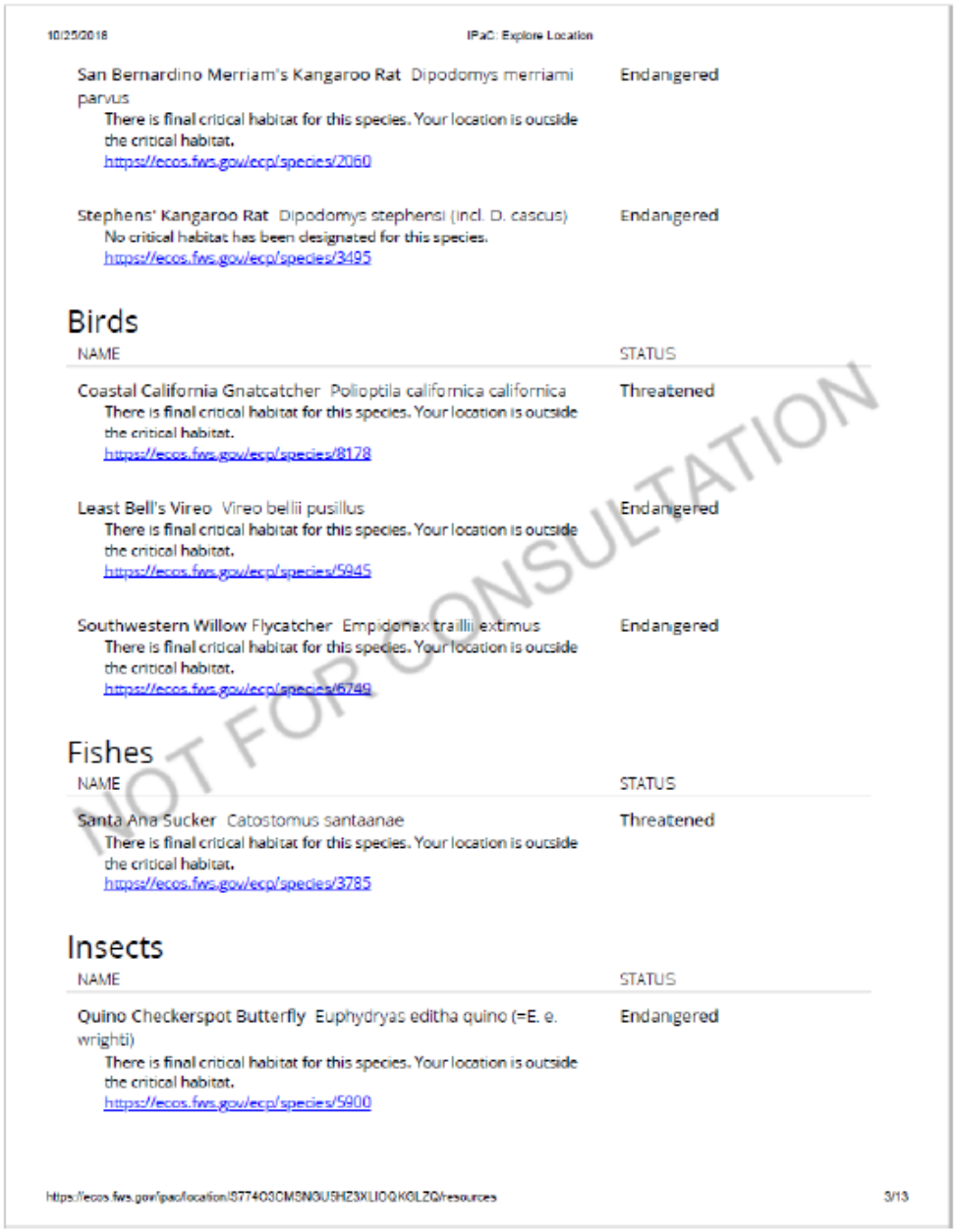
The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

https://ecos.fws.gov/ipac/location/S774O3CMSNGU6HZ3XLIOQKGLZQ/resources 2/13

8



10/25/2018 IPaC: Explore Location

San Bernardino Merriam's Kangaroo Rat Dipodomys merriami parvus — Endangered
There is final critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/2060

Stephens' Kangaroo Rat Dipodomys stephensi (incl. D. cascus) — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/3495

Birds

NAME	STATUS
Coastal California Gnatcatcher Polioptila californica californica There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8178	Threatened
Least Bell's Vireo Vireo bellii pusillus There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered
Southwestern Willow Flycatcher Empidonax traillii extimus There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered

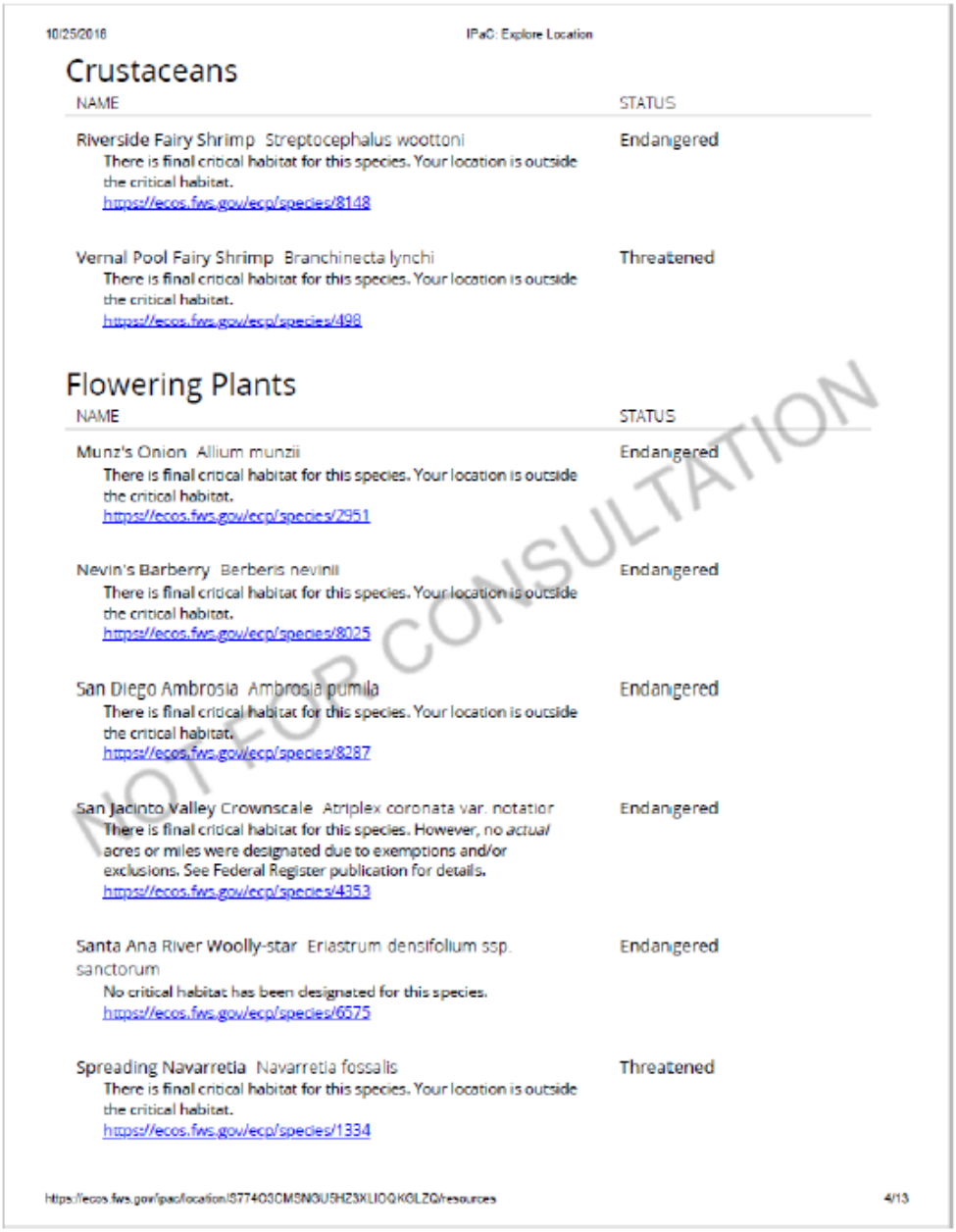
Fishes

NAME	STATUS
Santa Ana Sucker Catostomus santaanae There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/3785	Threatened

Insects

NAME	STATUS
Quino Checkerspot Butterfly Euphydryas editha quino (=E. e. wrighti) There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5900	Endangered

https://ecos.fws.gov/ipac/location/S774O3CM5N3U5HZ3XLIOQK6LZQ/resources 3/13



10/25/2018 IPaC: Explore Location

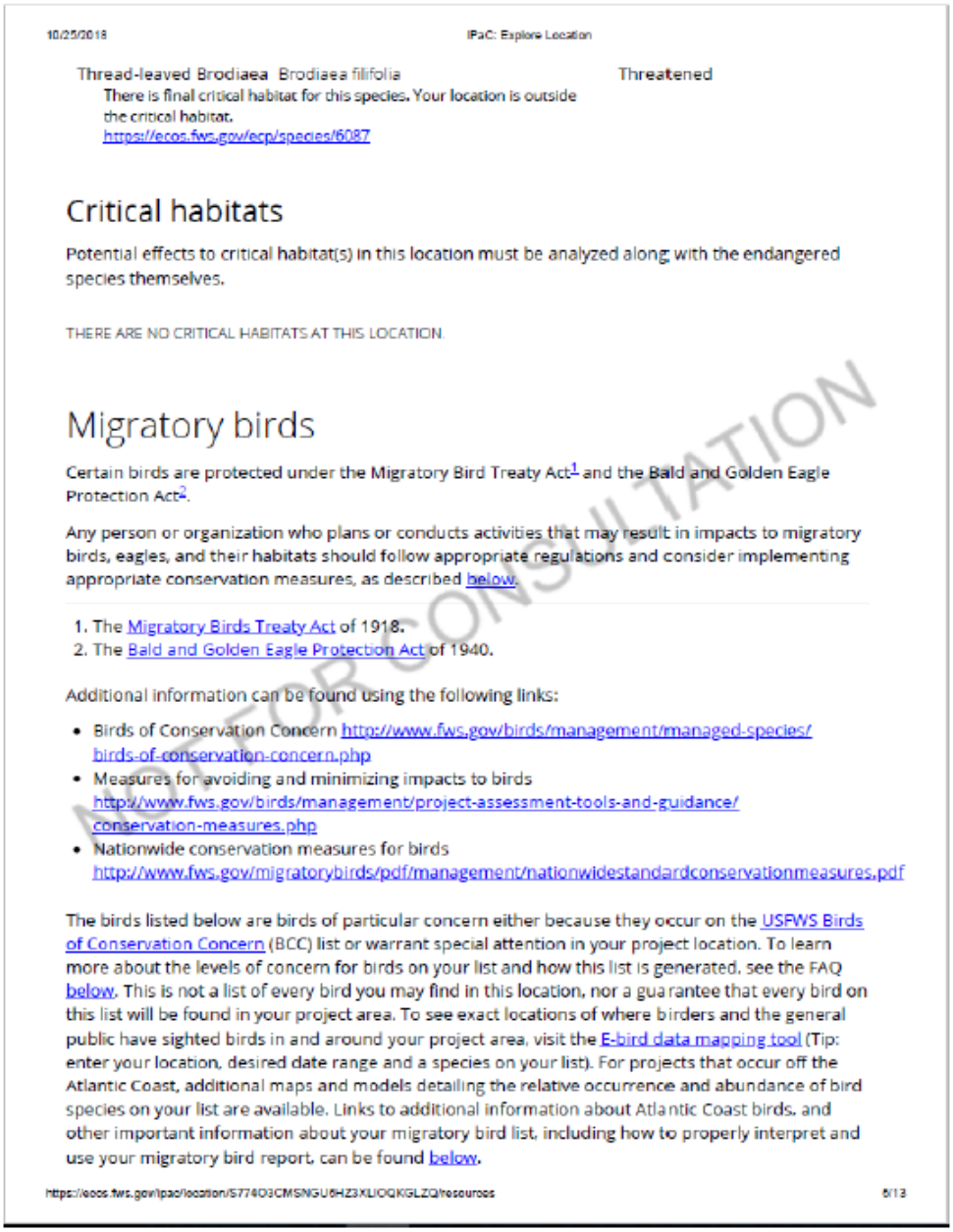
Crustaceans

NAME	STATUS
Riverside Fairy Shrimp Streptocephalus woottoni There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8148	Endangered
Vernal Pool Fairy Shrimp Branchinecta lynchi There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Munz's Onion Allium munzii There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2951	Endangered
Nevin's Barberry Berberis nevinii There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8025	Endangered
San Diego Ambrosia Ambrosia pumila There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8287	Endangered
San Jacinto Valley Crownscale Atriplex coronata var. notatior There is final critical habitat for this species. However, no *actual* acres or miles were designated due to exemptions and/or exclusions. See Federal Register publication for details. https://ecos.fws.gov/ecp/species/4353	Endangered
Santa Ana River Woolly-star Eriastrum densifolium ssp. sanctorum No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6575	Endangered
Spreading Navarretia Navarretia fossalis There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1334	Threatened

https://ecos.fws.gov/ipac/location/S774O3CMSN3U5HZ3XLIOQK6LZQ/resources 4/13



10/25/2018 IPaC: Explore Location

Thread-leaved Brodiaea Brodiaea filifolia Threatened
There is final critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6087

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

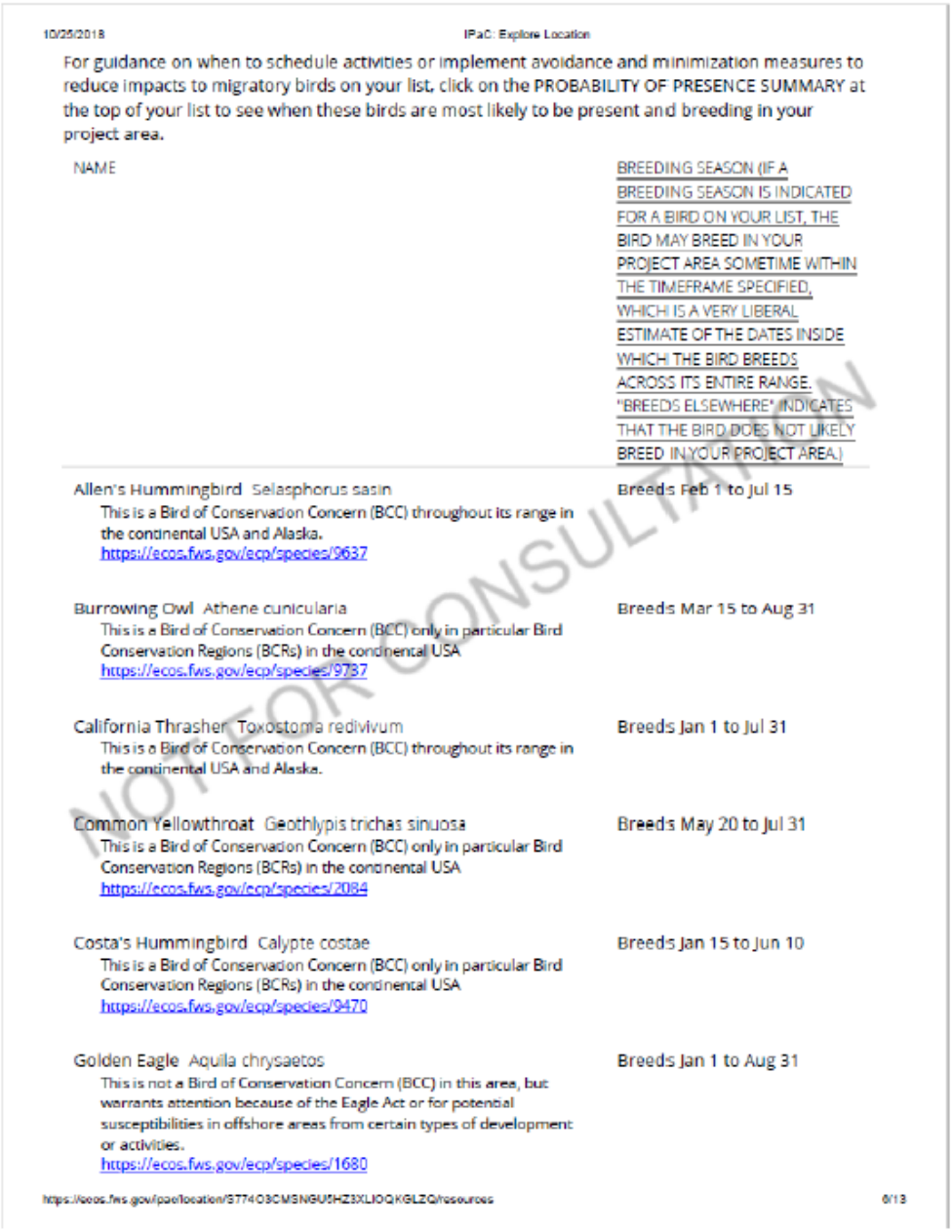
1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

https://ecos.fws.gov/ipac/location/S774O3CMSNGU6HZ3XLIOQKGLZQ/resources 6/13



10/25/2018 IPaC: Explore Location

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
California Thrasher Toxostoma redivivum This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Common Yellowthroat Geothlypis trichas sinuosa This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Golden Eagle Aquila chrysaetos This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31

https://ecos.fws.gov/ipac/location/S774O3CMSNGU5HZ3XLIOQKGLZQ/resources 6/13

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (|||)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

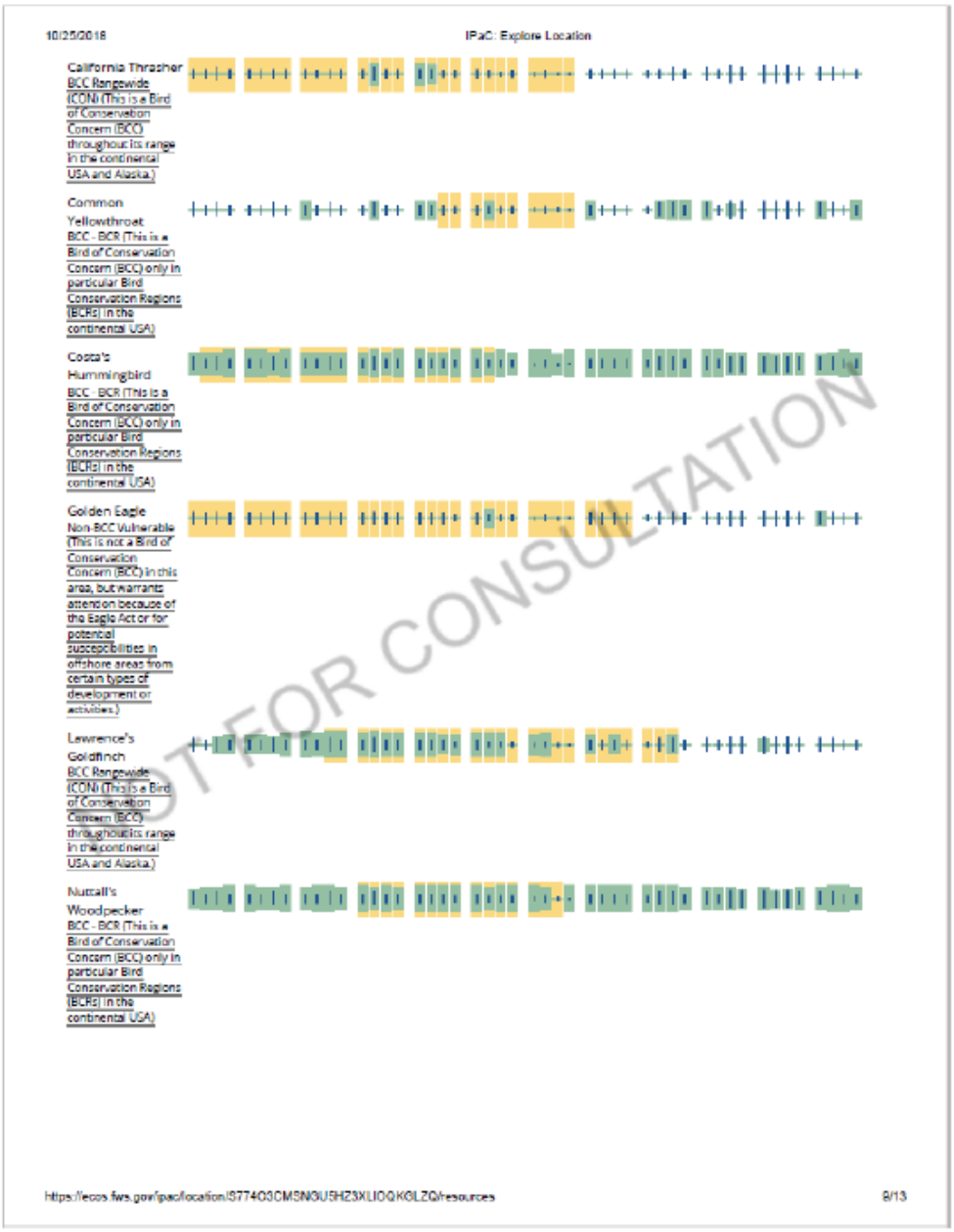
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.


10/25/2018
IPaC: Explore Location
California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)
Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)
Costa's Hummingbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)
Golden Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)
Lawrence's Goldfinch
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)
Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)
NOT FOR CONSULTATION
https://ecos.fws.gov/ipac/location/S774O3CMSNGU5HZ3XLIOQK6LZQ/resources
8/13

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

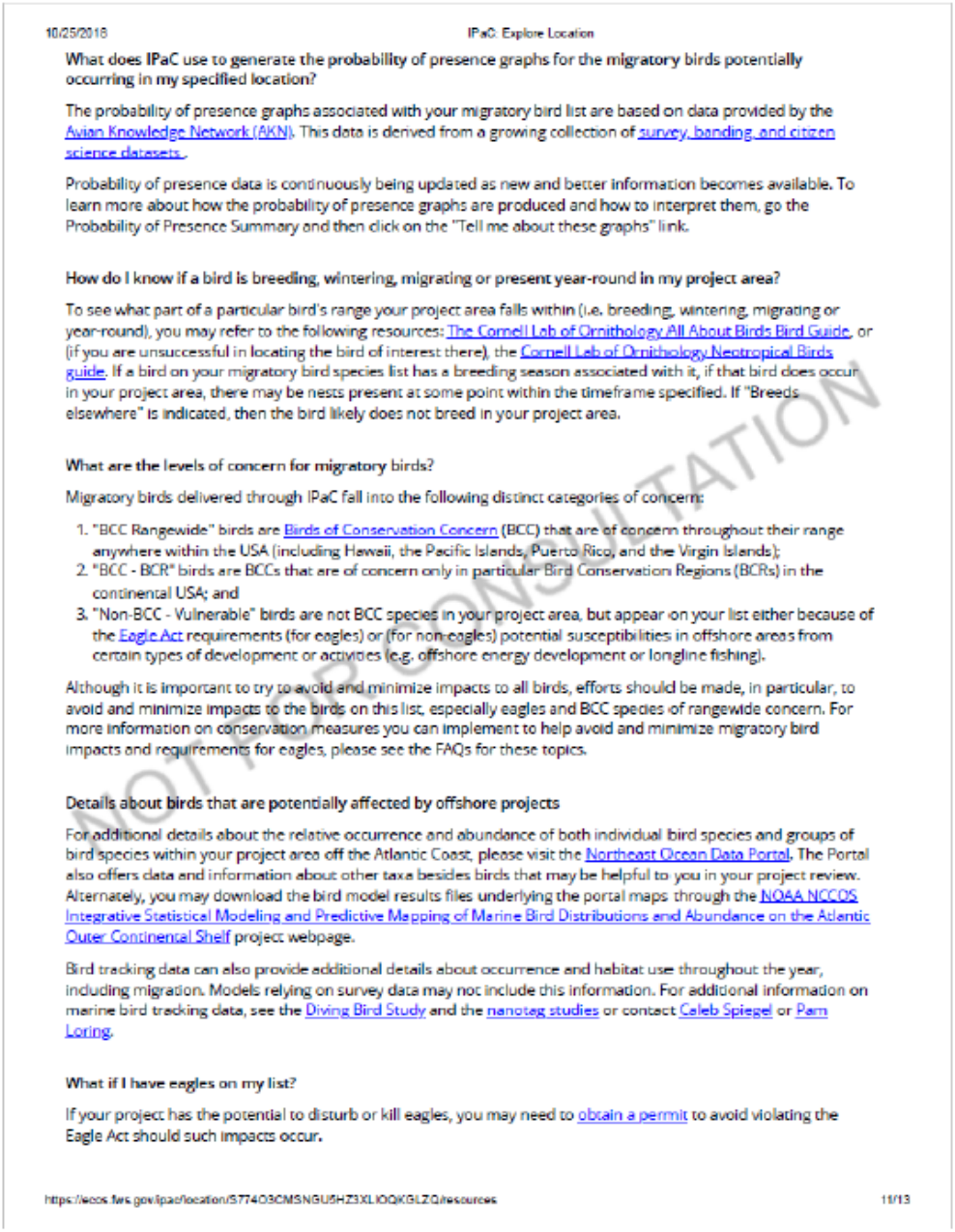
Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.



10/25/2018 IPaC: Explore Location

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

https://ecos.fws.gov/ipac/location/S774O3CMSNGU5HZ3XLIOQKGLZQ/resources 11/13

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

Wildlife refuges and fish hatcheries

REFUGE AND FISH HATCHERY INFORMATION IS NOT AVAILABLE AT THIS TIME

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R5UBFx

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error

is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

<This page was intentionally left blank>

DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
JOINT BASE SAN ANTONIO LACKLAND TEXAS

2 November 2018

Renae Fischer, REM
Air Force Civil Engineer Center
National Environmental Policy Act Division (AFCEC/CZN)
2261 Hughes Ave, Ste 155
JBSA Lackland TX 78236-9853

Julianne Polanco
State Historic Preservation Officer
1725 23rd Street, Suite 100
Sacramento, CA 95816

Dear Ms. Polanco

The United States Air Force (Air Force) is proposing to temporarily relocate sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California. To take into account various environmental concerns, the Air Force is engaging early with the appropriate resource and regulatory agencies as it formulates the undertaking. The Air Force is also preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with this proposal.

In accordance with 54 U.S. Code § 306108 of the National Historic Preservation Act (NHPA) and its implementing regulations at 36 CFR Part 800, the Air Force is advising you of a proposed undertaking at March ARB that has the potential to affect historic properties. The undertaking would require only the provision of ramp and runway space by March ARB to support the mission.

The runway at McChord Field, JBLM will be closed for repairs for a period of approximately 94 days between March and June of 2019. As part of the Proposed Action, March ARB would provide ramp and runway space for the temporary relocation and operation of sixteen (16) C-17As and assigned to the 62d Airlift Wing (AW) at JBLM while the runway is closed for repairs. The Proposed Action also includes the relocation of approximately 331 personnel during this time. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, the temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019. The aircraft and personnel would use existing structures, and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

These sixteen (16) aircraft would be relocated for parking and flight operations only, and would include an additional five (5) landings and takeoffs per day at March ARB. All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States, Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. As such, operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No training would be conducted under the Proposed Action.

The Area of Potential Effect (APE) for this undertaking is therefore defined as the March ARB airfield, areas where overflights as well as noise and visual effects attributable to C-17A flight operations at March ARB are projected to occur (see Attachment). The APE is three-dimensional, and effects on resources are analyzed for subsurface, surface, and airspace components. The areas within the APE will experience only indirect effects.

March ARB has a historic district and identified historic buildings on base. The Historic District includes many operational and other facilities on and near the flightline at the base; however, these historic buildings and facilities are outside the APE. Based on a review of all available data, this proposed action would not adversely impact National Register or eligible historic properties.

Pursuant to 36 CFR §800.4(d), the Air Force has determined that no historic properties will be affected by the temporary relocation of sixteen (16) C-17As from JBLM to March ARB.

We request your comment and/or concurrence on the finding of *No Historic Properties Affected*. If we do not receive your comments and/or concurrence within the required 30 days we will assume concurrence and proceed with the undertaking as described.

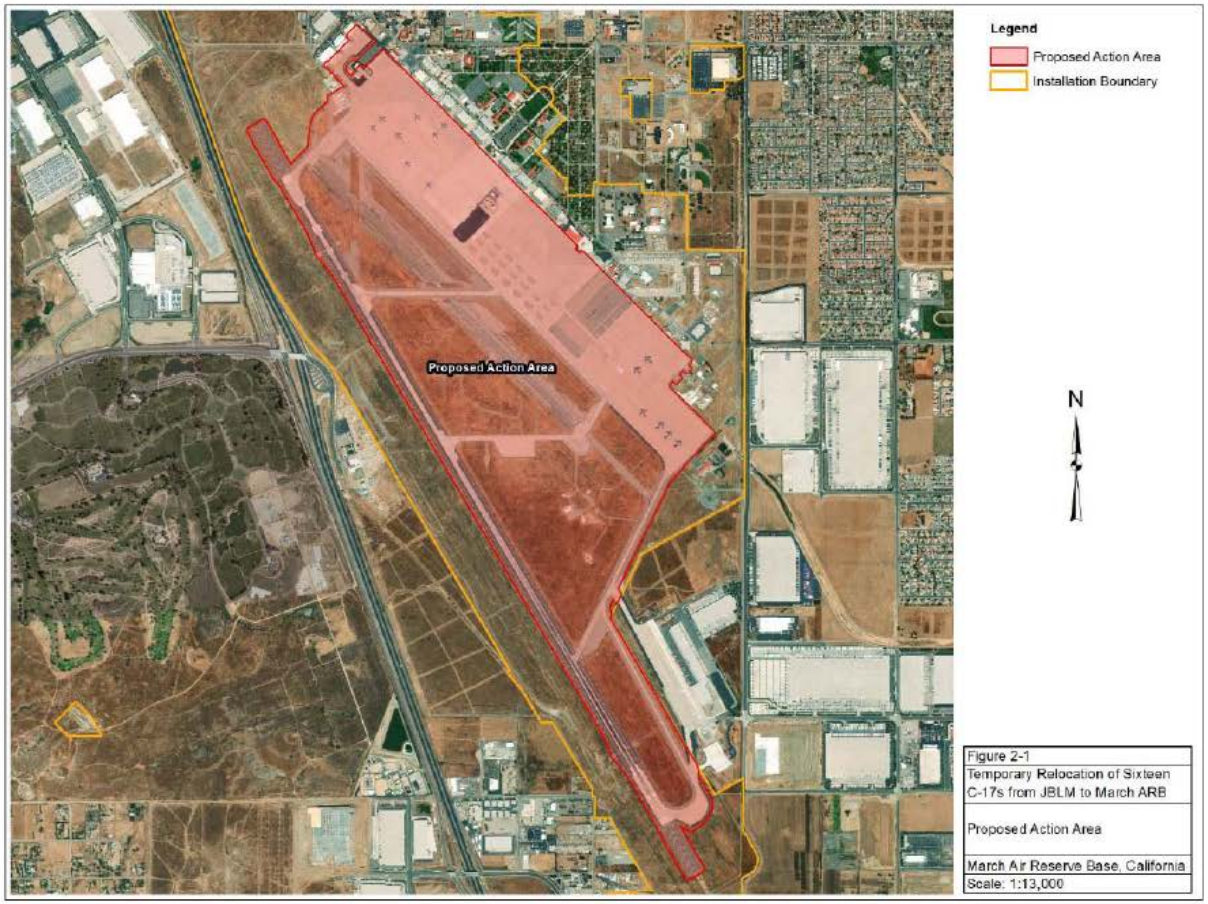
Please contact Jean Reynolds, Environmental Program Manager at jean.reynolds@us.af.mil; or AFCEC/CZN, Attn: Jean Reynolds - Bldg 171, 2261 Hughes Ave Ste 155, JBSA Lackland TX 78236-9853 if you have any questions.

Sincerely,

RENAE FISCHER, REM, GS-14, DAF
Chief, AFCEC NEPA Division

Attachments:
1. Area of Potential Effect

Attachment 1: Area of Potential Effect



<This page was intentionally left blank>

Interagency Consultation
Responses

<This page was intentionally left blank>

United States Department of the Interior
U.S. FISH AND WILDLIFE SERVICE
Ecological Services
Palm Springs Fish and Wildlife Office
777 East Tahquitz Canyon Way, Suite 208
Palm Springs, California 92262

In Reply Refer To:
FWS-WRIV-09B0064-19I0205

November 20, 2018
Sent by Email

Renae Fischer, REM
Air Force Civil Engineer Center
National Environmental Policy Act Division (AFCEC/CZN)
Building 171
2261 Hughes Ave., Suite 155
JBSA Lackland, Texas 78236-9853

Attention: Jean Reynolds, Environmental Program Manager, AFCEC/CZN

Subject: Informal Consultation regarding Temporary Relocation and Operation of C-17A Aircraft from Joint Base Lewis-McChord to March Air Reserve Base, Riverside County, California

Dear Ms. Fisher,

We received your letter requesting our concurrence with the U.S. Air Force's determination that the proposed action *may affect, but is not likely to adversely effect*, the federally endangered least Bell's vireo (*Vireo belli pusillus*), Riverside fairy shrimp (*Streptocephalus woottoni*), southwestern willow flycatcher (*Empidonax traillii extimus*), and Stephen's kangaroo rat (*Dipodomys stephensi*). The proposed action is the temporary relocation of 16 C-17A aircraft and their operation to March Air Reserve Base (MARB) for a period of time between February and June of 2019. We concur with your agency's determination based on the following:

1. No new construction or ground disturbance is proposed;

2. Flight operations for these aircraft are within the baseline conditions at MARB; and

3. There is no habitat for these listed species within the areas now used for flight operations.

Numerous other federally listed species detected by your search of our online IPAC system were mentioned in your letter to us dated November 2, 2018, but no suitable habitat for these species occurs on MARB. Hence, we anticipate there would be no effect to the other 16 species included in Table 1 of your letter.

Thank you for coordinating with our agency on this proposed action. If we can be of further assistance to you, or should you have questions or comments, please contact Nancy Ferguson, Regional Sikes Act Coordinator, [redacted]

Sincerely,

KARIN CLEARY-ROSE

Digitally signed by KARIN CLEARY-ROSE
Date: 2018.11.20 16:39:24 -08'00'

for Kennon A. Corey
Assistant Field Supervisor

State of California • Natural Resources Agency
Edmund G. Brown Jr., *Governor*
DEPARTMENT OF PARKS AND RECREATION
OFFICE OF HISTORIC PRESERVATION
Lisa Ann L. Mangat, *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

December 19, 2018

Reply in Reference To: USAF_2018_1108_001

Renae Fischer
Air Force Civil Engineer
National Environmental Policy Act Division
2261 Hughes Avenue, Suite 155
JBSA Lackland, TX 78236-9853

VIA EMAIL

Re: Section 106 Consultation for Temporary Relocation of 16 C-17A Aircraft, March Air Reserve Base, Riverside County

Dear Ms. Fischer:

The United States Air Force (USAF) is initiating consultation with the State Historic Preservation Officer (SHPO) regarding its effort to comply with Section 106 of the National Historic Preservation Act of 1966 (54 U.S.C. 306108), as amended, and its implementing regulation found at 36 CFR Part 800.

The USAF is proposing to temporarily relocate and operate 16 C-17A aircraft at March Air Reserve Base. No ground disturbance or modifications to facilities will occur. The USAF is requesting concurrence with their determination of no historic properties affected. After reviewing the information provided, the SHPO has the following comments:

1) Pursuant to 36 CFR Part 800.4(a)(1), the SHPO has no objection to the USAF's definition of the APE.
2) The SHPO concurs with the USAF's proposed finding of no historic properties affected pursuant to 36 CFR Part 800.4 (d)(1). Be advised that under certain circumstances, such as an unanticipated discovery or a project description change, the USAF may have future responsibilities for this undertaking under 36 CFR Part 800.

If there are any questions or concerns, contact Historian Ed Carroll [redacted]

Sincerely,

Julianne Polanco
State Historic Preservation Officer

<This page was intentionally left blank>

Government to Government Consultation
Recipients and Example Letter

The Air Force invited the following Tribal government representatives to enter into consultations regarding the EA.

Tribal Governments
Agua Caliente Band of Cahuilla Indians Patricia Garcia-Plotkin, Director of Historic Preservation
Agua Caliente Cupeño Tribe Chairman William J. Pink
Cabazon Band of Mission Indians, California Judy Stapp, Director of Cultural Affairs
Cahuilla Band of Indians Bobby Ray Esparza, Cultural Director
Cahuilla Band of Mission Indians Chairman Daniel Salgado
Morongo Band of Mission Indians Denise Torres, Cultural Heritage Program
Morongo Band of Cahuilla Mission Indians Cultural Heritage Program
Pala Band of Mission Indians Chairman Robert Smith
Pala Band of Luiseño Mission Indians Tribal Historic Preservation Office
Pechanga Band of Luiseño Mission Indians Chairman Mark A. Macarro
Pechanga Temecula Band of Luiseño Mission Indians Tuba Ebru Ozdil, Cultural Analyst
Ramona Band of Cahuilla Chairman Joseph D. Hamilton
Ramona Band of Cahuilla John Gomez, Cultural Resources Manager
San Manuel Band of Mission Indians Lee Clauss, Director of Cultural Resources
Santa Rosa Band of Cahuilla Indians Chairman Steven Estrada
Santa Rosa Band of Cahuilla Indians Vanessa Minott, Tribal Administrator
Soboba Band of Luiseno Indians Chairman Scott Cozart
Twenty-Nine Palms Band of Mission Indians Anthony Madrigal, Historic Preservation Officer
Yocha Dehe Wintun Nation Marilyn Delgado, Cultural Resources Director

DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

Colonel Matthew J Burger
452 Air Mobility Wing Commander
2145 Graeber Street, Suite 117
March ARB, CA 92518-1667

Chairman Daniel Salgado
Cahuilla Band of Mission Indians
[redacted]

Dear Chairman Salgado

The United States Air Force (USAF) is preparing an Environmental Assessment (EA) under the National Environmental Policy Act to evaluate potential environmental impacts associated with the temporary relocation of sixteen (16) C-17As from Joint Base Lewis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California. Per Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and 36 CFR Part 800, *Protection of Historic Properties*, the USAF is engaging early with tribal governments as it formulates the undertaking.

The runway at McChord Field, JBLM will be closed for repairs for a period of approximately 94 days between March and June of 2019. As part of the proposed undertaking, March ARB would provide ramp and runway space for the temporary relocation and operation of sixteen (16) C-17As and assigned to the 62d Airlift Wing (AW) at JBLM while the runway is closed for repairs. The Proposed Action also includes the relocation of approximately 331 personnel during this time. While the McChord Field runway will be closed for 94 days, the 62d AW would require additional time to set-up and tear-down operations at March ARB. Therefore, temporary operation of these C-17As at March ARB would be from approximately February 22 through June 15, 2019. The aircraft and personnel would use existing structures; and no construction, renovations, or other projects are associated with the proposed temporary relocation. No ground disturbing activity would occur.

These sixteen (16) aircraft would be relocated for parking and flight operations only, and would include an additional five (5) landings and takeoffs per day at March ARB. All 62d AW C-17As operating at March ARB would operate in support of Tanker/Airlift Control Center directed missions. The aircraft would depart upon being tasked to installation(s) within the contiguous United States, Alaska and Hawaii, or worldwide, as directed by higher headquarters. The aircraft would return to March ARB upon completion of tasked missions. As such, operation of the aircraft would be centered at March ARB, utilizing the existing flight path routings and operating hours that March ARB C-17A aircraft currently use for departures and arrivals at the airfield. No training would be conducted under the proposed undertaking.

The Area of Potential Effect (APE) for this undertaking is therefore defined as the March ARB airfield, areas where overflights as well as noise and visual effects attributable to C-17A flight operations at March ARB are projected to occur (see Attachment). March ARB's historic district and identified historic buildings are outside the APE. The APE is three-dimensional, and effects on resources are analyzed for subsurface, surface, and airspace components. Most of the areas within the APE will experience only indirect effects.

In accordance with the NHPA and its implementing regulations at 36 CFR 800.2(c)(2)(ii), the USAF would like to initiate government-to-government consultation with the Cahuilla Band of Mission Indians on this proposed action. In particular, we seek your assistance in identifying and evaluating any historic properties in the APE that have religious and cultural significance to the tribe. While we are not aware of any such properties, your participation will help ensure that our environmental analysis is based on the best available information. Historic properties may include archeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural properties and landscapes, plant and animal communities, and buildings and structures that are eligible for the National Register.

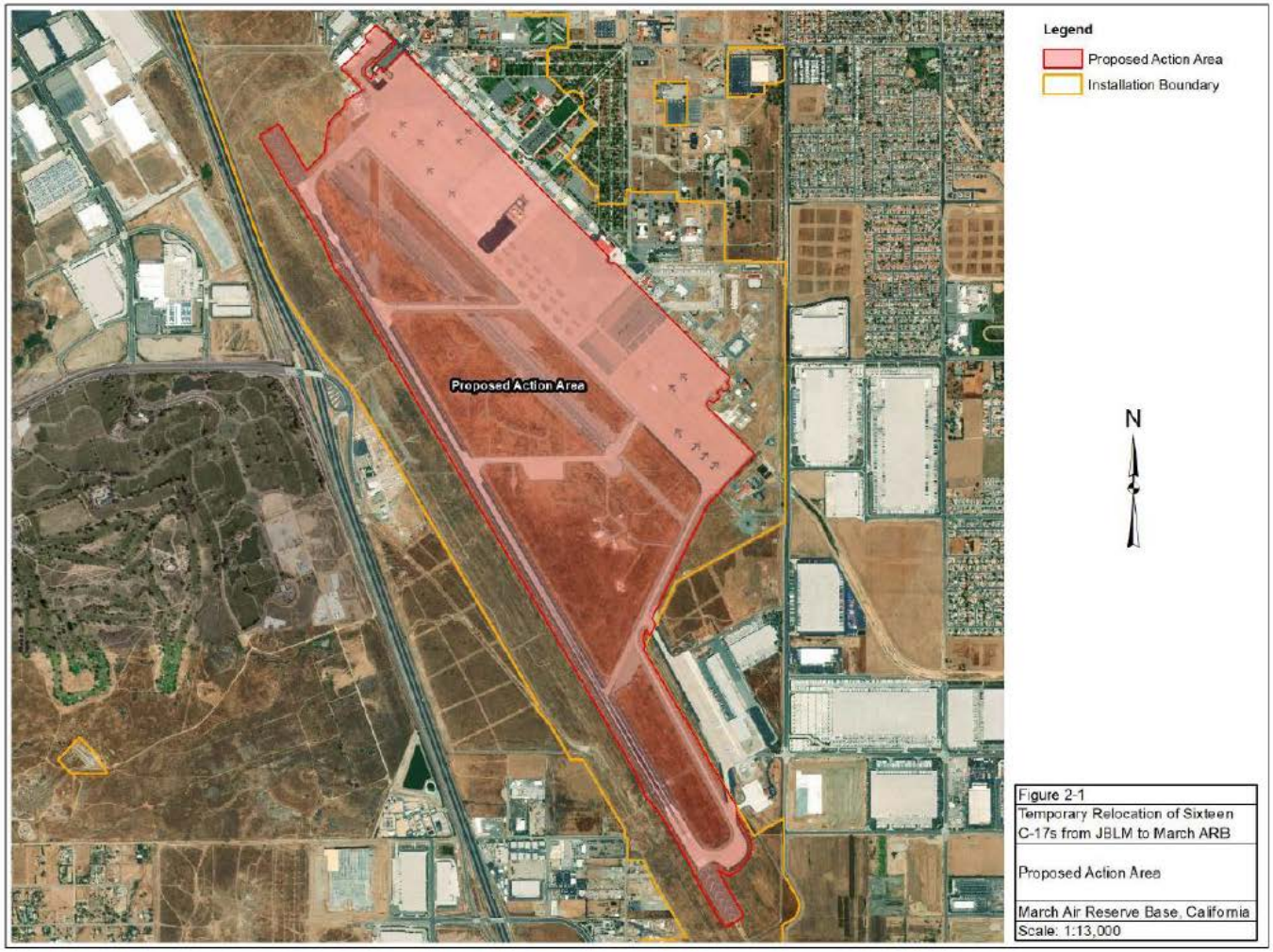
If you have any questions, please contact Jean Reynolds, Environmental Program Manager at jean.reynolds@us.af.mil; or AFCEC/CZN, Attn: Jean Reynolds - Bldg 171, 2261 Hughes Ave Ste 155, JBSA Lackland TX 78236-9853. Thank you in advance for your assistance in this effort.

Sincerely,

MATTHEW J BURGER,Colonel, USAF
Commander

Attachment:
Map of Proposed Action Area

Attachment 1: Map of Proposed Action Area



<This page was intentionally left blank>

Government to Government Consultation
Responses

<This page was intentionally left blank>

AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION

01-022-2018-001

November 16, 2018

[VIA EMAIL TO:jean.reynolds@us.af.mil]
U.S. Air Force
Ms. Jean Reynolds
Bldg 171, 2261 Hughes Ave Ste 155
Lackland, TC 78236-9853

Re: Section 106- Temporary Relocation od C-17As

Dear Ms. Jean Reynolds,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Temporary C-17 Relocation project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. Since this action does not have the potential to impact cultural resources, we have no concerns at this time. This letter shall conclude our consultation efforts.

Again, the Agua Caliente appreciates your interest in our cultural heritage. If you have questions or require additional information, please call me at (760)699-6829. You may also email me at ACBCI-THPO@aguacaliente.net.

Cordially,

Katie Croft

Katie Croft
Cultural Resources Manager
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

[redacted] WWW.AGUACALIENTE-NSN.GOV

From: Cultural Department [redacted]
Sent: Tuesday, December 04, 2018 11:16 AM
To: REYNOLDS, JEAN A CIV USAF AFMC AFCEC/CZN <jean.reynolds@us.af.mil>
Cc: [redacted]
Subject: [Non-DoD Source] RE: Temporary Relocation of Sixteen C-17As from Joint Base Lweis-McChord (JBLM), Washington to March Air Reserve Base (ARB), California

Dear Mr. Reynolds,

The Cahuilla Band of Indians received your letter of November 07, 2018 regarding the above project. The Cahuilla Band has reviewed this project and does not wish to consult or comment on the project. We appreciate your help in preserving Tribal Cultural Resources in your project.

Respectfully,

BobbyRay Esparza
Cultural Coordinator
Cahuilla Band of Indians
[redacted]

From: Tribal Historic Preservation Office [redacted]
Sent: Thursday, November 15, 2018 10:46 AM
To: REYNOLDS, JEAN A CIV USAF AFMC AFCEC/CZN <jean.reynolds@us.af.mil>
Subject: [Non-DoD Source] Section 106 - March Air Reserve Base

Dear Jean Reynolds,

Thank you for the Nov. 7, 2018 letter regarding Section 106 and preparation of an Environmental Assessment (EA) regarding runway and other operations at March Air Reserve Base. Our office understands there will be no ground disturbance. We have no additional information to provide at this time but do request a copy of the completed EA.

Sincerely,

Travis Armstrong

Tribal Historic Preservation Officer

Morongo Band of Mission Indians

[redacted]

[redacted]

From: Jessica Mauck [redacted]
Sent: Friday, November 16, 2018 2:06 PM
To: REYNOLDS, JEAN A CIV USAF AFMC AFCEC/CZN <jean.reynolds@us.af.mil>
Subject: [Non-DoD Source] Temporary Relocation of Sixteen C-17As from JBLM to March ARB

Hi Jean,

Thank you for contacting the San Manuel Band of Mission Indians (SMBMI) regarding the above referenced project. SMBMI appreciates the opportunity to review the project documentation, which was received by our Cultural Resources Management Department on 10 November 2018. The proposed project is located outside of Serrano ancestral territory and, as such, SMBMI will not be requesting consulting party status with the lead agency or requesting to participate in the scoping, development, and/or review of documents created pursuant to these legal and regulatory mandates.

Regards,

Jessica Mauck
CULTURAL RESOURCES ANALYST
[redacted]
SAN MANUEL
BAND OF MISSION INDIANS

TWENTY-NINE PALMS BAND OF MISSION INDIANS

[redacted]

November 15, 2018

Matthew Burger, Colonel, USAF Commander
452 Air Mobility Wing Commander
Department of the Air Force
2145 Graeber St., Suite 117
March ARB, CA 92518-1667

RE: Relocation of C-17As from the Joint Base Lewis-McChord (JBLM) to March Air Reserve Base (ARB)

Dear Colonel Burger,

This letter is in regards to consultation in compliance with the National Environmental Policy Act (NEPA), for the temporary relocation and operation f sixteen C-17As to the March Air Force Base. After review of the project area, the Tribal Historic Preservation Office (THPO) is not aware of any additional archaeological/cultural sites or properties in the project area that pertain to the Twenty-Nine Palms Band of Mission Indians (Tribe). The THPO currently has no interest in the project and defers to the comments of other affiliated tribes.

If you have any questions, please do not hesitate to contact the THPO at (760) 775-3259 or by email: TNPConsultation@29palmsbomi-nsn.gov.

Sincerely,

Anthony Madrigal, Jr.
Director of the Tribal Historic Preservation Office

cc: Darrell Mike, Twenty-Nine Palms Tribal Chairman
Sarah Bliss, Twenty-Nine Palms Cultural Resource Manager

<This page was intentionally left blank>

Appendix B

Public Notifications

Appendix B will be updated as inputs are received.

<This page was intentionally left blank>

Appendix C

Air Quality Assessment

ACAM Summary Report	C-3
ACAM Detail Report	C-7

<This page was intentionally left blank>

ACAM Summary Report

<This page was intentionally left blank>

AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:
Base: MARCH JARB
State: California
County(s): Riverside
Regulatory Area(s): Los Angeles South Coast Air Basin, CA

b. Action Title: March JARB Temporary C-17 Relocation From McChord AFB

c. Project Number/s (if applicable):

d. Projected Action Start Date: 3 / 2019

e. Action Description:

The runway at McChord Field will be closed for a period of aproximately 94 days between March and June of 2019. As a result, there will be a relocation of 16 C-17 Aircraft to Fairchild AFB along with 331 additional personnel. The aircraft will only be flying operations (no engine test cell). A maximum of 630 operations are expected with 331 personnel.

f. Point of Contact:
Name: Austin Naranjo
Title: AFCEC/CZTQ
Organization: AFCEC/CZTQ
Email:
Phone Number:

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable
__X__ not applicable

Conformity Analysis Summary:

2019

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.671	10	No
NOx	7.334	10	No
CO	5.019	100	No
SOx	0.403	100	No
PM 10	1.900	100	No
PM 2.5	1.609	100	No
Pb	0.000		

NH3	0.012	100	No
CO2e	1224.9		

2020 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.000	10	No
NOx	0.000	10	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000		
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the conformity threshold values established at 40 CFR 93.153 (b); Therefore, the requirements of the General Conformity Rule are not applicable.

12/12/18

Austin Naranjo, AFCEC/CZTQ — DATE

ACAM Detail Report

<This page was intentionally left blank>

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location
Base: MARCH JARB
State: California
County(s): Riverside
Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- Action Title: March JARB Temporary C-17 Relocation From McChord AFB

- Project Number/s (if applicable):

- Projected Action Start Date: 3 / 2019

- Action Purpose and Need:

- Action Description:
The runway at McChord Field will be closed for a period of aproximately 94 days between March and June of 2019. As a result, there will be a relocation of 16 C-17 Aircraft to Fairchild AFB along with 331 additional personnel. The aircraft will only be flying operations (no engine test cell). A maximum of 630 operations are expected with 331 personnel.

- Point of Contact
Name: Austin Naranjo
Title: AFCEC/CZTQ
Organization: AFCEC/CZTQ
Email:
Phone Number:

- Activity List:

Activity Type		Activity Title
2.	Aircraft	C-17
3.	Personnel	Personnel Associated with C-17 Relocation to March

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Aircraft

2.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Riverside
Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- Activity Title: C-17

- Activity Description:

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Activity Start Date
Start Month: 3
Start Year: 2019

- Activity End Date
Indefinite: No
End Month: 5
End Year: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.518308
SO_x	0.401289
NO_x	7.248080
CO	4.009246
PM 10	1.877370

Pollutant	Total Emissions (TONs)
PM 2.5	1.599441
Pb	0.000000
NH_3	0.000000
CO_2e	1056.6

- Activity Emissions [Flight Operations (includes Trim Test & APU) part]:

Pollutant	Total Emissions (TONs)
VOC	0.057965
SO_x	0.314727
NO_x	4.938379
CO	2.090295
PM 10	1.716263

Pollutant	Total Emissions (TONs)
PM 2.5	1.443443
Pb	0.000000
NH_3	0.000000
CO_2e	961.4

- Activity Emissions [Aerospace Ground Equipment (AGE) part]:

Pollutant	Total Emissions (TONs)
VOC	0.460344
SO_x	0.086562
NO_x	2.309701
CO	1.918951
PM 10	0.161107

Pollutant	Total Emissions (TONs)
PM 2.5	0.155998
Pb	0.000000
NH_3	0.000000
CO_2e	95.2

2.2 Aircraft & Engines

2.2.1 Aircraft & Engines Assumptions

- Aircraft & Engine
Aircraft Designation: C-17A
Engine Model: F117-PW-100
Primary Function: Transport - Bomber
Number of Engines: 4

- Aircraft & Engine Surrogate
Is Aircraft & Engine a Surrogate? No
Original Aircraft Name:
Original Engine Name:

2.2.2 Aircraft & Engines Emission Factor(s)

- Aircraft & Engine Emissions Factors (lb/1000lb fuel)

	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
Idle	978.00	0.37	1.06	3.76	22.70	10.67	8.75	3234
Approach	4645.00	0.05	1.06	15.49	0.51	5.53	5.10	3234
Intermediate	10408.00	0.04	1.06	32.72	0.32	2.31	1.42	3234

Military	13905.00	0.01	1.06	35.04	0.32	0.06	0.05	3234
After Burn	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3234

2.3 Flight Operations

2.3.1 Flight Operations Assumptions

- Flight Operations

Number of Aircraft:	16
Number of Annual LTOs (Landing and Take-off) cycles for all Aircraft:	630
Number of Annual TGOs (Touch-and-Go) cycles for all Aircraft:	0
Number of Annual Trim Test(s) per Aircraft:	0

- Default Settings Used: No

- Flight Operations TIMs (Time In Mode)

Taxi/Idle Out [Idle] (mins):	9.2
Takeoff [Military and/or After Burn] (mins):	0.4
Climb Out [Intermediate] (mins):	1.2
Approach [Approach] (mins):	5.1
Taxi/Idle In [Idle] (mins):	6.7

Per the Air Emissions Guide for Air Force Mobile Sources, the defaults values for military aircraft equipped with after burner for takeoff is 50% military power and 50% afterburner.

- Trim Test

Idle (mins):	12
Approach (mins):	27
Intermediate (mins):	9
Military (mins):	12
AfterBurn (mins):	0

2.3.2 Flight Operations Formula(s)

- Aircraft Emissions per Mode for LTOs per Year

$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * LTO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
LTO: Number of Landing and Take-off Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for LTOs per Year

$AE_{LTO} = AEM_{IDLE\_IN} + AEM_{IDLE\_OUT} + AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{LTO}: Aircraft Emissions (TONs)
AEM_{IDLE_IN}: Aircraft Emissions for Idle-In Mode (TONs)
AEM_{IDLE_OUT}: Aircraft Emissions for Idle-Out Mode (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)

$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for TGOs per Year
$AEM_{POL} = (TIM / 60) * (FC / 1000) * EF * NE * TGO / 2000$

AEM_{POL}: Aircraft Emissions per Pollutant & Mode (TONs)
TIM: Time in Mode (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
TGO: Number of Touch-and-Go Cycles (for all aircraft)
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for TGOs per Year
$AE_{TGO} = AEM_{APPROACH} + AEM_{CLIMBOUT} + AEM_{TAKEOFF}$

AE_{TGO}: Aircraft Emissions (TONs)
$AEM_{APPROACH}$: Aircraft Emissions for Approach Mode (TONs)
$AEM_{CLIMBOUT}$: Aircraft Emissions for Climb-Out Mode (TONs)
$AEM_{TAKEOFF}$: Aircraft Emissions for Take-Off Mode (TONs)

- Aircraft Emissions per Mode for Trim per Year
$AEPS_{POL} = (TD / 60) * (FC / 1000) * EF * NE * NA * NTT / 2000$

$AEPS_{POL}$: Aircraft Emissions per Pollutant & Power Setting (TONs)
TD: Test Duration (min)
60: Conversion Factor minutes to hours
FC: Fuel Flow Rate (lb/hr)
1000: Conversion Factor pounds to 1000pounds
EF: Emission Factor (lb/1000lb fuel)
NE: Number of Engines
NA: Number of Aircraft
NTT: Number of Trim Test
2000: Conversion Factor pounds to TONs

- Aircraft Emissions for Trim per Year
$AE_{TRIM} = AEPS_{IDLE} + AEPS_{APPROACH} + AEPS_{INTERMEDIATE} + AEPS_{MILITARY} + AEPS_{AFTERBURN}$

AE_{TRIM}: Aircraft Emissions (TONs)
$AEPS_{IDLE}$: Aircraft Emissions for Idle Power Setting (TONs)
$AEPS_{APPROACH}$: Aircraft Emissions for Approach Power Setting (TONs)
$AEPS_{INTERMEDIATE}$: Aircraft Emissions for Intermediate Power Setting (TONs)
$AEPS_{MILITARY}$: Aircraft Emissions for Military Power Setting (TONs)
$AEPS_{AFTERBURN}$: Aircraft Emissions for After Burner Power Setting (TONs)

2.4 Auxiliary Power Unit (APU)

2.4.1 Auxiliary Power Unit (APU) Assumptions

- Default Settings Used: Yes

- Auxiliary Power Unit (APU) (default)

Number of APU per Aircraft	Operation Hours for Each LTO	Exempt Source?	Designation	Manufacturer
1	0.5	No	331 250G	

2.4.2 Auxiliary Power Unit (APU) Emission Factor(s)

- Auxiliary Power Unit (APU) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
331 250G	272.6	0.493	0.289	1.216	3.759	0.131	0.037	910.8

2.4.3 Auxiliary Power Unit (APU) Formula(s)

- Auxiliary Power Unit (APU) Emissions per Year

$APU_{POL} = APU * OH * LTO * EF_{POL} / 2000$

APU_{POL}: Auxiliary Power Unit (APU) Emissions per Pollutant (TONs)
APU: Number of Auxiliary Power Units
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

2.5 Aerospace Ground Equipment (AGE)

2.5.1 Aerospace Ground Equipment (AGE) Assumptions

- Default Settings Used: Yes

- AGE Usage

Number of Annual LTO (Landing and Take-off) cycles for AGE: 630

- Aerospace Ground Equipment (AGE) (default)

Total Number of AGE	Operation Hours for Each LTO	Exempt Source?	AGE Type	Designation
1	0.66	No	Air Compressor	MC-1A - 18.4hp
1	1.5	No	Air Conditioner	MA-3D - 120hp
1	1.5	No	Bomb Lift	MJ-1B
1	2	No	Generator Set	A/M32A-86D
1	1.5	No	Heater	BT400-46
1	1.5	No	Light Cart	NF-2
1	0.5	No	Pumping Unit	AF/M27M-1
1	2	No	Start Cart	A/M32A-95

2.5.2 Aerospace Ground Equipment (AGE) Emission Factor(s)

- Aerospace Ground Equipment (AGE) Emission Factor (lb/hr)

Designation	Fuel Flow	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	CO_2e
MC-1A - 18.4hp	1.1	0.267	0.008	0.419	0.267	0.071	0.068	24.8
MA-3D - 120hp	7.1	0.053	0.050	4.167	0.317	0.109	0.105	161.7
MJ-1B	0.0	3.040	0.219	4.780	3.040	0.800	0.776	141.2
A/M32A-86D	6.5	0.294	0.046	6.102	0.457	0.091	0.089	147.0
BT400-46	0.4	0.100	0.003	0.158	0.181	0.109	0.105	8.9

NF-2	0.0	0.010	0.043	0.110	0.080	0.010	0.010	22.1
AF/M27M-1	1.8	0.276	0.004	0.177	12.262	0.109	0.100	34.8
A/M32A-95	0.0	0.070	0.264	1.470	5.860	0.110	0.107	190.4

2.5.3 Aerospace Ground Equipment (AGE) Formula(s)

- Aerospace Ground Equipment (AGE) Emissions per Year
$AGE_{POL} = AGE * OH * LTO * EF_{POL} / 2000$

AGE_{POL}: Aerospace Ground Equipment (AGE) Emissions per Pollutant (TONs)
AGE: Total Number of Aerospace Ground Equipment
OH: Operation Hours for Each LTO (hour)
LTO: Number of LTOs
EF_{POL}: Emission Factor for Pollutant (lb/hr)
2000: Conversion Factor pounds to tons

3. Personnel

3.1 General Information & Timeline Assumptions

- Add or Remove Activity from Baseline? Add

- Activity Location
County: Riverside
Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- Activity Title: Personnel Associated with C-17 Relocation to March

- Activity Description:

- Activity Start Date
Start Month: 3
Start Year: 2019

- Activity End Date
Indefinite: No
End Month: 5
End Year: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.152245
SO_x	0.001701
NO_x	0.085957
CO	1.010156
PM 10	0.022398

Pollutant	Total Emissions (TONs)
PM 2.5	0.009740
Pb	0.000000
NH_3	0.011925
CO_2e	168.3

3.2 Personnel Assumptions

- Number of Personnel
Active Duty Personnel: 331
Civilian Personnel: 0
Support Contractor Personnel: 0

Air National Guard (ANG) Personnel: 0
Reserve Personnel: 0

- Default Settings Used: Yes

- Average Personnel Round Trip Commute (mile): 20 (default)

- Personnel Work Schedule
Active Duty Personnel: 5 Days Per Week (default)
Civilian Personnel: 5 Days Per Week (default)
Support Contractor Personnel: 5 Days Per Week (default)
Air National Guard (ANG) Personnel: 4 Days Per Week (default)
Reserve Personnel: 4 Days Per Month (default)

3.3 Personnel On Road Vehicle Mixture

- On Road Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	37.55	60.32	0	0.03	0.2	0	1.9
GOVs	54.49	37.73	4.67	0	0	3.11	0

3.4 Personnel Emission Factor(s)

- On Road Vehicle Emission Factors (grams/mile)

	VOC	SO_x	NO_x	CO	PM 10	PM 2.5	Pb	NH_3	CO_2e
LDGV	000.124	000.003	000.093	001.081	000.047	000.020		000.024	00307.627
LDGT	000.313	000.004	000.201	002.090	000.048	000.021		000.025	00389.336
HDGV	000.652	000.012	001.435	009.670	000.183	000.078		000.045	01136.449
LDDV	000.028	000.003	000.147	000.293	000.062	000.034		000.008	00279.615
LDDT	000.099	000.004	000.568	000.620	000.116	000.086		000.008	00371.805
HDDV	000.227	000.014	005.388	001.218	000.227	000.133		000.029	01526.867
MC	004.492	000.002	001.255	024.283	000.019	000.009		000.054	00187.027

3.5 Personnel Formula(s)

- Personnel Vehicle Miles Travel for Work Days per Year
$VMT_P = NP * WD * AC$

VMT_P: Personnel Vehicle Miles Travel (miles/year)
NP: Number of Personnel
WD: Work Days per Year
AC: Average Commute (miles)

- Total Vehicle Miles Travel per Year
$VMT_{Total} = VMT_{AD} + VMT_C + VMT_{SC} + VMT_{ANG} + VMT_{AFRC}$

VMT_{Total}: Total Vehicle Miles Travel (miles)
VMT_{AD}: Active Duty Personnel Vehicle Miles Travel (miles)
VMT_C: Civilian Personnel Vehicle Miles Travel (miles)
VMT_{SC}: Support Contractor Personnel Vehicle Miles Travel (miles)
VMT_{ANG}: Air National Guard Personnel Vehicle Miles Travel (miles)
VMT_{AFRC}: Reserve Personnel Vehicle Miles Travel (miles)

- Vehicle Emissions per Year
$V_{POL} = (VMT_{Total} * 0.002205 * EF_{POL} * VM) / 2000$

V_{POL}: Vehicle Emissions (TONs)
VMT_{Total}: Total Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Personnel On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons