

**FINAL
ENVIRONMENTAL ASSESSMENT FOR
THE EXPANSION OF THE U.S. CUSTOMS AND BORDER PROTECTION
RIVERSIDE AIR AND MARINE OPERATION CENTER
AT MARCH AIR RESERVE BASE**

**MARCH AIR RESERVE BASE
AIR FORCE RESERVE COMMAND
RIVERSIDE, CA**



February 2019

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Cover Sheet

Responsible Agency: United States Air Force Reserve (AFRC)

Proposed Action: The Department of Homeland Security's (DHS), United States (U.S.) Customs and Border Protection (CBP), Riverside Air Marine Operation Center (AMOC) proposes to expand administrative space at March Air Reserve Base (ARB), California provide warehouse space and required parking and develop a park for static displays of AMOC equipment.

Point of Contact: Mr. Douglas S. Waters, Jr. PE, 452 MSG/CEV, 610 Meyer Drive, Bldg. 2403, March Air Reserve Base, CA 92518.

Report Designation: Final Environmental Assessment (EA)

Abstract: The Air Force has prepared this EA in coordination with the CBP addressing potential environmental impacts of the Proposed Action at March Air Reserve Base (ARB), California, located approximately 15 miles south of San Bernardino, California, 70 miles east of Los Angeles, California and 100 miles north of San Diego, California. The Proposed Action is to construct a 25,000 ft² single story administrative building immediately adjacent and north of an existing building to meet the square footage presently required for the anticipated personnel and uses of the facility to meet mission requirements of AMOC. Two existing modular buildings would also undergo minor renovations to the exterior providing an appearance more conducive to the co-located permanent structures. The proposed action also includes a 2.5-acre parking lot for the administrative building, a warehouse, and a static display Air and Marine Park on real property operated by the AFRC at March ARB.

CBP prepared an EA in 2011, the *2011 Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California* (CBP 2011) in anticipation of expansion of its operations and to facilitate the transfer of 8.38 acres from the City of Moreno Valley to the March ARB. The Proposed Action in the CBP 2011 was constructing a two-story building, roughly 90,000 square feet (ft²) in size with additional asphalt parking. The proposed action was to accommodate a growth in mission for border security and an anticipated growth of the AMOC operation to 700 personnel. This EA is tiered on that CBP 2011 Final EA.

Since 2011 the AMOC mission has changed, requiring less growth in personnel to only 326 personnel. This has resulted in a reduction in the requirements first envisioned in 2011. However, there is still a need for additional actions. The purpose of the proposed action is to meet the facility requirements of the AMOC, so it may perform its mission by accommodating the full 326-person contingent, provide additional warehouse space, within close proximity to the mission in a secured environment, and; to provide adequate parking for the personnel and visitors to the center. As envisioned in 2011, a park is also proposed to allow a display of AMOC related aircraft and equipment used in performance of its mission over the years.

This EA addresses the direct, indirect, and cumulative effects on the natural, social, economic, and physical environments resulting from the assessed alternatives. The information provided in this EA will serve as the basis for March ARB to determine whether the Proposed Action would have a significant impact(s) on the environment, thereby requiring an Environmental Impact Statement and a Record of Decision of have no significant impacts, which would result in a Finding of No Significant Impact. The EA also addresses the compliance of the Proposed Action with all applicable environmental statutes, such as the Endangered Species Act (ESA) of 1973 (16 U.S.C. § 1531 et seq.), as amended, and the National Historic Preservation Act (NHPA) of 1966 (54 U.S.C. § 300101 et seq.), as amended.

All public comments received on the Draft EA were considered in writing 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

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

THE EXPANSION OF THE U.S. CUSTOMS AND BORDER PROTECTION RIVERSIDE AIR AND MARINE OPERATION CENTER AT 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 expansion of the U.S. Customs and Border Protection, Riverside Air and Marine Operation Center at March Air Reserve Base, California.

The purpose of the Proposed Action is to accommodate growth of the Air and Marine Operation Center (AMOC) mission. Overcrowding is negatively affecting the efficiency of operations carried out by the Air and Marine Operation (AMO) at the AMOC. The existing AMOC facility was originally constructed to support 65 personnel. In 2011 AMOC anticipated a growth to 700 personnel and expanded their operations to include modular buildings and a 22,000 sq. ft. building. There are approximately 249 full-time personnel currently operating at the existing AMOC facility. The AMOC now anticipates projected growth up to 326 personnel. To meet the current growth the Proposed Action is to provide sufficient administrative facilities, to include a parking lot and warehouse, to allow AMO personnel to efficiently and effectively carry out day-to-day operations. The proposed Action also includes the development of a park to enhance the morale of the personnel and to display AMOC equipment for visitors.

The Environmental Assessment (EA) examines all feasible alternatives, analyzes the potential environmental consequences of the Proposed Action, as the only feasible alternative that will meet the purpose and need, and the No Action Alternative. The EA also considers cumulative environmental impacts associated with other past, present and future projects in the Region of Influence.

Proposed Action (Preferred Alternative)

Under the Proposed Action, The AMOC would expand its facilities by constructing a 25,000 sq. ft. single story building, relocate parking for 256 vehicles to the east to accommodate the anticipated levels of staff, potential visitors, and government owned vehicles, construct a 20,000 sq. ft. warehouse, and develop a park to display aircraft and equipment used in AMOC operations.

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 AMOC would not be expanded and the current CBP personnel would continue to operate from the existing facilities. The No Action Alternative would not accommodate the anticipated increase in staffing levels and additional operations required of the AMOC to perform its mission. No additional parking would be constructed, and the Air and Marine Park and warehouse would not be constructed under this alternative. CBP would be forced to operate within the confines of the existing space and with the current staffing. The lack of facilities will result in the degradation and potential failure in the AMOC mission to protect the borders of the

US. Alternative strategies, including the No Action Alternative, are assessed in the EA.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Proposed Action presented in the EA concludes that permanent, minor impacts would occur on approximately 2.5 acres of disturbed land, as this land would be used for parking and a warehouse. Negligible to minor impacts would occur on land use, vegetative resources, wildlife resources, aesthetics and visual resources, human health and safety, and hazardous waste. Minor, beneficial impacts would occur on socioeconomics and environmental justice for children as increased tax revenues and local spending from the additional workforce would be expected. No impacts to Federally listed threatened and endangered species, as well as cultural or historical resources would occur, as a result of the Proposed Action. Negligible to minor impacts on the state-listed burrowing owl (*Athene cunicularia*) would occur as potential habitat would be converted to developed area.

Temporary increases in air emissions, fugitive dust, and noise levels are anticipated during construction activities; however, air emissions would be *de minimus* based on a conformity applicability analysis conducted by March ARB. Also, during construction, the Proposed Action would have a temporary minor impact on roadways and traffic in the region. However, these impacts would be negligible compared to the cumulative impacts of other projects currently on-going and planned. Once construction activities are complete the increase in personnel would have negligible impacts on roadways and traffic.

Surface water quality could be temporarily impacted during construction, because of increased erosion and sedimentation; however, these impacts would be minor. Surface water quality impacts would be minimized by the implementation of Best Management Practices (BMPs) as outlined in the Small Municipal Separate Storm Sewer Systems (MS4s) (General Permit) and the March ARB Storm Water Pollution Prevention Plan (SWPPP). Therefore, the Proposed Action would have minimal impacts on wetlands and waters of the U.S. The increased usage of water for construction purposes could have a temporary, minor impact on municipal water resources. The increase in water usage, because of the increased personnel at AMOC, would have negligible impacts on municipal water resources. No significant adverse cumulative impacts would result from activities associated with the Proposed Action, 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 Proposed Action 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.

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MATTHEW J. BURGER
Brigadier General, USAF
Commander

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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	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
CBP	Customs and Border Protection
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
CH₄	Methane
CO	Carbon Monoxide
CO₂	Carbon Dioxide
CO₂eq	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
INRMP	Integrated Natural Resources Management Plan
IPaC	Information for Planning and Consultation
JPA	Joint Powers Authority

Leq	Equivalent Sound Level
Leq(h)	Hourly Average Noise Levels
Leq(24)	Equivalent Sound Level for 24 hours
Lmax	Maximum Sound Level
LTO	Landings and Takeoffs
MBTA	Migratory Bird Treaty Act
MFHD	March Field Historic District
N₂O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAGPR	Native American Graves Protection and Repatriation
NAS	National Airspace System
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NO_x	Nitrogen Oxides
NO₂	Nitrogen Dioxide
NRHP	National Register of Historic Places
O₃	Ozone
PAA	Primary Aerospace Vehicles Authorized
PFC	Perfluorocarbons
PL	Public Law
PM_{2.5}	Particulate Matter less than 2.5 microns in diameter
PM₁₀	Particulate Matter less than 10 microns in diameter
ppb	parts per billion
ppm	parts per million
ROI	Region of Influence
SEL	Sound Exposure Levels
SF₆	Sulfur Hexafluoride
SIP	State Implementation Plan
SO_x	Sulfur Oxides
SO₂	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 purpose of the Proposed Action is to accommodate growth of the Department of Homeland Security (DHS), Customs and Border Protection (CBP), Air and Marine Operation Center (AMOC) mission, which has evolved since first established at March Air Reserve Base in 1988. Overcrowding is negatively affecting the efficiency of operations carried out by the Air and Marine Operation (AMO) personnel operating at the AMOC. The existing AMOC facility was originally constructed to support 65 personnel. There are currently approximately 249 full-time personnel operating at the existing AMOC facility. AMOC now anticipates the projected growth of up to 326 personnel.

In 2011, AMOC anticipated a growth to 700 personnel and CBP prepared an EA in 2011, the 2011 *Final Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California* (CBP 2011), Appendix D, in anticipation of expansion of its operations and to facilitate the transfer of 8.38 acres from the City of Moreno Valley to the March ARB to accommodate that expansion. Since 2011 AMOC expanded their operations to include modular buildings and a 22,000 sq. ft. building to partially meet the 700 personnel growth. However, the mission has changed and funding was not provided for full expansion.

This Environmental Assessment (EA) is tiered on the CBP 2011 and FONSI, provided as Appendix D, and evaluates any potential environmental impacts, which may result from the expansion of AMOC facilities to accommodate the present anticipated growth of 326 personnel.

The Proposed Action would expand AMOC facilities by:

- Constructing a 25,000 sq. ft. single story building,
- Relocating parking to the east to accommodate the anticipated levels of staff, potential visitors, and government owned vehicles, approximately 256 vehicles.
- Constructing a 20,000 sq. ft. warehouse, and
- Developing a park (Air and Marine Park), to include the relocation of the existing Ku and Coalition Tactical Awareness and Response (CTAR) antennas to the Park.

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 Proposed Action in the CBP 2011 included the growth of the AMOC operation to 700 personnel, constructing a 90,000 square feet (ft²), two-story building, on a 55,000 ft² "footprint". The CBP 2011 Proposed Action also included future development of 8.38 acres of land to the east owned by the City of Moreno Valley. Based on the request from the CBP the AFRC acquired the land from the city in 2017. Under the CBP 2011 Proposed Action, the parcel acquired from the City of Moreno Valley to the east would be used as a security buffer with the possibility of future expansion of parking facilities, additional office space, a warehouse, armory, and an indoor small arms range all of which was undefined at that time. The entire AMOC would be fenced and lighted for security purposes.

The Title 32 Code of Federal Regulations §989.10 Tiering, states “that the Air Force should use tiered (40 CFR 1502.20) environmental documents, and environmental documents prepared by other agencies, to eliminate repetitive discussions of the same issues and to focus on the issues relating to specific actions.” This EA is tiered on the CBP 2011 EA, prepared by the CBP. This document will refer to the CBP 2011 as necessary and will not repeat the information contained in that document. The CBP 2011 will be made available to the public for review and will be posted on the March ARB web site as discussed later, with this document.

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 as shown on **Figure 1-1** is located approximately 70 miles east of Los Angeles in the western part of Riverside County, California. The Department of Homeland Security’s (DHS), United States (U.S.) Customs and Border Protection (CBP), Riverside Air Marine Operation Center (AMOC) is located at March Air Reserve Base (ARB), California (Figure 1-2).

Figure 1-1 Regional Location of March ARB

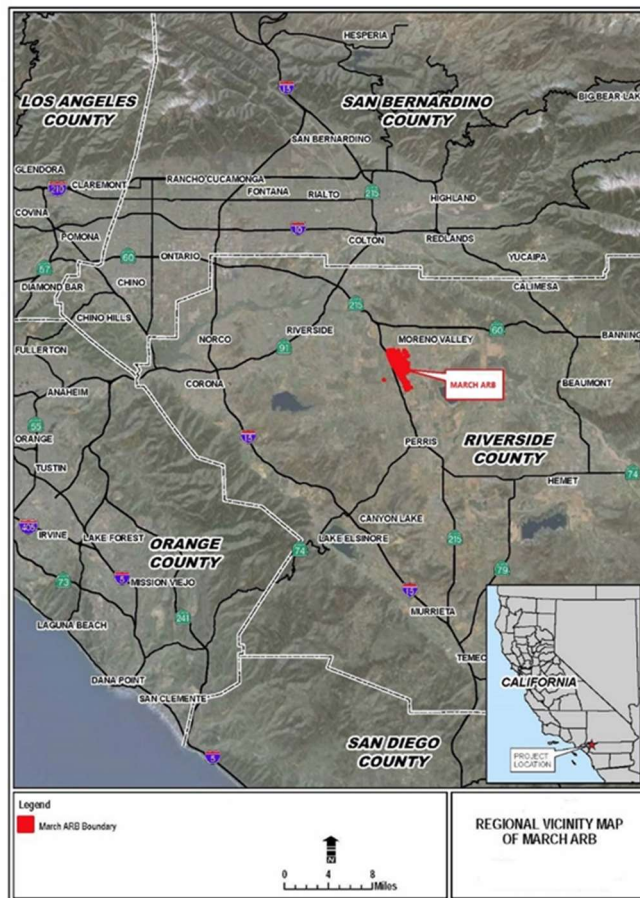
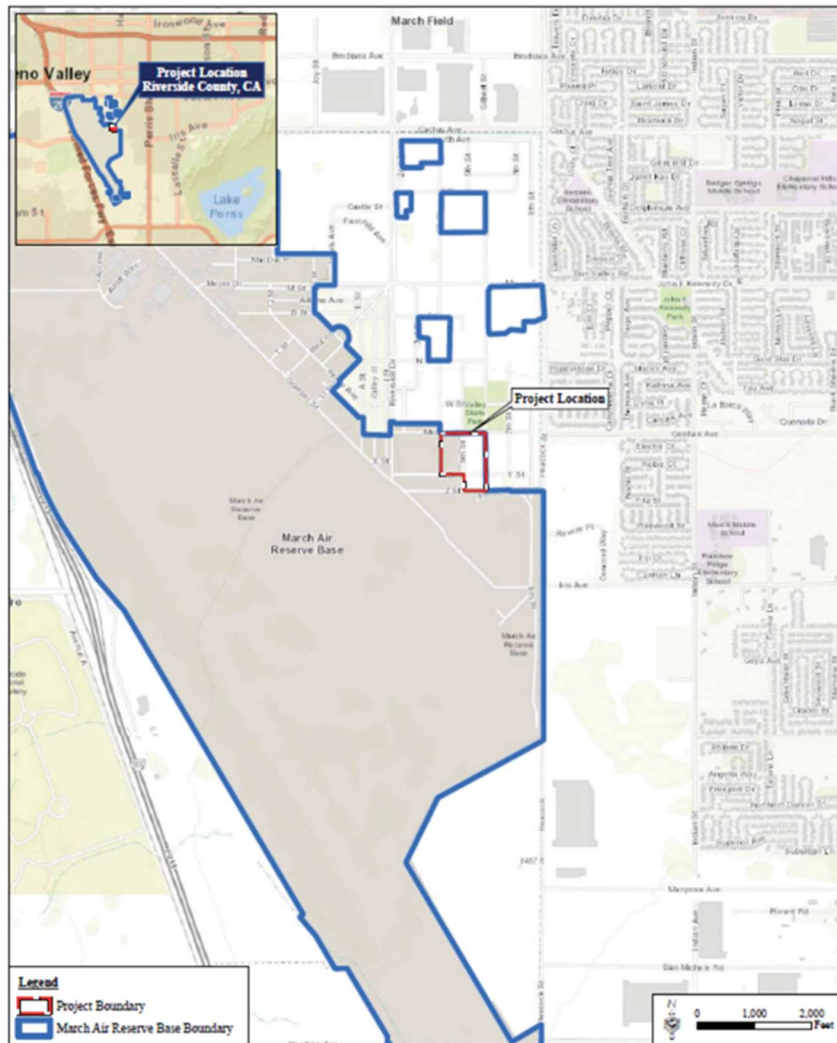


Figure 1-2 Project Location Map



1.3 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

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

The mission of CBP's AMO is to protect the American people and the Nation's critical infrastructure through the coordinated use of integrated AMO forces to detect, interdict, and prevent acts of terrorism and the unlawful movement of people, illegal drugs, and other contraband toward or across the borders of the U.S. To meet this need in the Southern California area, the AMOC has had a permit for its presence and use of March ARB since 1987. The original permit allowed the construction of Building 605 on 1.2 acres of land on what was formerly March Air Force Base. The permit was amended in 2013 to include Building 373, a hangar on the flight line and an additional 2.45 acres. The AMOC was originally constructed in 1988 and enlarged in 2007. Two modular buildings (Building 605A and 605B) were installed and permitted west of Building 605 in 2011 and 2015, respectively. These buildings continue to be required for the AMOC mission.

In 1994 The Base Realignment and Closure Act caused excess property on the former March AFB to be transferred to the March Joint Powers Authority, California. The non-excess property was transferred from the active Air Force to the Air Force Reserve Command (AFRC) and renamed March ARB.

The Commander, U. S. AFRC, 452nd Air Mobility Wing (AMW) is the Installation Commander. The 452nd AMW mission is to provide professional airmen committed to excellence and the highest state of readiness in support of national objectives at home and abroad and provide quality, efficient and effective service to its Base mission partners, while enhancing the installation and its Air and Marine in partnership with the local community. Providing facilities for the CBP is in keeping with the mission and is compatible with the 452nd AMW mission.

On April 20, 2017, March ARB granted an amendment to the AMOC permit granting the use of 15.02 acres as depicted in white within the red outlined project location on Figure 1-2.

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 determines whether to implement the Proposed Action or take no action (No Action Alternative). The decision to be made is to either expand the AMOC March ARB, or, implement the No Action Alternative to use facilities as existing. 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 15 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 undertakings 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 14 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 not received responses from these tribes as to FEBRUARY 2019

whether they were interested in entering a formal consultation for this Proposed Action. 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*. Consistent with 32 CFR 989.15, the AFRRC has determined that an extended review period is clearly unnecessary due to the lack of potential controversy in this project as shown by previous actions to include the Proposed Action considered in the previous CBP 2011 and other actions recently undertaken on March ARB. Therefore, the public review period will be limited to 14 days comment period beginning 19 January 2019. 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 of the environmental impact analysis process of 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 facilities. The process applied operational and other criteria to identify reasonable alternatives for the expansion of the AMOC.

To be viable, the alternative facility(s) must:

- Have adequate size and an open floor plan configuration to provide sufficient area for necessary perimeter security and space for program functions
- Be immediately adjacent to the current AMOC and allow for contiguous facilities and ensure ease of operations. The parcels must be situated in such a way as to not compromise the security and safety of the facility and staff by providing easy access and egress through existing roadways, as well as permitting increased security to this specific location
- Have access to the new facility equal to access to the existing facility.
- Not be located within proximity to residential areas, schools, or churches
- Have adequate utility services
- The potential for environmental impacts from any development, construction, and operation of the AMOC should be minimal or be mitigated to less than significant levels.

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.

2.2.1 Alternative 1: Proposed Action (Preferred Alternative)

The Proposed Action, as depicted on Figure 2-1 AERIAL VIEW and Figure 2-2 in Plan View, includes the following:

2.2.1.1 New Single-Story Building.

A single story, 25,000 ft² building that immediately adjacent and north of the existing AMOC building to meet the square footage required for accommodate the projected 326 personnel levels and mission of the AMOC.

2.2.1.2 Modular Building Renovations

The two existing modular buildings would undergo minor renovations to the exterior providing an appearance more conducive to the co-located permanent structures.

2.2.1.3 Warehouse

A 20,000 ft² warehouse. The warehouse is necessary to store janitorial and minor facility maintenance parts and materials, as well as computer equipment that are presently stored in the existing building, in CONEX boxes south of the AMOC, in a March ARB storage garage, and in the existing building courtyard. The proposed warehouse would have a concrete foundation and would have insulated metal panels for a roof and walls. The proposed new warehouse would have 20 new parking spots.

2.2.14 Park

A park (Air and Marine Park) would be developed. Once complete, Air and Marine Park would include:

- One decommissioned C550 Cessna aircraft acquired by the AMOC, which is currently located onsite. The Cessna aircraft has several parts removed (engine, seats, instrument panel, control stick, etc.), which are to be placed on display in the AMOC. All fluids have been removed and the tires have been foam filled. The wheels of the aircraft are located on three concrete footings.
- An additional C12 aircraft, currently located in Building 373 (CBP Hangar) would be decommissioned prior to locating on site.
- A retired Federal Aviation Administration (FAA) radar antenna currently being restored. This antenna would be transported from Oklahoma to the AMOC facility and would be placed on a concrete pad or pillars.
- A shade structure (gazebo) to allow meeting and ceremonial activities. The gazebo would be a 14-foot octagon and made of vinyl. Eight posts would support the shingled roof and a railing could be potentially added to the gazebo. The flooring of the gazebo would be either concrete or decomposed granite. Additionally, a pathway would be constructed and would start at the edge of 5th Street near the “Captain Tyson” dedication rock and meander towards the gazebo. The AMOC typically receives approximately 2,000 visitors per year. These visitors would be expected to take advantage of the Air and Marine Park.

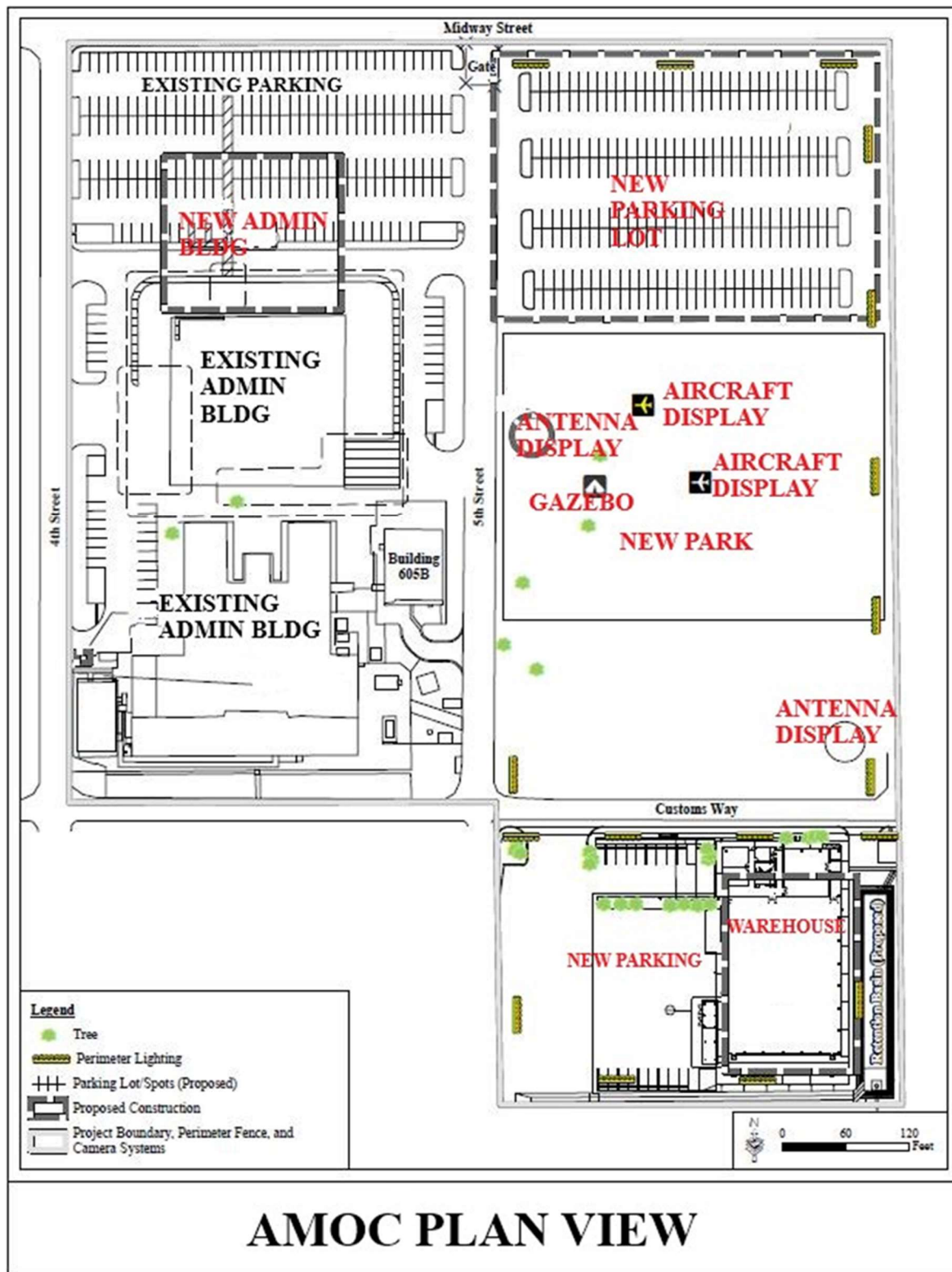
2.2.1.5 New Parking Area

A new parking area to the east of the new facility providing 256 parking spots and encompassing approximately 2 acres. The AMOC currently has 249 total parking spots, including handicapped reserved spaces that serve 254 current personnel and visitors. Using the March ARB ratios for parking requirements based on the anticipated increase of 326 personnel, the AMOC needs a total of 293 regular and handicap parking spots for personal vehicles, 10 spots for government vehicles, and eight spots for visitors for a total of 314 parking spots. Once construction of the new 25,000 ft² building and the warehouse are complete there would be 38 parking spots remaining at the existing parking lot.

Figure 2-1 Arial View



Figure 2-2 Plan View



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 this alternative, the AMOC facility would not be expanded and the current CBP personnel would continue to operate from the existing facilities. The No Action Alternative would not accommodate the increase to a total of 326 personnel, which would have an impact on the overall mission. In the absence of the proposed construction activities, AMOC capabilities and operational efficiency would be limited. CBP would be forced to operate within the confines of the existing space and with the current staffing. The No Action Alternative serves as the baseline for the evaluation of impacts from the Proposed Action and alternatives. The effected environment and environmental resources analyzed in this EA are discussed in Chapter 3.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER CONSIDERATION

The CBP 2011 considered various alternatives to expanding the existing AMOC site. The results are summarized below.

The AMOC reviewed two properties off Base and four buildings on Base for locating the Proposed Action. One of the two buildings located off Base was at the intersection of Cactus Avenue and Meridian Parkway just west of the Interstate 215 overpass. The other was across the street from the main gate in the Chevron gas station shopping center. Concerns over a lack of Base police protection and the buildings being located too far from the existing AMOC facilities were reasons for not selecting these alternate locations.

The March ARB offered four buildings to the AMOC. However, after evaluations of these facilities, it became apparent that 3 buildings required complete renovation, replacement of HVAC systems and other essential components. Building 625, closest to the AMOC, met most of the selection requirements; however, it did not meet the AMOC's open floorplan requirement and would have to have the roof replaced. Therefore, this building too did not meet the selection requirements.

When deciding where to locate other aspects of the Proposed Action (i.e., warehouse and park), the AMOC reviewed other locations on Base other than the location depicted in the Proposed Action. The AMOC looked at using Building 602 on March ARB for warehouse space. However, Building 602 is not a warehouse and is not set up for use of forklifts and other equipment, it is likely to have asbestos and lead based paint, would require extensive renovations, is not in the security coverage area for AMOC security and is not easily accessible for moving assets back and forth for use by AMOC staff. The Air and Marine Park only makes logical sense to be located adjacent to the AMOC facility. The Park serves a couple of purposes to include maintaining a static display of resources that CBP has used in the past to perform law enforcement duties. This includes the aircraft and radars.

Table 2-1 Screening of Alternatives

Other Alternatives Considered	Rationale for Elimination
<p>Use of existing facilities located on March ARB</p>	<p>The AMOC reviewed four buildings on Base during the development of the Proposed Action. The buildings that March ARB offered to the AMOC for use on Base included Building 263, Building 426, Building 434, and Building 625. However, after doing due diligence, it became apparent that Buildings 263, 426, and 434 were dilapidated and required complete renovation or replacement of HVAC systems and other essential components. Building 625 met most of the selection requirements; however, it did not meet AMOC’s open floorplan requirement and would have to have the roof replaced. Therefore, this building too did not meet the selection requirements.</p> <p>The AMOC looked at using Building 602 on March ARB for warehouse space. However, Building 602 is not a warehouse and is not set up for use of forklifts and other equipment, it is not part of the site that March ARB has permitted for the AMOC to use, it is likely to have asbestos and lead based paint and would require extensive renovations. Lastly Building 602 is not in the security coverage area for AMOC security and is not easily accessible for moving assets back and forth for use by AMOC staff.</p>
<p>Use of facilities located off of March ARB</p>	<p>Two properties off Base were reviewed by the AMOC during the development of the Proposed Action. One of the two buildings located off Base was at the intersection of Cactus Avenue and Meridian Parkway just south of Interstate 215 overpass. The other was across the street from the main gate in the Chevron gas station shopping center. Concerns of a less secure facility without Base police along with the buildings being located too far from the existing AMOC facilities were reasons for eliminating these alternate locations.</p>

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. The CBP 2011 EA discussed these same environmental aspects in detail and the discussion below only provides additional or changed information or conditions since the CBP 2011 EA was written.

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. Table 3-1 provides a list of environmental aspects evaluated under each alternative.

Table 3-1 List of Resource Areas to Be Evaluated in the EA

Resource Areas to be Evaluated in this EA
Noise, Section 3.2
Air Quality, Section 3.3
Water Resources, Section 3.4
Biological/Natural Resources, Section 3.5
Earth Resources, Section 3.6
Hazardous Materials/Waste, Section, 3.7
Cultural Resources, Section 3.8
Land Use, Section 3.9
Utilities and Infrastructure, Section 3.10
Safety and Occupational Health, Section 3.11
Socioeconomic Resources, Section 3.12
Environmental Justice, Section, Section 3.13

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. Some resource discussions are limited in scope due to the lack of direct effect from the proposed project on the resource or because that particular resource is not located within the project site.

Resources eliminated from further discussion include the following:

- Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers located in the vicinity of the proposed project.

- Geology

The Proposed Action would not disturb the regional geologic resources of the area, since only near-surface modifications would be implemented and the geotechnical setting would support the Proposed Action.

- Prime and Unique Farmlands

No soils designated as prime or unique farmlands (7 U.S.C. § 4201 et seq.) occur within or near the project corridor.

- Airspace

No additional aircraft, aircraft operations, or requirements for changes in airspace use are included in the Proposed Action; therefore, this resource is eliminated from further discussion.

3.3 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.3.1 Noise

3.3.1.1 Definition of the Resource

Noise is defined as unwanted sound or any sound that is undesirable because it is intense enough to damage hearing, interfere with communication or is otherwise annoying (Federal Interagency Committee on Noise [FICON] 1992). Much of the area surrounding March ARB is moderately populated, with noise levels of corresponding moderate magnitude. The noise environmental at March ARB is characteristic of a quiet suburban environment-setting that typically experiences noise associated with vehicles on local highways and aircraft activities. Aircraft noise is easily the dominant noise source at March ARB. The state of California uses the Community Noise Equivalent Level (CNEL) as its preferred noise metric for use in land use planning and has promulgated a set of airport noise regulations based on this metric (California Code of Regulations, Title 21, Divisions 2.5, Chapter 6) (National Guard Bureau 2017). Under these regulations, 65 decibels (dB) CNEL was established as the threshold at which residences are not normally compatible.

3.3.1.2 Existing Conditions at March ARB

Areas near March ARB that are exposed to aircraft noise levels exceeding 60 dB CNEL include agriculture, commercial, industrial, mixed, public, residential, and transportation. The proposed project footprint is outside of the area modeled by March ARB as being within the 65 dB CNEL noise level because of aircraft operations. Additional noise is generated on March ARB because of day to day operations in the form of ground support equipment, vehicular traffic, and general operations. Per the March ARB Installation Development Plan (IDP), the immediate footprint of the Proposed Action is located outside of the modeled 65 dB CNEL contours. There are no private residences, schools, hospitals or commercial buildings, or other sensitive receptors immediately adjacent to the Proposed Action development area.

3.4 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 [PM10] and particulate matter less than 2.5 microns in diameter [PM2.5]), sulfur dioxide (SO₂), carbon monoxide (CO), nitrogen dioxide (NO₂), ozone (O₃), 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 (NO₂), ozone (O₃), sulfur oxides (SO_x), commonly measured as sulfur dioxide (SO₂), lead, particulate matter equal to or less than

10 micrometers in aerodynamic diameter (PM₁₀) and particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter (PM_{2.5}). Although O₃ 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 O₃ is not typically emitted directly from most emissions sources. O₃ 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 O₃. The NAAQS for the six criteria pollutants are shown in Appendix C.

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 re-designated 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.

3.4.1 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).

3.4.2 Greenhouse Gases

There are six primary Greenhouse Gases (GHGs) of concern: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

Only three of the GHGs are considered in the emissions from the Proposed Action. CO₂, CH₄, and N₂O, represent the majority of carbon dioxide equivalent (CO₂eq) 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 SF₆ 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 CO₂, CH₄ and N₂O 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 CO₂eq (USEPA 2013). U.S. total GHG emissions have risen 8.4 percent from 1990 to 2011 (USEPA 2013).

3.5 WATER RESOURCES

3.5.1 Groundwater Resources

Groundwater resources have been previously discussed in the CBP 2011 and there has been no change in those resources since 2011, with the exception of the information below.

Groundwater quality in the vicinity of the Base is generally considered good, with total dissolved solid concentrations ranging from 350 parts per million (ppm) to 1,000 ppm; however, in some parts of the Perris Plain, total dissolved solid concentrations can be as high as 12,000 ppm. Past groundwater monitoring on the Base has identified contamination by various volatile organic compounds (VOCs), including trichloroethylene and tetrachloroethylene; however, water services to the Base rely on an outside supplier and groundwater from the Base is not used for potable purposes (March ARB 2003).

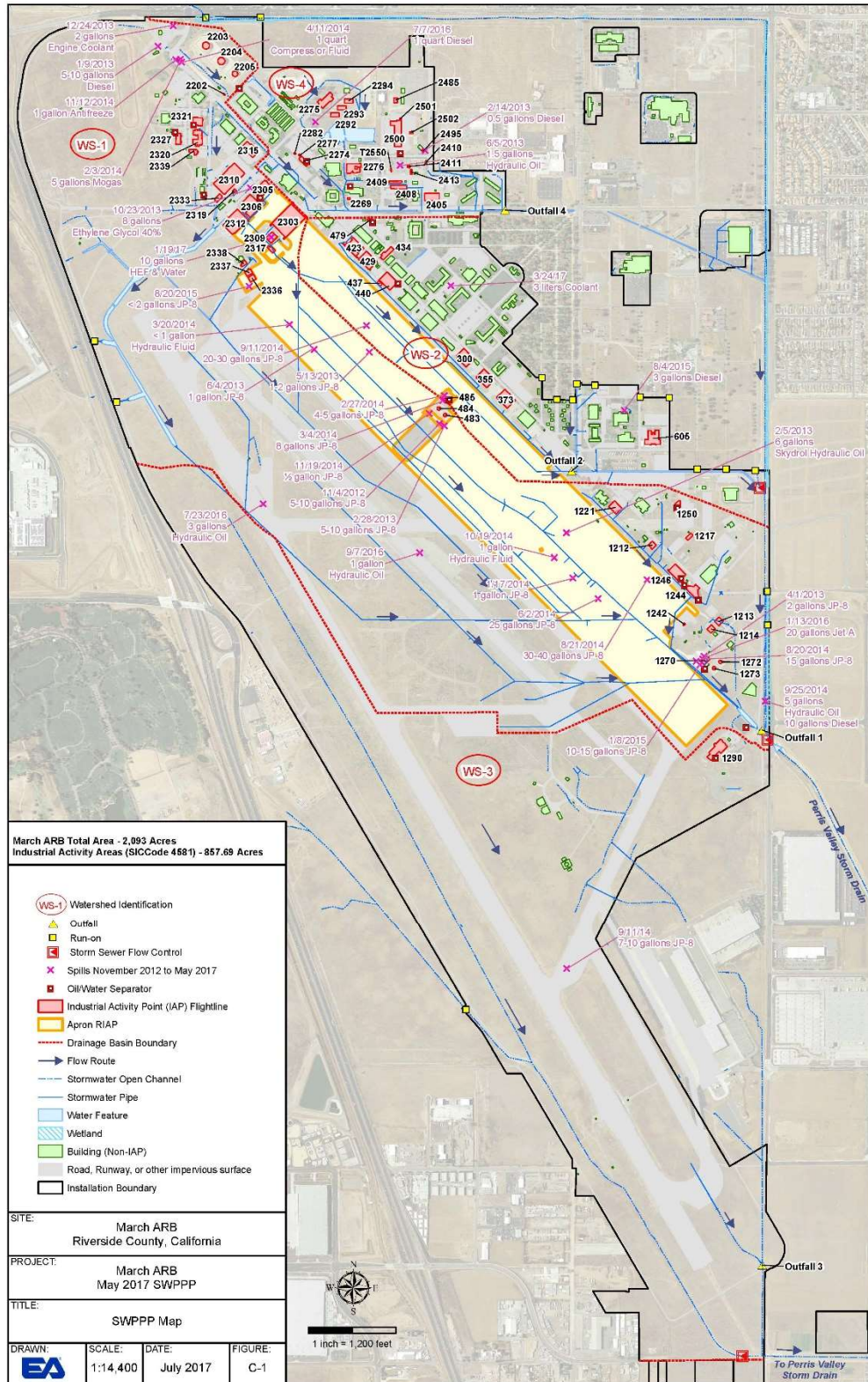
Groundwater levels have been rising since 1984. Several studies have investigated the cause, but there is no conclusive evidence at this time. The AMOC permitted land is in an area of the Base in which groundwater levels are lower below the surface than other areas. Some areas of the Base report groundwater at 1 to 10 feet below the surface, which causes concern for existing facilities particularly where soils may contribute to liquefaction. However, this situation is not present in the soils directly below the AMOC. Because groundwater is on a rise and groundwater recharge generally comes from local infiltration there is little concern of impact from impervious cover on the groundwater supplies in the area.

3.5.2 Surface Water

Surface waters within and near the ROI were discussed in the CBP 2011 (CBP 2011). No permanent surface water bodies are located within 2.5 miles of the March ARB boundary, with the exception of small impoundments used for agricultural purposes.

During heavier precipitation events on the Base, ground saturation/flooding may occur. A large percentage of March ARB is covered with impermeable, man-made features that reduce infiltration and increase surface runoff. In general, drainage on the Base flows in a southeasterly direction and surface water runoff on the Base is dominated by a network of manmade ditches, storm drains, drainage swales, and underground sewer lines. Drainage occurs by overland flow to storm drain inlets connected to a series of underground pipes, or percolates into the groundwater system via subsurface soils. All Base drainage flows into the Heacock Channel on the eastern boundary of the Base and the Oleander Avenue Channel to the south (Figure 3-1 Drainage Map). The system drains into the Perris Valley Storm Drain Channel, which flows to the San Jacinto River, 6 miles to the southeast and then eventually to Lake Elsinore (March ARB 2007a).

Figure 3-1 Drainage Map



The State of California, through the California Environmental Protection Agency (CalEPA), has adopted final stormwater permits for industrial discharges under the National Pollutant Discharge Elimination System (NPDES) program. March ARB falls under the jurisdiction of the Cal EPA's Santa Ana Regional Water Quality Control Board, which issued March ARB an individual permit, NPDES No. CA 0111007, to discharge stormwater associated with industrial activity from four outfalls (identified in the permit as Discharge Serial Nos. 001, 002, 003 and 004). The Base is divided into four localized watersheds, which represent the four areas of stormwater deposition from areas on and outside the Base (watersheds have the same numeric designation as their Discharge Serial Number). Each watershed discharges through one of three NPDES-permitted discharge areas, all of which are regularly monitored by Base personnel. Because of the irregularity of the Base boundary, the stormwater system crosses into property outside the Base in several locations and particularly the area of and surrounding the AMOC and then subsequently reenters the Base. As a result, the outfall points can potentially collect some drainage from areas outside Base boundaries (March ARB 2007a). In the past, Base personnel have observed periodic spikes in the levels of total suspended solids and surfactants.

The area immediately surrounding and including the AMOC, drains overland and into streets and gutters that then flows in the direction of the Oleander Channel at the border of the Base and on the southern boundary of the AMOC permitted land. Some of the area upon which the warehouse, new parking area, and Air and Marine Park are proposed drain off Base and onto land owned by the Joint Powers Authority and Moreno Valley.

3.5.3 Waters of the U.S., Wetlands, and Floodplains

The Heacock Channel, which is located east of the AMOC is considered a "waters of the U.S.". According to the Federal Emergency Management Administration, the AMOC is in Flood Zone D and is not considered to be within the 100-year floodplain. However, per the Riverside County Flood Control and Water Conservation District, the AMOC is located within the 100-year floodplain (Air Force Reserve Command 2010). The 100-year floodplain is associated with the Heacock Channel, which is located east of the AMOC. Modifications recently completed in 2018 to construct a new concrete lined trapezoid channel to contain the 100-year flood is expected to result in the elimination of the AMOC being in the 100-year floodplain.

3.6 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.

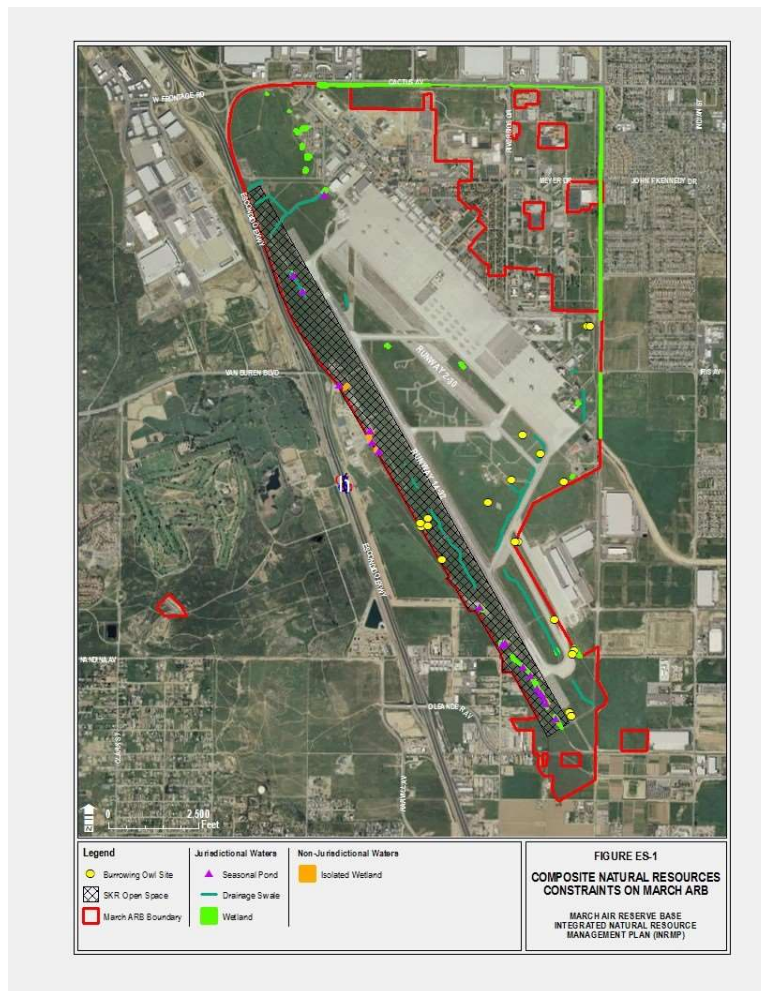
The Bald and Golden Eagle Protection Act (16 U.S.C. §668a; 50 CFR §22) prohibits the take, possession, sale, purchase, barter, offer to sell, transport or import of the bald eagle (*Haliaeetus leucocephalus*) or the golden eagle (*Aquila chrysaetos*), including any part, nest, or egg, unless allowed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

March Air Reserve Base (ARB), California and the Air Force Reserve Command (AFRC) developed an Integrated Natural Resources Management Plan (INRMP) in 2012. The INRMP provides March ARB with a description of the Base and the surrounding environments, and, presents various management practices designed to mitigate negative impacts and enhance the positive effects of the Base’s mission on regional ecosystems. The Chapter 6 of the INRMP 2012 included a final environmental assessment of the proposed actions and alternatives and a FONSI. That document provided a map of Environmental constraints as shown of Figure 3-2 Map of Environmental Concerns. Figure 3-2 shows no constraints near the AMOC area. The 2012 INRMP is currently under revision and a revised INRMP is expected by the end of 2019.

Figure 3-2 Map of Environmental Concerns



The CBP conducted a biological survey through a contract with Gulf South Research Corporation (GSRC) on February 26, 2018. That survey included a literature search and field observations to verify current conditions of the AMOC area and area of the Proposed Action, as well as adjacent areas. Results are included in the discussion below.

3.6.1 Vegetation

The vegetative habitat observed within the ROI was previously described and analyzed in the CBP 2011 has not changed. The ROI is extremely disturbed (Photograph 3-1) due to vehicle use, mowing, debris disposal (such as lawn and tree trimmings), and stockpiles of dirt from grading activities. The vegetation community at the AMOC consists of native and non-native mixed annual forbs with some non-native annual grasses. Plant species observed during the biological survey conducted by Gulf South Research Corporation (GSRC) on February 26, 2018 included but were not limited to, Russian thistle (*Salsola* sp.), telegraphweed (*Heterotheca grandiflora*), Menzie’s fiddleneck (*Amsinckia menziesii*), doveweed (*Croton setigerus*), mustard (*Brassica* sp.), London rocket (*Sisymbrium irio*), filaree (*Erodium cicutarium*), and gumweed (*Grindelia* sp.). Grass species were dominated by invasive brome grass (*Bromus* spp.). A few large landscape trees such as mesquite (*Prosopis* sp.), California fan palm (*Washingtonia filifera*), and bottle tree (*Brachychiton acerifolius*) were observed in the ROI. Two 5-foot tall saguaro cacti (*Carnegiea gigantea*) were observed in the northwest corner of the AMOC. The two saguaro cacti have multiple injuries and show signs of poor health. These findings are consistent with the findings in the INRMP 2012.

3.6.2 Wildlife

As described in 3.6.1, the AMOC is located within a previously disturbed landscape. General wildlife within the region has been previously described in the CBP 2011. Wildlife species found in the AMOC on March ARB are likely adapted to the existing urban/industrial environment. Additionally, quality wildlife habitat is limited because of the developed nature of the ROI. Several birds, mammals, and reptiles associated with the ROI were observed during the biological survey conducted by GSRC in 2018. The species observed during the biological survey are listed in Table 3-2

Table 3-2 Wildlife Species Observed During the Biological Survey

Species Common Name	Species Scientific Name
Mammals	
Desert cottontail	<i>Sylvilagus audubonii</i>
California ground squirrel	<i>Otospermophilus beecheyi</i>
Birds	
American crow	<i>Corvus brachyrhynchos</i>
Common raven	<i>Corvus corax</i>
Mourning dove	<i>Zenaida macroura</i>
Western meadowlark	<i>Sturnella neglecta</i>
Killdeer	<i>Charadrius vociferus</i>
Red-tail hawk	<i>Buteo jamaicensis</i>
Say’s phoebe	<i>Sayornis saya</i>
Black phoebe	<i>Sayornis nigricans</i>
Great-tailed grackle	<i>Quiscalus mexicanus</i>
Reptiles	
Side-blotched lizard	<i>Uta stansburiana</i>

3.6.3 Special Status Species

The 2012 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. No response was provided.

The following species are federally listed and have the potential to occur on March ARB (Table 3-3). The species included in this list are based on habitat on base identified in the 2012 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 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 3-4, to identify other aviation species that were taken into consideration (CNRA 2018).

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

Common Name	Scientific	Status*	Preferred Habitat
Federal			
Quino Checkerspot	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
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
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 Riverside an alluvial
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.

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

Table 3-4. 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	Melospiza 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 March ARB property to the west of I 215 in 1996, but has not been documented in the ROI, 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 to 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 proposed within the 2012 INRMP.

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.

3.7 SOILS AND PRIME FARMLAND

CBP 2011 describes the soils in the ROI. There is only one soil complex associated with the ROI expansion project site, Exeter sandy loam, 0 to 2 percent slopes. (Natural Resources Conservation Services [NRCS] 2018). The 2011 CBP notes that the soils are mostly fill of sandy materials.

3.8 HAZARDOUS MATERIALS

Hazardous materials within and near the ROI were previously described and discussed in the CPB 2011. The groundwater plume (as discussed in Section 3.4.1) is still being monitored by March ARB per protocol established when the plume was first discovered. The construction of the new administrative building, warehouse, and parking lot would not encounter the groundwater plume based on its depth below the surface. Therefore, there is not a significant environmental concern associated with hazardous materials at the AMOC.

The AMOC currently has one 2,500-gallon diesel tank, which supports the permitted generators for

existing buildings. The AMOC reports storage tank compliance information monthly to the storage tanks manager at March ARB, which is reported as part of the quarterly emissions report to the South Coast Air Quality District. The tanks are also identified in the March ARB Spill control and Countermeasure Plan and meet all State and Federal requirements for containment and facility response.

The AMOC produces small quantities of hazardous waste used repair and maintenance of its facilities and stores small quantities of hazardous materials. The AMOC is required under its permit conditions to comply with all March ARB environmental regulations to include required storage, transportation, use and disposal of hazardous materials and waste. The AMOC has a satellite accumulation point to hold hazardous waste until containers are filled and transported to the March ARB 90-day accumulation point. All wastes from the 90-day yard are disposed through the Defense Logistics Agency disposal contracts that meet all Federal and State laws.

3.9 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 1-2.

Cultural, historical, and archaeological resources were previously discussed in the CBP 2011 Final EA. No additional resources have been identified since the completion of the CBP 2011 Final EA within the ROI. Further, CBP completed consultation with the State Historic Preservation Officer (SHPO) during the CBP 2011 Final EA and it was determined that no historic resources would be affected. CBP also completed Tribal consultation for the CBP 2011 EA. Three Tribes responded to CBP as part of the consultation efforts. The Agua Caliente Band of Cahuilla Indians responded that they have no concerns regarding the project. The Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation and the Soboba Band of Luiseno Indians responded to CBP. The consultation letters, which include the Tribal requests and CBP’s responses, can be found in the CBP 2011.

March ARB sent consultation letters with the SHPO and Tribes asking for their interest in the
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environmental assessment and the proposed action on November 19, 2018. To date no response have been received.

3.9.1 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).

Cultural, historical, and archaeological resources were previously discussed in the CBP 2011 Final EA. No additional resources have been identified since the completion of the CBP 2011 within the ROI. Further, CBP completed consultation with the State Historic Preservation Officer (SHPO) during the CBP 2011 and it was determined that no historic resources would be affected. CBP also completed Tribal consultation for the CBP 2011. Three Tribes responded to CBP as part of the consultation efforts. The Agua Caliente Band of Cahuilla Indians responded that they have no concerns regarding the project. The Pechanga Band of Luiseno Mission Indians of the Pechanga Reservation and the Soboba Band of Luiseno Indians responded to CBP. The consultation letters, which include the Tribal requests and CBP’s responses, can be found in the CBP 2011 (Appendix D).

3.9.2 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 Installation Cultural Resources Management Plan (ICRMP) by summer 2019. In the event that either Building 605 or 601 are found to be potentially eligible for listing on the National Register of Historic Places, CBP would take any actions needed to preserve and protect these buildings as agreed between the USAF and the SHPO.

3.9.3 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.

3.10 LAND USE

March ARB is bordered by three communities; the City of Riverside to the northwest, Moreno Valley to the north and east, and Perris to the southeast. Per the March ARB Installation Development Plan (IDP), the core of March ARB is a patchwork of administrative, housing, community services and open space land uses. The primary land use within the southern portion of March ARB is industrial with a cluster of administrative uses, while the land use within the northern portion of March ARB is classified as a mix of larger industrial, administrative, open space, and outdoor recreational spaces. The IDP also identifies the Proposed Action as part of its future development plans and identifies the change of land use to Administrative. It also calls for the parcel east of the Proposed Action to be converted to parking lot and a new Defense Media Building and Commissary, which are included in the Administrative category for land use. Additional information was previously included in the CBP 2011(Appendix D).

3.11 UTILITIES AND INFRASTRUCTURE

The utilities and infrastructure within and near the AMOC are operated by Western Municipal Water District (WMWD), City Electric, Southern California Gas, and March ARB systems. WMWD will be coordinated with for placement of water and sewage lines as these lines are owned and operated by WMWD. Electricity capacity was increased during the construction of prior buildings in anticipation of the proposed expansion and the increase of personnel.

3.12 Socioeconomic Resources

The ROI for socioeconomics is Riverside County. Data are also provided for the cities of Riverside, Moreno Valley, and Perris, Census Tract 467, which includes the March ARB, and the March ARB Census Designated Place (CDP).

In Fiscal Year (FY) 2014, 305 active duty military, 6,784 other military, and 2,436 civilian personnel were associated with March ARB, with payroll for these employees exceeding \$267 million (Rose Institute of State and Local Government 2016). With the new operations planned for the AMOC, up to 77 additional personnel would be anticipated to work at the AMOC. These personnel would be expected to live in Riverside County, likely living in the three closest cities: Moreno Valley, Riverside, or Perris.

Population Demographics

Population data from the U.S. Census Bureau show that Riverside County is the fourth most populous county in California (Table 3-5). Between 2000 and 2010, the population growth in the Riverside County (4.2 percent) was greater than the growth rate for California and the U.S., both of which were 1.0 percent. The region grew rapidly from 2000 through 2010, with average annual growth rates in the cities of Riverside, Moreno Valley, and Perris of 14.2 percent, 17.8 percent, and 28.6 percent, respectively. This growth far exceeded the average annual growth rates for Riverside County, as well as California and the U.S. Average annual growth rates for 2010 to 2016 were much lower, ranging from 0.8 percent for the U.S. to 1.9 percent for the City of Perris, with Riverside County growing at an average annual rate of 1.5 percent. The average annual growth rate for the March ARB CDP and Census Tract 467 (Riverside County) were negative, with both areas losing population between 2010 and 2016.

Table 3-5 Population

Geographical Area	2000	2010	Average Annual Growth Rate 2000 to 2010 (Percent)	2016	Average Annual Growth Rate 2010 to 2016 (Percent)
Riverside County	1,545,387	2,189,641	4.2	2,387,741	1.5
City of Riverside	125,705	303,871	14.2	324,722	1.1
City of Moreno Valley	69,645	193,365	17.8	205,499	1.0
City of Perris	17,739	68,386	28.6	76,331	1.9
March ARB CDP*	370	1,159	2.9	1,145	-0.2
Census Tract 467	NA**	4,442	NA	4,351	-0.3
California	33,871,648	37,253,956	1.0	39,250,017	0.9
United States	281,421,906	308,745,538	1.0	323,127,513	0.8

Sources: U.S. Census Bureau 2000, 2010, 2017a, and 2017b

*The 2000 Census lists the area as the March AFB CDP. The 2010 changed to March ARB CDP.

**NA – Not available. Census tract areas were revised between the 2000 Census and the 2010 Census; Census Tract 467 was a newly created census tract in 2010.

Race and ethnicity data are presented in Table 3-6. Riverside County is 62.8 percent minority, compared to 61.6 percent for California and 38.0 percent for the U.S. Riverside County and the cities of Riverside, Moreno Valley, and Perris, as well as Census Tract 467, are heavily Hispanic compared to the population of the U.S. and California.

Table 3-6 Race and Ethnicity (Percent)

Geographical Area	White Not Hispanic	Black or African American	Asian	Hispanic	Total Minority
Riverside County	37.2	7.5	7.8	47.5	62.8
City of Riverside	31.9	7.5	8.6	52.0	68.1
City of Moreno Valley	17.4	19.5	6.9	56.5	82.6
City of Perris	11.1	12.1	4.6	73.1	88.9
March ARB CDP	61.0	12.0	6.6	21.0	39.0
Census Tract 467	19.4	17.0	1.9	63.8	80.6

California	38.4	7.0	15.8	38.6	61.6
United States	62.0	13.8	6.2	17.3	38.0

Source: U.S. Census Bureau 2017b

The median household income for Riverside County and the cities of Moreno Valley and Perris is slightly above the U.S. and below the median household income for California. The median household income for the City of Perris and Census Tract 467, 92.8 and 84.2 percent of the U.S. median household income, respectively, is well below the median household income for California (Table 3-7).

Table 3-7. Median Household Income and Poverty

Geographical Area	Median Household Income	Percent of U.S.	All Ages in Poverty 2016 (Percent)	Under Age 18 in Poverty 2014 (Percent)
Riverside County	\$57,972	104.8	16.5	22.8
City of Riverside	\$58,979	106.6	17.8	23.9
City of Moreno Valley	\$56,456	102.0	18.6	26.6
City of Perris	\$51,315	92.8	23.6	33.0
March ARB CDP	\$69,559	125.7	14.5	29.1
Census Tract 467	\$46,589	84.2	26.4	34.7
California	\$63,783	115.3	15.8	21.9
United States	\$55,322	100.0	15.1	21.2

Source: U.S. Census Bureau 2017c

The level of educational attainment by the population age 25 and older is presented in Table 3-9. In Riverside County, the percentage of the population with a high school credential (81 percent) is well below the U.S. (87 percent) but very similar to California (82 percent). The percent of the population with a Bachelor's degree or higher in Riverside County (21 percent) is well below California (32 percent) and the U.S. (30 percent). As with median household income, the level of educational attainment in Perris and Census Tract 467 is well below California and the U.S.

3.13 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

General information regarding environmental justice and protection of children was previously discussed in the CBP 2011(Appendix D) and is herein incorporated by reference.

3.13.1 Environmental Justice

Analysis of demographic data on race and ethnicity and poverty provides information on minority and low-income populations that could be affected by the Proposed Action. Minority populations are those persons who identify themselves as Black, Hispanic, Asian American, American Indian/Alaskan Native, Pacific Islander, or Other. Poverty status is used to define low-income. Poverty is defined as the number of people with income below poverty level, which was \$24,858 for a family of four in 2017, according to the U.S. Census Bureau (U.S. Census Bureau 2018). A potential disproportionate impact may occur when

the minority in the study area exceeds 50 percent or when the percent minority and/or low-income in the study area are meaningfully greater than those in the region.

Minority and poverty data for the ROI, the cities of Riverside, Moreno Valley, and Perris, and Census Tract 467 (the area surrounding the Proposed Action area) are presented in Table 3-8. The population of Riverside County, the cities of Riverside, Moreno Valley, and Perris, and Census Tract 467 are greater than 50 percent minority, as is California. Riverside County has a poverty rate of 16.5 percent, slightly above the poverty rate for California. The poverty rates in the cities of Riverside and Moreno Valley are higher at 17.8 and 18.6 percent, respectively, with the poverty rates in Perris and Census Tract 467 noticeably higher at 23.6 and 26.4 percent, respectively.

Table 3-8. Minority and Poverty (2016)

Geographic Unit	Percent Minority	Percent Low-Income/Poverty
Riverside County	62.8	16.5
City of Riverside	68.1	17.8
City of Moreno Valley	82.6	18.6
City of Perris	88.9	23.6
March ARB	39.0	14.5
Census Tract 467	80.6	26.4
California	61.6	15.8
United States	38.0	15.1

Source: U.S. Census Bureau 2017b

Protection of Children

The potential for impacts on the health and safety of children is greater where projects are located near residential areas. The AMO is located approximately 0.3 mile from the nearest off Base residences, approximately 1,000 feet from the nearest on Base residence, and approximately 0.8 mile from the nearest school.

Table 3-9. Educational Attainment (population 25 years and older)

Geographic Area	High School Credential or Higher (Percent)	Bachelor’s Degree or Higher (Percent)
Riverside County	81	21
City of Riverside	79	23
City of Moreno Valley	76	15
City of Perris	65	9
March ARB CDP	83	40

Census Tract 467	67	19
California	82	32
United States	87	30

Source: U.S. Census Bureau 2017d

Labor Force and Employment

The average annual labor force in Riverside County in 2016 was 1,051,815. The unemployment rate was 6.1 percent, which is above the 2016 annual average unemployment rate for California (5.5 percent) and the U.S. (4.9 percent) (U.S. Bureau of Labor Statistics [BLS] 2017a and 2017b).

Employment by industry data for 2016 show that employment in Riverside County is concentrated in Retail, Health Care and Social Assistance, and Government and Government Enterprises. The percentage of employment in Local Government in Riverside County (10.8 percent) is above the percentages for California and the U.S. of 7.6 and 7.3 percent, respectively. The percentage of employment in Manufacturing in Riverside County (4.8 percent) is substantially below California (6.1 percent) and the U.S. (6.8 percent), while the percentage of employment in Construction in Riverside County (8.1 percent) is well above the percentages for California and the U.S. of 4.7 and 5.2 percent, respectively (Bureau of Economic Analysis [BEA] 2018).

Housing

Housing data (Table 3-10) show that the median value of owner occupied housing units in Riverside County (\$276,300), as well as the median values in the cities of Riverside, Moreno Valley, and Perris, the March ARB CDP, and Census Tract 467, are substantially below the median value for California (\$409,300). However, they are above the median value for the U.S. (\$184,700).

The homeowner and rental vacancy rates provide an indication of the amount of housing available for sale and rent. The homeowner vacancy rates in the cities of Riverside, Moreno Valley, and Perris (0.9, 1.4, and 0.9 percent, respectively) are substantially lower than the U.S. (2.1 percent), with the homeowner vacancy rate in Riverside County (2.0 percent) similar to the U.S. Rental vacancy rates in the cities of Moreno Valley and Perris (4.8 and 3.3 percent, respectively) are well below the U.S. (6.9 percent). Rental vacancy rates in Riverside County and the City of Riverside are somewhat more in line with the nation at 5.7 and 5.9 percent, respectively.

Table 3-10. Housing Units

Geographic Area	Total Housing Units	Median Value of Owner Occupied Units	Occupied		Homeowner Vacancy Rate* (Percent)	Rental Vacancy Rate** (Percent)
			Percent Owner Occupied	Percent Renter Occupied		
Riverside County	820,300	\$276,300	64.5	35.5	2.0	5.7
City of Riverside	98,109	\$286,600	54.5	45.5	0.9	5.9
City of Moreno Valley	54,711	\$231,400	59.6	40.4	1.4	4.8
City of Perris	17,325	\$211,400	60.0	40.0	0.9	3.3
March ARB CDP	778	\$285,300	10.9	89.1	0.0	12.6
Census Tract 467	1,664	\$234,800	18.8	81.2	0.0	9.9
California	13,911,737	\$409,300	54.1	45.9	1.3	3.8
United States	134,054,899	\$184,700	63.6	36.4	2.1	6.9

Source: U.S. Census Bureau 2017e

*Homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale."

** Rental vacancy rate is the proportion of the rental inventory that is vacant "for rent."

ROADWAYS AND TRAFFIC

All vehicular access to and from the AMOC facility must travel through Moreno Valley on Cactus Avenue (CBP 2011), which have level of service ratings of C or better near the ROI (Urban Crossroads 2016). The only access to enter March ARB is through a single gate located at the intersection of Cactus Avenue and Graeber Street. The AMOC is accessed by entering through the Graeber Street gate and traveling south to the intersection of Riverside Drive and Graeber Street. At this intersection, turn left onto Riverside Drive and make an immediate right onto Y Street. Travel east on Y Street for approximately 0.25 mile and then turn left onto 5th Street, which is where the AMOC is located. Within March ARB there are approximately 19.25 miles of roadway allowing vehicles access throughout the Base in general. According to the March ARB IDP, no recent transportation studies have been completed, but roadway congestion is generally not a major issue. The IDP is planning for one new gate at Iris Avenue, a roundabout at Graeber Street, Y Street, and Riverside Drive, and building a perimeter road network along the north end of Base to improve traffic and congestion on Base. In the event that the main gate at Graeber is closed, construction workers, staff, and deliveries would access the project site by using either the existing Meyers or Riverside gates. Additional information regarding roadways and traffic was described and discussed in the CBP 2011.

3.14 AESTHETICS AND VISUAL RESOURCES

Aesthetics and visual resources within and surrounding the ROI were previously described and discussed in the CBP 2011 Final EA. The ROI is developed with limited aesthetic or visual resources.

3.15 SUSTAINABILITY AND GREENING

Greenhouse gases are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in greenhouse gas emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Within the ROI, climate change is expected to increase the demand and competition for water among communities, agriculture, energy production, and ecological needs. Changes to crop growth cycles due to warming winters and alterations in the time and magnitude of rainfall events have already been observed. The severity of periodic drought and extreme temperatures during drier months is likely to increase (Maizlish et al 2017).

3.16 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.

3.17 Safety

Human health and safety was previously described and discussed in the CBP 2011 Final EA. Federal and California guidelines, rules, and regulations are in place to protect area residents, March ARB employees, and construction-related personnel. Health and safety guidelines, rules, and regulations include Federal Occupational Safety and Health Administration (OSHA) and California/OSHA laws and regulations, as well as state and local building codes.

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 expansion of AMOC at March ARB, California.

Alternative 1: Proposed Action

Under the Proposed Action Alternative, temporary construction-related noise would be expected; however, because of the short duration of construction these impacts would be minor and would not result in changes to March ARB current noise contours. Impacts regarding noise because of the Proposed Action were previously discussed in the CBP 2011 Final EA.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no new development of infrastructure and therefore no associated impacts from noise.

4.2.2 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.

Alternative 1: Proposed Action

The USAF performed an analysis to assess the potential air quality impacts associated with the Proposed Action using the USAF's Air Conformity Applicability Model (ACAM). This analysis was completed in accordance with the USAF 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).

The total air quality emissions for the construction activities were calculated to compare to the de minimis threshold levels. Summaries of the total estimated emissions per the ACAM for the Proposed Action are presented in Table 4-1. Several sources of air pollutants would contribute to the overall air impacts of the construction project. The air results in Table 4-1 included emissions from the following sources:

- Combustion engines of construction equipment
- Construction workers commuting to and from work
- Supply trucks delivering materials to the construction site

- Fugitive dust from job-site ground disturbances

Table 4-1. Conformity Analysis Summary - Proposed Action
Construction Period

Pollutant	Action Emissions (ton/yr.)	GENERAL CONFORMITY	
		Threshold (ton/yr.)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.502	10	No
NOx	0.389	10	No
CO	3.373	100	No
SOx	0.006	100	No
PM 10	0.081	100	No
PM 2.5	0.039	100	No
Pb	0.000		
NH3	0.039	100	No
CO2e	658.3		

Source: USAF AFRC March ARB ACAM Model Results 2018.

Post-construction Air Emissions

Negligible impacts would result from post-construction activities associated with the Proposed Action. Post-construction air emissions refer to air emissions that may occur after construction is complete, such as workers driving to and from the AMOC or generator usage, when necessary. Table 4-2 shows the post-construction air emissions that were calculated using the ACAM.

Table 4-2. Conformity Analysis Summary - Proposed Action
Post Construction Period

Pollutant	Action Emissions (ton/yr.)	GENERAL CONFORMITY	
		Threshold (ton/yr.)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.501	10	No
NOx	0.366	10	No
CO	3.368	100	No
SOx	0.006	100	No
PM 10	0.080	100	No
PM 2.5	0.038	100	No
Pb	0.000		
NH3	0.039	100	No
CO2e	651.9		

Source: USAF AFRC March ARB ACAM Model Results 2018.

Minor, temporary increases in air pollution would occur from the use of construction equipment (combustion emissions) and the disturbance of soils (fugitive dust) during construction of the high-water crossing and adjacent roads. Construction workers would temporarily increase the combustion emissions in the air shed during their commute to and from the AMOC. Emissions from delivery trucks would also

contribute to the overall air emission budget. Emissions from delivery trucks and construction worker commuters traveling to the job site were calculated using the ACAM. As can be seen from Table 4-1 and 4-2, 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. As there are no violations of air quality standards and no conflicts with the state implementation plans, the impacts on air quality from the implementation of the Proposed Action would be negligible and would not be expected to affect the climate.

Best Management Practices (BMPs) are to be conducted to ensure that fugitive dust and other air quality constituent emission levels do not rise above the minimum threshold, as required per 40 CFR § 51.853(b)(1). These include the following:

- Standard construction BMPs such as routine watering of the construction site, as well as access drives to the site, would be used to control fugitive dust and thereby will assist in limiting potential PM10 excursions during the construction phase of the Proposed Action.
- All construction equipment and vehicles would be required to be maintained in good operating condition to minimize exhaust emissions.

As a result of ACAM showing that all emissions would be below de minimus levels and the fact that the above BMPs would be implemented, the Proposed Action would result in minimal impacts.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no new development or infrastructure and therefore no impacts associated with construction activities on air quality. Based on the USAF ACAM there would be no impacts from the increase in staff either.

4.2.3 WATER RESOURCES

4.2.3.1 Groundwater Resources

Alternative 1: Proposed Action

The Proposed Action would have a no adverse impacts on groundwater resources and impervious cover would make a minor improvement or slowing of the rising groundwater situation.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no additional impacts on groundwater resources, as the Riverside AMOC expansion would not occur.

4.2.3.2 Surface Water

Alternative 1: Proposed Action

The Proposed Action would change the drainage patterns of the land on the AMOC parcel. The design for this area must include necessary BMPs and controls to water flow to meet the permit conditions of the Base. This would result in flows being held in retaining basins to keep from increasing flows to the drainage system and to reduce the potential flow of soils and contaminants into the drainage system.

During construction the soils removed would be stock piled or taken to a construction material dump site for disposal or reuse. The construction contractor would comply with Clean Water Act (CWA) Section 402, and obtain a Construction Stormwater General Permit prior to construction, which would require approval of a site-specific Stormwater Pollution Prevention Plan (SWPPP). A site-specific spill response plan would also be in place prior to the start of construction. BMPs outlined in these plans would reduce potential migration of soils, oil and grease, and construction debris into local surface waters. Once the construction project is complete, where possible, the construction footprint would be revegetated with native vegetation, as outlined in the SWPPPs, which would mitigate the potential for non-point source

pollution to enter local surface waters.

The introduction of additional impervious surfaces totaling approximately 2.5 acres would have permanent, minor adverse impacts to the Cactus and Heacock flood control Channels in the form of potential increases in additional stormwater. However, these impacts would be mitigated through engineering design, which would minimize the potential increase in additional stormwater or pollutants being directed to the Channels.

The Proposed Action would slightly increase demands on water supplies during construction activities. Water would be needed for a variety of construction activities including, but not limited to, drinking water supply for construction crews, wetting the construction site for dust suppression, and concrete mixing. These increases would be temporary and minimal. Water usage by personnel at the proposed Building 605D would slightly increase surface water consumption and long-term demand on regional water supplies. However, impacts associated with this usage and demands are considered minor due to the Western Municipal Water District's (WMWD) ability to handle this minor increase in demand. Therefore, there would be negligible to minor impacts on surface waters because of the Proposed Action.

Alternative 2: No Action Alternative

Under the No Action Alternative, no additional impacts on surface waters would occur as there would be no construction activities.

4.2.3.3 Waters of the U.S., Wetlands, and Floodplains

Alternative 1: Proposed Action

Storm water will drain into the Heacock Channel as it does now. The proposed project would install curbs and gutters to better manage storm water flows, to include a retention basin. During construction there would be the potential for minor increases in turbidity, which could have minor impacts on Heacock Channel, a waters of the U.S. These impacts would be minimized through the use of BMPs. Although Riverside County considers the AMOC to be within the 100-year floodplain, the Water Conservation District is currently making improvements to the Heacock Channel to remove the AMOC from within the 100-year floodplain. Therefore, no direct impacts to the 100-year floodplain would occur. All construction related activities would be in compliance with the NPDES and any SWPPP prepared or used for guidance during the construction efforts. Additionally, BMPs would be implemented pre and post construction to mitigate any potential impacts to waters of the U.S. or floodplains within the AMOC to a level of insignificance.

Alternative 2: No Action Alternative

Under the No Action Alternative, no impacts to waters of the U.S. would occur as no construction activities would occur. Without the action by the AMOC to contain runoff from this site and take all waters and runoff to the March ARB controlled stormwater system, which is monitored in accordance with the MS4 General Permit of the State of California, runoff will be able to flow over vacant lands and contribute turbidity and other pollutants to the waters of the US.

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 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.

Alternative 1: Proposed Action

The Proposed Action would have a permanent, minor impact on vegetation from construction and demolition activities due to the nature of the existing vegetation, and would be managed through BMPs to include stabilization of soils through revegetation of disturbed ground with native seed mixtures. No impacts on native species would occur as the area is currently disturbed and consists of primarily non-native species. The Proposed Action would include conversion of open sparsely vegetated areas to developed buildings, Air and Marine Park, and associated infrastructure.

Alternative 2: No Action Alternative

Under the No Action Alternative, no direct impacts on vegetation would occur since no construction activities would occur.

4.2.4.2 Wildlife

Alternative 1: Proposed Action

The Proposed Action would have a permanent, direct impact on wildlife and wildlife habitat in the ROI. Wildlife species found in the proposed project area on March ARB are likely adapted to the existing urban/industrial environment. Additionally, quality wildlife habitat is limited because of the developed nature of the site. Wildlife would be displaced by the construction and resulting buildings and parking and would move to adjacent areas on and off Base. Approximately 2.5 acres of the habitat would be lost; however, there are thousands of acres of similarly disturbed or developed lands within the ROI. The loss of less than 0.1 percent of similar habitat within the ROI would have very little effect on wildlife in the ROI.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no direct impacts on wildlife or wildlife habitat, since no construction activities would occur.

4.2.4.3 Special Status Species

Alternative 1: Proposed Action

Although habitat for Federally listed species does exist within the ROI (i.e., SKR), no federally listed species were documented during 2011, 2016, and 2018 surveys that were conducted within the direct footprint of the Proposed Action. Therefore, the potential for effects, either direct or indirect, to any Federally listed species would be minimal as a result of the Proposed Action.

As stated above, biological surveys have been conducted within the ROI for numerous years including 2018 but no state-listed species have ever been observed. However, it was noted during these surveys that small mammal burrows were located throughout the ROI. Although burrowing owls are well established on the Base in several habitats, the existing habitat is not occupied and appears to be less than adequate habitat for the owls. Additionally, according to March ARB, burrowing owl populations are secure outside of this project footprint in other areas set aside by March ARB. Therefore, while there is potential habitat for the burrowing owl, it is highly unlikely due to the developed nature of the project footprint that any burrowing owls would ever inhabit the area. The potential habitat that would be lost as a result of the Proposed Action is considered poor quality and is not likely to be used by the burrowing owl. Therefore, impacts on the owl habitat are not considered major. No major adverse impacts on burrowing owls or other state-listed species would occur as a result of the Proposed Action.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no direct impacts on Federally or state listed species, since the no construction activities would occur.

4.2.5 SOILS AND PRIME FARMLAND

Alternative 1: Proposed Action

The Proposed Action would permanently change the soils in the ROI. Soils will be removed during construction down to approximately 3 to 5 feet and covered by buildings or parking hardstand. The project would temporarily expose a large area of cleared land to wind and possibly water erosion. The project would comply with the Base-wide SWPPP, and a project-specific SWPPP usually prepared by the construction contractor. Ground disturbing activities would use appropriate BMPs to minimize erosion and loss of soil before, during, and following construction activities. These BMPs would include, but not be limited to: installation of silt fencing and sediment traps, frequent spraying of water on exposed soil during construction to keep soil from becoming airborne, proper soil stockpiling methods, and revegetation of disturbed areas as soon as possible, as appropriate.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no modification of soils from construction activities since no construction activities would occur.

4.2.6 HAZARDOUS MATERIALS

Alternative 1: Proposed Action

Under the Proposed Action, the construction, maintenance, and routine operations of the AMOC facility would result in the use of small quantities of hazardous or regulated materials such as petroleum, oil, lubricants, small quantities of cleaners, solvents, and universal wastes (batteries, fluorescent light bulbs, etc.). The warehouse would not be used to store any hazardous materials or waste. To minimize and mitigate impacts from any spill, the generator fuel tank would have the required containment to meet the USEPA and State requirements for containment of spills. The AMOC would also include this tank in its SPCCP, which is part of the March ARB SPCCP and Facility Response Plan.

Any accidental spills during construction activities, would be managed using primary and secondary containment measures. All solid, liquid and hazardous and regulated wastes and materials, including universal wastes would be handled in accordance with applicable Federal and state laws and guidelines, as well as March ARB rules and guidelines governing disposal, handling, and storage of these items. Lastly, the implementation of BMPs would minimize or eliminate spills associated with hazardous and regulated materials during the construction, operation, and maintenance of the proposed facilities. Therefore, impacts on hazardous materials as a result of the Proposed Action when combined with all of the permit requirements, BMPs, and standard operating procedures to be implemented would be considered long-term and minimal.

Alternative 2: No Action Alternative

Under the No Action Alternative, there would be no new development of infrastructure and, therefore, no impacts from hazardous materials and petroleum products would occur. Groundwater will continue to be monitored in support of monitoring activities associated with the groundwater plume located underneath the northwest quadrant of the ROI.

4.2.7 CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES

Alternative 1: Proposed Action

No cultural resources have been identified within the proposed ROI prior to the previous CBP 2011 Final EA, or since the EA was completed. However, in the event that a cultural resource is unearthed during construction activities, an archaeologist would be provided to assess the significance of the resource prior to the continuation of construction activities. Furthermore, no NRHP listed or eligible properties are located within the boundaries of the ROI; no Office of Historic Preservation (OHP), Archaeological Determinations of Eligibility (ADOE), or Historic Property Directory (HPD) listed properties are found

within the boundaries of the ROI, and no notable historic properties were noted on historic maps. Further, no cultural resources were discovered during the construction activities associated with the CBP 2011 Proposed Action. No cultural resources would be affected by the Proposed Action.

Alternative 2: No Action Alternative

Under the No Action Alternative, no cultural resources would be impacted as none exist and no additional construction activities would occur.

4.2.8 LAND USE

Alternative 1: Proposed Action

The Proposed Action would cause open vacant land to become more similar to the adjacent land uses and would have no effect upon adjacent land uses or other proposed changes to land use. Land use within the ROI would be consistent with March ARB's land use plan; therefore, the Proposed Action would have a negligible impact on land use in the ROI.

Alternative 2: No Action Alternative

Under the No Action Alternative, no modification or impacts to land use would occur since no construction activities would occur.

4.2.9 UTILITIES AND INFRASTRUCTURE

Alternative 1: Proposed Action

The addition of 77 personnel at the expanded AMOC facility would require negligible modification of utilities or infrastructure. New water, electric and sewage lines would be installed. The proposed warehouse requires a new 600 kilo-volt-ampere transformer to be installed. Currently water and sewage lines are near to the proposed location of the proposed administrative building and the warehouse. WMWD has confirmed that the Proposed Action would not exceed WMWD water and sewer capacities (Smith 2018). The power lines would be connected to the lines that are currently located near the existing AMOC facility. The water and fire lines for the warehouse would be tied into an existing line just north of Customs Way and be routed under Custom Way to the warehouse site. The existing sewage line located approximately 120 feet south of Custom Way that runs in an east to west manner would be used for sewage for the warehouse. The power would be provided by the lines that run along Custom Way, these lines were previously owned by Southern California Edison; however, they have been transferred over to Base City Light and Power. All infrastructure elements would be in compliance with state, local, Federal, and March ARB guidelines.

Long-term and minor impacts on energy demand and solid waste generation would occur. There would be no impact on communication systems. Sufficient capacity exists within the WMWD, City Electric, Southern California Gas, and March ARB systems to accommodate the increased demand (CBP 2011). A temporary, minor impact on the stormwater system would occur during construction. Permanent stormwater controls would adhere to all state, county, Federal, and city requirements and would be properly permitted, as needed. Because the recently completed Building has the utilities and infrastructure in place to support the proposed Building, negligible impacts on infrastructure or utilities would occur as a result of the Proposed Action.

Alternative 2: No Action Alternative

Under the No Action Alternative, no additional increases on utilities or infrastructure would be required as no construction activities would occur.

4.2.10 SAFETY AND OCCUPATIONAL HEALTH

Alternative 1: Proposed Action FEBRUARY 2019

During construction, all applicable OSHA and California/OSHA rules and regulations would be followed by project contractors. The construction site would be secured to prevent inadvertent access. Construction of the expanded AMOC facilities has the potential for minor, short-term direct effects on health and safety during construction as a result of the presence and use of heavy construction equipment and construction vehicles onsite and added construction-related traffic on area roads. Adherence to permit requirements and BMPs would minimize impacts on health and safety from noise, air quality, traffic, and onsite accidents. Construction-related impacts would be direct, temporary, and minor.

Negligible impacts to human health and safety are anticipated to result from operation of the proposed AMOC expansion or the increase in personnel. The addition of up to 77 AMOC personnel and their families would result in a negligible increase in demand on local emergency services. Since the capacity of existing services is sufficient to meet this increased demand, no direct impacts on these services are anticipated. Additionally, the relocation of the two antennae would have negligible impacts to human health and safety as these antennae are currently operational and in use within the current AMOC footprint and would be simply being relocated.

Indirect impacts on human health and safety are difficult to quantify because of synergistic effects and the time-lag between exposure and reaction. Indirect impacts could be caused by emissions due to increased transportation or other impacts from the additional population; however, the small increase in the populations of the cities of Moreno Valley, Riverside, and Perris (0.2 percent) would have negligible indirect adverse impacts on human health and safety.

Alternative 2: No Action Alternative

Under the No Action Alternative, no construction would occur. Therefore, no direct or indirect impacts would occur as a result of construction activities. However, impacts from the additional 77 personnel would be the same as described under the Proposed Action, negligible impacts would occur.

4.2.11 SOCIOECONOMICS

Alternative 1: Proposed Action

Construction of the facility would be expected to last approximately 24 months and employ approximately 50 construction workers. This relatively small, temporary increase in employment for construction workers would be expected to easily be satisfied by the existing construction workforce in the region. During construction, with BMPs in place, there would be minor, temporary, direct noise, air quality, and traffic impacts near the AMOC construction area; however, there would be no long-term or permanent adverse socioeconomic impacts associated with construction. There would be temporary, minor, direct, beneficial impacts in the form of jobs and income for area residents if local workers are hired and revenues to local businesses if construction materials are purchased locally. There would be temporary, minor indirect beneficial impacts in the form of revenues to local businesses resulting from additional income for area construction workers and sales and use taxes to counties, cities, and California.

Once all construction activities are complete, up to 77 additional personnel would be anticipated to work at the AMOC. These personnel would increase the population of Riverside County, primarily the cities of Moreno Valley, Riverside, and Perris, by approximately 203 people (77 personnel and 126 family members), based on the national average household size of 2.64 (U.S. Census Bureau 2017f). Assuming the personnel and their families live in the cities of Moreno Valley, Riverside, and Perris, an increase in the population of 203 people would result in a negligible increase in the population of the three cities.

Most of the additional personnel would be highly skilled workers trained in the use of the sophisticated surveillance technology at the AMOC. The 77 additional, highly-skilled personnel would provide permanent minor, direct socioeconomic benefits from additional earnings that would be spent in the ROI. The average salary, based on the average salary of Appropriated Fund Civilians working at March ARB in FY 2014, is estimated to be \$88,752 (Rose Institute 2016). An additional 77 employees means an additional approximately \$7 million in annual earnings in the region associated with the AMOC

expansion.

Indirect impacts from the addition of up to 77 new personnel and their families would include minor increases demand for housing, public education, and other community services in the cities of Moreno Valley, Riverside, and Perris. Impacts on housing in the ROI would be minor, as personnel moving into the region would be easily absorbed into the existing housing market. The new personnel would increase the K-12 student population by approximately 40 students (based on the current U.S. average household size of 2.64 and 19.6 percent of the population 5-19 years of age) (U.S. Census Bureau 2017f and 2017g). An increase of 40 students in schools in the cities of Moreno Valley, Riverside, and Perris would have a negligible impact on school systems. While the cities of Moreno Valley, Riverside, and Perris would incur some additional costs for schools, police and fire protection, and other public services, the cities would also benefit from additional sales and property tax revenues. Minor indirect benefits would also occur in the form of revenues to local businesses.

Alternative 2: No Action Alternative

Under this alternative, the AMOC facility would not be expanded and CBP personnel would continue to operate from the existing facilities. Impacts from the additional 77 personnel would be the same as described under the Proposed Action, minor beneficial impacts would occur.

4.2.12 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

Alternative 1: Proposed Action

There would be no disproportionately high adverse human health, economic, or social impacts on minority or low-income populations. There are no residences located within the immediate vicinity of the Proposed Action, with the closest on Base residences located more than 1,000 feet from the site and the closest off Base residences more than 1,600 feet from the site.

Construction noise, which would be temporary, would attenuate to acceptable levels before reaching residences. BMPs would be in place and construction activities would be limited to normal business hours to minimize potential impacts of noise, lighting, or other normal construction disturbance to nearby populations.

The Proposed Action would result in additional vehicle traffic during construction and operations; however, construction vehicles would use the main access routes through town and are not anticipated to be driving on residential roads. Operations at Building 605D would not generate additional noise in the area outside of minor vehicle noise. Therefore, during operations, there would be negligible noise impacts.

Census Tract 467, the area surrounding the Proposed Action, is high minority and low-income. However, with the mitigation measures in place, there would be no adverse impacts on populations, so there would be no disproportionately high adverse human health, economic, or social impacts on minority or low-income populations.

There are no residences or schools in the vicinity of the Proposed Action. With BMPs in place to mitigate for construction noise, there would be adverse impacts on any population. There would be no disproportionately high or adverse impacts on the health and safety of children with the implementation of the Proposed Action.

Alternative 2: No Action Alternative

Under the No Action Alternative, AMOC would not be expanded. Therefore, no direct or indirect impacts will occur as a result of construction activities. However, impacts from the additional 77 personnel will be the same as described under the Proposed Action, negligible impacts will occur.

4.2.13 ROADWAYS AND TRAFFIC

Alternative 1: Proposed Action

Under the Proposed Action, minor short-term impacts on traffic conditions may occur during the construction phase; the effects of the increased traffic post construction would be long-term but negligible. There would be a temporary increase in use of the Base transportation system as a result of construction activities. Equipment would be driven to project locations and would, under typical circumstances, be kept on-site for the duration of the project. Equipment hauling demolition debris off-site would be an exception and project workers would likely drive on and off the Base daily.

The proposed increase of up to 77 personnel would result in a slightly higher usage of the Base transportation system; however, roadway conditions are sufficient to accommodate the Proposed Action and increased population. March ARB has included the Proposed Action as well as all of the other planned projects in their IDP. In doing so, March ARB has analyzed, reviewed, and concluded that the addition of the elements described in the Proposed Action would have minimal impacts to roadways and traffic by considering the carrying capacity to be adequate. It is assumed that if multiple construction activities occur at once or if Graeber Street were blocked off that traffic would be redirected to other primary or secondary routes as described in the March ARB IDP. Meyers or Riverside gates could possibly be opened to help alleviate congestion, as well. Any congestion of roadways would be during peak hours and would return to normal traffic patterns outside of those hours.

Alternative 2: No Action Alternative

Under the No Action Alternative, permanent, minor adverse impacts on roadways and traffic due to the increase in personnel would occur.

4.2.14 AESTHETICS AND VISUAL RESOURCES

Alternative 1: Proposed Action

Under the Proposed Action, approximately 2.5 acres of existing open space would be developed into a warehouse and parking lot. The development of Air and Marine Park would allow for green space to remain within the ROI. The new administrative building would be designed to mimic the recently completed building, which adheres to all regional and community level planning/design codes. More importantly, building would meet all of the USAF's applicable unified facilities criteria and March ARB's IDP, as well as March ARB's Facility Excellence Plan. Additionally, the AMOC is located within a developed area (March ARB), which provides limited, if any, aesthetic or visual resources. The adjacent lands are recreational areas; however, these areas would not be significantly impacted by the Proposed Action. Therefore, any impacts on aesthetic or visual resources would be considered permanent, negligible impacts.

Alternative 2: No Action Alternative

No impacts on aesthetics or visual resources within the ROI would occur under the No Action Alternative because the AMOC facility would not be further expanded outside of its current state.

4.2.15 SUSTAINABILITY AND GREENING

Alternative 1: Proposed Action

Construction activities associated with implementation of the Proposed Action would contribute to increased GHG emissions, but such emissions would be short-term, ending with the cessation of construction. Any effects of construction-related GHG emissions on climate change would not be discernible at a local scale as it is not possible to meaningfully link the GHG emissions of such actions to effects on climactic patterns.

newly constructed building and warehouse would help to minimize energy consumption and GHG emissions from the Proposed Action. Increased GHG emissions would occur as a result of the increase in POV combustion engines and commuting to work each day. However, only 77 personnel would be added thereby limiting the increase of GHG emissions. As seen in Table 4-1 and Table 4-2, GHG emissions would be below de minimis levels and would not significantly contribute to increasing climate change. Minor, long-term increases in GHGs would occur as a result of the Proposed Action.

Alternative 2: No Action Alternative

The No Action Alternative would not result in any direct or indirect impacts on sustainability and greening as a result of construction activities because no construction would occur.

4.3 ENVIRONMENTAL COMMITMENTS

Impact evaluations conducted during preparation of this EA have determined that no significant environmental impacts would result from implementation of the Proposed Action at March ARB in Moreno Valley, California. This determination is based on a thorough review of existing resource information, objective analysis of the Proposed Action, and coordination with knowledgeable, responsible personnel at March ARB, AMOC, and relevant Federal, state, and local agencies.

A number of BMPs and other measures that are typically incorporated as standard operating procedures by CBP would be implemented as part of this project to reduce or eliminate the potential for adverse impacts to the human and natural environment. Although no substantial impacts were identified associated with implementation of the proposed action, the following mitigation measures were identified to enhance protection of certain resources that could potentially be affected by the expansion and operation of the AMOC Facility.

4.3.1 Vegetation:

Attempts would be made to salvage or relocate native plants prior to the initiation of construction activities. During occupancy of the property, CBP will control the spread of invasive plant species on the property, as necessary.

4.3.2 Wildlife Resources:

Attempts would be made to time construction activities to avoid disturbance during the nesting season. Efforts would be made to locate any active nest sites for birds protected under the ESA or the Migratory Bird Treaty Act prior to construction and to avoid such sites to the extent practicable.

4.3.3 Water Resources:

Standard BMPs would be incorporated during construction to minimize erosion, runoff, and sedimentation, consistent with the installation's site specific SWPPP. A construction storm water permit, comprised of a SWPPP and NOI would be obtained from the Santa Ana Regional Water Quality Control Board, and implemented. Further, in accordance with the Energy and Independence and Security Act Section 438 (requiring Federal facility projects over 5,000 ft² to maintain or restore the predevelopment hydrology of the property), low-impact development techniques would be incorporated into the proposed construction. NPDES permits would be adhered to at all times.

4.3.4 Air Quality:

Project-related particulate matter (PM₁₀) emissions are expected to occur only during the construction activities. Proper and routine maintenance of all vehicles and other equipment would be implemented to ensure that air emissions are within the design standards of all construction equipment. Other measures,

such as dust suppression methods to minimize airborne fugitive dust, would be implemented during construction activities.

4.3.5 Cultural Resources:

As with any ground-disturbing project, there remains a potential for the accidental discovery of buried cultural resources. If cultural resources or materials are discovered during ground-disturbing activities, the work in the vicinity of the discovery would cease and the area would be protected until the find can be evaluated by a qualified archaeologist. Depending on the nature of the find, additional consultation with the SHPO or affected tribes may be necessary before work can resume in the area of the find

4.4 OTHER NEPA CONSIDERATIONS

4.4.1 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.

4.4.2 Irreversible and Irrecoverable Commitments of Resources

NEPA requires that Federal agencies identify “any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented” (42 U.S.C. § 4332). An irreversible commitment of resources occurs when the primary or secondary impacts of an action result in the loss of future options for a resource. Usually, this is when the action affects the use of a nonrenewable resource or it affects a renewable resource that takes a long time to renew. An irretrievable commitment of resources is typically associated with the loss of productivity or use of a natural resource (e.g., loss of production or harvest).

Most impacts for this project are short-term and temporary or, if long-term, are negligible. An irreversible commitment of resources includes the commitments of labor, energy/fossil fuels, and construction materials (e.g., sand, gravel, steel, aluminum). Building construction material such as gravel and gasoline usage for construction equipment would constitute the consumption of non-renewable resources. The Proposed Action would not have irreversible impacts because future options for using the project location would remain possible. The site could be used for alternative uses in the future, ranging from natural open space to urban development. The primary irretrievable commitment of resources under the Proposed Action would involve the use of energy, labor, materials and funds, and the conversion of lands from an undeveloped condition through the construction of the building, parking spaces, warehouse, and Air and Marine Park. Irretrievable impacts would occur as a result of construction, facility operation, and maintenance activities. Direct losses of biological productivity and the use of natural resources from these impacts would be inconsequential.

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."

Cumulative impacts were previously evaluated by CBP as part of the CBP 2011. The previous EA concluded that significant cumulative effects were unlikely to occur. Several actions identified in the CBP 2011 were subsequently implemented and are described below.

5.1 Past, Present, and Reasonably Foreseeable Future Actions

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. There would be potential for cumulative impacts for actions occurring outside of March ARB.

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

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.

The overall environmental impacts associated with the implementation of the Proposed Action are expected to be negligible or minor. As a result, this analysis of cumulative impacts does not reveal any resource areas with individually minor, but collectively significant impacts resulting from the Proposed Action.

5.2 Cumulative Impacts of Proposed Actions

Sections 5.2.1 through 5.2.15 present an analysis of the potential cumulative impacts that the Proposed Action would have on the affected environment in conjunction with other future activities. For resource areas with no or negligible adverse effects associated with the Proposed Action, implementation of the Proposed Action is assumed to be non-contributing to cumulative impacts.

5.2.1 Noise

Noise levels within March ARB and the ROI are generally elevated due to airfield operations. The Proposed Action combined with the projects described in Section 5 would have a cumulative impact as elevated noise levels would occur near the construction sites. This construction related elevation in noise levels would be temporary and normalize upon completion of the construction activities. Therefore, cumulative noise impacts associated with development activity is expected to be minor.

5.2.2 Air Quality

Emissions expected from the Proposed Action would be minor and are not expected to have detectable adverse effects. The increase in emissions as a result of the various projects combined with the Proposed Action to be implemented within the ROI would result in negligible cumulative air quality impacts since all individual projects at March ARB would be required to implement standard BMPs to reduce air emissions below significance thresholds.

5.2.3 Water Resources

In addition to the 2.5 acres of increase impervious surface that would result from the implementation of the Proposed Action, additional surface area would be disturbed and converted to impervious surface on March ARB and within the ROI over the next several years as a result of the projects described in Section 5. All proper permits and approval requirements would have to be met. NPDES and SWPPP requirements along with BMPs would be implemented for any projects occurring on March ARB or within the ROI. With the inclusion of mitigations and BMPs and adherence to permit requirements, it is unlikely that significant adverse cumulative impacts would occur.

5.2.4 Biological Resources

Given that the impacts associated with the Proposed Action would result in minimal impacts to vegetation, wildlife and its habitat when combined with the other projects planned within the ROI, cumulatively significant impacts on wildlife are not anticipated. Further, March ARB has set aside natural areas for natural resources management purposes, which helps to reduce the potential cumulative impacts associated with development projects.

The loss of potential habitat for the SKR and burrowing owl would have a cumulative adverse impact on the SKR and owl; however, within the region and specifically within March ARB there is an abundance of habitat of much greater quality than what would be impacted by the Proposed Action. Therefore, the negligible adverse effects associated with the Proposed Action on the burrowing owl and SKR, would not cumulatively be considered a significant impact.

5.2.5 Earth Resources

Given the negligible adverse effects associated with the Proposed Action, cumulatively significant impacts on geology and soils are not anticipated.

5.2.6 Hazardous Materials

Products containing hazardous materials and petroleum products would be procured and used during the construction activities described under the Proposed Action as well as those described above in Section 4.2. The quantity of products containing hazardous materials used during the construction of the Proposed Action and other future facilities would be minimal and their use would be of short duration. All contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and state regulations. The current facilities at March ARB can accommodate projected increases in the use of hazardous materials and generation of wastes, which would be within the volumes covered under any existing permits. Cumulative impacts on solid and hazardous materials and waste management as a result of the Proposed Action and future projects are expected to be negligible.

5.2.7 Cultural and Historic Resources

Given the lack of adverse effects associated with the Proposed Action, cumulatively significant impacts on cultural, historical and archeological resources are not anticipated.

5.2.8 Land Use

Given the negligible adverse effects associated with the Proposed Action, cumulatively significant impacts on land use are not anticipated. Further, any proposed projects within March ARB and the ROI would to adhere to March ARB's land use plan and any other local land use plans. The combination of the Proposed Action and the projects described in Section 4.2 would not result in significant adverse cumulative impacts.

5.2.9 Utilities and Infrastructure

New development and activities would tend to increase the demand on utility services at March ARB and within the ROI over time. As needed, evaluation of capacity and improvements to keep pace with demands may be needed in the future. Some future projects will benefit infrastructure (e.g., roundabout at Graeber Street and Y Street). In general, cumulative impacts to March ARB and local infrastructure as a result of Proposed Action combined with the projects described in the Section 4.2 are expected to be minor or positive over the long-term.

5.2.10 Safety and Occupational Health

Risk of a catastrophic event occurring during construction activities described under the Proposed Action or those activities described in Section 4.2 are considered to be minimal, and strict adherence to all applicable occupational safety requirements would further minimize the relatively low risk associated with described construction activities. Cumulative impacts on safety occupational health are expected to be negligible.

5.2.11 Socioeconomics

Given the negligible adverse and beneficial effects associated with the Proposed Action, cumulatively significant impacts on socioeconomics are not anticipated.

5.2.12 Environmental Justice and Protection of Children

Given the negligible adverse effects associated with the Proposed Action, cumulatively significant impacts on environmental justice and protection of children are not anticipated.

5.2.13 Roadways/Traffic

Proposed and other future construction activities could result in some temporary and minor hindrances of transportation and circulation during construction activities; however, these minor impacts would be

temporary.

5.2.14 Aesthetics and Visual Resources

While some of the proposed construction activities include large structures, the size and type of buildings would be similar to other buildings within the ROI and March ARB. As the proposed structures when combined with the projects described in Section 4.2 would not be incongruent with the surrounding buildings or land uses, cumulative impacts on aesthetic and visual resources would be expected to be negligible.

5.2.15 Sustainability and Greening

Given the negligible adverse effects associated with the Proposed Action, cumulatively significant impacts on sustainability and greening are not anticipated.

5.3 Cumulative Impacts of the No Action Alternative.

Though the cumulative impacts of the projects listed in Section 5.1 may have cumulative impacts due to the combination of those projects, the No Action Alternative of not constructing the AMOC expansion would have no contributing impacts associated with it because none of the impacts identified from the proposed actions had a significant impact on the environmental and socio-economic aspects of the ROI.

CHAPTER 6: LIST OF PREPARERS

The following people were primarily responsible for preparing this EA.

Name	Agency/ Organization	Discipline/ Expertise	Experience	Role in Preparing EA
Doug Waters	AFRC, 452 MSG/CEV	Environmental Management	35+	Reviewer, Editing, Quality Control
Chris Wagner	AFRC, 452 MSG/CEV	Biological Science	15+	Reviewer
John Petrilla	CBP, BPFTI	Environmental Planning	10 years	Project Management
Michael Dodge	CBP, AMOC			Project Management
Chris Ingram	GSRC	Biology/Ecology	38 years of EA/EIS studies	EA review
Josh McEnany	GSRC	Biology	18years of environmental and NEPA	Project Manager – EA preparation and review
Logan Mccardle	GSRC	Biology	2 years of natural resources	EA preparation
John Ginter	GSRC	Biology	24 years; Biology	EA preparation and survey
Dave Hart	GSRC	Archaeology	25 years of professional archaeology/cultur al resources	EA preparation and survey
Ann Guissinger	GSRC	Economics	36 years of economics	EA preparation
Christy Guempel	GSRC	GIS/Graphics	6 years of GIS/graphics	GIS/graphics

CHAPTER 7: REFERENCES

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Appendix A

Interagency / Government to Government Coordination and Consultations

Agency Notification <i>Recipients and Example Letter</i>	A-3
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Agency Notification
Recipients and Example Letter

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

Mr. Andrew Wheeler,
Regional Administrator
U.S. Environmental Protection Agency Southwest Office
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Ms. Nancy Ferguson,
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(916) 445-0613

Ms. Julianne Polanco
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1725 23rd Street, Suite 100
Sacramento, CA 95816
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Mr. Charlton H. Bonham, Director
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(951)826-5551

Mr. Michael M. Vargas
Mayor
City of Perris
101 N. D Street
Perris, CA 92570



DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

SAMPLE AGENCY REVIEW LETTER

2 November 2018

Douglas S. Waters, Jr., P.E.
Chief Environmental Flight
452 Mission Support Group
March ARB, CA 92518

(Name
Organization
Address)

Dear (Title and name)

The United States Air Force (Air Force), Air Force Reserve Command, March Air Reserve Base (March ARB) is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with a Proposed Action by the Department of Homeland Security's (DHS), United States (U.S.) Customs and Border Protection (CBP), Riverside Air Marine Operation (AMO) Center (AMOC) located at March Air Reserve Base. 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 Proposed Action would construct a single story building (Building 605D) that is approximately 25,000 square feet (ft²), immediately adjacent and north of previously constructed AMOC Building, 605C. Previously constructed AMOC owned Modular Buildings 605A and 605B would also undergo minor renovations to the exterior providing an appearance more conducive to the co-located permanent structures. Parking would be added to the east of the new Building 605D, a 20,000 ft² warehouse, and a small park would also be constructed under the proposed action. Attachments 1 and 2 provide a vicinity map and plan of the Proposed Action.

In 2011 CBP prepared an EA and a Finding of No Significant Impact (FONSI), the *2011 Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California* (CBP 2011), in anticipation of expansion of its operations and to facilitate the transfer of 8.38 acres from the City of Moreno Valley to March ARB. The Proposed Action in the CBP 2011 Final EA was to construct a 90,000 ft², two-story, building, having a 55,000 ft² "footprint" with additional asphalt parking directly east and adjacent to the AMOC building 605 originally constructed in 1987. The Proposed Action included the growth of the AMOC operation to 700 personnel. March ARB acquired the additional 15.02 acres from the City of Moreno Valley and amended its permit in 2017 to

AMOC to occupy the land and implement the proposed action. As a result of a lack of funding and lowered personnel requirements of 326 personnel, in 2018, CBP constructed a smaller 22,000 ft² expansion of Building 605 (Building 605C) on the same footprint as the 90,000 ft² building, renovated internal space in Building 605, and constructed a 1.6 acre parking lot to the north of Building 605C. In addition, CBP was able to build a perimeter fence.

The actions completed do not meet all of the requirements for the 326 personnel needed to perform its mission. The purpose of the Proposed Action of the EA under consideration is to meet the facility requirements of the AMOC to perform its mission by accommodating the full 326 person contingent, providing backup generator capability, providing additional warehouse space, providing adequate parking for the personnel and visitors to the center, and establishing a park to display AMOC related aircraft and equipment.

The expansion of the U.S. Customs and Border Protection, Riverside Air and Marine Operation Center at March ARB, California EA is tiered on the CBP 2011 EA and 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 comments or concerns on general or specific issues you feel should be addressed in the environmental analysis.

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your assistance in reviewing the enclosed Draft EA and providing comments. We also request your assistance in advising appropriate agencies of this Proposed Action and soliciting their comments on the Draft EA. Offices listed in the attached distribution list have already received this package; if there are additional agencies you feel should review and comment on the proposal, please include them in your distribution of these materials.

To ensure the Air Force has sufficient time to consider your input in the preparation of the Draft EA and because this EA is tiered on the CBP 2011 EA and FONSI and the scope of the proposed action is similar to the scope of the Proposed Action in the CBP 2011 EA, we request that you forward written issues or concerns to myself within 15 days of receipt of this letter. If you have any questions, please contact myself at douglas.waters.2@us.af.mil; or Douglas Waters, Building 2403, 452 MSG/CEV, March ARB, CA 92518. Thank you in advance for your assistance in this effort.

Sincerely,

DOUGLAS S WATERS, JR., PE
Chief Environmental Flight

Attachments:

1. Vicinity Map of Proposed Action
2. Map of Proposed Action
3. Distribution List

Attachment 1: Vicinity Map of Proposed Action

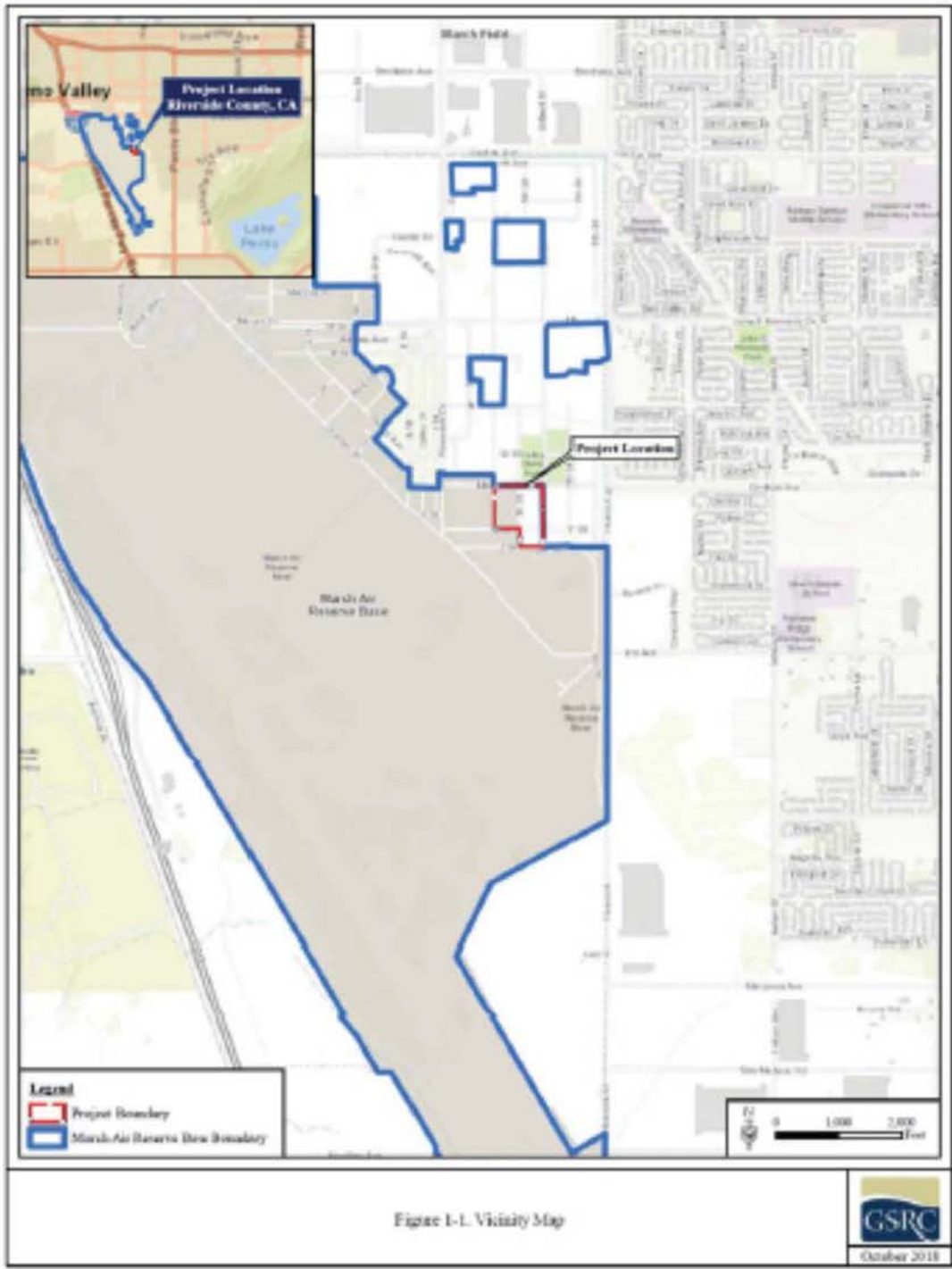
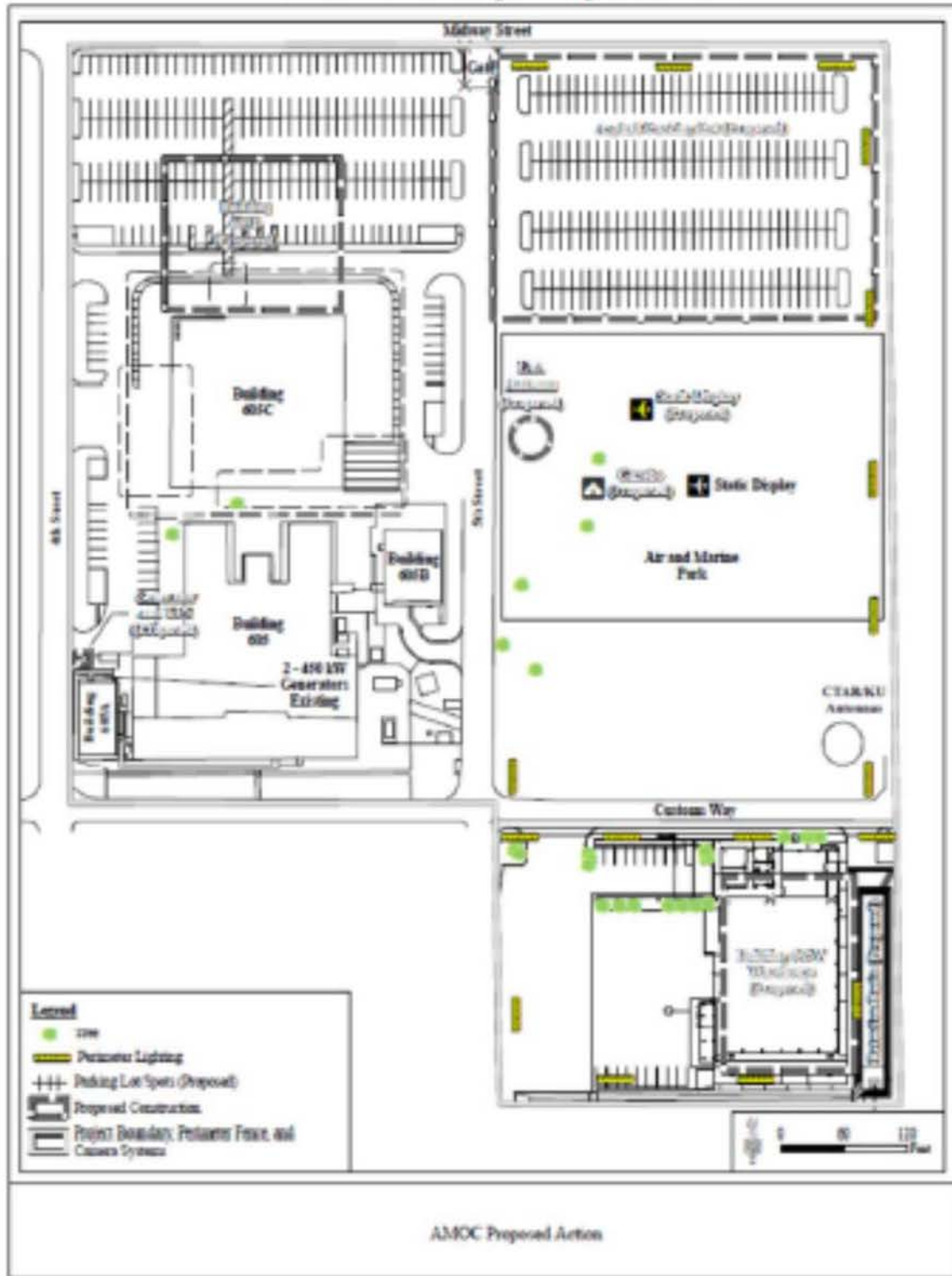


Figure I-1. Vicinity Map



Attachment 2: Map of Proposed Action



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**Agency Notification
*Responses***

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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

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DEPARTMENT OF THE AIR FORCE
AIR FORCE RESERVE COMMAND

27 November 2018

452 MSG/CEV
610 Meyer Drive, Building 2403
March ARB, CA 92518

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

Dear Ms. Polanco

The United States Air Force, Air Force Reserve Command, March Air Reserve Base (March ARB) is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with a Proposed Action by the Department of Homeland Security's (DHS), United States (U.S.) Customs and Border Protection (CBP), Riverside Air Marine Operation Center (AMOC) located at March Air Reserve Base. As the Lead Agency under the National Environmental Protection Act for tenants on March ARB and 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 with the CBP.

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 construct a single story building (Building 605D) that is approximately 25,000 square feet (ft²), immediately adjacent and north of previously constructed AMOC Building, 605C. Previously constructed AMOC owned Modular Buildings 605A and 605B would also undergo minor renovations to the exterior providing an appearance more conducive to the co-located permanent structures. Parking would be added to the east of the new Building 605D, emergency generators would be installed as backup power, a 20,000 ft² warehouse, and an Air and Marine Park would also be constructed under the proposed action. Attachments 1 and 2 provide a vicinity map and plan of the Proposed Action.

In 2011 CBP prepared an EA and a Finding of No Significant Impact (FONSI), the *2011 Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California* (CBP 2011), in anticipation of expansion of its operations and to facilitate the transfer of 8.38 acres from the City of Moreno Valley to March ARB. The Proposed Action in the CBP 2011 Final EA was to construct a 90,000 ft², two-story, building, having a 55,000 ft² "footprint" with additional asphalt parking directly east and adjacent to the AMOC building 605 originally constructed in 1987. The Proposed Action included the growth of the AMOC operation to 700 personnel.

March ARB acquired the additional 15.02 acres from the City of Moreno Valley and amended its permit in 2017 for AMOC to occupy the land and implement the proposed action. As a result of a lack of funding and a lower personnel requirements projection of only 326 personnel, in 2018 CBP constructed a smaller 22,000 ft² expansion of Building 605 (Building 605C) on the same footprint as the 90,000 ft² building, renovated internal space in Building 605, constructed a 1.6 acre parking lot to the north of Building 605C and a perimeter fence with lighting, in 2018.

The actions completed do not meet all of the requirements for the 326 personnel needed to perform its mission. The purpose of the Proposed Action of the EA under consideration is to meet the facility requirements of the AMOC to perform its mission by accommodating the full 326 person contingent, providing backup generator capability, providing additional warehouse space, providing adequate parking for the personnel and visitors to the center, and establishing a park to display AMOC related aircraft and equipment.

The Area of Potential Effect (APE) for this undertaking is therefore defined as March ARB. 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 mostly housing units near the proposed action, but not in view of the area of the proposed action. 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 expansion of the CBP, AMOC at March ARB, California.

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 14 days we will assume concurrence and proceed with the undertaking as described.

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 myself within 14 days of receipt of this letter. If you have any questions, please contact myself at douglas.waters.2@us.af.mil; or Douglas Waters, Building 2403, March ARB 92518. Thank you in advance for your assistance in this effort.

Sincerely,

WATERS.DOUGLAS Digitally signed by
.STUART.JR.126147 261479148
9148 Date: 2018.11.27 15:41:45
-0800'
DOUGLAS S WATERS, JR., P.E.
Chief Environmental Flight

Attachments:

1. Vicinity Map of Proposed Action
2. Map of Proposed Action

CC.

Mr. Ed Carroll

Attachment 1: Vicinity Map of Proposed Action

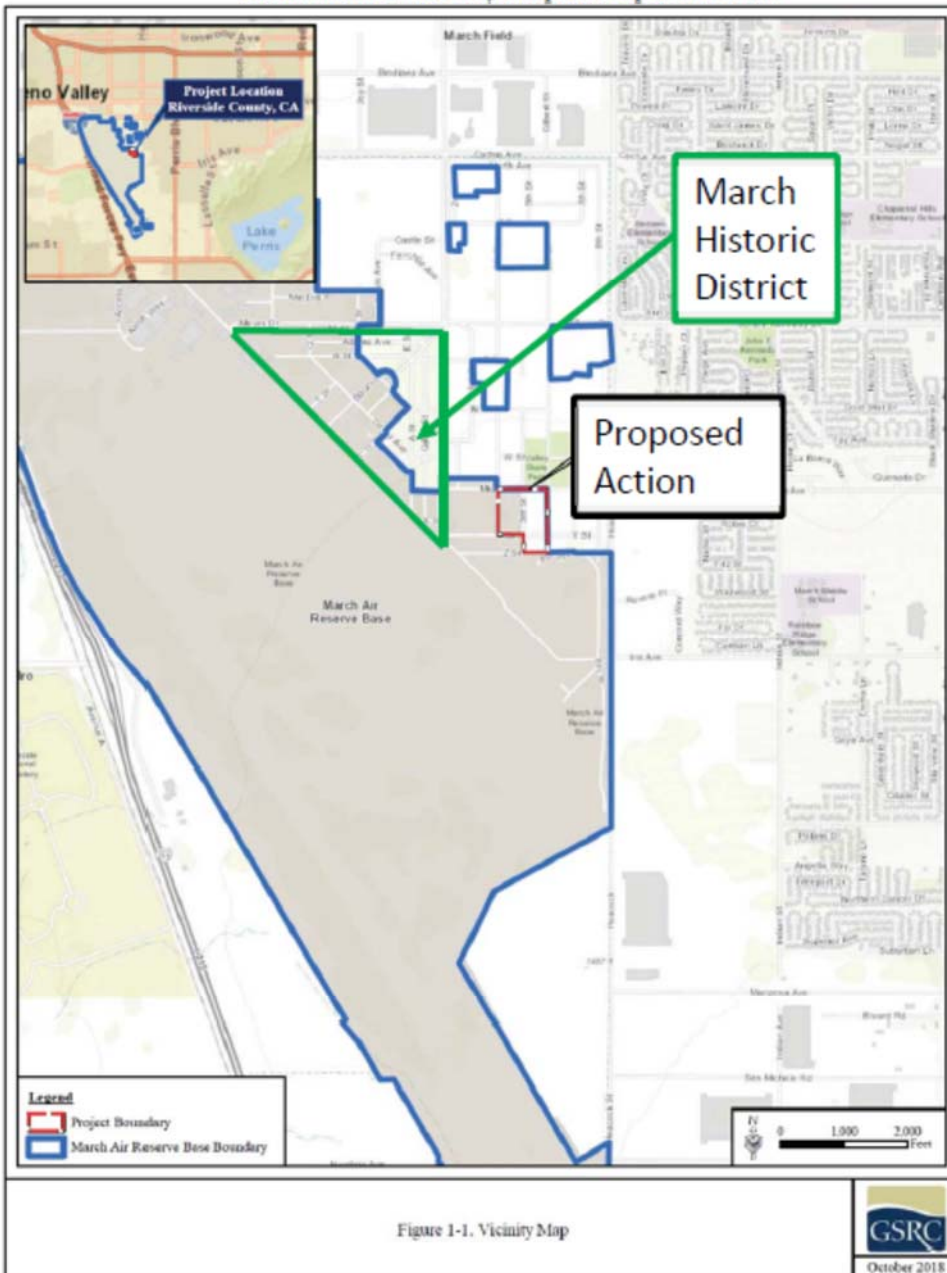
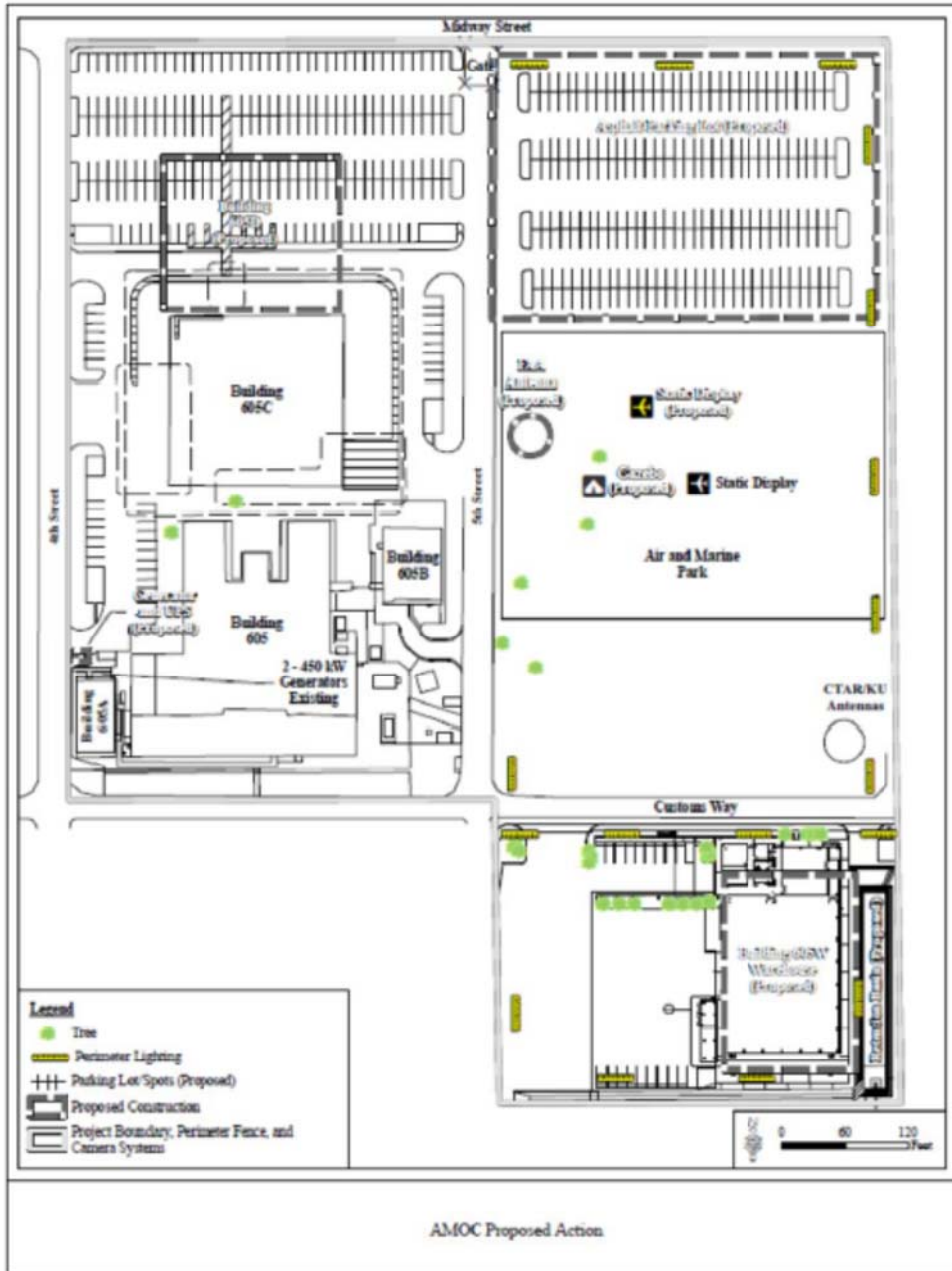


Figure 1-1. Vicinity Map



October 2018



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**Interagency Consultation
*Responses***

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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**

2018 NOV 19 PM 2:36

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

Ms. Patricia Garcia-Plotkin
Director of Historic Preservation
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Rd
Palm Springs, Ca 92264

Dear Director Garcia-Plotkin

The United States Air Force, Air Force Reserve Command, March Air Reserve Base (March ARB) is preparing an Environmental Assessment (EA) to evaluate potential environmental impacts associated with a Proposed Action by the Department of Homeland Security's (DHS), United States (U.S.) Customs and Border Protection (CBP), Riverside Air Marine Operation Center (AMOC) located at March Air Reserve Base. 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. 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 Proposed Action is to construct a single story building (Building 605D) that is approximately 25,000 square feet (ft²), immediately adjacent and north of previously constructed AMOC Building, 605C. Previously constructed AMOC owned Modular Buildings 605A and 605B would also undergo minor renovations to the exterior providing an appearance more conducive to the co-located permanent structures. Parking would be added to the east of the new Building 605D, emergency generators would be installed as backup power, a 20,000 ft² warehouse, and an Air and Marine Park would also be constructed under the proposed action. Attachment 1 provides a plan of the Proposed Action.

In 2011 CBP prepared an EA and a Finding of No Significant Impact (FONSI), the 2011 Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California (CBP 2011), in anticipation of expansion of its operations and to facilitate the transfer of 8.38 acres from the City of Moreno Valley to March ARB. The Proposed Action in the CBP 2011 Final EA was to construct a 90,000 ft², two-story, building, having a 55,000 ft² "footprint" with additional asphalt parking directly east and adjacent to the AMOC building 605 originally constructed in 1987. The Proposed Action included the growth of the AMOC operation to 700 personnel.

March ARB acquired the additional 15.02 acres from the City of Moreno Valley and amended its permit in 2017 for AMOC to occupy the land and implement the proposed action. As a result of a lack of

funding and a lower personnel requirements projection of only 326 personnel, in 2018 CBP constructed a smaller 22,000 ft² expansion of Building 605 (Building 605C) on the same footprint as the 90,000 ft² building, renovated internal space in Building 605, constructed a 1.6 acre parking lot to the north of Building 605C and a perimeter fence with lighting, in 2018.

However, there is still a need for additional actions. The actions completed do not meet all of the requirements for the 326 personnel needed to perform its mission. Congested conditions would continue to affect the efficiency of missions and operations conducted by AMOC personnel. The purpose of the Proposed Action of the EA under consideration is to meet the facility requirements of the AMOC to perform its mission by accommodating the full 326 person contingent; provide backup generator capability to allow the AMOC to perform its mission during power interruptions; provide additional warehouse space, within close proximity to the mission in a secured environment; provide adequate parking for the personnel and visitors to the center, and provide a park to display AMOC related aircraft and equipment used in performance of its mission over the years.

The existing facility will not support the anticipated maximum staff level and operations of 326 personnel. As such, the Proposed Action is needed to allow AMO to meet the planned mission requirements. Additionally, generators are needed because there is currently no emergency power source for the AMOC. The AMOC requires a storage warehouse due to lack of storage facility space. The need for the proposed parking lot is to provide designated parking for the additional employees or visitors. The Air and Marine Park will be used as green space for AMOC personnel and visitors, as well as a place to provide static displays of past CBP operational resources, to enhance the esprit de corps of the AMOC and show visitors equipment used over the years to perform its mission.

The EA for expansion of the U.S. Customs and Border Protection, Riverside Air and Marine Operation Center at 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. 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 Agua Caliente Band of Cahuilla 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. 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 by November 28, 2018 to myself or Douglas Waters, Chief, Environmental Flight at douglas.waters.2@us.af.mil; or 452 MSG/CEV, Attn: Douglas Waters - Bldg 2403, 610 Meyer Drive, March ARB CA 92518. Thank you in advance for your assistance in this effort.

Sincerely,

A handwritten signature in black ink, appearing to read 'MLB', with a long horizontal stroke extending to the right.

MATTHEW LEBURGER, Colonel, USAF
Commander

Attachments:

1. Vicinity Map of Proposed Action
2. Map of Proposed Action

Attachment 1: Vicinity Map of Proposed Action

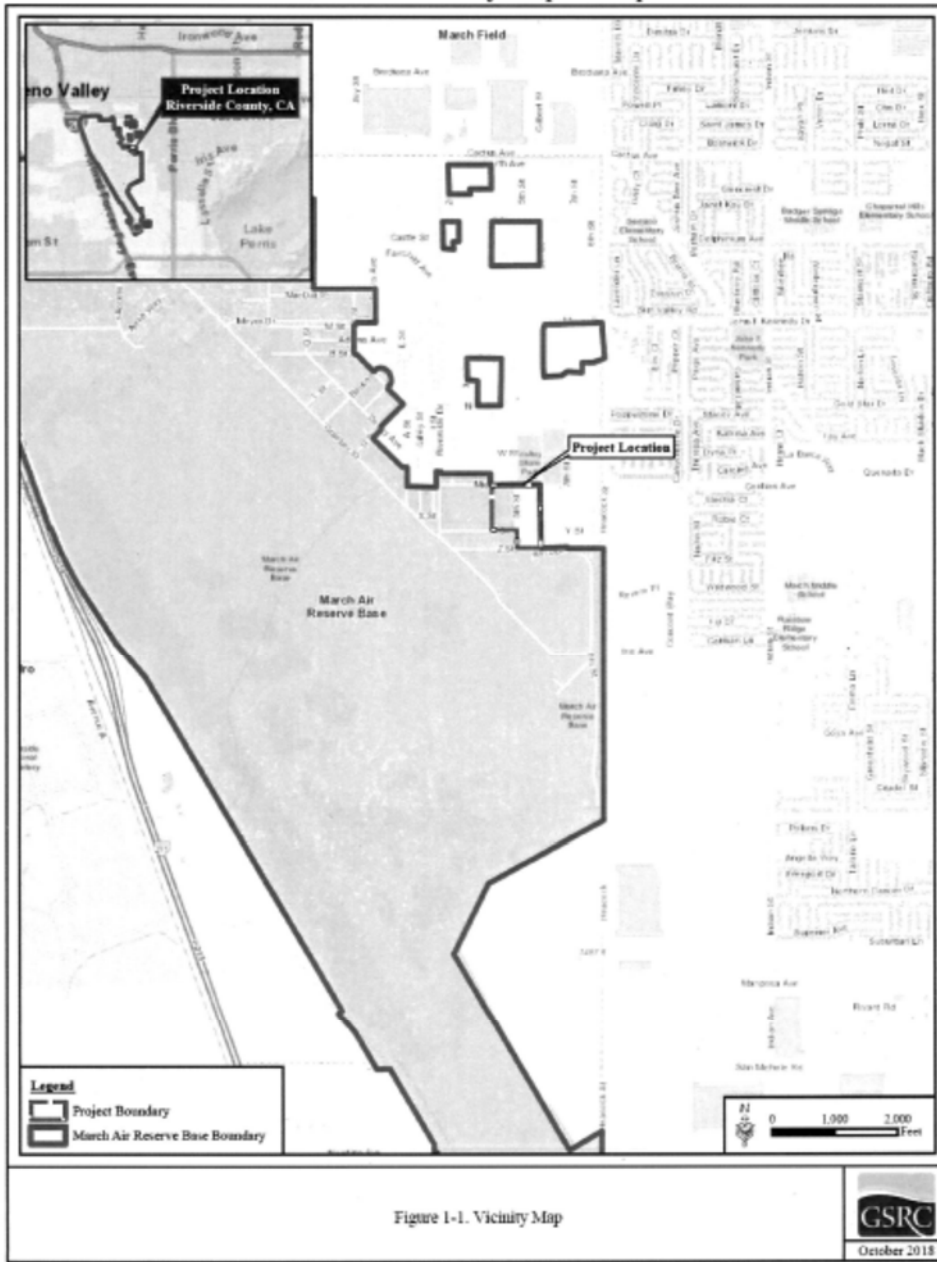
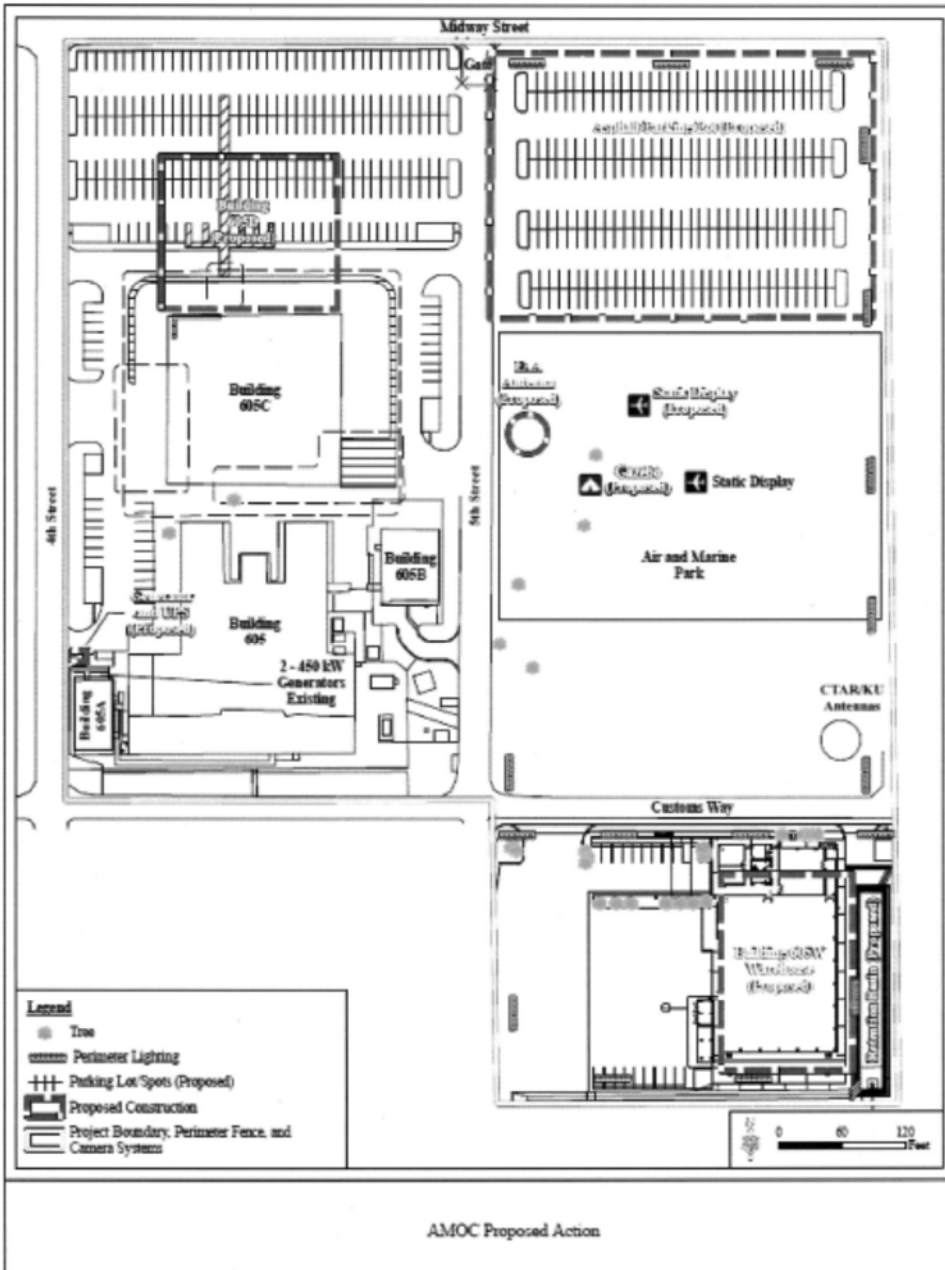


Figure 1-1. Vicinity Map



October 2018

Attachment 2: Map of Proposed Action



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**Government to Government Consultation
*Responses***

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AGUA CALIENTE BAND OF CAHUILLA INDIANS

TRIBAL HISTORIC PRESERVATION



01-022-2018-002

November 19, 2018

[VIA EMAIL TO:douglas.waters.2@us.af.mil]
U.S. Air Force
Mr. Douglas Waters
Bldg 2403, 610 Meyer Drive
March ARB, CA 92518

Re: EA Preparation for Building 605D

Dear Mr. Douglas Waters,

The Agua Caliente Band of Cahuilla Indians (ACBCI) appreciates your efforts to include the Tribal Historic Preservation Office (THPO) in the Building 605D project. The project area is not located within the boundaries of the ACBCI Reservation. However, it is within the Tribe's Traditional Use Area. For this reason, the ACBCI THPO requests the following:

- *At this time ACBCI defers to Soboba. This letter shall conclude our consultation efforts.
- *At this time ACBCI defers to the Morongo Band of Mission Indians. 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
Cultural Resources Manager
Tribal Historic Preservation Office
AGUA CALIENTE BAND
OF CAHUILLA INDIANS

WATERS, DOUGLAS S GS-12 USAF AFRC 452 MSG/CEV

From: Gabriella Rubalcava <grubalcava@santarosacahuilla-nsn.gov>
Sent: Tuesday, January 22, 2019 10:18 AM
To: WAGNER, CHRISTHILD L GS-11 USAF AFRC 452 MSG/CEV
Subject: [Non-DoD Source] RE: AMOC project

After reviewing the information for the AMOC Project, the Santa Rosa Band of Cahuilla Indians do not have any comments at this time.

Gabriella Rubalcava
Santa Rosa Band of Cahuilla Indians
Environmental Director/Tribal Council
PO Box 391820
Anza, CA 92539
951.659.2700 p
951.260.7148 c
951.659.2228 f
Mon-Thurs: 8am-6pm



From: WAGNER, CHRISTHILD L GS-11 USAF AFRC 452 MSG/CEV [mailto:christhild.wagner@us.af.mil]
Sent: Tuesday, January 22, 2019 9:13 AM
To: Gabriella Rubalcava
Subject: AMOC project

Chris Wagner
Environmental
Cultural and Natural Resource Manager
Backup Hazmat Manager

christhild.wagner@us.af.mil
Office- 951-655-3653
Cell- 503-758-3268
DSN- 447-3653

US Air Force Reserve Command
452nd MSG/Civil Engineers
610 Meyer Dr., Bldg 2403
March ARB, CA 92518-2188

From: [Cultural Department](#)
To: [WAGNER, CHRISTHILD L GS-11 USAF AFRC 452 MSG/CEV](#)
Subject: [Non-DoD Source] RE: AMOC Environmental Assessment Notification
Date: Tuesday, January 29, 2019 1:57:43 PM

Dear Ms. Wagner,

The Cahuilla Band of Indians has received and reviewed the project above and we do not wish to consult or comment on this project. The Cahuilla Band appreciates your help in preserving Tribal Cultural Resources in your project.

Also thank you for reaching out and speaking with me. Have a good day.

Respectfully,

BobbyRay Esparza
Cultural Coordinator
Cahuilla Band of Indians
Cell: (760)423-2773
Office: (951)763-5549
Fax:(951)763-2808



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

February 6, 2019

Douglas S. Waters, JR., P.E.
Environmental Flight
452 MSG/CEV, Bldg. 2403
March ARB, CA 92518

Project Title: Expansion of the US Customs and Border Protection Riverside Air and Marine Operation Center at March Air Reserve Base

Dear Mr. Waters:

The Mojave Desert Air Quality Management District (MDAQMD) has received the request for comments for the proposed Expansion of the U.S. Customs and Border Protection Riverside Air and Marine Operation Center at March Air Reserve Base. The proposed action would construct a single story building that is approximately 25,000 square foot, immediately adjacent and north of previously constructed Air Marine Operation Center (AMOC) building. Previously constructed AMOC modular buildings would undergo minor exterior renovations to provide an appearance more conducive to the co-located permanent structures. Parking would be added to the east of the new building, a 20,000 square foot warehouse and a small park would be proposed actions.

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 Tracy Walters at extension 6122.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan J. DeSalvo".

Alan J. DeSalvo
Deputy Director – Mojave Desert Operations

AJD/tw

MARB US Customs and Border Protection Expansion



TWENTY-NINE PALMS BAND OF MISSION INDIANS

46-200 Harrison Place . Coachella, California . 92236 . Ph. 760.863.2444 . Fax: 760.863.2449

February 8, 2019

Douglas S. Waters, Jr., PE
Chief Environmental Flight
452 MSG/CEV, Bldg. 2403
March ARB, CA 92518

RE: Building 605D Project

Dear Mr. Waters,

This letter is in regards to consultation in compliance with Section 106 of the NHPA (36 CFR 800) for the construction of a single-story building (Building 605D). This undertaking entails construction of 25,000 square feet. Additionally, parking would be added to the east of the new building and there will be the construction of a warehouse and small park. The Tribal Historic Preservation Office (THPO) is not aware of any additional archaeological/cultural sites or properties in the undertaking that pertain to the Twenty-Nine Palms Band of Mission Indians (Tribe). The THPO does not have any specific concerns in regards to this undertaking. However, if there are inadvertent discoveries of archaeological remains or resources, construction should stop immediately, and the appropriate agency and tribe(s), and the THPO should be notified.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Anthony Madrigal, Jr.", is written over a horizontal line.

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

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

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Appendix B

Public Notifications

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NOTICE OF AVAILABILITY

**Draft Environmental Assessment for the expansion of the U.S. Customs and Border
Protection Riverside Air and Marine Operation Center at March Air Reserve Base,
Riverside County, California
January 2019**

The public is hereby notified of the availability of the draft Environmental Assessment (EA) and draft Finding of No Significant Impact (FONSI) prepared by U.S. Customs and Border Protection (CBP) on behalf of March Air Reserve Base to construct an approximately 25,000 square foot administrative facility, a 2.5 acre parking lot for the administrative building, a warehouse, and a static display Park. The draft EA and FONSI will be available to the public for review for 15 days at the Riverside Main Library, 3581 Mission Inn Avenue, Riverside, California, and at <http://www.march.afrc.af.mil/>.

The 15-day public comment period begins with publication of this Notice of Availability. In order for comments to be considered, February 18, 2019, must receive comments on the draft EA and FONSI. Comments should be sent to Mr. Douglas Waters via email douglas.waters.2@us.af.mil or by mail to:

Mr. Douglas Waters
United States Air Force Reserve Command
610 Meyer Drive, 452 MSG/CEV, Bldg. 2403
March Air Reserve Base, CA 92518

Appendix C
Air Quality Assessment
ACAM Summary Report C-3
ACAM Detail Report C-7

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ACAM Summary Report

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

b. Action Title: THE EXPANSION OF AMOC- MARCH ARB

c. Project Number/s (if applicable): N/A

d. Projected Action Start Date: 1 / 2019

e. Action Description:

The Proposed Action is to construct a single story 1 building (Building 605D) that is approximately 25,000 sqft immediately adjacent to and north of Building 605C.

An asphalt parking lot is to be constructed on 2 acres of disturbed land.

A 20,000 sqft warehouse is to be constructed.

f. Point of Contact:

Name: Jacob Netemeyer
Title: GS-09
Organization: 452 MSG CEV
Email: jacob.netemeyer@us.af.mil
Phone Number: 655-5062

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
 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	NaN	10	No
NOx	NaN	10	No
CO	NaN	100	No
SOx	NaN	100	No
PM 10	NaN	100	No
PM 2.5	NaN	100	No
Pb	0.000		
NH3	NaN	100	No
CO2e	NaN		

2020

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.502	10	No
NOx	0.389	10	No
CO	3.373	100	No
SOx	0.006	100	No
PM 10	0.081	100	No
PM 2.5	0.039	100	No
Pb	0.000		
NH3	0.039	100	No
CO2e	658.3		

2021 - (Steady State)

Pollutant	Action Emissions (ton/yr)	GENERAL CONFORMITY	
		Threshold (ton/yr)	Exceedance (Yes or No)
Los Angeles South Coast Air Basin, CA			
VOC	0.501	10	No
NOx	0.366	10	No
CO	3.368	100	No
SOx	0.006	100	No
PM 10	0.080	100	No
PM 2.5	0.038	100	No
Pb	0.000		
NH3	0.039	100	No
CO2e	651.9		

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.

ACAM Detail Report

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DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: MARCH JARB
County(s): Riverside
Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- **Action Title:** THE EXPANSION OF AMOC- MARCH ARB

- **Project Number/s (if applicable):** N/A

- **Projected Action Start Date:** 1 / 2019

- Action Purpose and Need:

The purpose of the Proposed Action is to provide sufficient facilities, which includes the parking lot and warehouse, to allow AMO personnel to efficiently and effectively carry out day-to-day operations.

- Action Description:

The Proposed Action is to construct a single story 1 building (Building 605D) that is approximately 25,000 sqft immediately adjacent to and north of Building 605C.

An asphalt parking lot is to be constructed on 2 acres of disturbed land.

A 20,000 sqft warehouse is to be constructed.

- Point of Contact

Name: Jacob Netemeyer
Title: GS-09
Organization: 452 MSG CEV
Email: jacob.netemeyer@us.af.mil
Phone Number: 655-5062

- Activity List:

	Activity Type	Activity Title
2.	Personnel	Personnel Activity, Building 605D and East Parking Lot
3.	Construction / Demolition	Reconfigure B605 & 605A
4.	Construction / Demolition	Warehouse
5.	Construction / Demolition	Building 605D and East Parking Lot
6.	Construction / Demolition	8.3 ac Perimeter Lighting & CCTV
7.	Heating	Building 605D- Heating

2. Personnel

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: Personnel Activity, Building 605D and East Parking Lot

- Activity Description:

- Activity Start Date

Start Month: 1

Start Year: 2019

- Activity End Date

Indefinite: Yes

End Month: N/A

End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.496752
SO _x	0.005551
NO _x	0.280466
CO	3.295978
PM 10	0.073083

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.031779
Pb	0.000000
NH ₃	0.038909
CO ₂ e	549.1

2.2 Personnel Assumptions

- Number of Personnel

Active Duty Personnel: 0

Civilian Personnel: 66

Support Contractor Personnel: 6

Air National Guard (ANG) Personnel: 0

Reserve Personnel: 0

- Default Settings Used: No

- Average Personnel Round Trip Commute (mile): 75

- Personnel Work Schedule

Active Duty Personnel: 5 Days Per Week

Civilian Personnel: 5 Days Per Week

Support Contractor Personnel: 5 Days Per Week

Air National Guard (ANG) Personnel: 4 Days Per Week

Reserve Personnel: 4 Days Per Month

2.3 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

2.4 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

2.5 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

3. Construction / Demolition

3.1 General Information & Timeline Assumptions

- Activity Location

County: Riverside

Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- Activity Title: Reconfigure B605 & 605A

- Activity Description:

- Activity Start Date

Start Month: 1
Start Month: 2019

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	NaN
SO _x	NaN
NO _x	NaN
CO	NaN
PM 10	NaN

Pollutant	Total Emissions (TONs)
PM 2.5	NaN
Pb	0.000000
NH ₃	NaN
CO _{2e}	NaN

3.1 Demolition Phase

3.1.1 Demolition Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2019

- Phase Duration

Number of Month: 0
Number of Days: 10

3.1.2 Demolition Phase Assumptions

- General Demolition Information

Area of Building to be demolished (ft²): 1500
Height of Building to be demolished (ft): 12

- Default Settings Used: No

- Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 12
Average Hauling Truck Round Trip Commute (mile): 25

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

3.1.3 Demolition Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

3.1.4 Demolition Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (0.00042 * BA * BH) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

0.00042: Emission Factor (lb/ft³)

BA: Area of Building to be demolished (ft²)

BH: Height of Building to be demolished (ft)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (1 / 27) * 0.25 * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building being demolish (ft²)

BH: Height of Building being demolish (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

0.25: Volume reduction factor (material reduced by 75% to account for air space)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

3.2 Trenching/Excavating Phase

3.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 14

3.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 1000
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 0
 Average Hauling Truck Round Trip Commute (mile): 25

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

3.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.240	000.004	000.179	002.019	000.047	000.020		000.034	00349.301
LDGT	000.529	000.004	000.390	003.951	000.049	000.022		000.034	00438.299
HDGV	001.133	000.012	002.177	017.401	000.185	000.079		000.045	01175.364
LDDV	000.057	000.003	000.387	000.455	000.084	000.055		000.008	00322.805
LDDT	000.127	000.004	000.747	000.768	000.138	000.107		000.008	00404.546
HDDV	000.429	000.015	008.814	001.758	000.338	000.240		000.029	01587.930
MC	004.838	000.002	001.285	028.044	000.019	000.009		000.050	00181.592

3.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- WD: Number of Total Work Days (days)
- WT: Average Worker Round Trip Commute (mile)
- 1.25: Conversion Factor Number of Construction Equipment to Number of Works
- NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

3.3 Building Construction Phase

3.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

- Start Month: 1
- Start Quarter: 1
- Start Year: 2019

- Phase Duration

- Number of Month: 12
- Number of Days: 0

3.3.2 Building Construction Phase Assumptions

- General Building Construction Information

- Building Category: Office or Industrial
- Area of Building (ft²): 10000
- Height of Building (ft): 23
- Number of Units: N/A

- Building Construction Default Settings

- Default Settings Used: No
- Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 25

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

3.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

3.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT} : Vender Trips Vehicle Miles Travel (miles)
BA: Area of Building (ft²)
BH: Height of Building (ft)
(0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

3.4 Architectural Coatings Phase

3.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 14

3.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
 Total Square Footage (ft²): 400
 Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Worker Trips

Average Worker Round Trip Commute (mile): 75

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

3.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

3.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 1: Conversion Factor man days to trips (1 trip / 1 man * day)
 WT: Average Worker Round Trip Commute (mile)
 PA: Paint Area (ft²)
 800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Off-Gassing Emissions per Phase

$$\text{VOC}_{\text{AC}} = (\text{AB} * 2.0 * 0.0116) / 2000.0$$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)
 BA: Area of Building (ft²)
 2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)
 0.0116: Emission Factor (lb/ft²)
 2000: Conversion Factor pounds to tons

4. Construction / Demolition

4.1 General Information & Timeline Assumptions

- Activity Location

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

- Activity Title: Warehouse

- Activity Description:

- Activity Start Date

Start Month: 1
Start Month: 2019

- Activity End Date

Indefinite: False
End Month: 6
End Month: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.177465
SO _x	0.000165
NO _x	0.063277
CO	0.014647
PM 10	0.867820

Pollutant	Total Emissions (TONs)
PM 2.5	0.001566
Pb	0.000000
NH ₃	0.000346
CO _{2e}	18.0

4.1 Site Grading Phase

4.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2019

- Phase Duration

Number of Month: 0
Number of Days: 30

4.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 87000
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 12
 Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

4.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

4.2 Trenching/Excavating Phase

4.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2019

- Phase Duration

Number of Month: 0
Number of Days: 14

4.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 2000
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 12
 Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

4.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
NE: Number of Equipment
WD: Number of Total Work Days (days)
H: Hours Worked per Day (hours)
EF_{POL}: Emission Factor for Pollutant (lb/hour)
2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
HC: Average Hauling Truck Capacity (yd³)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

4.3 Building Construction Phase

4.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2019

- Phase Duration

Number of Month: 6

Number of Days: 0

4.3.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial

Area of Building (ft²): 20000

Height of Building (ft): 23

Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: No

Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 25

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

4.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

4.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

4.4 Architectural Coatings Phase

4.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 14

4.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
 Total Square Footage (ft²): 15000
 Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Worker Trips

Average Worker Round Trip Commute (mile): 75

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

4.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

- VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
- 1: Conversion Factor man days to trips (1 trip / 1 man * day)
- WT: Average Worker Round Trip Commute (mile)
- PA: Paint Area (ft²)
- 800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Off-Gassing Emissions per Phase

$$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$$

- VOC_{AC}: Architectural Coating VOC Emissions (TONs)
- BA: Area of Building (ft²)
- 2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)
- 0.0116: Emission Factor (lb/ft²)
- 2000: Conversion Factor pounds to tons

4.5 Paving Phase

4.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

- Start Month: 1
- Start Quarter: 1
- Start Year: 2019

- Phase Duration

- Number of Month: 0
- Number of Days: 30

4.5.2 Paving Phase Assumptions

- General Paving Information

- Paving Area (ft²): 25000

- Paving Default Settings

- Default Settings Used: No
- Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day

- Vehicle Exhaust

- Average Hauling Truck Round Trip Commute (mile): 75

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 75

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

4.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

4.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

PA: Paving Area (ft²)

0.25: Thickness of Paving Area (ft)

(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Off-Gassing Emissions per Phase

$$VOC_P = (2.62 * PA) / 43560$$

VOC_P: Paving VOC Emissions (TONs)
 2.62: Emission Factor (lb/acre)
 PA: Paving Area (ft²)
 43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre)

5. Construction / Demolition

5.1 General Information & Timeline Assumptions

- Activity Location

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

- Activity Title: Building 605D and East Parking Lot

- Activity Description:

- Activity Start Date

Start Month: 1
Start Month: 2019

- Activity End Date

Indefinite: False
End Month: 6
End Month: 2020

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.199184

Pollutant	Total Emissions (TONs)
PM 2.5	0.002395

SO _x	0.000252
NO _x	0.096878
CO	0.022242
PM 10	1.037695

Pb	0.000000
NH ₃	0.000527
CO _{2e}	27.5

5.1 Site Grading Phase

5.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 30

5.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 100000
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
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- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 12
 Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

5.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

5.2 Trenching/Excavating Phase

5.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 1
 Number of Days: 0

5.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 5000
 Amount of Material to be Hauled On-Site (yd³): 0
 Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 12
 Average Hauling Truck Round Trip Commute (mile): 20

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

5.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)
 20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)
 ACRE: Total acres (acres)
 WD: Number of Total Work Days (days)
 2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)
 NE: Number of Equipment
 WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

5.3 Building Construction Phase

5.3.1 Building Construction Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 18
 Number of Days: 0

5.3.2 Building Construction Phase Assumptions

- General Building Construction Information

Building Category: Office or Industrial
 Area of Building (ft²): 25000
 Height of Building (ft): 23
 Number of Units: N/A

- Building Construction Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 25

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

- Vendor Trips

Average Vendor Round Trip Commute (mile): 40

- Vendor Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

5.3.3 Building Construction Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips 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

5.3.4 Building Construction Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = BA * BH * (0.42 / 1000) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

BA: Area of Building (ft²)

BH: Height of Building (ft)

(0.42 / 1000): Conversion Factor ft³ to trips (0.42 trip / 1000 ft³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Vender Trips Emissions per Phase

$$VMT_{VT} = BA * BH * (0.38 / 1000) * HT$$

VMT_{VT}: Vender Trips Vehicle Miles Travel (miles)
 BA: Area of Building (ft²)
 BH: Height of Building (ft)
 (0.38 / 1000): Conversion Factor ft³ to trips (0.38 trip / 1000 ft³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

5.4 Architectural Coatings Phase

5.4.1 Architectural Coatings Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
 Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 30

5.4.2 Architectural Coatings Phase Assumptions

- General Architectural Coatings Information

Building Category:
 Total Square Footage (ft²): 16600
 Number of Units: N/A

- Architectural Coatings Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Worker Trips

Average Worker Round Trip Commute (mile): 75

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.4.3 Architectural Coatings Phase Emission Factor(s)

- Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

5.4.4 Architectural Coatings Phase Formula(s)

- Worker Trips Emissions per Phase

$$VMT_{WT} = (1 * WT * PA) / 800$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

1: Conversion Factor man days to trips (1 trip / 1 man * day)

WT: Average Worker Round Trip Commute (mile)

PA: Paint Area (ft²)

800: Conversion Factor square feet to man days (1 ft² / 1 man * day)

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL}: Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_{AC} = (AB * 2.0 * 0.0116) / 2000.0$$

VOC_{AC}: Architectural Coating VOC Emissions (TONs)

BA: Area of Building (ft²)

2.0: Conversion Factor total area to coated area (2.0 ft² coated area / total area)

0.0116: Emission Factor (lb/ft²)

2000: Conversion Factor pounds to tons

5.5 Paving Phase

5.5.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 1

Start Quarter: 1
 Start Year: 2019

- Phase Duration

Number of Month: 0
 Number of Days: 30

5.5.2 Paving Phase Assumptions

- General Paving Information

Paving Area (ft²): 83000

- Paving Default Settings

Default Settings Used: No
 Average Day(s) worked per week: 5

- Construction Exhaust

Equipment Name	Number Of Equipment	Hours Per Day
----------------	---------------------	---------------

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 75

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 75

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

5.5.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO ₂ e
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

5.5.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)
 H: Hours Worked per Day (hours)
 EF_{POL}: Emission Factor for Pollutant (lb/hour)
 2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 PA: Paving Area (ft²)
 0.25: Thickness of Paving Area (ft)
 (1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Off-Gassing Emissions per Phase

$$VOC_P = (2.62 * PA) / 43560$$

VOC_P: Paving VOC Emissions (TONs)
 2.62: Emission Factor (lb/acre)
 PA: Paving Area (ft²)
 43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre)

6. Construction / Demolition

6.1 General Information & Timeline Assumptions

- Activity Location

County: Riverside

Regulatory Area(s): Los Angeles South Coast Air Basin, CA

- Activity Title: 8.3 ac Perimeter Lighting & CCTV

- Activity Description:

- Activity Start Date

Start Month: 1

Start Month: 2019

- Activity End Date

Indefinite: False

End Month: 1

End Month: 2019

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.006294
SO _x	0.000100
NO _x	0.039249
CO	0.037786
PM 10	0.006386

Pollutant	Total Emissions (TONs)
PM 2.5	0.001779
Pb	0.000000
NH ₃	0.000014
CO ₂ e	9.4

6.1 Trenching/Excavating Phase

6.1.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

Start Month: 1

Start Quarter: 1

Start Year: 2019

- Phase Duration

Number of Month: 0

Number of Days: 5

6.1.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 2000

Amount of Material to be Hauled On-Site (yd³): 0

Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: Yes

Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8

Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HdGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

6.1.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.240	000.004	000.179	002.019	000.047	000.020		000.034	00349.301
LDGT	000.529	000.004	000.390	003.951	000.049	000.022		000.034	00438.299
HdGV	001.133	000.012	002.177	017.401	000.185	000.079		000.045	01175.364
LDDV	000.057	000.003	000.387	000.455	000.084	000.055		000.008	00322.805
LDDT	000.127	000.004	000.747	000.768	000.138	000.107		000.008	00404.546
HDDV	000.429	000.015	008.814	001.758	000.338	000.240		000.029	01587.930
MC	004.838	000.002	001.285	028.044	000.019	000.009		000.050	00181.592

6.1.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
 HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)
 HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)
 HC: Average Hauling Truck Capacity (yd³)
 (1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
 HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

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

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

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

7. Heating

7.1 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: Building 605D- Heating

- Activity Description:

- Activity Start Date

Start Month: 1
Start Year: 2019

- Activity End Date

Indefinite: Yes
End Month: N/A
End Year: N/A

- Activity Emissions:

Pollutant	Emissions Per Year (TONs)
VOC	0.004695
SO _x	0.000512
NO _x	0.085357
CO	0.071700
PM 10	0.006487

Pollutant	Emissions Per Year (TONs)
PM 2.5	0.006487
Pb	0.000000
NH ₃	0.000000
CO _{2e}	102.8

7.2 Heating Assumptions

- Heating

Heating Calculation Type: Heat Energy Requirement Method

- Heat Energy Requirement Method

Area of floorspace to be heated (ft²): 25000
Type of fuel: Natural Gas
Type of boiler/furnace: Commercial/Institutional (0.3 - 9.9 MMBtu/hr)
Heat Value (MMBtu/ft³): 0.00105
Energy Intensity (MMBtu/ft²): 0.0717

- Default Settings Used: No

- Boiler/Furnace Usage

Operating Time Per Year (hours): 2880

7.3 Heating Emission Factor(s)

- Heating Emission Factors (lb/1000000 scf)

VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
5.5	0.6	100	84	7.6	7.6			120390

7.4 Heating Formula(s)

- Heating Fuel Consumption ft³ per Year

$$FC_{HER} = HA * EI / HV / 1000000$$

FC_{HER}: Fuel Consumption for Heat Energy Requirement Method
 HA: Area of floorspace to be heated (ft²)
 EI: Energy Intensity Requirement (MMBtu/ft²)
 HV: Heat Value (MMBTU/ft³)
 1000000: Conversion Factor

- Heating Emissions per Year

$$HE_{POL} = FC * EF_{POL} / 2000$$

HE_{POL}: Heating Emission Emissions (TONs)
 FC: Fuel Consumption
 EF_{POL}: Emission Factor for Pollutant
 2000: Conversion Factor pounds to tons

Appendix D

2011 Environmental Assessment for Proposed Construction, Maintenance, and Operation for the Expansion of the Customs and Border Protection, Air and Marine Operations Center Expansion, March Joint Air Reserve Base, Riverside, California (CBP 2011)

Appendix B - CBP 2011 is available at Riverside Main Library, 3581 Mission Inn Avenue, Riverside, California, and at [http://www.march.afrc.af.mil/..](http://www.march.afrc.af.mil/)

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