Draft

Supplemental Environmental Assessment for Base Civil Engineering Complex

Travis Air Force Base, California

February 2021

Prepared for:
United States Air Force
Civil Engineer Center

BPA W9128F-11-A-0031, 0006

DRAFT FINDING OF NO SIGNIFICANT IMPACT

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT FOR BASE CIVIL ENGINEERING COMPLEX TRAVIS AFB, CALIFORNIA

Pursuant to provisions of the National Environmental Policy Act (NEPA), Title 42 United States Code (USC) 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 proposed construction of a consolidated Base Civil Engineering (BCE) Complex at Travis AFB, Solano County, California.

The purpose of the Proposed Action is to provide a contiguous facility for all BCE Complex shops, offices, and warehouses for better utilization of land at Travis AFB. Construction of new high-efficiency, low-energy facilities also eliminates the need to use aging, low-efficiency and high-energy buildings. The need for the action is driven by identified inefficiencies and capacity shortfalls in the existing engineering and maintenance structures and offices, some of which were constructed over 60 years ago. The Proposed Action is also needed for operational consolidation, integration of the maintenance programs, and to supply the workspace necessary to accommodate future growth.

The Supplemental Environmental Assessment (SEA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with construction of a BCE Complex at Travis AFB that would provide administrative space, indoor storage, maintenance spaces, and outdoor storage facilities where maintenance personnel can have safe and adequate work areas to maintain, repair, operate, and construct facilities and systems in support of base missions. An original Environmental Assessment (EA) was completed in 2011 and the SEA, incorporated by reference into this finding, is a supplement to that EA. The SEA also provides environmental protection measures to avoid or reduce adverse environmental impacts.

The SEA considers all potential impacts of Alternative 1 (Preferred Alternative) and the No-Action Alternative. Two action alternatives were initially identified; however, one site was dropped from consideration in the SEA due to the presence of wetlands. The SEA also considers cumulative environmental impacts with other projects at Travis AFB.

ALTERNATIVE 1 (PREFERRED ALTERNATIVE)

Alternative 1 includes the construction of a consolidated BCE Complex to house and consolidate the Base's civil engineering functions from 55 separate facilities and multiple locations to one operating location on a site located north of Ellis Drive, across from the current location of the Recreational Vehicle parking lot at Travis AFB. The site is a maintained, grassy field with a few large landscape trees.

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Preferred Alternative would not occur and the consolidated BCE Complex would not be constructed. This alternative would not meet the goal of consolidating the Base's civil engineering functions from 55 separate facilities and multiple locations to one operating location.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Proposed Action presented in the SEA concluded that by implementing conservation measures in

Appendix B of the SEA [Project Analysis submitted to United States Fish and Wildlife Service (USFWS)], Travis AFB would be in compliance with all terms and conditions and reporting requirements for implementation of the reasonable and prudent measures stipulated by the USFWS.

All of the emissions projected from the Proposed Action would fall well below the *de minimis* thresholds for the general conformity rule. As such, a rigorous Conformity Determination is not required for the Proposed Action.

The Air Force has concluded that no significant adverse effects would result to the following resources as a result of the Proposed Action: air quality, greenhouse gas emissions and climate change; noise; water resources; biological resources; socioeconomic resources; cultural resources; airspace; wastes, hazardous materials, Environmental Response Program sites, and stored fuels; land use; transportation systems; safety and occupational health; environmental management; utilities; earth resources; environmental justice and protection of children; population, housing, and public services; agricultural, forestry, and mineral resources; and recreation, visual, and aesthetics. No significant adverse cumulative impacts would result from activities associated with Alternative 1 (Preferred Alternative) when considered with past, present, or reasonably foreseeable future projects at Travis AFB.

FINDING OF NO SIGNIFICANT IMPACT

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

_____ Date _____

COREY A. SIMMONS, Colonel, USAF
Commander, 60th Air Mobility Wing

ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACAM	Air Conformity Applicability Model
AFB	Air Force Base
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
APE	Area of Potential Affect
BA	Biological Assessment
BAAQMD	Bay Area Air Quality Management District
BCE	Base Civil Engineering
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CCG	Contra Costa Goldfields
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
CM	conservation measure
CNEL	community noise exposure level
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CTS	California Tiger Salamander
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DNL	day-night average sound level
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GIS	Geographic Information System
GWP	Global Warming Potential
HAP	hazardous air pollutant
INRMP	Integrated Natural Resources Management
LEED	Leadership in Energy and Environmental Design
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NRHP	National Register of Historic Places
O_3	ozone
Pb	lead
PM_{10}	particulate matter less than or equal to 10 microns
$PM_{2.5}$	particulate matter less than or equal to 2.5microns
ROG	reactive organic gas
ROI	Region of Influence
SB	Senate Bill
SEA	Supplemental Environmental Assessment
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO_2	sulfur dioxide
TBD	To Be Determined
UFC	Unified Facilities Criteria
U.S.	United States
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
U.S.C.	U.S. Code
USCB	U.S. Census Bureau
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
VOC	volatile organic compound
VP	vernal pool
VPFS	Vernal Pool Fairy Shrimp
VPTS	Vernal Pool Tadpole Shrimp

COVER SHEET

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
FOR CONSTRUCTION OF A NEW CIVIL ENGINEERING COMPLEX
AT TRAVIS AIR FORCE BASE, CALIFORNIA**

a. Responsible Agency: U.S. Air Force (USAF)

b. Proposed Action: The USAF proposes to construct a consolidated Base Civil Engineering (BCE) Complex to house and consolidate the base's civil engineering functions from 55 separate facilities and multiple locations to one operating location.

c. Written comments and inquiries regarding this document should be directed to: Seth Merdler, 60th Civil Engineering Squadron, 411 Airmen Drive, Bldg. 570, Travis AFB, CA 94535-2001.

d. Designation: Draft Supplemental Environmental Assessment (SEA).

e. Abstract: The USAF proposes to construct a consolidated BCE Complex at Travis AFB in Fairfield, California. An original EA was done in 2011 and this document is a supplement to that EA. The BCE Complex would provide administrative space, indoor storage, maintenance spaces, and outdoor storage facilities where maintenance personnel can have safe and adequate work areas to maintain, repair, operate, and construct facilities and systems in support of base missions. Currently, 55 separate facilities, spread across the base, support the BCE mission.

This SEA was prepared in accordance with the National Environmental Policy Act to analyze the potential environmental impacts of the Proposed Action and alternatives. This document is also intended to satisfy the requirements of the California Environmental Quality Act. The Proposed Action is to construct a new consolidated BCE Complex; the following alternatives were examined: Alternative 1 (Preferred Alternative) and the No-Action Alternative. Two action alternatives were initially identified in the original EA; however, one site was dropped from consideration in this SEA due to the presence of wetlands. Because there was a viable practicable alternative, which is Alternative 1, the Preferred Alternative, it was carried forward for analysis in this SEA. The No-Action Alternative would not construct a consolidated BCE Complex but continue operating out of 55 facilities dispersed across multiple on-base locations.

The environmental resources potentially affected by the Proposed Action and alternatives are Air Quality, Greenhouse Gas Emissions, and Climate Change Adaptation; Noise; Water Resources; Biological Resources; Socioeconomic Resources; and Cultural Resources. Based on the nature of the activities that would occur under the Proposed Action and alternatives and the potential environmental consequences, the USAF has determined that no significant impacts would occur.

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Executive Summary

The United States (U.S.) Air Force (USAF), Travis Air Force Base (AFB), in cooperation with Solano County, proposes to construct a consolidated Base Civil Engineer (BCE) Complex at Travis AFB in Fairfield, California. The BCE Complex would provide administrative space, indoor storage, maintenance spaces, and outdoor storage facilities where maintenance personnel can have safe and adequate work areas to maintain, repair, operate, and construct facilities and systems in support of base missions. The current BCE facilities are dispersed throughout 55 buildings at multiple locations on Travis AFB. The majority of these existing facilities are aging, crowded, and requires constant maintenance and repair. Because many of the buildings are outdated, occupants are potentially exposed to unnecessary safety risks.

This Supplemental Environmental Assessment (EA) was prepared by the USAF in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), the USAF's implementing regulations (32 CFR Part 989), and the California Environmental Quality Act (CEQA). This SEA analyzes the potential environmental consequences resulting from the Proposed Action and No-Action Alternative. Please note that this is a supplement to the original 2011 EA, and much of the information presented in the 2011 EA is still valid. Therefore, information and text drawn from the original EA in the Purpose and Need for the Action (Chapter 1) and the Description of Proposed Action and Alternatives (Chapter 2) are not italicized, to include minor edits and corrections to the original text. *New information added for this supplement is presented in italicized text in Chapters 1 and 2.* Resource sections in Chapters 3 and 4 changed substantially from the original EA because of updated information and analyses; therefore, the text was not italicized.

ES.1 PURPOSE AND NEED FOR THE ACTION

The BCE function at Travis AFB includes training and deploying combat engineers to open, establish, and operate expeditionary air bases and execute worldwide contingency taskings, in addition to providing fire, emergency, and infrastructure support for Travis AFB. The *purpose* of the Proposed Action is to provide a complex with contiguous facilities for all BCE shops, offices, and warehouses for better utilization of land at Travis AFB. Construction of new high-efficiency, low-energy facilities also eliminates the need to use aging, low-efficiency and high-energy buildings.

The *need* for the action is driven by identified inefficiencies and capacity shortfalls in the existing engineering *and maintenance* structures and offices, some of which were constructed over 60 years ago. The Proposed Action is also needed for operational consolidation, integration of the maintenance programs, and to supply the workspace necessary to accommodate future growth at Travis AFB. Project implementation would enhance the ability of base personnel to maintain and operate equipment and ensure that affected systems are consistent with modern environmental and safety standards. Current maintenance staff operations employ over 500 personnel working in 55 buildings at multiple locations. Operating from separate locations hinders maintenance activities and creates operational inefficiencies. Additionally, workspace in many facilities is limited and frequently substandard, thus requiring work arounds.

The Proposed Action would provide significant savings by bringing, over time, all engineering and maintenance components together in a single complex. Workplace consolidation would enable an overarching approach to configuration control, supply chain management, contract management, and financial management. Maintaining this highly interactive community in a single complex would streamline programmatic actions, thereby increasing responsiveness to base needs. Consolidation of facilities would

greatly reduce travel, shipment, duplication of support areas, and maintenance costs associated with the use of these aging facilities.

ES.2 PROPOSED ACTION AND ALTERNATIVES

ES.2.1 Proposed Action

The BCE Complex would be constructed in three phases, include four buildings, and would encompass approximately 14.2 acres.

- Phase 1: Construct the BCE Maintenance Shops and Supply Warehouse, including a separate Entomology and Fuels Facility,
- Phase II: Construct the Base Engineering Administration building, and
- Phase III: Construct the Pavement and Ground, Covered Storage, and Explosive Ordnance facilities.

In addition, the parking areas (including walkways, landscaping, and entries/exits) and shop yards would be contiguous to the Complex. The parking lot design would include structural components for stormwater management and accessible parking for persons with disabilities. The BCE Complex would also be used for shops and a warehouse for bulk storage and bins of materials needed to support base operations. Materials stored at the Complex would include machinery, portable generators, lights, building and maintenance supplies, and some heavy equipment.

ES.2.2 No-Action Alternative

The No-Action Alternative would involve no changes to the existing BCE functions and continue to be operated out of the 55 separate facilities at multiple locations. If this alternative were chosen, the inefficiencies and capacity shortfalls in the existing engineering and maintenance structures and offices, some of which are over 60 years old, would continue.

ES.3 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This SEA provides an analysis of the potential environmental consequences resulting from implementing the Proposed Action's Preferred Alternative and No-Action Alternative, and the cumulative environmental consequences of the Preferred Alternative relative to pertinent past, current, and foreseeable future actions. Resource categories received a thorough interdisciplinary analysis to identify potential impacts and the following were determined to have a potential for environmental and cumulative impacts: Air Quality, Greenhouse Gas (GHG) Emissions, and Climate Change Adaptation; Noise; Water Resources; Biological Resources; Socioeconomic Resources; and Cultural Resources. Based on the nature of the activities that would occur under the Proposed Action and alternatives and the potential environmental consequences, the USAF determined that no significant impacts were anticipated. Table ES-1 summarizes the results of the analysis by resource category.

Table ES-1 – Summary of Environmental Impacts

Resource Area	Alternative 1 (Preferred Alternative)	No-Action Alternative
Air Quality, Greenhouse Gas Emissions, and Climate Change Adaptation	No significant impacts to air quality would occur. Emissions generated by proposed construction activities would be temporary and short term; no long-term increases in emissions would occur. Additionally, automobile emissions would be reduced by concentrating engineering facilities at the proposed BCE complex. Implementing Alternative 1 would not appreciably add to global climate change due to its short-term and minor GHG emissions contributions. Federal and state emissions standards would not be affected by implementing Alternative 1.	Under this alternative, no changes in emissions would occur. Therefore no potential for significant impacts to air quality.
Noise	No significant impacts to the surrounding noise environment would occur because of construction or operation of the proposed BCE Complex. During construction, outdoor noise levels would be well below the ambient noise levels of approximately 60 decibel (dB) Day-Night Average Sound Level (DNL).	Under this alternative, the noise environment would remain unchanged. Therefore, no noise impacts.
Water Resources	Impacts to water resources would not be significant. Construction would result in up to 9 acres of new impervious surfaces associated with the proposed BCE building footprints and parking areas. However, any potential impacts resulting from erosion or surface runoff would be minimized using standard erosion and stormwater control measures. In addition, in accordance with Unified Facilities Criteria 3-210-10, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible. There are no wetlands or vernal pools located within the construction footprint under the Preferred Alternative. Therefore, Alternative 1 would not significantly impact wetlands or other waters of the U.S.	Under this alternative, there would be no changes to water resources; therefore, no impacts.
Biological Resources	*Vegetation and Wildlife.* There would be no significant impacts to vegetation or wildlife resulting from construction or operation of the BCE Complex. *Special Status Species.* Per the Programmatic Agreement between Travis AFB and USFWS, a Project Analysis for the Proposed Action was submitted to the USFWS on January 19, 2021 that outlines potential impacts to federally listed species. Travis AFB will comply with mitigation and conservation measures mandated by USFWS, and therefore, impacts to Contra Costa Goldfields and vernal pool branchiopods would be less than significant. There would be no significant impacts to California Tiger Salamander and migratory birds.	Under this alternative, there would be no changes to biological resources; therefore, no impacts.

Resource Area	Alternative 1 (Preferred Alternative)	No-Action Alternative
Socioeconomic Resources	Short-term beneficial impacts resulting from construction payrolls and materials purchased would be negligible on a regional scale. Accordingly, less than significant beneficial impacts to socioeconomic resources would result.	Under the No-Action Alternative, proposed construction activities would not occur. Therefore, the temporary beneficial input from construction payrolls and materials purchased would not be realized.
Cultural Resources	The Area of Potential Effect (APE) was identified and no National Register of Historic Places-eligible resources, including architectural or traditional resources, are located in the APE. Therefore, neither construction nor operation of the BCE Complex would result in effects to cultural resources within the APE.	Under this alternative, there would be no changes introduced to cultural resources; therefore, no impacts.
Environmental Justice and Protection of Children	Analysis of each resource concluded that no disproportionate health or safety risks would be introduced to children, or minority and low-income populations, by implementing the Preferred Alternative.	Under the No-Action Alternative, there would be no changes to environmental justice of protection of children populations; therefore, no impacts.

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1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

Note to Readers: Please note that this is a supplement to the original 2011 EA, and much of the information presented in the 2011 EA is still valid. Therefore, information and text drawn from the original EA in the Purpose and Need for the Action (Chapter 1) and the Description of Proposed Action and Alternatives (Chapter 2) are not italicized, to include minor edits and corrections to the original text. *New information added for this supplement is presented in italicized text in Chapters 1 and 2.* Resource sections in Chapters 3 and 4 changed substantially from the original EA because of updated information and analyses; therefore, the text was not italicized.

This SEA was prepared to update information presented in the EA for the Base Civil Engineering (BCE) Complex, Travis Air Force Base (AFB), California published in November 2011 (see Appendix A; Travis AFB 2011a). Since the original publication, Solano County has become a contributor resulting from an agreement with the U.S. Air Force under the Air Force Community Partnership Program. This program establishes relationships between bases and local governments for mutually beneficial programs. Because of the County's involvement, the California Environmental Quality Act (CEQA) requirements must be followed, in addition to the National Environmental Policy Act (NEPA) requirements.

While the Proposed Action for the BCE Complex has remained the same, aspects of the baseline environmental conditions have changed since publication of the original EA over 6 years ago. This SEA updates the baseline environmental conditions and analyzes the corresponding environmental consequences according to NEPA and CEQA. In addition, supplementary sections were analyzed as part of this SEA as required under CEQA guidelines to include Greenhouse Gas (GHG) Emissions, Agricultural and Forestry Resources, Mineral Resources, Population and Housing, Transportation and Traffic, Recreation, Visual, Aesthetics, Utilities, and Public Services.

1.1 Introduction

The U.S. Air Force (USAF) Travis AFB proposes to construct a consolidated BCE Complex at Travis AFB in Fairfield, California. The BCE Complex would provide administrative space, indoor storage, maintenance spaces, and outdoor storage facilities where maintenance personnel can have safe and adequate work areas to maintain, repair, operate, and construct facilities and systems in support of base missions. The current BCE Complex buildings are dispersed throughout 55 different facilities and multiple locations on Travis AFB. The majority of these existing maintenance facilities are aging, crowded, and requires constant maintenance and repair. Because many of the buildings are outdated, occupants are potentially exposed to unnecessary safety risks. Therefore, Travis AFB prepared this SEA in accordance with NEPA implementing regulations (40 Code of Federal Regulations [CFR] §§ 1500 through 1508), *CEQA regulations (Public Resources Code Sections 21000–21189),* Air Force regulation 32 CFR § 989, and Department of Defense (DoD) directives. The purpose of this SEA is to determine whether the Proposed Action, construction and operation of the BCE Complex to the north of Ellis Street (Alternative 1, *Preferred Alternative*), would have significant adverse effects on the quality of the environment, when compared to the No-Action Alternative.

1.2 Purpose of and Need for the Action

The BCE function at Travis AFB includes training and deploying combat engineers to open, establish, and operate expeditionary air bases and execute worldwide contingency taskings, in addition to providing fire,

emergency, and infrastructure support for Travis AFB. The *purpose* of the Proposed Action is to provide a contiguous facility for all BCE Complex shops, offices, and warehouses for better utilization of land at Travis AFB. Construction of new high-efficiency, low-energy facilities also eliminates the need to use aging, low-efficiency and high-energy buildings. In addition, Travis AFB plans to construct a new Deployment Distribution and Operation Center on "V" Street, bordered by Dixon Avenue and Ragsdale Street. This is at the location where a majority of the existing BCE Complex facilities are currently located, also known as the 800 area; therefore, the functions of these facilities have to be relocated to move forward on the Deployment Distribution and Operation Center.

The *need* for the action is driven by identified inefficiencies and capacity shortfalls in the existing engineering *and maintenance* structures and offices, some of which were constructed over 60 years ago. The Proposed Action is also needed for operational consolidation, integration of the maintenance programs, and to supply the workspace necessary to accommodate future growth. Project implementation would enhance the ability of base personnel to maintain and operate equipment and ensure that affected systems are consistent with modern environmental and safety standards. Current maintenance staff operations employ over 500 personnel working in 55 buildings at multiple locations across the base. Operating from separate locations hinders maintenance activities and creates operational inefficiencies. Additionally, workspace in many facilities is limited and frequently substandard.

The Proposed Action would provide significant savings by bringing, over time, all engineering and maintenance components together in a single facility. Workplace consolidation would enable an overarching approach to configuration control, supply chain management, contract management, and financial management. Maintaining this highly interactive community at a consolidated complex would streamline programmatic actions, thereby increasing responsiveness to base needs. Consolidation of facilities would greatly reduce travel, shipment, duplication of support areas, and maintenance costs associated with the use of aging facilities.

1.3 Objectives of the Proposed Action

The *objectives* of the Proposed Action are to improve efficiency, safety, and working conditions for those working in the dispersed 55 BCE facilities across the base. Another objective is to use energy efficient designs, with emphasis on sustainable strategies, to reduce energy use and GHGs. Supporting objectives for the BCE Complex include the following:

- Relocate functions from facilities that have reached the end of their life cycle into new, properly sited, designed, and constructed facilities as part of the consolidation effort.
- Design *and construct* facilities at least to Unified Facilities Criteria 1-200-02, High Performance and Sustainable Building Requirements.
- Consolidate and integrate facilities using a "campus" concept.

1.4 Location of the Proposed Action

Travis AFB is located approximately 3 miles east of the Central Business District of the City of Fairfield along the Interstate 80 corridor, approximately 40 miles southwest of Sacramento and 50 miles northeast of San Francisco (Figure 1-1). The base encompasses 6,383 acres and is home to approximately 7,250 active duty personnel, 4,250 reservists, and 3,750 civilians. The base is also home to the David Grant USAF Medical Center, a 265-bed hospital and teaching facility. Travis AFB's mission is to provide rapid,

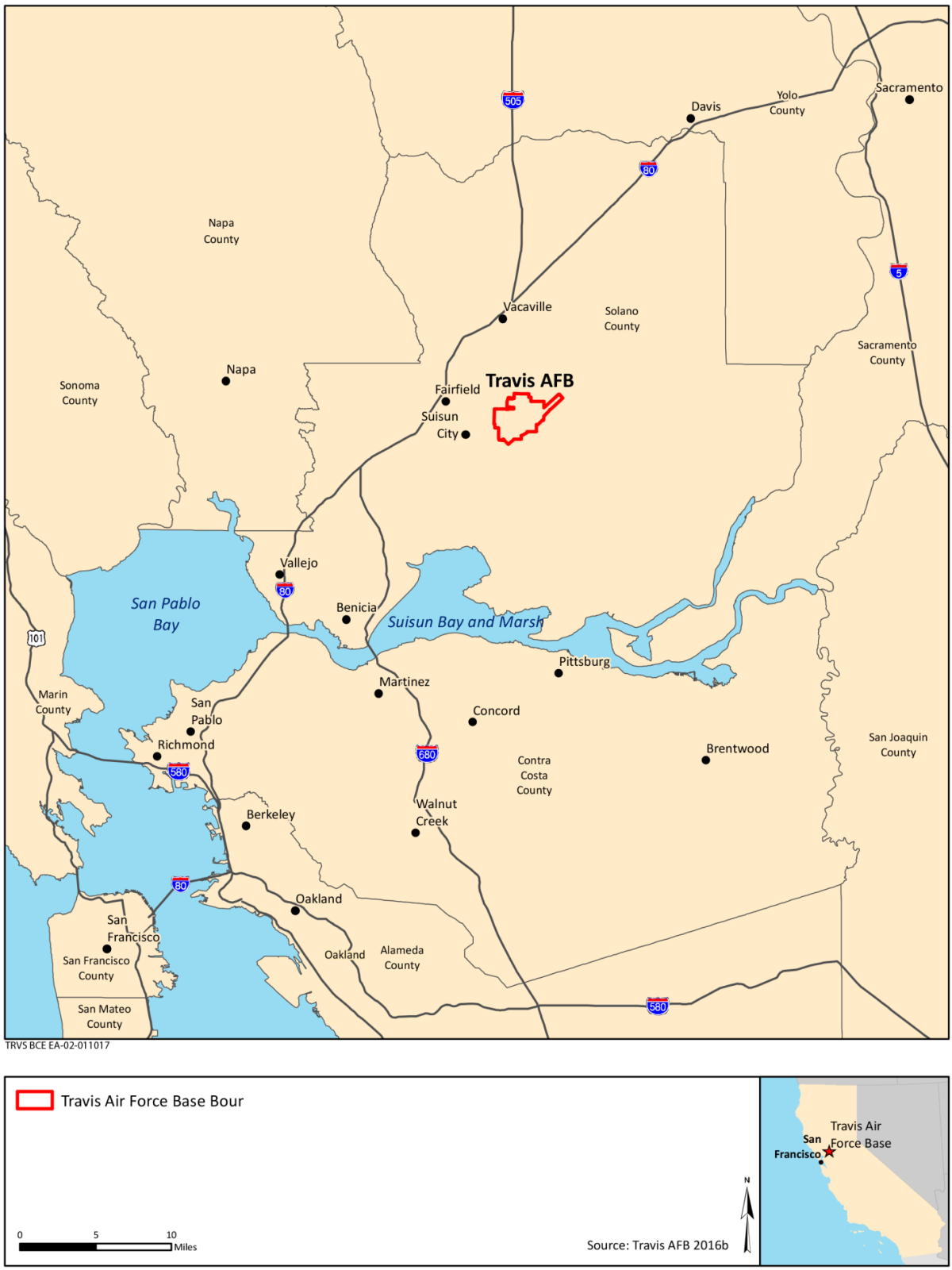

Figure 1-1. Regional Location of Travis Air Force Base

responsive, and reliable airlift of forces to any worldwide location to fulfill the global logistics needs of the DoD. The base is home to the largest Air Mobility Command (AMC) organization in the USAF, the 60th Air Mobility Wing, whose mission is to deliver unrivaled strategic airlift and air refueling operations throughout the world.

1.5 Scope of the Environmental Assessment

The Proposed Action considers two alternatives, Alternative 1 *(the Preferred Alternative*) and the No-Action Alternative. The SEA identifies, evaluates, and documents the *resulting* environmental impacts from implementing either of the alternatives. Chapter 3, *Affected Environment* presents baseline information on resources potentially impacted by implementing the Proposed Action. Potential environmental impacts of the Proposed Action alternatives are described in Chapter 4, *Environmental Consequences*. This analysis includes *direct, indirect, and cumulative* impacts. Direct impacts are those caused by the action and occurring at the same time and location. Indirect impacts are caused by the action but occur later or in a physically disconnected location, but within a reasonably foreseeable time or geographic area. Cumulative impacts of the action are considered in the context of other past, present, and reasonably foreseeable future actions, regardless of whether they are federal or non-federal.

1.6 Decision(s) that Must Be Made

Important decisions that must be made before project implementation can commence include the identification of any mitigation measures or best management practices that may be necessary to avoid or minimize impacts to identified sensitive environmental resources (e.g., vernal pool resources and listed species). *Depending upon the results of the analyses, the decisions possible for this SEA are a Finding of No Significant Impact (FONSI), FONSI/Finding of No Practicable Alternative, or a recommendation to proceed with an Environmental Impact Statement (EIS). Action alternatives that include construction in a wetland or vernal pool require a Finding of No Practicable Alternative be prepared and approved by Headquarters AMC.* These decisions, which may ultimately involve modifying design details to further reduce impacts, or implementing mitigation measures, ensure that the action is undertaken in a way such that all project objectives are accomplished while simultaneously allowing the USAF to continue to achieve its environmental stewardship mission. The USAF environmental impact analysis process ensures compliance with environmental regulations. *Because this action includes local and state approval, this SEA is prepared to comply with CEQA as well as NEPA requirements.*

1.7 Applicable Regulatory Requirements and Required Coordination

1.7.1 National Environmental Policy Act

In accordance with NEPA, federal agencies are required to take into consideration potential environmental consequences of proposed actions in their decision-making process. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. The Council on Environmental Quality (CEQ) was established under NEPA to implement and oversee federal policy in this process. The CEQ subsequently issued *Regulations for Implementing the Procedural Provisions of the NEPA* (40 CFR §§ 1500-1508). These regulations specify that an EA be prepared to:

- briefly provide sufficient analysis and evidence for determining whether to prepare an EIS or a FONSI;
- aid in an agency's compliance with NEPA when no EIS is necessary; and
- facilitate preparation of an EIS when one is necessary.

To comply with NEPA and other pertinent environmental requirements, such as the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA), and to assess impacts on the environment, the decision-making process includes a study of baseline environmental conditions and an analysis of the potential impacts on these conditions that may result from implementing the Proposed Action alternatives. The USAF's regulatory requirements with respect to NEPA are promulgated at 32 CFR § 989.

1.7.2 California Environmental Quality Act

This act, including guidelines promulgated by California Public Resources Code Sections 21000–21178, and Title 14 California Code of Regulations, Section 753, and Chapter 3, Sections 15000–15387, requires the state of California and local California agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. CEQA was passed in 1970, shortly after the federal government implemented NEPA in 1969, to institute a statewide policy of environmental protection. NEPA and CEQA are similar, both in intent and in the review process (the analyses, public engagement, and document preparation). Importantly, CEQA and NEPA encourage a joint federal and state review where a project requires both federal and state approvals.

1.7.3 Interagency and Intergovernmental Coordination

Interagency and intergovernmental coordination is a federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions. As detailed in 40 CFR § 1501.4(b), CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental impacts. Through this coordination, the USAF notifies relevant federal, state, and local agencies of the Proposed Action and allows them sufficient time to make known their environmental concerns specific to the Proposed Action. Comments and concerns submitted by these agencies during the coordination process are subsequently incorporated into the analysis of potential environmental impacts conducted as part of the SEA. Government-to-Government consultation is undertaken as a separate coordination activity as presented in section 1.8.2.2.

1.7.4 Endangered Species Act

The 1973 ESA (16 U.S. Code [U.S.C.] §§ 1531–1544, as amended) established measures for the protection of plant and animal species that are federally listed as threatened or endangered, and for the conservation of habitats that are critical to the continued existence of those species. Federal agencies must evaluate the effects of their proposed actions through a set of defined procedures, which can include the preparation of a Biological Assessment (BA) and subsequent Biological Opinion, and can require formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the ESA. Habitat conservation and protected species management is directed by the base's *Integrated Natural Resources Management Plan (Travis AFB 2016a)*.

1.7.5 Air Quality Requirements

The Clean Air Act (CAA) (42 U.S.C. §§ 7401–7671q, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish nationwide air quality standards to protect public health and welfare. Federal standards, known as the National Ambient Air Quality Standards (NAAQS), were developed for six criteria pollutants: ozone (O_3), nitrogen oxides (NO_x), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns in diameter (PM_{10}) or 2.5 microns in diameter ($PM_{2.5}$), and lead (Pb). The CAA also requires that each state prepare a State

Implementation Plan (SIP) for maintaining and improving air quality and eliminating violations of the NAAQS. Under the CAA Amendments of 1990, federal agencies are required to determine whether their undertakings are in conformance with the applicable SIP; demonstrate that their actions will not cause or contribute to a new violation of the NAAQS; increase the frequency or severity of any existing violation; or delay timely attainment of any standard, emission reduction, or milestone contained in the SIP. The USEPA has set forth regulations in 40 CFR § 51, Subpart W, which require the proponent of a proposed action to perform an analysis to determine if its implementation would conform to the SIP.

1.7.6 Climate Change Adaptation and Greenhouse Gas Emissions

Climate change refers to any significant change in climate lasting for an extended period of time (USEPA 2016). It is now well established that rising global atmospheric GHG emissions are significantly affecting the earth's climate (CEQ 2016). GHGs are gas emissions that trap heat in the atmosphere; the primary GHGs are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. These gases act like a blanket around the earth, trapping energy in the atmosphere and causing it to warm. According to the USEPA, the global average temperature has increased by more than 1.5 degrees Fahrenheit since the late 1800s. The buildup of GHGs in the atmosphere and the warming of the planet are responsible for other changes, such as:

- *changing precipitation patterns;*
- *increases in ocean temperatures, sea level, and acidity;*
- *melting of glaciers and sea ice;*
- *changes in the frequency, intensity, and duration of extreme weather events;*
- *changing ecosystems, which influence the geographic ranges of many plant and animal species and the timing of their lifecycle events, such as migration and reproduction;*
- *increasing threats to human health; and*
- *worsening air and water quality, increasing the spread of certain diseases (USEPA 2016).*

Natural causes alone cannot explain all of these changes. Human activities that release GHGs are contributing to climate change. A variety of human activities generate GHGs, including burning fossil fuels for heat and energy, clearing forests, fertilizing crops, storing waste in landfills, raising livestock, and producing some kinds of industrial products (USEPA 2016). The climate change associated with this global warming has negative economic and social consequences across the globe (USEPA 2016).

Over the past decade, multiple policies have been implemented to address issues surrounding climate change. These include the Energy Independence and Security Act of 2007; Greenhouse Gas Reporting Program (74 Federal Register 56260, 2008) (40 CFR § 98); Executive Order (EO) 13693, Planning for Federal Sustainability in the Next Decade (March 2015); and EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance (October 2009). Several states, including California, have promulgated laws and/or policies as a means to reduce statewide levels of GHG emissions. Together these policies aim to reduce carbon pollution and increase renewable energy generation.

To implement these policies, the DoD issued a directive Climate Change Adaptation and Resilience, which integrates climate change considerations into all aspects of the department (DoD Directive 4715.21, January 2016). The directive furthers DoD's effort to adapt current and future operations to address the impacts of climate change. Mission planning and execution include identification and assessment of the effects of climate change on the mission; considers climate change adaptation and resiliency in installation planning and basing processes; integrates climate change considerations into acquisition strategies across

the life cycle of weapons, platforms, and equipment; and DoD training range sustainment policies. DoD components are also charged with assessing and managing risks, and mitigating the effects of climate change on natural and cultural resource management, force structure, basing, and training and testing activities in the field environment. The directive affects every aspect of DoD from assessing security risks posed by climate change, to planning for disaster relief in the case of climate change impacts and instability sparked by a lack of natural resources.

Additionally, the DoD 2016 Operational Energy Strategy sets forth plans to reduce the demand for energy and secure energy supplies. This policy also directs DoD components to reduce GHG emissions from operational forces. Other policies, updates, and/or directives include the DoD Sustainability Performance Plan (2015), and the Climate Change Adaptation Roadmap (2014), which focus on various actions DoD is taking to increase its resilience to the impacts of climate change.

1.7.7 Water Resources Regulatory Requirements

The Clean Water Act (CWA) of 1972 (33 USC § 1251 et seq.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. Section 404 of the CWA, and EO 11990, Protection of Wetlands, regulate development activities in or near streams or wetlands. Section 404 also regulates development in streams and wetlands and requires a permit from the U.S. Army Corps of Engineers (USACE) for dredging and filling in wetlands.

Stormwater runoff is a leading contributor to water pollution in urban and developing areas in the U.S. Section 438 of the Energy Independence and Security Act of 2007 requires agencies to protect water resources by reducing storm water runoff from any federal development projects. Federal projects with a footprint larger than 5,000 square feet must maintain predevelopment hydrology and prevent any net increase in storm water runoff as outlined in Unified Facilities Criteria (UFC) 3-210-10, Low Impact Development (as amended, 2015), and consistent with the USEPA's Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (2009).

In September of 2014, California Governor Brown signed several bills related to groundwater management: Senate Bill (SB) 1168, Assembly Bill (AB) 1739, and SB 1319 composing the groundwater management legislation package and the Sustainable Groundwater Management Act (SGMA), which became effective on January 1, 2015. SGMA gives local agencies the authorities to manage groundwater in a sustainable manner and allows for limited state intervention when necessary to protect groundwater resources. SGMA requires the creation of groundwater sustainability agencies to develop and implement local plans, allowing 20 years to achieve sustainability. SGMA provides a state framework to regulate groundwater for the first time in California history (Solano County Water Agency 2016a).

1.7.8 Cultural Resources Regulatory Requirements

The NHPA of 1966 (54 U.S.C. § 300101 et seq., as amended) was enacted to preserve historical and archaeological sites in the U.S. The act created the National Register of Historic Places, the State Historic Preservation Offices (SHPO), and the Advisory Council on Historic Preservation. Cultural resources include archaeological remains, architectural structures, and traditional cultural properties such as ancestral settlements, historic trails, and places where significant historic events occurred. The NHPA requires federal agencies to consider potential impacts to cultural resources that are listed, nominated to, or eligible for listing on the NRHP; designated a National Historic Landmark; or valued by Native Americans for

maintaining their traditional culture. The NHPA and associated Section 106 require federal agencies to consult with the appropriate SHPO if their undertaking might affect such resources. *Protection of Historic and Cultural Properties* (36 CFR § 800 [1986]) outlines an explicit set of procedures for federal agencies to meet their obligations under the NHPA, which include inventorying resources and consultation with the SHPO. The EO 13007, *Indian Sacred Sites*, directs federal land (any land or interests in land owned by the U.S., including leasehold interests held by the U.S., except Indian trust lands) managing agencies to accommodate access to, and ceremonial use of, Indian sacred sites provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site. The American Indian Religious Freedom Act (42 U.S.C. § 1996) established federal policy to protect and preserve the rights of Native Americans to believe, express, and exercise their traditional religions, including providing access to sacred sites. The Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 *et seq.*) requires consultation with Native American tribes prior to excavation or removal of human remains and certain objects of cultural importance. Cultural resources management at Travis AFB is directed by the base's *Integrated Cultural Resources Management Plan* (Travis AFB 2016c). *SHPO Section 106 and government-to-government consultation is ongoing for this project (see Appendix B for correspondence).*

1.7.9 Other Executive Orders

Additional regulatory legislation that potentially applies to the implementation of this action includes guidelines promulgated by EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, to ensure that citizens in either of these categories are not disproportionately affected. Additionally, potential health and safety impacts that could disproportionately affect children are considered under guidelines established by EO 13045, *Protection of Children from Environmental Health and Safety Risks*. Finally, in accordance with the USAF Sustainable Design and Development policy (July 2007), all USAF construction projects, regardless of scope or funding source, shall endeavor to use the U.S.'s Green Building Council's LEED Green Building Rating Systems as their self-assessment metric. Since 2009, all vertical military construction and major renovation projects have been designed, constructed, and/or renovated to achieve LEED Silver certification (Air Force Sustainable Design and Development Implementing Guidance, 2011).

1.8 Cooperating Agency and Intergovernmental Coordination and Consultations

1.8.1 Cooperating Agency

Upon request of the Lead Agency (USAF), any other federal, state, or local agency of similar qualifications or, when the effects are on lands of tribal interest, a Native American tribe that has jurisdiction by law can participate in the environmental impact analysis process as a cooperating agency (32 CFR § 1508.5). A cooperating agency is one that has special expertise with respect to any particular environmental issue that must be addressed in the document. There are no cooperating agencies associated with this SEA. However, the County of Solano is a cooperating partner for this SEA. The intent of this category, while not officially recognized by NEPA, is to encourage governmental agencies at any level with an interest in the proposed project to be active participants in the NEPA evaluation. Designation as a cooperating partner does not indicate project support, but does give the county opportunities to provide input at key decision points in the process.

1.8.2 Interagency and Intergovernmental Coordination and Consultations

As required by the Intergovernmental Coordination Act of 1968 and EO 12372, Intergovernmental Review of Federal Programs, interagency and intergovernmental coordination is being conducted. The USAF sent letters to interested and affected government agencies, government representatives, elected officials, and interested parties potentially affected by the Proposed Action on October 13, 2016. Chapter 6 identifies the persons and agencies contacted for this coordination and Appendix B contains the correspondence associated with the coordination. Letters sent to agencies, interested parties, Chambers of Commerce, and libraries announced the USAF's intent to prepare an SEA, summarized the Proposed Action and preliminary alternatives, and solicited comments. Relevant comments were considered and addressed (as applicable) in the Draft SEA.

1.8.2.1 State Historic Preservation Office United States Fish and Wildlife Service

On October 13, 2016, the California SHPO was sent a letter notifying them of the Proposed Action and the USAF determination that the action would have no effects on historic properties because the construction and operational activities are not anticipated to harm or affect any of the known historic properties. The SHPO concurred with this finding on June 17, 2017. Appendix B provides a copy of the letter and any agency response.

1.8.2.2 United States Fish and Wildlife Service

According to the Travis AFB Integrated Natural Resources Management Plan (Travis AFB 2016a, 2016b), several special status species and habitat may be present or have been previously documented at Travis AFB. Therefore, on October 13, 2016 a letter was sent to the USFWS requesting concurrence of the USAF determination that ESA Section 7 consultation would apply to this Proposed Action and a Biological Assessment (BA) is needed to determine whether the Proposed Action may affect listed or proposed species, and/or designated and proposed critical habitat. The USFWS concurred that a BA was applicable. However, since then, the USAF conducted a Base-wide programmatic section 7 consultation with the USFWS in 2018 for multiple classes of actions at Travis AFB, which resulted in a Base-wide Biological Opinion being issued by the USFWS (USFWS 2018). Per the Programmatic Agreement between Travis AFB and USFWS, a Project Analysis for the Proposed Action was submitted to the USFWS on January 19, 2021 that outlines potential impacts to federally listed species (see Appendix B for correspondence).

1.8.2.3 Government-to-Government

The EO 13175, Consultation and Coordination with Indian Tribal Governments (November 2000), directs federal agencies to coordinate and consult with Native American tribal governments whose interests might be directly and substantially affected by activities on federally administered lands. Consistent with EO 13175, DoD Instruction 4710.02 (DoD Interactions with Federally-Recognized Tribes), and Air Force Instruction 90-2002 (Air Force Interactions with Federally-Recognized Tribes), tribes that are historically affiliated with the Travis AFB geographic region were invited to consult on all proposed undertakings that have a potential to affect properties of cultural, historical, or religious significance to the tribes. In addition, CEQA requires consultation with California Native American tribes and consideration of California tribal cultural resources. The tribal coordination process is distinct from NEPA consultation or the interagency coordination process and requires separate notification of all relevant tribes. In accordance with these requirements, consultation was requested in letters sent on April 6, 2017, to two federally recognized tribes: Yocha Dehe Wintun Nation and Cortina Indian Rancheria of Wintun Indians

of California. The two letters requested consultation with the Tribes, asked for input on any concerns or information of traditional resources within Travis AFB with the potential to be impacted by the Proposed Action, and requested meetings at their convenience to discuss their concerns.

On May 1, 2017, the Cortina Indian Rancheria of Wintun Indians of California verbally indicated that they had no issues with the Proposed Action. On May 11, 2017, a follow-up letter was sent to both Tribes. The letter to the Cortina Indian Rancheria acknowledged that they had verbally expressed to the Air Force that they had no concerns with the Proposed Action. The letter to the Yocha Dehe reiterated the description of the Proposed Action and included a copy of the Geoarchaeological Overview and Site Sensitivity Assessment, which found that there is an extremely low probability for the existence of ground-surface or buried archaeological deposits on Travis AFB due to the amount of ground disturbance over the years and the geologic history of the location. On June 1, 2017, at the request of the Yocha Dehe, the Air Force met with the Tribe and visited the Proposed Action site. Verbally, the Tribe indicated that they had no concerns with the BCE Proposed Action (Appendix B provides a summary of the site visit). The California Native American Heritage Commission was also contacted in October of 2016; in February 2017, they identified that no other California Tribes would be potentially impacted by implementing the Proposed Action at Travis AFB. Appendix B contains copies of the correspondence.

1.8.2.4 Public Notification and Review

Publication of the Notice of Availability is being announced in The Vacaville Reporter, The Daily Republic, and The Tailwind newspapers, notifying the public of the availability of the Draft SEA and unsigned Draft FONSI. The advertisement provides the list of libraries where the SEA and FONSI were available for review (Appendix B). Copies of the Draft SEA and unsigned draft FONSI was also sent to agencies, Native American tribes, including both federally and state recognized tribes, as well as to interested groups and the public (see Appendix B for distribution list).

2.0 DESCRIPTION OF THE ALTERNATIVES, INCLUDING THE PROPOSED ACTION

2.1 Introduction

The NEPA requires the identification and evaluation of practical alternatives to demonstrate the proponent *has evaluated viable options fulfilling the purpose and need for the Proposed Action* prior to committing to a final decision. This chapter compares the alternatives in terms of their consistency with the stated purpose and need as discussed in Section 2.2. Selection criteria used for determining alternatives that would be carried forward for further analysis are described in Section 2.2. Alternatives considered but not carried forward for analysis are presented in Section 2.3. A detailed description of alternatives carried forward for analysis is provided in Section 2.4.

2.2 Selection Standards for Alternatives

According to 32 CFR § 989.8, analysis of alternatives should include the Proposed Action, the No-Action Alternative and other reasonable alternatives that meet the purpose of and need for the Proposed Action. The USAF may eliminate alternatives from detailed analysis based on reasonable criteria such as operational, technical, or environmental standards suitable to a particular project.

The Proposed Action must be consistent with the overall mission of Travis AFB, must meet the project's stated purpose and need, and must minimize impacts to the natural and human environment. The selection standards described below were used for determining which alternatives were carried forward for analysis.

- Meet or exceed state environmental requirements for building and parking lot construction.
- Avoid or minimize impacts to sensitive habitat areas, species, and other environmental issues.
- Comply with USAF, DoD, and Travis AFB planning and design manuals.
- Comply with design standards and safety requirements to avoid conflicts with airfield operations.
- Meet DoD Anti-Terrorism/Force Protection requirements.
- Provide operational flexibility for the various organizations that would use the BCE Complex.

2.3 Alternatives Considered but Eliminated from Analysis

In the original EA, a site west of Dixon Avenue was identified as Alternative 2 in the original 2011 EA but would have involved construction within a number of jurisdictional vernal pools and wetlands that may support endangered species. Because this alternative supports waters of the U.S. and habitat for federally listed species, it was removed from further analysis in this SEA.

2.4 Description of the Proposed Action and Alternatives

Under the Proposed Action, the USAF proposes to construct a permanent BCE Complex in one contiguous *location.*

2.4.1 Alternative 1 (Preferred Alternative)

The BCE Complex would be constructed in three phases, include four buildings, and would encompass approximately 14.2 acres.

- Phase 1: Construct the BCE Maintenance Shops and Supply Warehouse, including a separate Entomology and Fuels Facility,
- Phase II: Construct the Base Engineering Administration building, and

- Phase III: Construct the Pavement and Ground, Covered Storage, and Explosive Ordnance facilities.

In addition, the parking areas (including walkways, landscaping, and entries/exits) and shop yards would be contiguous to the Complex. The parking lot design would include structural components for stormwater management and accessible parking for persons with disabilities. The BCE Complex would also be used for shops and a warehouse for bulk storage and bins of materials needed to support base operations. Materials stored at the Complex would include machinery, portable generators, lights, building and maintenance supplies, and some heavy equipment.

Alternative 1 is the preferred location to construct the BCE Complex and has been sited to avoid explosive safety arcs and sensitive areas. It is located north of Ellis Drive, across from the current location of the Recreational Vehicle parking lot. *Figure 2-1 identifies the location of the preferred alternative. There are multiple configuration concept designs for the BCE Complex within the defined footprint on Figure 2-1. Therefore,* f*or the purpose of the impact analysis presented in this SEA, the entire project footprint in Figure 2-1 is carried forward for analysis.*

No discrete drainage pathways exist on site; however, most surface water sheds by sheet-flow down-slope toward the existing mapped wetlands that may support threatened and endangered species and the West Branch of Union Creek, which runs the entire length of the northern property boundary. Domestic water is available from a 10-inch water main located on and parallel to Ellis Drive. A second 10-inch water line runs diagonally in the northern part of the site and may have to be moved because of the BCE Complex construction. An 8-inch sanitary waste sewer lateral line is located on Ellis Street, and a 15-inch sewer main is located just north of the site that parallels the west branch of Union Creek. Equipment and material storage would occur on already paved sites across Ellis Drive to the south.

The southwest corner of the Preferred Alternative is located within the boundary of Environmental Response Program (ERP) site DP039. Building 755, now demolished, was a battery and electrical shop that was located on this site, north of Ellis Drive and approximately 1,000 feet west of Dixon Avenue. In existence since at least 1963, historically the building tested rocket engines with liquid fuel until 1968 and then became a battery shop until 2009. During that time, various contaminants, primarily chlorinated solvents, were introduced into the soil and groundwater. Building 755 and associated equipment and sumps were removed, and lead residue in the soil was identified but was determined to be low in concentration and did not pose a hazard or risk to local workers or ecological receptors. However, a significant groundwater plume exists under the footprint of the former building and has migrated down gradient to the southeast. Designs for the BCE Complex avoid construction in the area where groundwater remediation is underway.

Figure 2-1. Location of Alternative 1

2.4.2 No-Action Alternative

Under the No-Action Alternative, Travis AFB would not implement the Proposed Action, the BCE Complex construction would not occur at this time and the existing facilities would continue to be used. Personnel would continue to work in the 55 buildings dispersed throughout Travis AFB. Efficiencies and improved work conditions in the buildings would not be realized, including but not limited to, improvement of energy usage and worker safety. However, because CEQ regulations require that the No-Action Alternative be analyzed to assess any environmental consequences that may occur if the Proposed Action were not implemented, this alternative is carried forward for analysis in the SEA.

2.5 Identification of Preferred Alternative

Alternative 1 was chosen as the preferred location for BCE Complex establishment based on a thorough examination of feasible alternatives and consideration of anticipated environmental effects.

2.6 Summary of Potential Impacts

Potential impacts resulting from the Proposed Action are summarized in Table 2.6-1.

Table 2.6-1. Summary of Environmental Consequences

Resource Area	Alternative 1 (Preferred Alternative)	No-Action Alternative
Air Quality, Greenhouse Gas Emissions, and Climate Change Adaptation	No significant impacts to air quality would occur. Emissions generated by proposed construction activities would be temporary and short term; no long-term increases in emissions would occur. Additionally, automobile emissions would be reduced by concentrating engineering facilities at the proposed BCE complex. Implementing Alternative 1 would not appreciably add to global climate change due to its short-term and minor GHG emissions contributions. Federal and state emissions standards would not be affected by implementing Alternative 1.	Under this alternative, no changes in emissions would occur. Therefore no potential for significant impacts to air quality.
Noise	No significant impacts to the surrounding noise environment would occur because of construction or operation of the proposed BCE Complex. During construction, outdoor noise levels would be well below the ambient noise levels of approximately 60 decibel (dB) Day-Night Average Sound Level (DNL).	Under this alternative, the noise environment would remain unchanged. Therefore, no noise impacts.

Table 2.6-1. Summary of Environmental Consequences

Resource Area	Alternative 1 (Preferred Alternative)	No-Action Alternative
Water Resources	Impacts to water resources would not be significant. Construction would result in up to 9 acres of new impervious surfaces associated with the proposed BCE building footprints and parking areas. However, any potential impacts resulting from erosion or surface runoff would be minimized using standard erosion and stormwater control measures. In addition, in accordance with Unified Facilities Criteria 3-210-10, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible. There are no wetlands or vernal pools located within the construction footprint under the Preferred Alternative. Therefore, Alternative 1 would not significantly impact wetlands or other waters of the U.S.	Under this alternative, there would be no changes to water resources; therefore, no impacts.
Biological Resources	*Vegetation and Wildlife.* There would be no significant impacts to vegetation or wildlife resulting from construction or operation of the BCE Complex. *Special Status Species.* Per the Programmatic Agreement between Travis AFB and USFWS, a Project Analysis for the Proposed Action was submitted to the USFWS on January 19, 2021 that outlines potential impacts to federally listed species. Travis AFB will comply with mitigation and conservation measures mandated by USFWS, and therefore, impacts to Contra Costa Goldfields and vernal pool branchiopods would be less than significant. There would be no significant impacts to California Tiger Salamander and migratory birds.	Under this alternative, there would be no changes to biological resources; therefore, no impacts.
Socioeconomic Resources	Short-term beneficial impacts resulting from construction payrolls and materials purchased would be negligible on a regional scale. Accordingly, less than significant beneficial impacts to socioeconomic resources would result.	Under the No-Action Alternative, proposed construction activities would not occur. Therefore, the temporary beneficial input from construction payrolls and materials purchased would not be realized.
Cultural Resources	The Area of Potential Effect (APE) was identified and no National Register of Historic Places-eligible resources, including architectural or traditional resources, are located in the APE. Therefore, neither construction nor operation of the BCE Complex would result in effects to cultural resources within the APE.	Under this alternative, there would be no changes introduced to cultural resources; therefore, no impacts.
Environmental Justice and Protection of Children	Analysis of each resource concluded that no disproportionate health or safety risks would be introduced to children, or minority and low-income populations, by implementing the Preferred Alternative.	Under the No-Action Alternative, there would be no changes to environmental justice of protection of children populations; therefore, no impacts.

3.0 AFFECTED ENVIRONMENT

3.1 Scope of the Analysis

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that a NEPA document should consider, but not analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, a NEPA document should not be encyclopedic; rather, it should be succinct and to the point. Both description and analysis in an EA should provide sufficient detail and depth to ensure that the agency (i.e., USAF) took a critical look at all resources potentially impacted by an action. NEPA also requires a comparative analysis that allows decision makers and the public to differentiate among the alternatives. This document is a supplement to the original EA, and much of the information presented in the 2011 EA is still valid (see Appendix A). To keep the SEA succinct and to the point, only those sections with updates relevant to the Proposed Action, since the 2011 publication, are presented.

3.1.1 Resources Analyzed

While the BCE Complex Proposed Action has remained the same, certain aspects of the baseline environmental conditions have changed. Since 2011, the USFWS made the determination that California tiger salamander (CTS) (*Ambystoma californiense*) upland habitat extends into the BCE Complex project area. The findings of the 2010 habitat assessment (Travis AFB 2011b) are currently presented in Biological Resources, Sections 3.5 and 4.5. Another development since the 2011 EA relates to CEQA applicability. Since the original EA publication, Solano County has become a contributor to this BCE Complex project. This resulted from an agreement under the Air Force Community Partnership Program between the USAF and the county. With the county's involvement, CEQA requirements must be followed, in addition to NEPA requirements.

The organizational structure for the SEA is identical to that of the 2011 EA; however, additional and supplementary sections are included to attain CEQA compliance. The new sections include Greenhouse Gas Emissions, Transportation and Traffic, Utilities, Population and Housing, Public Services, Agricultural and Forestry Resources, Mineral Resources, Recreation, Visual, and Aesthetics. Resources that are not carried forward for further analysis are described below in Section 3.1.2. Please note that italics are not used from this point on; the abundance of new data and information from the 2011 EA was integrated to such an extent that switching between the two would be distracting for the reader.

3.1.2 Rational for Resources Eliminated from Detailed Analysis

Several resources are not fully re-analyzed in this SEA because it was determined that much of the information presented in the 2011 EA is still valid or that no significant impacts would occur based on a re-evaluation of the Proposed Action. While every section in the 2011 EA was thoroughly reviewed and analyzed, the following sections had no relevant changes from what were presented therein: Airspace; Wastes, Hazardous Materials, ERP Sites, and Stored Fuels; Land Use; Transportation Systems; Safety and Occupational Health; Environmental Management; Utilities; and Earth Resources. Some of the CEQA resource requirements were also determined to have no potential for environmental impacts and are listed here and include: Population, Housing, and Public Services; Agricultural, Forestry, and Mineral Resources; and Recreation, Visual, and Aesthetics. Additionally, while environmental justice and protection of children were evaluated in the 2011 EA, they are not carried further for detailed analysis in this SEA. An explanation of the reasons why resources were eliminated from additional analysis is provided below.

3.1.2.1 Airspace

Under the Proposed Action, there would be no changes to airspace management or use; this section was not analyzed under the 2011 EA. There would be no changes to aircraft operations and no new aircraft would be introduced at Travis AFB. Therefore, because there are no impacts to airspace, this category was eliminated from further analysis in this SEA.

3.1.2.2 Wastes, Hazardous Materials, Environmental Restoration Program Sites, and Stored Fuels

The Travis AFB Environmental Restoration Program Management Action Plan (Travis AFB 2016d), Travis AFB Installation Development Plan (Travis AFB 2016e), and the most recent Geographic Information System (GIS) data available were reviewed for relevant updates. Following the review, it was determined that there were no relevant changes in wastes, hazardous materials, ERP sites, and stored fuel conditions. Specifically, ERP site DP039 and the associated contaminated groundwater plume have not changed. Therefore, nothing would change the compliance with applicable federal and state regulations, or impacts to wastes, hazardous materials, ERP sites, or stored fuels beyond what was discussed in the 2011 EA. Because there are no changes to this resource category that would affect the outcome from what was analyzed under the 2011 EA, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.4 and 4.4 for the 2011 EA discussion on Wastes, Hazardous Materials, ERP sites, and Stored Fuels.

3.1.2.3 Land Use

The Travis AFB Installation Development Plan (Travis AFB 2016e) and the most recent GIS data available were reviewed for relevant updates to the 2011 EA Land Use section. The proposed BCE Complex would be located within industrial and open space land use designations. The future land use designation, as described in the Installation Development Plan (Travis AFB 2016e), would continue to be industrial. Constructing and operating the industrial-related BCE Complex would be compatible with adjacent existing and future land uses. Therefore, because there are no changes to land use that would affect the outcome from what was analyzed under the 2011 EA, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.9 and 4.9 for the 2011 EA discussion on Land Use.

3.1.2.4 Transportation and Traffic Systems

The Travis AFB Installation Development Plan (Travis AFB 2016e) was reviewed for relevant updates to the Transportation Systems in the 2011 EA, and for traffic implications per CEQA requirements. Under the Proposed Action, there would be no changes in military or civilian personnel; therefore, no long-term increases or decreases in the transportation and traffic systems would occur. Additionally, it was determined that no existing or future transportation network projects would result in disruption or improvement of transportation and traffic patterns and systems; deterioration or improvement of levels of service; or changes in levels of transportation safety. Therefore, because there are no changes to transportation or traffic systems from what were analyzed in the 2011 EA, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.10 and 4.10 for the 2011 EA discussion on Transportation and Traffic Systems.

3.1.2.5 Safety and Occupational Health

The Travis AFB Environmental Restoration Program Management Action Plan (Travis AFB 2016d), the Travis AFB Installation Development Plan (Travis AFB 2016e), and the most recent GIS data available

were reviewed for relevant updates to safety and occupational health. Following the review, it was determined that there have been no changes to the safety and occupational health conditions from what were analyzed in the 2011 EA. No changes to explosive safety arcs, aboveground storage tanks, ERP sites, or other occupational health and safety considerations have occurred. Therefore, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.11 and 4.11 for the 2011 EA discussion on Safety and Occupational Health.

3.1.2.6 Environmental Management

The Travis AFB 60 Air Mobility Wing Storm Water Pollution Prevention Plan (Travis AFB 2017), Travis AFB Environmental Restoration Program Management Action Plan (Travis AFB 2016d), the Travis AFB Installation Development Plan (Travis AFB 2016e), and the most recent GIS data available were reviewed for relevant updates to the environmental management section. Following the review, it was determined that there were no relevant changes in environmental management conditions. Specifically, ERP site DP039 and the associated contaminated groundwater plume have not changed. Therefore, nothing would change the compliance with applicable federal and state regulations, or impacts to environmental management conditions beyond what were discussed in the 2011 EA. Because there are no changes from what was analyzed in the 2011 EA, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.12 and 4.12 for the 2011 EA discussion of Environmental Management.

3.1.2.7 Utilities

The Travis AFB 60 AMW Storm Water Pollution Prevention Plan (Travis AFB 2017), Travis AFB Installation Development Plan (Travis AFB 2016e), and the most recent GIS data available were reviewed for relevant updates to the utilities section. There were no pertinent changes to potable water, wastewater, storm water, electrical, gas, or communications infrastructure that would result in affects to the Proposed Action as analyzed in the 2011 EA. The ability to supply potable water and energy to the new Complex or the base would not be affected, nor would the ability to accept wastewater or stormwater effluent. Because there are no changes to utilities from what was analyzed under the 2011 EA, this category was eliminated from further analysis in this SEA. See Appendix A, Sections 3.14 and 4.14 for the 2011 EA discussion on Utilities.

3.1.2.8 Population, Housing, and Public Services (CEQA Requirement)

As required under CEQA, potential impacts to population, housing, and public services were considered. Under the Proposed Action no changes in military or civilian personnel would occur. Therefore, population, housing, and public services (e.g., public schools, healthcare facilities, fire, and police services) would not be affected. Because there are no impacts to population, housing, and public services, this category was eliminated from further analysis in this SEA.

3.1.2.9 Agricultural, Forestry, and Mineral Resources (CEQA Requirement)

As required under CEQA, potential impacts to agricultural, forestry, and mineral resources resulting from implementing the Proposed Action were evaluated. Per the California Department of Conservation Important Farmland Finder website, Travis AFB is comprised of entirely urban and built-up land (State of California 2016a). There are no prime farmlands, farmlands of statewide or local importance or potential, unique farmlands designations, or California Land Conservation Act of 1965 Williamson Act lands on Travis AFB. Per the Department of Forestry and Fire Protection website, there are no forestlands or timberland production zones located within Travis AFB (CAL FIRE 2016). According to the California

Department of Conservation Surface Mining and Reclamation Act Mineral Land Classification data portal, no minerals of statewide importance are located within Travis AFB (State of California 2016b). Portions of Travis AFB lie within a Mineral Land Classification Study for Portland Cement Concrete Grade Aggregate; however, the installation is not within any Mineral Resource Zones considered to contain significant deposits of aggregate (Dupras 1988). As no agricultural, forestry, or appreciable mineral resources are located within the base, this category was eliminated from further analysis in this SEA.

3.1.2.10 Recreation, Visual, and Aesthetics (CEQA Requirement)

As required under CEQA, recreational, visual, and aesthetic impacts of implementing the Proposed Action need analysis. Under the Proposed Action, however, there would be no changes to existing recreational resources found on the base. The visual and aesthetic character of the new BCE Complex would be similar in character as existing facilities and developed within an industrial-designated area on Travis AFB. The BCE Complex would have little appreciable effect on viewsheds. BCE Complex construction and operations would be consistent with the viewshed typically found on a military installation and occur on a site designated for industrial use. Because there would be no effects to recreation, visual, or aesthetic resources, this category was eliminated from further analysis in this SEA.

3.1.2.11 Environmental Justice and Protection of Children

Environmental justice, as defined in EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, looks at whether an action disproportionately affects these types of populations. Additionally, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* requires that federal agencies identify and assess risks that may disproportionately affect children. The *Interim Guide for Environmental Justice with the Environmental Impact Analysis Process* (Air Force 1997) establishes noise levels of 65 decibels (dB) Day-Night Average Sound Level (DNL) (or 65 dB Community Noise Equivalent Level [CNEL]) as a guideline for the evaluation of environmental justice. Use of this 65 dB DNL guideline for the evaluation of environmental justice and protection of children and is consistent with the intent of EO 12898.

Under the Proposed Action, construction and demolition activities would not generate noise levels to affect any minority or low-income populations, and the nearest school, Travis Elementary School, is located approximately 3,000 feet from proposed construction activities. Noise level calculations using Road Construction Noise Model (Federal Highway Administration 2006), estimates construction noise exposure at the elementary school would be 52 dB CNEL or DNL, which would be well below the 65 dB DNL used as a USAF guideline (see Appendix C for noise calculations). Therefore, no health risks would be introduced to affect environmental justice communities or children. In terms of safety, the construction site would be fenced to prohibit unauthorized entry and safeguard against safety hazards. Once the BCE Complex is operational, neither noise levels nor safety hazards would be introduced. Therefore, this resource category is not carried forward for further analysis.

3.1.2.12 Earth Resources

Implementing the Proposed Action would involve minimal excavation or removal of soil. The majority of the construction would occur on previously disturbed soils exposed to increased human activity, or on already disturbed barren soils. Stabilizing soils and controlling sedimentation during construction and demolition activities would minimize potential impacts from erosion and sedimentation. No prime farmland soils are located in the areas proposed for construction. Construction and demolition activities would not

significantly alter the soils and topographic features of the area. Therefore, earth resources were eliminated from further analysis.

In summary, the resources that are analyzed under this SEA include Air Quality, GHG Emissions, and Climate Change Adaptation; Noise; Water Resources; Biological Resources; Socioeconomic Resources; and Cultural Resources. The following sections contain definitions of each resource, describe the affected environment (or region of influence [ROI]) and present existing/baseline conditions for each resource category.

3.2 Air Quality, Greenhouse Gas Emissions, and Climate Change Adaptation

3.2.1 Definition of the Resource

Air quality is defined by ambient air concentrations of specific pollutants determined by the USEPA to be of concern related to the health and welfare of the general public and the environment. Pollutant emissions typically refer to the amount of pollutants or pollutant precursors introduced into the atmosphere by a source or group of sources. Pollutant emissions contribute to the ambient air concentrations of criteria pollutants, either by directly affecting the pollutant concentrations measured in the ambient air or by interacting in the atmosphere to form criteria pollutants. Primary pollutants, such as CO, SO_2, lead (Pb), and some particulates, are emitted directly into the atmosphere from emission sources.

Secondary pollutants, such as O_3, nitrogen dioxide (NO_2), and some particulates, are formed through atmospheric chemical reactions that are influenced by meteorology, ultraviolet light, and other atmospheric processes. Suspended particulate matter PM_{10} or $PM_{2.5}$ are generated as primary pollutants by various mechanical processes (for example, abrasion, erosion, mixing, or atomization) or combustion processes. However, PM_{10} and $PM_{2.5}$ can also be formed as secondary pollutants through chemical reactions or by gaseous pollutants that condense into fine aerosols. In general, emissions that are considered "precursors" to secondary pollutants in the atmosphere (such as volatile organic compounds [VOCs] and oxides NO_x, which are considered precursors for O_3) are the pollutants for which emissions are evaluated to control the level of O_3 in the ambient air.

Travis AFB is located in central Solano County, which is at the eastern edge of the San Francisco Bay Area Air Basin. The basin extends from Napa County in the north, to Santa Clara County in the south. The Basin encompasses 5,340 square miles and 19 percent of California's population. The Basin is under the jurisdiction of the Bay Area Air Quality Management District (BAAQMD) pursuant to a mandate from the California Air Resources Board (CARB). Only the golf course at Travis AFB extends into a neighboring jurisdiction, the Yolo-Solano Air Pollution Control District.

The purpose of this section is to provide an overview of regional air quality and includes a discussion of applicable federal and state regulations, regional air quality management programs, and the current air quality conditions. The ROI for the air quality analysis includes portions of the BAAQMD relevant to the Proposed Action at Travis AFB.

3.2.1.1 Air Quality Standards

National Ambient Air Quality Standards and California Ambient Air Quality Standards

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. The NAAQS are established by the USEPA for criteria pollutants including O_3, CO, NO_x, SO_2, PM_{10}, $PM_{2.5}$, and Pb. The USEPA only regulates NO_2 for all NO_x because it is the most prevalent of the NO_x compounds

produced by human activity. The NAAQS represent maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare. In addition, the CARB has established California Ambient Air Quality Standards (CAAQS) for the criteria pollutants, as well as for hydrogen sulfide, sulfates, and vinyl chloride. Additionally, both VOCs and reactive organic compounds (ROGs) are categories of organic gases that participate in atmospheric photochemical reactions regulated under NAAQS and CAAQS. The difference between ROGs and VOCs are that the CARB and the USEPA independently list exemptions for gases that have negligible photochemical reactivity. The exemption lists differ slightly; therefore, they are used interchangeably. Table 3.2-1 provides the CAAQS and NAAQS standards and the attainment status of criteria pollutants in Solano County.

Table 3.2-1. National and California Ambient Air Quality Standards and Solano County Attainment Status under State and Federal Standards

Pollutant	Averaging Time	CAAQS		NAAQS	
		Standard	***Solano County Attainment Status***	***Standard***	***Solano County Attainment Status***
O_3	8-Hour 1-Hour	0.07 ppm 0.09 ppm	Nonattainment	0.070 ppm	Nonattainment No 1-hour standard
CO	8-Hour 1-Hour	9.00 ppm 20.00 ppm	Attainment	9 ppm 35 ppm	Attainment
NO_2	Annual 1-Hour	0.03 ppm 0.18 ppm	Attainment	0.053 ppm 0.100 ppm	Attainment Undetermined
SO_2	24-Hour 3-Hour 1-Hour	0.04 ppm Not applicable 0.25 ppm	Attainment - Attainment	Not applicable 0.5 ppm 0.075 ppm	- Attainment Attainment
PM_{10}	Annual arithmetic mean 24-Hour	20 µg/m^3 50 µg/m^3	Nonattainment	- 150 µg/m^3	- Attainment
$PM_{2.5}$	Annual arithmetic mean 24-Hour	12 µg/m^3 -	Nonattainment	12 µg/m^3 35 µg/m^3	Attainment Nonattainment
Pb	Calendar Quarter 30-Day Average	1.50 µg/m^3	Attainment	1.5 µg/m^3	Attainment
Sulfates	24-Hour	25 µg/m^3	Attainment	NA	NA
Hydrogen Sulfide	1-Hour	1.50 µg/m^3	Unclassified	NA	NA
Vinyl Chloride	24-Hour	0.01ppm	Undetermined	NA	NA

Source: BAAQMD 2016.
Notes: NA = not applicable; ppm = parts per million; µg/m3 = micrograms per cubic meter.

Additionally, 40 Code of Federal Regulations Section 51.307 requires the operator of any new major stationary source or major modification located within 100 kilometers of a Prevention of Significant Deterioration air quality Class I area to contact the federal land managers for that area. The nearest Class I areas to Travis AFB are Desolation Wilderness at about 170 kilometers and Mokelumne Wilderness at about 257 kilometers.

Hazardous Air Pollutants

Hazardous air pollutants (HAPs) have the potential to cause serious health impacts and regulated under Section 112(b) of the 1990 CAA Amendments. While no ambient standards for local concentrations exist,

HAPs are controlled by limiting emissions. The National Emission Standards for Hazardous Air Pollutants regulate HAP emissions from stationary sources (40 CFR §§ 61 and 63). HAPs emitted from mobile sources are called Mobile Source Air Toxics (MSAT); these are compounds emitted from highway vehicles and non-road equipment, known or suspected to cause serious health and environmental effects. In 2001, USEPA issued its first MSAT Rule, which identified 21 compounds as being HAPs that required regulation. In February 2007, USEPA issued a second MSAT Rule that generally supported the findings in the first rule, and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the criteria pollutants, there are no NAAQS for HAPs.

The primary control methodologies instituted by federal regulation for MSATs involve technological improvements for reducing their content in fuel and altering engine-operating characteristics to reduce the volume of pollutants generated during combustion. MSATs would be the primary HAPs emitted by mobile sources during construction and operations. At the state level, CARB regulates toxic air contaminants, which include federal HAPs and other pollutants. CARB requires the use of Best Available Control Technology to limit toxic air contaminant and HAP emissions.

Greenhouse Gas Emissions and Climate Change Adaptation

The USEPA issued the Final Mandatory Reporting of Greenhouse Gases Rule on September 22, 2009. Greenhouse gases covered under the Final Mandatory Reporting of Greenhouse Gases Rule are CO_2, methane, NO_x, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other fluorinated gases including nitrogen trifluoride and hydrofluorinated ethers. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to carbon dioxides (CO_2), which has a value of one. The equivalent CO_2 rate is calculated by multiplying the emissions of each GHG by its global warming potential and adding the results together to produce a single, combined emissions rate representing all GHGs designated as carbon dioxide equivalents (CO_2e). Under the rule, suppliers of fossil fuels and/or industrial GHGs, manufacturers of mobile sources and engines, and facilities that emit greater than 25,000 metric tons or more per year of GHG emissions as CO_2e must submit annual reports to the USEPA. In the 2017-2036 Energy Flight Plan, the Air Force indicates that it generated about 35 million metric tons of CO_2e in 2015 from all operations and uses (USAF 2016).

The USAF implements federal and DoD policies to reduce energy usage, GHG emissions, and energy vulnerability. In 2016, the Secretary of the Air Force set three major goals in their 2017-2036 Air Force Energy Flight Plan: to improve energy resiliency, optimize energy demand, and assure supply (USAF 2016, http://www.safie.hq.af.mil/Programs/energy/strategy). To meet these goals, several objectives were identified and include, but are not limited to, the following:

- By FY36, all mission critical functions will have assured access to a reliable supply of energy at all times
- By FY20, increase the use of energy resiliency technologies and partnerships for critical infrastructure to improve energy security
- Reduce reliance on and consumption of petroleum fuel for ground-based vehicles to achieve a 30 percent reduction in fleet-wide per mile GHG emissions by FY25 based on an FY14 baseline
- Reduce energy intensity (energy consumed per gross square foot) by 25% by FY25, compared to FY15

- Increase facility use of clean energy by 25% by FY25
- Increase use of alternative fuels in ground vehicles and equipment by FY20

Examples of USAF-wide renewable energy initiatives include wind, solar, waste-to-energy, and landfill gas projects (USAF 2014, http://www.afcec.af.mil/Portals/17/documents/Energy/AFD-140722-006.pdf). The USAF continues to promote and install new renewable energy projects.

3.2.1.2 Regulatory Framework

The CAA Amendments of 1990 place most of the responsibility to achieve compliance with NAAQS on individual states. California is geographically divided into Air Pollution Control Districts, each of which is required to adopt strategies for achieving NAAQS, as well as the state's CAAQS. Each Air Pollution Control District must also adopt a SIP, which is a compilation of goals, strategies, schedules, and enforcement actions designed to lead the state into compliance with all NAAQS. Air Pollution Control Districts not in compliance with a standard can be declared nonattainment areas by the USEPA or CARB. In order to reach attainment, NAAQS may not be exceeded more than once per year, except for 8-hour O_3, for which the fourth-highest value in a year may not exceed the NAAQS. A nonattainment area can reach attainment when NAAQS have been met for a period of 10 consecutive years. During this period, the area is in transitional attainment, also termed maintenance.

General Conformity Rule

Federal actions are required to conform to the approved SIP for those areas of the U.S. designated as nonattainment or in maintenance for any criteria air pollutant under the CAA (40 CFR §§ 51 and 93). As Travis AFB is located in an area of nonattainment for two criteria pollutants (1- and 8-hour O_3 and 24-hour $PM_{2.5}$), the action is subject to the general conformity rule. When an area is designated in nonattainment and/or in maintenance, the CAA Section 176(c), General Conformity Rule, is applied. The intent of this rule is to ensure that federal actions do not adversely affect the timely attainment of air quality standards in areas of nonattainment or maintenance. Because Travis AFB is within areas designated in nonattainment, the USAF evaluated: 1) whether a conformity determination is required, and, if it is, 2) a conformity determination was undertaken to evaluate whether the action conforms to the California SIPs for pollutants in nonattainment. The General Conformity Rule consists of three major parts: applicability, analysis, and procedural requirements.

Applicability

NONATTAINMENT AREAS. This applies to federal actions occurring in geographic regions designated as nonattainment or maintenance areas for criteria pollutants. A nonattainment area consists of a region that fails to meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard (i.e., NAAQS) for the pollutant. A maintenance area represents a re-designated nonattainment area that has achieved attainment of the national primary ambient air quality standard.

DE MINIMIS EMISSIONS LEVELS. Threshold (or *de minimis*) levels of emissions are established to focus conformity requirements on those federal actions with the potential to produce significant air quality impacts. With the exception of lead, the *de minimis* levels are based on the CAA Amendments major stationary source definitions for criteria pollutants (and precursor criteria pollutants) and vary by the severity of the nonattainment area. USEPA's implementing regulation requires a conformity applicability analysis for nonattainment or maintenance area criteria pollutants to identify whether the annual total of

direct and indirect emissions equals or exceeds the annual *de minimis* levels. Tables 3.2-2 lists the *de minimis* levels by criteria pollutant, applicable to federal actions in nonattainment.

Table 3.2-2. *De Minimis* Levels for Criteria Pollutants in Nonattainment Areas by Designation

Pollutant	Designation	NAAQS Tons/Year
O_3*	Serious Nonattainment	50
	Severe Nonattainment	25
	Extreme Nonattainment	10
	Other nonattainment areas outside of ozone transport region	100
	Marginal/Moderate nonattainment areas inside ozone transport region	50 (VOCs)/100 (NO_x)
CO	All nonattainment areas	100
SO_2**	All nonattainment areas	100
Pb	All nonattainment areas	25
NO_2	All nonattainment areas	100
PM	Moderate Nonattainment (PM_{10})	100
	Serious Nonattainment (PM_{10})	70
	Nonattainment ($PM_{2.5}$)	100

Source: 40 CFR § 51.853.
*Includes precursors: VOCs and NO_x.
**Sulfur dioxide is often reported as SO_x.

Exemptions and Presumptions. Certain federal actions are deemed by the USEPA to conform because of the thorough air quality analysis required to comply with other statutory requirements. Examples of these actions include those subject to the New Source Review program and remedial activities under the Comprehensive Environmental Response, Compensation, and Liability Act. Other federal actions that are exempt from the conformity process include those actions that would result in no increase in emissions, or an increase in emissions that is clearly *de minimis*.

Examples include continuing or recurring activities, routine maintenance and repair, administrative and planning actions, land transfers, and routine movement of mobile assets. A federal agency can establish its own presumptions of conformity through separate rulemaking actions. Section 176(c) of the CAA Amendments does not specifically exempt any activity, thus a separate analysis would need to show that the activity presumed to conform has no impacts to air quality. Based on this analysis, a federal agency can document that certain types of future actions would be *de minimis*.

Analysis

A conformity analysis for the federal action examines impacts of both direct and indirect emissions from mobile and stationary sources. Indirect emissions are those caused by the federal action but may occur later in time and/or may be farther removed in distance from the action itself but are still reasonably foreseeable, and the federal agency can control and will maintain control over the indirect action due to a continuing program responsibility of the federal agency. Reasonably foreseeable emissions are projected future indirect emissions that are identified at the time the conformity determination is made and the location of such emissions is known and the emissions are quantifiable, as described and documented by the federal agency based on its own information and after reviewing any information presented to the federal agency.

The conformity determination procedure is detailed in 40 CFR § 93.158-159. The analysis is based upon the latest planning assumptions, emission estimation techniques, applicable air quality models, databases,

and other requirements of the USEPA, and on the total of direct and indirect emissions from the action(s). Finally, a formal general conformity determination must provide for mitigation measures and undertake a thorough public notification process. Exempt actions are not required to go through this process.

Procedural Requirements

General Conformity Rule procedural requirements allow for public review of the federal agency's conformity determination. Although the conformity determination is a federal responsibility, state and local air agencies are provided notification and their expertise is consulted. The federal agency must provide a 30-day notice of the federal action and draft conformity determination to the appropriate USEPA Region, and state regulating entity, and local air control agencies. The federal agency must also make the determination available to the public for review and comment (40 CFR § 93.156).

3.2.2 Existing Conditions

3.2.2.1 Local Air Quality

The western part of Solano County, including the part of Travis AFB relevant to this document, is located within the San Francisco Bay Area Air Basin and governed by the BAAQMD (USAF 2003); the eastern part is located within the Sacramento Valley Air Basin. The San Francisco Bay Area Air Basin is currently designated by the USEPA as a NAAQS attainment area for CO, NO_2, SO_2, Annual $PM_{2.5,}$ and Pb; and nonattainment for 1-hour and 8-hour O_3 and 24-hour $PM_{2.5}$ standards. The basin is currently designated by BAAQMD as a CAAQS attainment or unclassified area for CO, NO_2, SO_2, Pb, sulfates, vinyl chloride, and hydrogen sulfide, and a nonattainment area for $PM_{2.5}$, PM_{10}, and state 1- and 8-hour O_3 standards (BAAQMD 2016).

3.2.2.2 Baseline Pollutant Emissions

Criteria Pollutants Thresholds and Permitting

CAA Amendments Title V Operating Permit thresholds are defined as emissions from stationary sources in excess of 100 tons per year of any of the criteria pollutants, or 10 to 25 tons per year of any single or combination of HAPs, respectively (BAAQMD 2001). Because Travis AFB emissions are below Title V thresholds, it is considered a minor source for air emissions.

Travis AFB operates under a BAAQMD Synthetic Minor Operating Permit, which contains provisions to limit the base's potential emission levels to below defined thresholds. As part of the base-requested and BAAQMD-approved revision to Condition 19843 of the BAAQMD Permit to Operate for Plant #770, allowable 12-month rolling emissions of precursor organic compounds including NO_x and ROGs were 34 tons per year and are 95 tons per year for all other regulated criteria pollutants (USAF 2016).

Emissions sources include permitted abrasive blasting booths and cleaning solvent tanks. The Synthetic Minor Operating Permit report from August 2015 through July 2016 includes emissions for CO, NO_x, PM_{10}, SO_2, VOCs, and HAPs. Emissions from stationary combustion sources at Travis AFB totaled roughly 20.5 tons during the reporting period from August 2015 to July 2016 and fell well within the BAAQMD Synthetic Minor Operating Permit threshold. Table 3.2-3 shows the Synthetic Minor Operating Permit emissions by source and criteria pollutants during the 2015 to 2016 reporting period. Currently, Travis AFB emissions for all of the criteria pollutant emissions are well below permit limits.

Table 3.2-3. Criterial Air Pollutants for 12-Month Period from August 2015 through July 2016

Source Group	Criteria Emissions (tons per year)				
	PM	***CO***	***SO_2***	***NO_x***	***VOCs***
Boilers	0.42	4.66	0.03	5.55	0.31
Emergency Generators	0.07	0.20	0.06	0.96	0.08
Fuel Storage/Distribution	NA	NA	NA	NA	0.91
Surface Coating	NA	NA	NA	NA	0.24
Other	0.66	NA	NA	NA	6.36
Emissions Total	**1.15**	**4.87**	**0.10**	**6.51**	**7.90**
Emissions Limit	**95**	**95**	**95**	**34**	**34**

Source: Travis AFB 2016d.
Notes: NA = not applicable.

Greenhouse Gas Emissions

Review of the USEPA GHG inventory website (https://ghgdata.epa.gov/ghgp/main.do) indicated that 1,058,306 metric tons of CO_2e were generated in 2016 in Solano County (USEPA 2017). Of these, 1,006,135 metric tons (95 percent) were emitted by Valero Refinery Company. Travis AFB CO_2e emissions are below the 25,000 metric tons threshold for reporting purposes.

Climate Change Adaptation

Due to its elevation, lands within Travis AFB are not subject to rising sea levels. However, according to the USEPA Climate Change website in 2016 (now being updated), over the last century, the average annual temperature in the southwestern U.S. has risen by about 2 degrees Fahrenheit over the last century, with temperatures projected to increase by approximately 3.5 to 9.5 degrees Fahrenheit by the end of the century. Drought conditions are already common in the west and drought periods are expected to become more frequent, intense, and longer. Drought will affect important water sources. Combined with expected population growth, climate change will exacerbate existing stresses (USEPA 2016).

3.3 Noise

3.3.1 Definition of the Resource

Noise is considered to be unwanted sound that interferes with normal activities or otherwise diminishes the quality of the environment. It may be intermittent or continuous, steady or impulsive, stationary or transient. When considering stationary sources, noise is associated with non-moving activity (e.g., construction equipment and generators). Transient noise sources move through the environment, either along relatively established paths (e.g., highways, railroads, aircraft flight paths), or randomly. There is wide diversity in responses to noise that not only vary according to the type of noise and the characteristics of the sound source, but also according to the sensitivity and expectations of the receptor, the time of day, and the distance between the noise source (e.g., an aircraft) and the receptor (e.g., a person or animal). The duration of a noise event and the number of times noise events occur are important considerations in assessing noise impacts. All of these factors play a role in determining context and the intensity of a human's reaction to noise.

The physical characteristics of noise, or sound, include its intensity, frequency, and duration. Sound is created by acoustic energy, which produces minute pressure waves that travel through a medium, like air, and are sensed by the eardrum. This may be likened to the ripples in water that would be produced when a stone is dropped into it. As the acoustic energy increases, the intensity or amplitude of these pressure waves increase, and the ear senses louder noise. The unit used to measure the intensity of sound is the decibel

(dB). Sound intensity varies widely (from a soft whisper to a jet engine) and is measured on a logarithmic scale to accommodate this wide range.

3.3.1.1 Overview

The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations. In 1974, the USEPA provided information on negative effects of noise, identifying indoor and outdoor noise limits that protect public health and welfare (e.g., prevent hearing damage, sleep disturbance, and communication disruption). In addition, sound quality criteria promulgated by USEPA, the U.S. Department of Housing and Urban Development, and DoD have identified noise levels to protect public health and welfare with an adequate margin of safety. These levels are considered acceptable guidelines for assessing noise conditions in an environmental setting. Sound levels are generally described in terms of "A-weighted dBs (dBA)," meaning that the response of a sound-level meter has been adjusted to simulate the response of the human ear. Noise levels below 65 dB normally are considered acceptable in the living environment.

3.3.1.2 Sound Measurement

Sound measurement is further refined by using an A-weighted dB scale that emphasizes the range of sound frequencies that are most audible to the human ear. DNL and CNEL are time-averaged metrics describing the cumulative noise environment of individual noise events over longer periods, usually up to 24 hours. DNL and CNEL account for single-event noise levels and "penalize" those levels depending on the time in which they occur. For DNL, a 10 dB penalty is added to noise levels generated during the nighttime hours of 10:00 p.m. to 7:00 a.m. CNEL adds 5 dB to noise levels generated during the evening hours of 7:00 p.m. to 10:00 p.m. and 10 dB during nighttime hours. CNEL is specific to California; DNL, is applicable to the remaining 49 states.

Aircraft noise exposure around DoD facilities is assessed by the NOISEMAP model, which overlays a regularly spaced "grid" containing DNL or CNEL noise contours onto a base vicinity map. These noise contours are used to determine the compatibility of aircraft operations, other base operations, and construction activities with local land use. The USAF Air Installation Compatible Use Zone (AICUZ) program uses these noise contours to protect public safety and health, and the national defense mission of the USAF by identifying compatible/incompatible land uses within the noise contours.

3.3.2 Existing Conditions

3.3.2.1 Noise Generating Activities

The ROI for the noise analysis includes Travis AFB and areas surrounding the construction sites. Aircraft activity is the primary noise generator at Travis AFB. Aircraft noise exposure associated with the base was calculated in the 2009 Travis AFB AICUZ (Travis AFB 2009). Noise contours are shown in Figure 3.3-1. The 65 dB CNEL to 85 dB CNEL noise contours surrounding the airfield are generally aligned with the base's two runways and typical aircraft approach patterns; these contours are mostly within Travis AFB boundaries or undeveloped areas adjacent to the base. Ground-based activities also contribute to the noise environment at Travis AFB. Major transportation corridors include Air Base Parkway, Walters Road, and Peabody Road and are the primary sources of ground-based noise. On-base vehicle, construction equipment, and aircraft maintenance activities also contribute to the ground-based noise environment at Travis AFB.

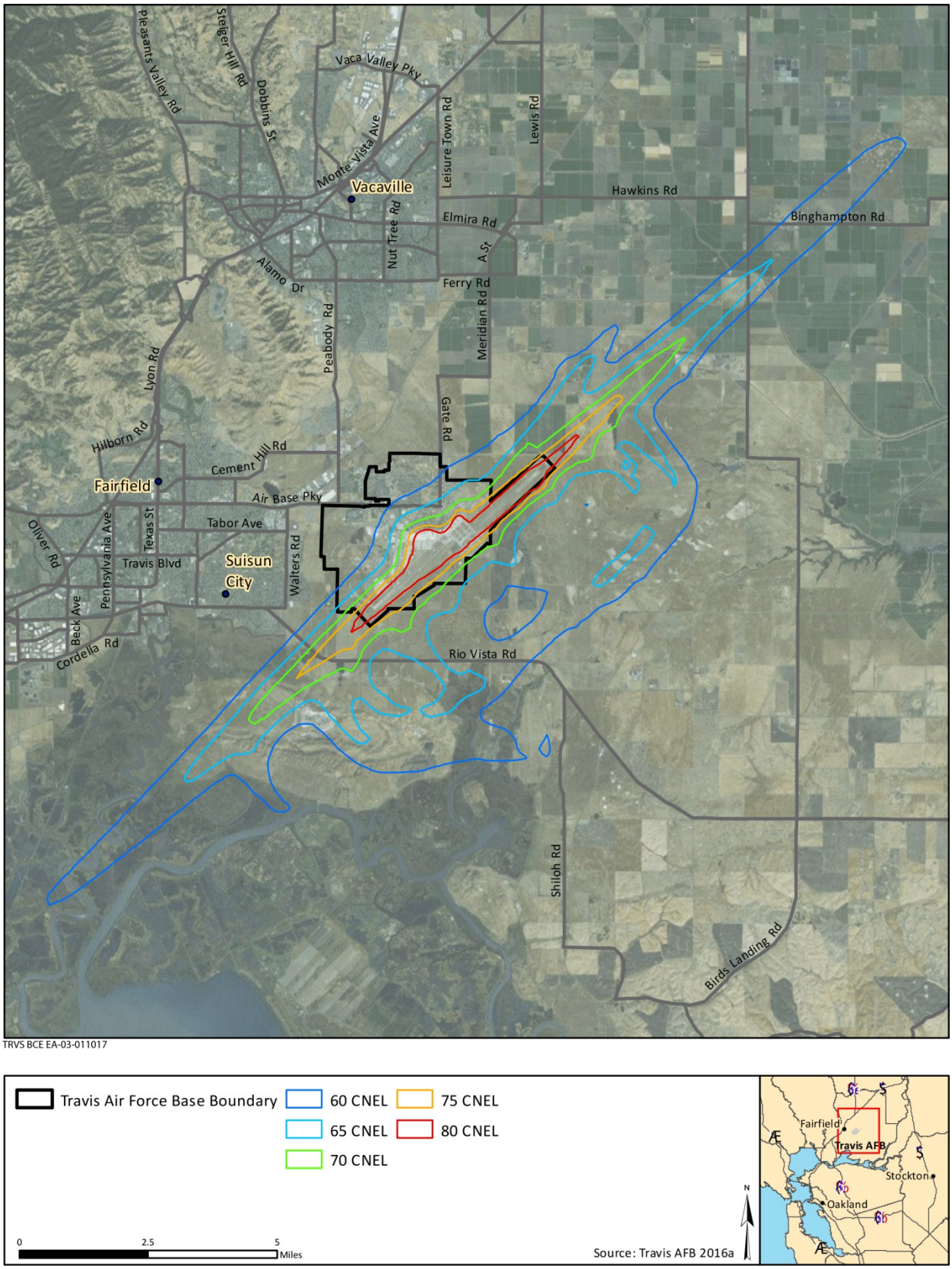

Figure 3.3-1. Travis Air Force Base Air Installation Compatible Use Zone Noise Contours

3.3.2.2 Local Noise Distribution

Land use around Travis AFB is divided into two distinct noise environments. Areas west of the base comprise a low-density suburban setting, where noise is typically limited to vehicles on local highways or light industrial activities. Areas north, east, and south of the base comprise rural agricultural and residential uses, where noise is typically associated with farming operations and occasional vehicle use (Solano County 2002). According to the Travis AFB AICUZ study, residential land use is acceptable below 65 dB DNL, discouraged at 65 dB up to 70 dB, and strongly discouraged at 70 dB or greater. Agricultural use is acceptable under any noise contour (Travis AFB 2009). Current noise levels west of the base in the suburban areas are less than 60 dB. On the other hand, noise levels over the agricultural lands to the north, east, and south are up to 80 dB because the vast majority of aircraft operations occur above these areas.

3.4 Water Resources

3.4.1 Definition of the Resource

Water resources analyzed in this SEA include groundwater and surface water quantity and quality, floodplains, and wetlands. Further, this section provides descriptions of the qualitative and quantitative characteristics of water resources.

Groundwater includes the subsurface hydrologic resources of the physical environment. Groundwater plays an important part in the overall hydrologic cycle and its properties are described in terms of depth to the aquifer or water table, water quality, and surrounding geologic composition.

Surface water includes lakes, rivers, and streams and is important for a variety of reasons including irrigation, power generation, recreation, flood control, and human health. The nation's waters are protected under the statutes of the CWA; the goal of the CWA is to restore and maintain the chemical, physical, and biological integrity of the nation's water so that they can support "the protection and propagation of fish, shellfish, wildlife, and recreation in and on the water." Under the CWA Section 402, it is illegal to discharge any point and/or nonpoint pollution sources into any surface water without a National Pollutant Discharge Elimination System permit. The USEPA is charged with administering the National Pollutant Discharge Elimination System permit program; however, California has legal authority to implement and enforce the CWA provisions, while the USEPA retains oversight responsibilities.

In December 2007, Congress enacted the *Energy Independence and Security Act*; Section 438 of this legislation established into law new stormwater design requirements for all federal projects with a footprint greater than 5,000 square feet. This act triggered updates to the DoD issued UFC guidelines on *Low Impact Development* (UFC 3-210-10, as amended June 1, 2015) that established the technical criteria and requirements for applicable DoD projects to comply with the stormwater requirements under the *Energy Independence and Security Act* Section 438. As such, the overall design objectives for each applicable DoD project is to maintain predevelopment hydrology and prevent any net increase in stormwater runoff through interception, infiltration, storage, or evapotranspiration processes. Agencies can meet the pre-development hydrology requirements in two ways: 1) managing the on-site total volume of rainfall from the 95th percentile storm, or 2) managing the on-site total volume of rainfall based on a site-specific hydrologic analysis through various engineering techniques. Typical on-site design options include bio-retention areas, permeable pavements, cisterns/recycling systems, and green roofs (i.e., a roof that is covered with vegetation).

Floodplains are defined by EO 11988, *Floodplain Management* (as amended 2015), as *"the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands."* Floodplains and riparian habitat are biologically unique and highly diverse ecosystems providing a rich diversity of aquatic and terrestrial species, as well as promoting stream bank stability and regulating water temperatures. In addition, losses caused by flooding affect the environment, economic prosperity, and public health and safety, each of which affects national security.

Wetlands are considered sensitive habitats and are subject to federal regulatory authority under Section 404 of the CWA and EO 11990, *Protection of Wetlands*. Jurisdictional wetlands are defined by the USACE as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Areas meeting the federal wetland definition are under the jurisdiction of the USACE. Wetlands generally include swamps, marshes, bogs, and similar areas. Like vegetation, the affected environment for wetlands includes only those areas potentially subject to ground disturbance. Additionally, EO 11990 extends to non-jurisdictional wetlands. In accordance with EO 11990, construction within wetlands shall be avoided, where practicable. Actions that include construction in a wetland or a floodplain require a Finding of No Practicable Alternative be prepared and approved by Headquarters AMC. All appropriate permits must be obtained from applicable regulatory agencies to address impacts on wetland areas and floodplains and to determine potential mitigation, if required.

3.4.2 Existing Conditions

The affected environment for water resources includes the areas within and immediately surrounding the Proposed Action located on Travis AFB, as well as areas downstream of those parcels.

3.4.2.1 Groundwater

Travis AFB is located within the Suisun-Fairfield Valley Groundwater Basin encompassing an area of 133,600 acres underlying the central portion of Solano County. Thick sequences of highly impermeable, marine sedimentary rock underlying the basin are classified as non-water bearing. Water yields from the basin are generally low and of poor quality (California Groundwater Bulletin 2014). Consequently, the majority of potable water supplied to the cities of Vallejo, Fairfield, and Suisun City is imported from Lake Berryessa Reservoir, located approximately 20 miles northwest of Travis AFB in nearby Napa County, and the North Bay Aqueduct (Solano County Water Agency 2016b).

Travis AFB is not underlain by extensive water-bearing materials, as shown by the absence of major water supply wells near the base and the presence of extensive well fields to the northeast and west. However, there are wells 5 miles to the north of base on Cypress Lakes Golf Course that account for approximately 10 percent, or 75 million gallons, of potable water supply annually (Travis AFB 2016a). Groundwater occurs at the base in shallow deposits and flows south of the base into the Suisun Marsh, to Suisun Bay, and ultimately into the San Francisco Bay, generally following the surface topography. Recharge to the shallow groundwater table is from the foothills of Cement Hill to the north, in channel infiltration from the draining area of nearby creeks (Union Creek, Denverton Creek, and smaller unnamed creeks northwest of the base), and through direct precipitation (Travis AFB 2016a).

Over 4 million gallons per month of groundwater extracted from contaminated groundwater plumes under Travis AFB are treated and discharged to Union Creek pursuant to two interim Groundwater Records of Decision with the USEPA, the California Department of Toxic Substances Control, and the San Francisco

Bay Regional Water Quality Control Board. This treated groundwater supplements the flow of the eastern branch of Union Creek (Travis AFB 2016a, 2017).

3.4.2.2 Surface Water

Solano County has over 150 miles of delta sloughs, channels, and bays, including the Suisun and Montezuma Sloughs; the Suisun, Honker, and Grizzly Bays; and Suisun Marsh (Solano County Water Agency 2016c). Travis AFB is located in the northeastern portion of the Fairfield-Suisun Hydrologic Basin. Within this basin, water generally flows south to southeast toward Suisun Marsh, a 116,000-acre contiguous brackish water marsh, the largest remaining on the west coast of North America. Suisun Marsh drains into Grizzly and Suisun Bays; water from these bays flow through the Carquinez Strait to San Pablo Bay and San Francisco Bay, and ultimately into the Pacific Ocean (Solano County Water Agency 2016c).

Travis AFB lies in the southern portion of the Union Creek watershed. The headwaters of Union Creek are located approximately 1-mile north of the base, near the Vaca Mountains, where the creek is an intermittent stream. Union Creek splits into two branches north of the base and enter at storm water inlets A1 and A2. There are eight sub-watersheds delineated within the installation that comprise the majority of surface water flow on base. Several other minor drainages flow onto and off the installation as sheet flow during a storm event or from irrigation return flow from adjacent agricultural lands (Travis AFB 2017). Travis AFB has defined Outfalls I through VI and B1 through B7 (eight total outfalls) that correspond with the eight sub-watersheds. Four of these outfalls are associated with industrial discharge leaving the facility in quantities sufficient to form a measurable waterway during a storm event. These permitted outfalls are defined as Outfalls I, VI, B2, and B3. Union Creek accepts the vast majority of the storm water exposed to industrial activities (Travis AFB 2017).

As noted above, surface water from Travis AFB discharges to the south, flowing into Union Creek, several swamps, marshy areas, and troughs before discharging into Hill and Loco Sloughs. The USEPA has grouped these waterways into the Suisun Marsh Wetlands Impairment. California has evaluated several of these waterways and found them impaired from mercury, nutrients, low dissolved oxygen, and total dissolved solids/chlorides. Further studies are being conducted by the state to determine if total maximum daily loads will be implemented (Travis AFB 2017). Based on the California 2014/2016 Clean Water Act Section 303(d) listing (the latest report available), no total maximum daily loads are associated with the base or these watersheds (California State Water Resources Control Board 2017).

For Travis AFB, CWA requirements are administered by the State Water Resources Control Board, and enforced by Region 2—the San Francisco Bay Regional Water Quality Control Board. Travis AFB is on record with a Notice of Intent to comply with the requirements of the California General Industrial Activities Storm Water Permit (CAS000001). The base manages storm water runoff with its Storm Water Pollution Prevention Plan, which outlines engineering and management strategies designed to enhance the quality of the base's storm water discharges, especially releases related to industrial and construction activities (Travis AFB 2017).

The affected environment lies within Drainage Areas 2 and 6; rainwater from high rain events in these areas typically flows off parking areas and roads, into roadside ditches, and ultimately discharges into the West Branch of Union Creek (Figure 3.4-1). This branch eventually exits at Outfall 2 into the main portion of Union Creek at the south end of the base.

3.4.2.3 Floodplains

The affected environment is not located within the 100-year floodplain and the majority of Travis AFB (including the affected environment) is outside the 500-year floodplain. Although Union Creek has crested its banks during heavy rains, it is in the southwest corner of the base where Union Creek leaves the base and not found within the affected environment (Travis AFB 2016a). Because the Proposed Action does not occur within the 100-year floodplain, this aspect of water resources is not analyzed further.

3.4.2.4 Wetlands and Other Waters of the United States

Jurisdictional delineations were conducted during September and November of 2010 within the affected environment. These surveys were conducted in accordance with USACE's 1987 Wetland Delineation Manual (USACE 1987) and the Arid West Regional Supplement (USACE 2008). However, since that time, Travis AFB recently conducted updated jurisdictional delineations for wetlands and vernal pools in 2014 and again in 2016. The updated delineations are shown in Figure 3.4-1.

Although no aquatic features occur within the project site, a complex of 9 shallow (<12 inches) vernal pools and a wetland swale occur outside of the northeast boundary of the project site, within the 250-foot ROI buffer (Figure 3.4-1). The 9 vernal pools and single wetland swale within the 250-foot ROI buffer comprise approximately 45,511 square feet (1.04 acres) of vernal pool and wetland habitat (Table 3.4-1).

Table 3. Aquatic Features in the Action Area

Aquatic Habitat ID	Square Feet (Acreage) in Action Area*
Vernal Pools	
VP.CA.662	14,124 (0.32)
VP.CA.663	3,696 (0.08)
VP.CA.664	14,827 (0.34)
VP.CA.665	2,520 (0.06)
VP.CA.666	3,985 (0.09)
VP.CA.777	899 (0.02)
VP.CA.778	3,268 (0.08)
VP.CA.779	635 (0.01)
VP.CA.780	289 (0.01)
Subtotal	**44,243 (1.01)**
Wetland Swale	
WS.CA.708	**1,268 (0.03)**
Fresh Water Marsh	
FM.CA.739	**21,407 (0.49)**
TOTAL	**66,918 (1.53)**

*Note: *For vernal pools and the wetland swale, the entire areas of individual features are included here, even those features that are only partially in the Action Area.*

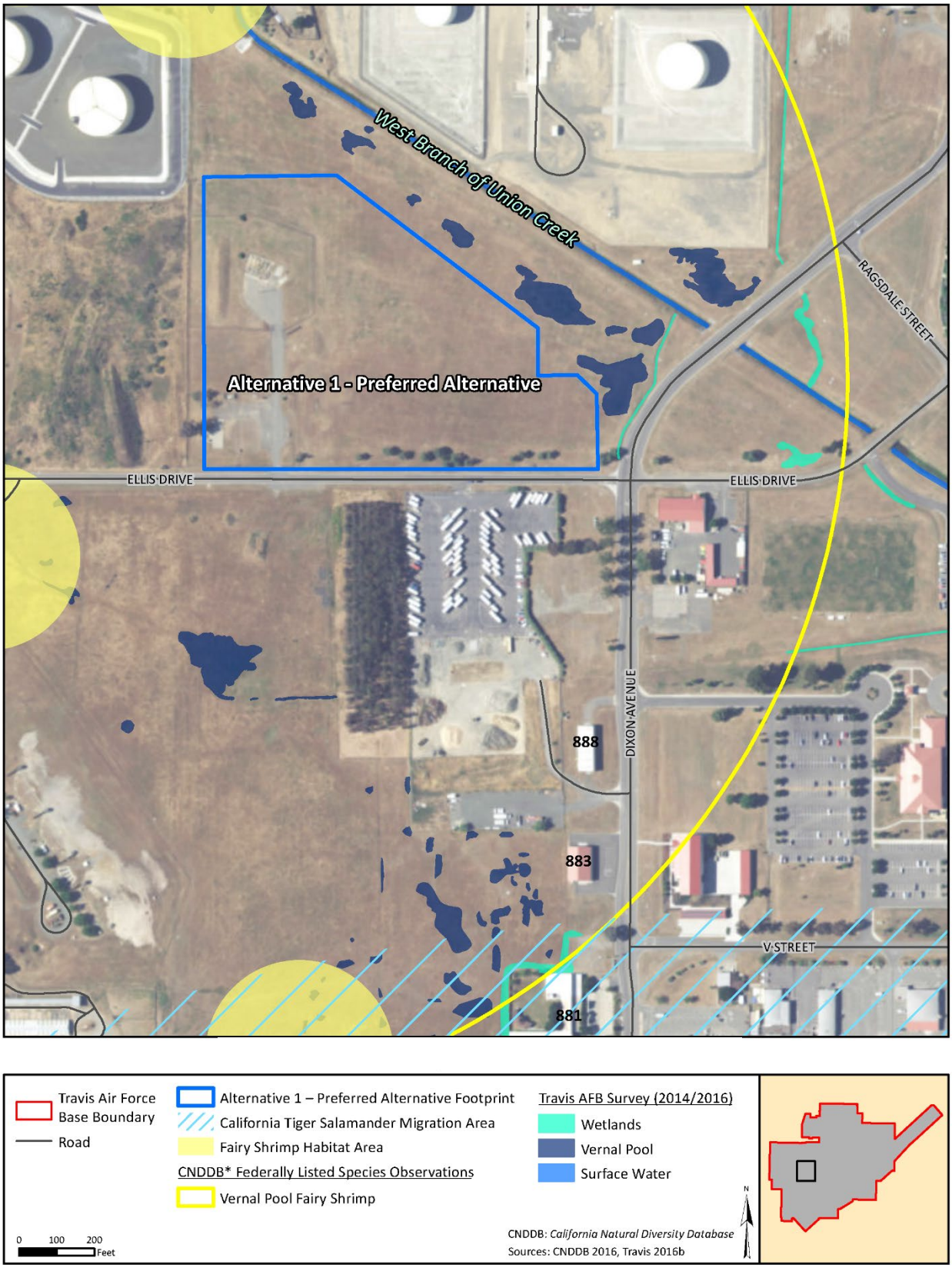

Figure 3.4-1. Water and Biological Resources in the Affected Environment

3.5 Biological Resources

3.5.1 Definition of the Resource

Biological resources include plant and animal species and the habitats within which they occur. Plant associations are generally referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall et al. 1997). Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. This analysis focuses on species or vegetation types that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute. For purposes of this analysis, these resources are divided into three major categories: vegetation, wildlife, and special status species.

Vegetation types include all existing terrestrial plant communities as well as their individual component species. The affected environment for vegetation includes only those areas potentially subject to ground disturbance.

Wildlife generally includes all fish, amphibian, reptile, bird, and mammal species with the exception of those identified as special status species, which are treated separately.

Special status species are those species officially listed as endangered or threatened, or any species that is a candidate for listing as endangered or threatened under the ESA; California-listed threatened, endangered, or rare species; and/or California Department of Fish and Wildlife fully protected species or species of concern in addition to any species afforded federal protection under the Migratory Bird Treaty Act and/or the Bald and Golden Eagle Protection Act.

Endangered Species Act. The purpose of the ESA is to conserve the ecosystems upon which threatened and endangered species depend and to recover listed species. Section 7 of the ESA requires action proponents to consult with the USFWS or National Oceanic and Atmospheric Administration Fisheries to ensure that their actions are not likely to jeopardize the continued existence of federally listed threatened and endangered species, or result in the destruction or adverse modification of designated critical habitat. The USFWS has primary responsibility for terrestrial and freshwater organisms, while the responsibilities of National Oceanic and Atmospheric Administration are mainly marine wildlife such as whales and anadromous fish such as salmon. Under the ESA, species may be listed as either endangered or threatened. "Endangered" means a species is in danger of extinction throughout all or a significant portion of its range. "Threatened" means a species is likely to become endangered within the foreseeable future. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened (USFWS 2016).

Migratory Bird Treaty Act. Most birds are protected under the Migratory Bird Treaty Act, and their conservation by federal agencies is mandated by EO 13186 (*Responsibilities of Federal Agencies to Protect Migratory Birds*). Under the Migratory Bird Treaty Act, it is illegal for anyone, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, [or] possess migratory birds or their nests or eggs at any time, unless permitted by regulation. Under EO 13186, each federal agency taking actions that have, or are likely to have, a measurable negative effect on migratory bird populations is directed to develop and implement a Memorandum of Understanding with the USFWS that promotes the conservation of migratory bird populations.

In July 2006, the DoD and USFWS signed the Memorandum of Understanding to promote the conservation of migratory birds. In it, specific activities were identified (e.g., Partners in Flight and Integrated Natural

Resources Management Plans) where cooperation between the two agencies will contribute to the conservation of migratory birds and their habitats. In February 2007, 50 CFR § 21.15 authorized the take incidental to military readiness activities. It states that the Armed Forces may take migratory birds incidental to military readiness activities provided that, for those ongoing or proposed activities that the Armed Forces determine may result in a significant adverse effect on a population of a migratory bird species, the Armed Forces must confer and cooperate with the USFWS to develop and implement appropriate conservation measures to minimize or mitigate such significant adverse effects. Military readiness activities, as defined in Public Law 107-314, section 315(f) in the 2003 National Defense Authorization Act, includes all training and operations of the Armed Forces that relate to combat, and the adequate and realistic testing of military equipment, vehicles, weapons, and sensors for proper operation and suitability for combat use.

*Bald and Golden Eagle Protection Act***.** Bald and golden eagles are protected by this act. It prohibits anyone, without a permit issued by the Secretary of the Interior, from taking eagles, including their parts, nests, or eggs. The act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb. “Disturb” means: “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (16 U.S.C. §§ 668-668c).

3.5.2 Existing Conditions

The affected environment for biological resources consists of lands that could be affected by the Proposed Action, primarily the parcel proposed for the BCE Complex located on base, and the ROI, which consists of those areas where biological resources could be directly or indirectly impacted by project activities (runoff, noise, etc.). For the purpose of this analysis, the ROI consists of a 250-foot buffer around the project area. The description of biological resources presented below is based on information in the Travis AFB Integrated Natural Resources Management Plan (INRMP) (Travis AFB 2016a) and biological surveys that were conducted in support of this SEA.

The BCE Complex Alternative 1 site is a 14.2-acre parcel that consists of non-native, annual grassland with a row of ornamental trees that border Ellis Drive. The grassland portion of the site is regularly mowed. The western portion of the site is composed of paved staging areas that are used by the Environmental Restoration Program for groundwater remediation. The southwest corner of the project site slopes downhill toward the West Branch of Union Creek; representing an approximate 20-foot elevation shift within the site. The majority of land cover within the 250-foot ROI buffer is mowed, non-native grassland, paved roads, and other disturbed and/or impervious surfaces.

3.5.2.1 Vegetation and Wildlife

Annual Grassland Community

The annual grassland community occurs in uplands dominated by introduced annual grasses that are associated with agricultural practices, along with occurrences of non-native and native wildflowers and weedy forbs. This community is dominated by grass species such as slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft brome (*Bromus hordeaceus*), salt grass (*Distichlis spicata*), Mediterranean barley (*Hordeum marinum*), and Italian ryegrass (*Festuca perennis*).

Wildlife typically encountered in this area includes jackrabbit (*Lepus californicus*), California ground squirrel (*Otospermophilus beecheyi*), deer mouse (*Peromyscus maniculatus*), western fence lizard (*Sceloporus occidentalis)*, gopher snake (*Pituophis melanoleucus*), and a variety of birds including house sparrow (*Passer domesticus*), red-winged black bird (*Agelaius phoeniceus*), and ring-necked pheasant (*Phasianus colchicus*).

Vernal Pool Community

Vernal pools are vegetated by annual plants characteristic of northern claypan soil (Sawyer and Keeler-Wolf 1995) and are composed of shallow depressions or small, shallow pools that fill with water during the winter rainy season. Vernal pools begin drying out during the spring and are completely dry during the summer. Most vernal pools on the base are northern claypan, which occur on deep alluvial soils. Vernal swales are ecologically and floristically similar to vernal pools, and are found on the base. Vernal swales consist of drainage ways or poorly defined depressions that are seasonally inundated for relatively short periods (Travis AFB 2016a). Vernal pools have developed an ecologically unique flora that has evolved to tolerate the wetting and drying cycle.

Vernal pools are an important community for multiple federally listed species on Travis AFB, such as Contra Costa goldfields (CCG) (*Lasthenia conjugens*), vernal pool fairy shrimp (VPFS) (*Branchinecta lynchi*), and vernal pool tadpole shrimp (VPTS) (*Lepidurus packardi*). Common vernal pool plant species include ripgut brome, wild oat, Italian ryegrass, filaree (*Erodium* spp.), annual hairgrass (*Deschampsia danthonioides*), maroonspot calicoflower (*Downingia concolor*), and stalked popcornflower (*Plagiobothrys stipitatus*).

3.5.2.2 Special Status Species

A list of special status species that potentially occur in the affected environment was compiled from the results of previous studies conducted at the base, the California Natural Diversity Database (2017), and the USFWS Information for Planning and Conservation website (USFWS 2017a). Additionally, rare plant surveys (Cardno 2017a) and a CTS habitat assessment (Cardno 2017b) were conducted in the proposed project area in support of this SEA. Table 3.5-1 identifies 19 special-status species (6 plants and 13 animals) potentially occurring in the affected environment. Federally protected species with the potential to occur in the ROI are described below.

Table 3.5-1. Special Status Species that May Occur on Travis AFB

Scientific Name	Common name	Protection Status	Presence in ROI?	Critical Habitat Present?
Plants				
Gratiola heterosepala	Boggs Lake hedge hyssop	CE/CNPS 1B.2	No	NA
Neostapfia colusana	Colusa grass	FT/CE/CNPS 1B.1	No	No
Lasthenia conjugens[1]	Contra Costa goldfields	FE/CNPS 1B.1	Yes, inside of ROI, outside of project footprint	No
Tuctoria mucronata	Crampton's tuctoria	FE/CE/CNPS 1B.1	No	No
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	FT/CE/CNPS 1B.1	No	No

Table 3.5-1. Special Status Species that May Occur on Travis AFB

Scientific Name	Common name	Protection Status	Presence in ROI?	Critical Habitat Present?
Trifolium amoenum	Showy Indian clover	FE/CNPS 1B.1	No	No
Animals				
Agelaius tricolor	Tricolored blackbird	CSSC	Potential	NA
Aquila chrysaetos	Golden eagle	BGEPA	Potential	NA
Athene cunicularia	Burrowing owl	CSSC	Potential	NA
Buteo swainsonii	Swainson's hawk	ST	Potential	NA
Rana draytonii	California red-legged frog	FT/CSSC	No	No
Ambystoma californiense[1]	California tiger salamander	FT/CT	Potential upland habitat, however ROI is surrounded by urban development with existing artificial and natural barriers to dispersal from nearest breeding ponds, therefore extremely low risk of presence in ROI	No
Actinemys marmorata	Western pond turtle	CSSC	No	NA
Thamnophis gigas	Giant garter snake	FT/CT	No	No
Desmocerus californicus dimorphus	Valley elderberry longhorn beetle	FT	No	No
Elaphrus viridis	Delta green ground beetle	FT	No	No
Branchinecta conservatio	Conservancy fairy shrimp	FE	Not known to occur on-base	No
Branchinecta lynchi	Vernal pool fairy shrimp	FT	Presence is assumed in all suitable natural and non-natural vernal basins	No
Lepidurus packardi	Vernal pool tadpole shrimp	FE	Presence is assumed in all suitable natural and non-natural vernal basins	No

Sources: California Natural Diversity Database 2017; DoD 2016; Travis AFB 2011b; USFWS 2017a.
Notes: [1]Updated surveys for this species are being conducted in 2017
NA = Not Applicable; BGEPA = Bald and Golden Eagle Protection Act; CE = California Endangered; CNPS = California Native Plants Ranking System; CSSC = California Species of Special Concern; CT = California Threatened; FE = Federal Endangered; FT = Federal Threatened; ST = Special Status; 1B.1 = Rare or endangered in California and elsewhere; seriously threatened in California; 1B.2 = Rare or endangered in California and elsewhere; fairly threatened in California

Contra Costa Goldfields

The Contra Costa Goldfields (CCG) is an annual plant species that occurs in vernal pools and mesic grasslands in Napa and Solano counties. Primary threats to vernal pool habitat include direct and indirect impacts from development activities such as land use changes, off-highway vehicle use, inappropriate livestock grazing, and road widening (*Federal Register* 59 FR 65311, USFWS, December 19, 1994). Vernal pools are ephemeral in nature, and changes in hydrologic conditions, particularly changes resulting in permanent saturation or premature drying of the vernal pools, will result in permanent destruction of these plants and associated habitat (*Federal Register* 59 FR 65311, USFWS, December 19, 1994).

No rare plant species were observed in the project footprint in project-specific surveys conducted in 2017 (Cardno 2017a). Although no vernal pools or populations of CCG occur within the project footprint, there is one historic occurrence of CCG in a vernal pool (VP.CA.666) within the 250-foot ROI of the Proposed Action, approximately 175 feet north of the project footprint (see Figure 3.4-1). The vernal pool with the historic occurrence of CCG is approximately 3,985 square feet (0.09 acre) in size (see Table 3.4-1).

California Tiger Salamander

An analysis of CTS risk assessment areas on Travis AFB was conducted in support of the *Programmatic Biological Assessment: Effects of Activities Conducted at Travis Air Force Base, California, on Six Federally Threatened and Endangered Species* (Travis AFB 2017). Based on the analysis, the portion of Travis AFB where the BCE Complex ROI occurs is considered a "low risk" area for CTS. Low risk areas are those furthest from known breeding ponds with heavy development and little potential aestivation habitat (Travis AFB 2017). Therefore, the Proposed Action would have no impact on the California tiger salamander, and the species is not analyzed further in this SEA.

Vernal Pool Fairy Shrimp

Vernal Pool Fairy Shrimp (VPFS) occur on Travis AFB in seasonally inundated habitats (continuously or sporadically between the autumn onset and spring termination of rain) that are not subject to strong flow (Travis AFB 2016b). Although characteristically inhabiting vernal pools, fairy shrimp can also live in temporary surface waters, not considered vernal pools, such as swales, ponded ditches, and seasonal ponds. Primary threats to the survival of VPFS and associated species are loss of ephemeral aquatic systems such as vernal pools from development activities, recreational impacts, inappropriate grazing, hydrological modifications, degradation of water quality, and introduction of predators (Travis AFB 2016b).

VPFS have been found in 45 wetland features, totaling 8.9 acres, on Travis AFB (Travis AFB 2017). Although surveys for VPFS were not conducted in support of this Proposed Action, Travis AFB assumes presence of VPFS in all seasonally ponded wetland features. Therefore, it is assumed that the 9 vernal pools, totaling approximately 44,243 square feet (1.02 acres), in the project ROI (see Figure 3.4-1 and Table 3.4-1) are suitable habitat for VPFS.

Vernal Pool Tadpole Shrimp

The Vernal Pool Tadpole Shrimp (VPTS) occurs in a wide variety of seasonally inundated habitats including vernal pools, clay flats, ephemeral stock ponds, and roadside ditches. VPTS are known to occur in much of the undeveloped areas surrounding Travis AFB, but the species is not known to occur on the main base of Travis AFB (Travis AFB 2017). VPTS have been found on one of the Geographically Separated Units, the Northern Railroad Right-of-Way, and just off base near the Meridian Gate on the eastern base boundary. Habitat destruction, degradation, and fragmentation are the primary threats to VPTS, primarily through agricultural conversion and urban development, as well as by altered hydrology and inappropriate land management (USFWS 2007).

Although surveys for VPTS were not conducted in support of this BA, Travis AFB assumes presence of VPTS in all seasonally ponded wetland features. Therefore, it is assumed that the 9 vernal pools, totaling approximately 44,243 square feet (1.02 acres), in the project ROI (see Figure 3.4-1 and Table 3.4-1) are suitable habitat for VPTS.

Burrowing Owls

No burrowing owls were found within the affected environment as evidenced through habitat surveys conducted from October 2010 through August 2011 (Travis AFB 2011a). Several ground squirrels were identified, presenting potential habitat for the burrowing owl.

Migratory Birds

The USAF and Partners in Flight developed a checklist of birds, which identifies 153 bird species that occur or have the potential to occur on base (DoD 2016). To support conservation, the base monitors for resident and transient migratory birds to determine population trends in association with habitat management; protects the remnant natural habitats that support migratory birds; and develops management strategies for high priority species designated in the Partners in Flight Landbird Conservation Plan (Rosenberg *et al*. 2016).

3.6 Socioeconomic Resources

3.6.1 Definition of the Resource

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Economic activity typically includes employment, personal income, and industrial growth.

CEQ regulations implementing NEPA state that when economic or social effects and natural or physical environmental effects are interrelated, these effects on the human environment should be discussed (40 CFR § 1508.14). The CEQ regulations further state that the "human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment." In addition, 40 CFR § 1508.8 states that agencies need to assess not only direct effects, but also indirect effects such as "aesthetic, historic, cultural, economic, social, or health" effects.

3.6.2 Existing Conditions

The ROI for socioeconomics includes Travis AFB, as well as Solano County, in which the Proposed Action is located. Travis AFB is located within the city of Fairfield in Solano County, California. Suisun City is also located near the base. The ROI examined with regard to socioeconomics includes Solano County and, where appropriate, the cities of Fairfield and Suisun City. Socioeconomic data are presented at the county and state level to analyze baseline socioeconomic conditions in the context of regional, and state, trends. Data were collected from federal, state, and local agencies (e.g., U.S. Census Bureau [USCB], *Bureau of Labor Statistics*) and from state and national databases (e.g., U.S. Bureau of Economic Analysis' Regional Economic Information System, Association of Bay Area Governments Projections).

3.6.2.1 Population

Solano County is one of 58 counties in California and ranks 46th in total land area. Based on the 2010-2014 American Community 5-Year Survey Estimates, the population of Solano County was approximately 421,624 (USCB 2015). Travis AFB is located in a growing part of the San Francisco Bay Area. By 2040, the population of the Bay Area is expected to increase by approximately 32 percent (Association of Bay Area Governments Projections 2016). Fairfield is the second most populated city in Solano County, with a 2014 population of 107,983, while Suisun City, with a 2014 population of 28,627 ranks fourth. Together, Fairfield and Suisun City comprised approximately 32.4 percent of the county's total population in 2014. Table 3.6-1 summarizes local, state, and national population trends for 1990, 2000, 2010, and 2014.

Table 3.6-1. Population Overview (1990-2014) Solano County California

Year	Solano County	California	USA
1990	340,421	29,760,021	248,709,873
2000	394,542	33,871,648	281,421,906
2010	413,344	37,253,956	308,745,538
2014	421,624	38,066,920	314,107,084

Source: USCB 1990, 2000, 2010, and 2015.

3.6.2.2 Employment

Table 3.6-2 summarizes employment, per capita personal income, and average earnings per job for the region and nationally. Employment levels in Solano County have increased over 14 years, experiencing a cumulative gain of 24,057 jobs (a 12.6 percent increase) between 2000 and 2014. In contrast, the county's military sector experienced a net loss of 1,480 jobs (a 22.3 percent decrease) during the same period. Overall job growth in Solano County between 2000 and 2014 was 12.6, which was less than the nation at 14.5 percent and less than California which was 19.6 percent (USCB 2000, 2015).

Table 3.6-2. Job Growth and Earnings for Solano County, California, and the United States from 2000 to 2014

	2000	2014	Difference	Percentage
Employment				
Solano County	190,243	214,300	24,057	12.6
Military	6,648	5,168	-1,480	22.3
California	15,977,879	19,108,876	3,130,997	19.6
Nation	138,820,935	158,965,511	20,144,576	14.5
Per Capita Personal Income				
Solano County	$21,731	$29,132	$7,401	34.1
California	$22,711	$29,906	$7,195	31.7
Nation	$21,257	$28,555	$7,298	34.3
Average Earnings Per Job				
Solano County	$62,932	$80,797	$17,865	28.4
California	$64,725	$87,087	$22,362	34.5
Nation	$56,604	$76,303	$19,699	34.8

Source: USCB 2000, 2015.

Per capita personal income in Solano County in 2014 was $29,132, 2.7 percent less than per capita personal income for the state of California at $29,906 and 2.0 percent higher than the national average of $28,555. The 2014 per capita personal income in Solano County increased by 34.1 percent from the 2000 level, a slightly higher growth rate than California at 31.7 percent, and a slightly lower rate than found in the nation at 34.3 percent (USCB 2000, 2015). Average earnings per job increased by 28.4 percent in Solano County between 2000 and 2014, a lower rate than California of 34.5 percent and the nation of 34.8 percent (USCB 2000, 2015).

3.6.2.3 Work Force and Unemployment

Employment data for Solano County shows a decrease in unemployment between February 2015 and February 2016, from 6.6 to 5.6 percent. However, similar decreases were experienced in California (6.9 to 5.7 percent) and the U.S. (5.8 to 5.2 percent) (Bureau of Labor Statistics 2016).

3.6.2.4 Travis Air Force Base

Travis AFB has a total work force of approximately 13,414, including 7,200 active duty; 3,096 reserve military; 1,828 civil service; and 1,290 other civilians/contractors (Travis AFB 2013). Total payroll in fiscal

year 2013 exceeded $758 million, with approximately $552 million for active duty and reserve, $155 million for Appropriated Fund Civilian, and $19.2 million for Non-Appropriated Fund and Army and Air Force Exchange Services, $28.2 million for Non-Appropriated Fund Corporation/Contract personnel, and $2.7 million for private businesses on base. Total Travis AFB economic impacts to Solano County are estimated at over $1.3 billion (Travis AFB 2013).

3.7 Cultural Resources

3.7.1 Definition of the Resources

Cultural resources represent activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. Depending on their conditions and historic use, these resources may provide insight to living conditions in previous civilizations and may retain cultural and religious significance to modern groups. Archaeological resources comprise areas where prehistoric or historic activity measurably altered the environment or deposits of physical remains (e.g., arrowheads, bottles) discovered therein. Architectural resources include standing buildings, districts, bridges, dams, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for inclusion in the National Register of Historic Places (NRHP), an inventory of culturally significant resources identified in the U.S. However, more recent structures, such as Cold War-era resources, may warrant protection if they are of exceptional significance.

Traditional cultural resources or properties can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native American tribes or other groups consider essential for the persistence of traditional culture. Traditional cultural properties are defined under the NHPA as “those beliefs, customs, and practices of a living community of people that have been passed down through the generations. A traditional cultural property can be included in the NRHP because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community.” Tribal cultural resources are defined under CEQA as either “sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are included in the state register of historic places or local register of historic resources, or that are determined to be eligible for inclusion in the state register or resources that have been determined by the lead agency to be significant on the criteria for listing in the state register of historic places.” Although they are very similar, tribal resources are only associated with Native American tribes in California and traditional cultural properties may be associated with any group.

Cultural resources are governed by federal laws and regulations, including the NHPA, Archeological and Historic Preservation Act, American Indian Religious Freedom Act, Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1990. Federal agencies’ responsibility for protecting historic properties is defined primarily by sections 106 and 110 of the NHPA.

Section 106 of the NHPA, as implemented by 36 CFR § 229, requires federal agencies to consider the effects of their actions on historic properties before undertaking a project. Section 110 requires federal agencies to establish—in conjunction with the Secretary of the Interior—historic preservation programs for the identification, evaluation, and protection of historic properties. Cultural resources also may be covered by state, local, and territorial laws. A historic property is defined as any building, site, structure, object, or district that is included in, or eligible for inclusion in, the NRHP. The NRHP is the official inventory of the nation’s historic properties. The NRHP also includes National Historic Landmarks. In consideration of 36

CFR § 229, federal agencies are required to initiate consultation with the SHPO and interested parties to define the proposed action, its potential effects on significant cultural resources, and the means to avoid, minimize, or mitigate effects on historic properties.

For the USAF, the Integrated Cultural Resources Management Plan provides guidance and establishes standard operating procedures for the management of historic properties on their installations in compliance with sections 106 and 110 of the NHPA, as well as with other federal laws, and DoD and Navy instructions and policies on the management of cultural resources.

California Assembly Bill 52 established a formal consultation process for California tribes as part of the CEQA process and a new category of cultural resources "tribal cultural resources." Based on Assembly Bill 52, lead agencies are required to offer Native American tribes with interest in tribal cultural resources within its jurisdiction the opportunity to consult on CEQA documents. This new procedure gives the Native American tribes the opportunity to take an active role in the CEQA process in order to protect tribal cultural resources. The Native American tribes must request consultation within 30 days upon receipt of notice of the project so the lead agency has time to consult with them.

3.7.2 Existing Conditions

The APE for cultural resources is those areas likely to be affected by the construction of the BCE Complex (see Figure 2-1).

3.7.2.1 Archaeological Resources

Travis AFB has been completely surveyed for cultural resources and no known NRHP-eligible sites have been located to date. Nine archaeological sites have been recorded at Travis AFB. These include two prehistoric lithic sites, six historic farmsteads, and portions of the Leisure Town Road that date to the early 20th century. The two prehistoric sites were removed, one through mitigation measures and the other through disturbance. The six farmsteads were all considered not eligible for listing in the NRHP and the California SHPO concurred on July 29, 1996 (Travis AFB 2016c). The portion of the Leisure Town Road on Travis AFB was recommended not eligible; the California SHPO concurred with the USAF finding on June 26, 2014 (Travis AFB 2016c). None of these sites is located within the APE.

In an effort to provide an overview for use in the ongoing government-to-government consultation, Travis AFB developed site sensitivity models for both surface and subsurface archaeological deposits at the main base and the outlying facilities managed by the base (Meyer 2017). The surface sensitivity model used the following factors: proximity to freshwater, slope, and landform age. These factors have been used to correlate site distributions in Solano County and more broadly, in Central California. Based on the surface sensitivity model, the surface site potential was "Highest" in approximately 8.8 percent (~467 acres) and "High" in 48 percent (~2,530 acres) within the study area. There was also a "Moderate" potential for surface sites in a little more than one-quarter (28.2 percent) and approximately 15 percent (~811 acres) have a "Low" or "Lowest" potential within the study area. The two main areas with the highest site potential occurred within the main base, one located along the former channel Union Creek near the central part of the main runway, and the other is located along the middle tributary of Union Creek (Meyer 2017).

The factors used for the buried site sensitivity model included proximity to water and the age of landforms. It was assumed that buried sites are more likely to be located beneath younger landforms. The majority of the study area was considered "Low" to "Lowest" potential for buried sites with approximately 5,300 acres (99.7 percent). This reflects the age of the surface landforms which are mostly Pleistocene in age. Fewer

than 16 acres (0.3 percent) have a "Moderate" or "High" potential for buried sites and no "Highest" potential zones were identified. Therefore, the potential for buried prehistoric sites is restricted to very small portions of Travis AFB and the associated facilities (Meyer 2017).

3.7.2.2 Architectural Resources

Three architectural surveys have been conducted at Travis AFB for buildings that dated between 1943 and 1991. Out of the 271 buildings evaluated, 28 buildings have been determined eligible for listing in the NRHP with SHPO concurrence. The remaining 243 buildings were determined not eligible for listing in the NRHP (Travis AFB 2016c). There are no eligible or potentially eligible buildings located within the APE.

3.7.2.3 Traditional Cultural Properties and Tribal Cultural Resources

No traditional cultural properties or sacred sites have been identified at Travis AFB (Travis AFB 2016c). According to state and federal regulations, consultation was requested in letters sent on April 6, 2017, to two federally recognized tribes: Yocha Dehe Wintun Nation and Cortina Indian Rancheria of Wintun Indians of California. On May 1, 2017, the Cortina Indian Rancheria of Wintun Indians of California verbally indicated that they had no issues with the Proposed Action. On May 11, 2017, a follow-up letter was sent to both Tribes. The letter to the Cortina Indian Rancheria acknowledged that they had verbally expressed to the Air Force that they had no concerns with the Proposed Action. The letter to the Yocha Dehe reiterated the description of the Proposed Action and included a copy of the Geoarchaeological Overview and Site Sensitivity Assessment, which found that there is an extremely low probability for the existence of ground-surface or buried archaeological deposits on Travis AFB due to the amount of ground disturbance over the years and the geologic history of the location. On June 1, 2017, at the request of the Yocha Dehe, the Air Force met with the Tribe and visited the Proposed Action site. Verbally, the Tribe indicated that they had no concerns with the BCE Proposed Action (Appendix B provides a summary of the site visit and correspondence).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Introduction

Environmental impacts resulting from construction and operation of the consolidated BCE Complex at Travis AFB are evaluated in this section. Impact analyses are presented by resource area, as described in Section 3, Affected Environment. Analyses for the Proposed Action are presented for Alternative 1 (the Preferred Alternative) and the No-Action Alternative. Cumulative impacts for each resource are presented in Section 4.9. Section 4.10 presents Unavoidable Adverse Impacts, Relationship Between Short-term Uses and Enhancement of Long-term Productivity, and Irreversible and Irretrievable Commitment of Resources.

4.2 Air Quality, Greenhouse Gas Emissions, and Climate Change Adaptation

4.2.1 Methodology

Localized construction emissions are the primary air quality issue associated with the Proposed Action. All of the construction that would occur under the Proposed Action involves construction and other heavy equipment operating within Travis AFB.

4.2.1.1 Thresholds of Significance

Construction Emissions

The following measures shall be implemented prior to construction under the Proposed Action:

- Contractor special purpose construction diesel fueled equipment and/or in-use off-road diesel fueled vehicles rated equal or greater than 25 horsepower shall be registered with the California Air Resources Board prior to operate on Travis AFB. [13 CCR 2449]
- Contractor portable diesel-fueled internal combustion engines rated equal or greater than 50 brake horsepower shall be registered with the California Air Resources Board prior to operate on Travis AFB. [13 CCR 2450]

The BAAQMD adopted thresholds of significance in 2010, but the ruling was challenged and the 1999 guidelines are currently being used (BAAQMD 2014). Therefore, no regulatory thresholds exist for construction-related emissions (BAAQMD 1999). However, best management practices to control fugitive dust would be employed to minimize criteria pollutant emission. These practices may include some or all of the following:

- Water all active construction areas at least twice daily;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard;
- Pave, apply water three times daily, or apply soil stabilizers on all unpaved access roads and parking and staging areas at construction sites;
- Sweep daily (with water sweepers) all paved access roads, parking areas, and staging areas at construction sites; and
- Sweep daily (with water sweepers) if visible soil material is carried onto adjacent public streets.

The following Enhanced Control Measures would be implemented at the construction site (BAAQMD 1999):

- All basic control measures outlined above;
- Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more);
- Enclose, cover, water twice daily, or apply (non-toxic) soil binders to exposed stockpiles (dirt, sand, etc.);
- Limit traffic speeds on unimproved surfaces to 15 miles per hour;
- Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and
- Replant vegetation in disturbed areas as quickly as possible.

In addition, the following Optional Control Measures are strongly encouraged for implementation at large or sensitive construction sites (BAAQMD 1999):

- Install wheel washers for all exiting trucks, or wash off tires or tracks of all trucks and equipment leaving the site;
- Install wind breaks, or plant trees/vegetative windbreaks at windward side(s) of construction areas;
- Suspend excavation and grading activity when winds (instantaneous gusts) exceed 25 miles per hour; and
- Limit the area subject to excavation, grading, and other construction activity at any one time.

Operational Emissions

The BAAQMD provides quantitative thresholds of significance levels to evaluate ongoing operations of proposed projects. These thresholds must consider both direct emissions associated with ongoing project operations, as well as indirect emissions sources such as motor vehicles traveling to and from the project site (BAAQMD 1999). There are several pertinent requirements for evaluating operational emissions under BAAQMD:

- Projects must evaluate localized levels of CO emissions from vehicles that would exceed 550 pounds per day;
- Projects should evaluate the potential for odor impacts;
- Toxic air contaminants should not have a probability of cancer risk of greater than 10 in 1 million nor a hazard index greater than 1 for the maximum exposed individual;
- Acutely hazardous materials should be evaluated for accidental releases; and
- Cumulative impacts should be assessed.

Emissions Thresholds and Permitting

Travis AFB's Synthetic Minor Operating Permit limits the base's potential emission levels to 34 tons per year for emissions of precursor organic compounds [i.e., NO_x and ROGs] and 95 tons per year for all other criteria air pollutants. If the Proposed Action emissions exceed these emissions thresholds, the Proposed Action would be subject to a separate BAAQMD permit. Additionally, a BAAQMD Authority to Construct Permit would be required for construction and the Synthetic Minor Operating Permit may need to be modified if source locations and equipment in the existing permit are changed.

4.2.1.2 Emissions Calculation Methodology

Construction and operations emissions were calculated using the Air Force's Air Conformity Applicability Model (ACAM). The ACAM is used to perform analyses to assess potential air quality impact/s in

accordance with the Air Force Manual 32-7002, Environmental Compliance and Pollution Prevention; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B).

4.2.2 Impacts

4.2.2.1 Alternative 1 (Preferred Alternative)

Construction

Emissions resulting from construction would be temporary and transient, and the short-term exposure levels would be minimal equaling well below 1 ton per year for any criteria air pollutant. None of the air quality standards would be exceeded and would be well below established threshold *de minimis* limits in tons per year as shown in Table 4.2-1 (see Appendix D for details on construction emissions). With implementation of BAAQMD's control measures outlined above, fugitive dust emissions would be well below thresholds of significance. Accordingly, impacts to air quality associated with construction of the BCE complex would be less than significant.

Table 4.2-1. Alternative 1 Construction Emissions (tons per year)

Construction Year	PM_{10}	$PM_{2.5}$	CO	SO_2	NO_x	VOCs	CO_2e
2022	**0.74**	**0.01**	**0.15**	**0.00**	**0.21**	**0.11**	**62**
2023	**0.07**	**0.02**	**0.38**	**0.00**	**0.41**	**0.59**	**114**
2024	**0.41**	**0.02**	**0.43**	**0.00**	**0.50**	**0.01**	**155**
Federal de minimis thresholds	**N/A**	**100**	**N/A**	**100**	**100**	**100**	**N/A**
Less than de minimis	**N/A**	**Yes**	**N/A**	**Yes**	**Yes**	**Yes**	**N/A**

Source: Air Conformity Applicability Model (Appendix D).
Note: [1]$CO_2e = (CO_2 * 1) + (CH_4 * 25) + (N_2O * 298)$, (40 CFR 98, Subpart A, Table A-1) in metric tons per year.

Operations

Emissions resulting from operation of the BCE Complex would be well below the General Conformity de minimis thresholds and below existing operational emissions as a result of the use of new operational equipment in place of the aging, inefficient equipment in use today. Additionally, automobile emissions would be reduced due to concentrating engineering facilities at the proposed BCE complex. Consequently, impacts to air quality associated with BCE operations would be less than significant and there would be no net loss in air quality resulting from operations.

Conformity Determination

All of the emissions projected from either construction (see Table 4.2-1) or operations would fall well below the *de minimis* thresholds for the general conformity rule. As such, a rigorous Conformity Determination is not required.

Greenhouse Gas Emissions

Greenhouse gas emissions for Alternative 1 would be dominated by construction emissions for construction activities during the first year of construction and would be approximately 400 metric tons per year. These emissions are minimal when compared to the overall regional GHG emissions of over 1 million metric tons per year, equaling 0.0004 percent of the regional GHG emissions.

Climate Change Adaptation

According to the USEPA, climate changes in the southwest are predicted to continue to have warming temperatures and reduced snowpack observed in recent decades in the Southwest. Increasing temperatures and more frequent and severe droughts are expected to heighten competition for water resources for use in cities, agriculture, and energy production (USEPA 2016c). Drought, wildfire, invasive species, pests, and changes in species' geographic ranges will increase threats to native forests and ecosystems (USEPA 2016c). Implementation of Alternative 1 would not appreciably add to global climate change due to its relative minor GHG emissions. Additionally, although surrounded by open and agricultural lands and suburban lands to the west, Travis AFB does not partake in agriculture activities except for some grazing and the housing areas would be quite similar to the adjacent suburban areas. As such, the effects of climate change would not have a widespread impact on Travis AFB nor would Alternative 1 be affected by climate change.

As climate science advances and better determines if and how human-generated factors may affect climate, the DoD reevaluates climate change risks and opportunities to develop policies and plans to manage its effects on the operating environment, missions, and facilities. Managing the national security effects of climate change requires the DoD to work collaboratively, through a whole-of-government approach, with local, state, and federal agencies.

4.2.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed construction activities would not occur. Existing air quality conditions (as described in Section 3.2) would remain unchanged; therefore, no impacts to air quality would occur.

4.3 Noise

4.3.1 Methodology

Noise impact analyses typically evaluate potential changes to existing noise environments, which are instigated by implementation of a proposed action. Impacts would be considered significant if they would result in increased noise exposure to unacceptable noise levels. An increase in noise levels due to a new noise source can create an impact on the surrounding environment. Noise associated with the Proposed Action is compared with existing noise to determine the magnitude of potential impacts. See Section 3.3 for discussion on noise sources within the affected environment. Noise contours in the 2009 Travis AFB AICUZ changed since the 2002 Solano County Land Use Compatibility Plan and the impact sections have been revised to reflect the current 2009 AICUZ.

4.3.1.1 Construction

Construction noise is generated by the use of heavy equipment on job sites and short-term in duration (i.e., the duration of the construction period). Commonly, use of heavy equipment occurs sporadically throughout daytime hours. Construction noise varies greatly depending on the construction process, type and condition of equipment used, and layout of the construction site. Overall, construction noise levels are governed primarily by the noisiest pieces of equipment and impact devices (i.e., jackhammers, pile drivers). The Federal Highway Administration noise modeling program, Road Construction Noise Model, was used to determine construction noise levels generated by construction equipment. Typical noise levels from various construction equipment are listed in Table 4.3-1.

Table 4.3-1. Example Noise Levels of Typical Construction Equipment

Equipment Description	Impact Device	Percent Equipment Use Factor	A-weighted Maximum Sound Level at 50 feet (in decibels)	Number of Data Samples
Backhoe	No	40	78	372
Clam Shovel (dropping)	Yes	20	87	4
Compactor (ground)	No	20	83	57
Compressor (air)	No	40	78	18
Concrete Mixer Truck	No	40	79	40
Concrete Saw	No	20	90	55
Crane	No	16	81	405
Dozer	No	40	82	55
Dump Truck	No	40	76	31
Excavator	No	40	81	170
Front End Loader	No	40	79	96
Generator	No	50	81	19
Impact Pile Driver	Yes	20	101	11
Jackhammer	Yes	20	89	133
Pavement Scarifier	No	20	90	2
Paver	No	50	77	9
Roller	No	20	80	16
Scraper	No	40	84	12
Vibratory Pile Driver	No	20	101	44

Source: Federal Highway Administration 2006.

4.3.1.2 Operations

Operational noise includes any activities associated with a particular facility and or noise generated by the physical operation of a facility. Examples of activities relative to the BCE operations would be the shops necessary for maintaining the base including sheet metal shop; heating, ventilation, and air conditioning shop; and vehicle maintenance. Physical operational noise of a facility would be noise sources involved with the actual operation of the facility itself, such as boilers, cooling towers, and emergency generators.

4.3.2 Impacts

4.3.2.1 Alternative 1 (Preferred Alternative)

Construction

Construction of the BCE Complex would generate minor, temporary impacts on the noise environment around the proposed construction site. Use of heavy equipment for site preparation, excavation, and facility construction may potentially generate noise exposure above typical ambient levels adjacent to the BCE Complex footprint. However, noise generation would be typical of construction activities, would last only the duration of construction activities (i.e., 1 year), and could be reduced by using equipment sound mufflers and restricting construction activities to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). No residences are found within 4,000 feet of Alternative 1; however, the David Grant Medical Center and Travis Elementary School (sensitive noise receptors) are both about 3,000 feet from the site. Using Road Construction Noise Model (Federal Highway Administration 2006), noise levels at the medical center and elementary school would be 52 dB CNEL, which would be below the ambient noise levels of approximately

65 dB DNL (the guideline used by the Air Force to assess noise impacts) (see Appendix C for noise calculations). Therefore, noise produced by construction of the BCE Complex would not significantly affect the surrounding noise environment.

Operations

Noise-generating operations at the BCE Complex would be primarily from the occasional shop activities and localized to the shop areas. These activities would be inaudible to the nearest noise sensitive receptors, David Grant Medical Center and Travis Elementary School. Other than the occasional shop noise, the BCE Complex would generate noise levels typical of an office building and as such, operation of the BCE Complex would not generate noise above typical ambient levels in surrounding areas. According to the Travis AFB AICUZ, the west portion of Alternative 1 is located outside the 60 dB CNEL noise contour; however, a small portion (about 2 acres) of the east half of the site is located within the 65 to 60 CNEL noise contour. Operations at the BCE Complex would not alter the noise environment, which is predominated by aircraft operations at the nearby runways (Travis AFB 2009). Therefore, no significant operational noise impacts are expected.

4.3.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed construction activities would not occur. Existing noise environment (as described in Section 3.3) would remain unchanged; therefore, no impacts to the noise environment.

4.4 Water Resources

4.4.1 Methodology

When land is developed, the hydrology, or natural cycle of water, can be altered. Impacts on hydrology can result from land clearing activities, disruption of the soil profile, loss of vegetation, introduction of pollutants, new impervious surface, and an increased rate and/or volume of runoff. Without proper management controls, these actions can adversely affect the quality and/or quantity of water resources.

Criteria for evaluating impacts related to water resources associated with the Proposed Action are water availability, water quality, groundwater recharge, and adherence to applicable regulations. Affects to water resources would be significant if they: 1) adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions; 2) threaten or damage unique hydrologic characteristics; or 3) violate established laws or regulations that have been adopted to protect or manage water resources of an area.

4.4.2 Impacts

4.4.2.1 Alternative 1 (Preferred Alternative)

Groundwater

Construction

Construction of the BCE Complex would result in 8.6 acres of new impervious surface associated with the proposed building footprints and parking areas (as described in Section 2.4.1). Under Alternative 1, the increase in impervious surfaces (8.6 acres) could also result in a decrease in groundwater recharge. The integration of water harvesting and natural open space into project design would further minimize potential adverse impacts due to impervious surface. The use of these features would also increase groundwater

recharge through direct percolation offsetting the loss of pervious surface due to future construction. In addition, in accordance with UFC 3-210-10 and Phase II Small MS4 Permit, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible.

Construction of the BCE Complex would not involve excavating areas within the ERP DP039 contamination area. Therefore, no significant impacts to groundwater are expected to occur. Any construction that involves foundations that would enter groundwater would need to meet federal, state of California (including the *California Sustainable Groundwater Management Act effective on January 1, 2015)*, and other pertinent regulations.

Operations

As there is no change in personnel associated with the Proposed Action, Alternative 1 would not affect the quantity of water available to the installation or to the surrounding areas, nor would it increase the amount of water withdrawn from groundwater resources. Adherence to the Spill Prevention Control and Countermeasures Plan during BCE Complex operations would avoid impacts to groundwater in the area. Therefore, no significant impacts to groundwater are expected to occur resulting from BCE operations.

Surface Water

Construction

Construction of the BCE Complex would result in 8.6 acres of new impervious surface associated with the proposed building footprints and parking areas (as described in Section 2.4.1). Construction could potentially produce short-term impacts to surface water quality caused by erosion during construction activities. A Construction Storm Water Discharge Permit has been issued by the State Water Resources Control Board Water Quality Order No. 2009-0009-DWQ (Construction General Permit covering Land Disturbance Activities), National Pollutant Discharge Elimination System permit, as amended. This permit addresses construction sites of one acre or more (Travis AFB 2017). During construction, best management practices prescribed by permits would be implemented to reduce soil erosion and sedimentation impacts to adjacent open fields and the West Branch of Union Creek. In accordance with UFC 3-210-10 (as amended 2015) and Section 438 of the *Energy Independence and Security Act of 2007*, facilities having a footprint that exceeds 5,000 square feet (0.1 acre) must maintain or restore the pre-development site hydrology to the maximum extent technically feasible. Any potential impacts resulting from erosion or temporary increases in surface stormwater runoff during construction activities would be temporary and minimized by applying erosion control measures (e.g., wetting of soils, silt fencing, and detention basins). Therefore, impacts to surface waters from Alternative 1 construction activities would be less than significant.

Operations

Stormwater retention structures would be provided to collect stormwater from the newly developed area. These stormwater retention structures would be designed, through size and depth of the retaining areas and the manner in which they drain to the system, to discharge no more than the pre-existing rate into the drainage system in order not to increase flooding or erosion hazards. The Storm Water Pollution Prevention Plan outlines engineering and management strategies designed to enhance the quality of the base's storm water discharges, especially releases related to industrial and construction activities. In addition, the BCE Complex storm water design will conform to Phase II Small MS4 Permit and Section 438 guidance of EO 13514 (October 2009) that requires DoD installations under UFC 3-210-10 to use Low Impact Development

techniques that reduce impacts to surface waters. Under Alternative 1, affects to surface waters would be less than significant with implementation of the above stated measures.

Floodplains, Wetlands, and Other Waters of the United States

Construction

The base does not lie within the 100-year floodplain and the vast majority is outside of the 500-year floodplain. Therefore, construction of the projects would not impact floodplains. As shown on Figure 3.4-1, there are no wetlands located within the proposed construction footprint under Alternative 1. However, isolated seasonal wetlands (vernal pools) were surveyed outside the project boundary and may be considered jurisdictional under the CWA because they are adjacent to a relatively permanent water (RPW) of the U.S. This RPW is the west branch of Union Creek (see Figure 3.4-1). Construction activities would include avoidance measures and management practices such that the wetlands outside the construction footprint would not be impacted unintentionally or in an indirect manner during construction activities. Therefore, implementation of Alternative 1 would not significantly impact wetlands or other waters of the U.S.

Operations

Operation of the BCE Complex would not affect floodplains, wetlands, and other waters of the U.S.; therefore, no impacts to these resources would occur under Alternative 1.

4.4.2.2 No-Action Alternative

Groundwater and Surface Water

Under the No-Action Alternative, the proposed construction activities would not occur. Existing conditions (as described in Section 3.4) would remain unchanged; therefore, no impacts to either groundwater or surface water would occur under the No-Action Alternative.

Floodplains, Wetlands, and Other Waters of the United States

Under the No-Action Alternative, the proposed construction activities would not occur. Existing conditions (as described in Section 3.4) would remain unchanged; therefore, no impacts to floodplains, wetlands, and other waters of the U.S. would occur.

4.5 Biological Resources

4.5.1 Methodology

This section analyzes the potential for impacts to biological resources at Travis AFB resulting from implementation of the Proposed Action. Analysis of impacts focuses on whether and how ground-disturbing activities could affect biological resources.

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) the sensitivity of the resource to proposed activities; and (4) the duration of ecological ramifications. Impacts to biological resources would be considered significant if species or habitats of concern were significantly affected over relatively large areas or disturbances resulted in reductions in the population size or distribution of a special status species, or if laws, codes, or ordinances protecting special status species were violated.

4.5.2 Impacts

4.5.2.1 Alternative 1 (Preferred Alternative)

Vegetation and Wildlife

Construction and Operations

Vegetation. Under Alternative 1, approximately 8.6 acres of disturbed, non-native grassland and dispersed landscape trees would be converted to a BCE Complex. As the project area is already a heavily disturbed area, this would not represent a significant loss of natural habitat. Therefore, impacts to vegetation would be less than significant under Alternative 1.

Wildlife. Construction associated with Alternative 1 would eliminate or displace wildlife from approximately 8.6 acres of non-native grassland. Individuals of the smaller, less mobile, and burrowing species would likely be killed or injured by construction, whereas mobile species (e.g., birds and larger mammal and reptile species) would disperse to surrounding areas. However, any loss of commonly occurring individuals would not represent a noticeable portion of the population. Overall, no significant impacts to wildlife populations and their habitats would occur.

Special Status Species

Construction and Operations

Contra Costa Goldfields and Vernal Pool Branchiopods. Under the Preferred Alternative, CCG and vernal pool branchiopods would not be directly impacted by construction or operation of the BCE Complex, as the species do not occur and no potential habitat exists within the project footprint. Additionally, as described in Section 4.1 of the BA, Conservation Measures (CMs), including protective fencing, restriction of construction equipment and vehicles to specific upland areas, and worker training would be implemented that would prevent any direct impacts to vernal pool habitats outside of the project area.

As CCG population is known to occur in the ROI (i.e., outside the project footprint), and vernal pool branchiopods are assumed to occur in the vernal wetlands in the ROI, these species have the potential to be indirectly impacted by project construction and operational activities. Potential indirect impacts would result from altered hydrology during construction activities and changes in runoff patterns during the operational phase. CMs in the Base-wide Biological Opinion issued by the USFWS (USFWS 2018) require implementation of erosion control measures to reduce and/or prohibit any indirect hydrological impacts to vernal pools within the ROI during the construction phase of the project. Additionally, the BCE Complex would include structural components for stormwater management that would be designed to avoid hydrological impacts to vernal pools in the action area.

Construction and operation of the BCE Complex would potentially alter the overall hydrology within the ROI (addition of impervious surfaces, loss of grassland/upland habitat, alteration of runoff patterns, etc.). However, with the use of structural components for stormwater management designed to avoid hydrological impacts to vernal pools, it is not likely that such impacts would alter the natural, seasonal ponding, and drying scheme of the vernal pools that occur in the ROI during the construction phase. Nonetheless, the local hydrology would be impacted to some degree and affect the natural inundation/drying of the vernal pools within the ROI throughout the operational phase of the project.

The Proposed Action may affect and is likely to adversely affect VPFS and VPTS by indirectly affecting 1.02 acre of vernal pool branchiopod habitat. In addition, The Proposed Action may affect and is likely to

adversely affect CCG by indirectly affecting 0.09 acre of CCG vernal pool habitat. Conservation measures that will avoid and minimize the adverse effects associated with construction are included as part of the Proposed Action. Per the Programmatic Agreement between Travis AFB and USFWS, a Project Analysis for the Proposed Action was submitted to the USFWS on January 19, 2021 that outlines potential impacts to federally listed species (see Appendix B for correspondence). Travis AFB will comply with any and all mitigation and conservation measures mandated by USFWS, and therefore, impacts to CCG and vernal pool branchiopods would be less than significant.

Burrowing Owls. No burrowing owls were found within the Alternative 1 site during habitat surveys from October 2010 through August 2011 (Travis AFB 2011a). Several ground squirrels were identified, presenting potential habitat for the burrowing owl. However, a pre-construction survey for burrowing owls would be conducted. Should there be active nesting on site, re-location of the nest(s) would occur in accordance with mitigation guidelines in the CEQA Section 15380. Therefore, less than significant construction impacts to the burrowing owl are expected to occur during construction. BCE Complex operational activities would not affect burrowing owls; therefore, impacts to this species would not be significant under the Proposed Action.

Migratory Birds. Golden eagles, tricolored blackbirds, and Swainson's hawks would potentially occur in the Alternative 1 site during transit, foraging, and/or hunting but would not nest or remain in the project area due to lack of habitat for the species. It is expected that these bird species, if present during construction, would temporarily vacate the area and later have the opportunity to return following construction. Alternative 1 does not represent a noticeable loss of nesting or foraging/hunting habitat for these species. Per California Department of Fish and Wildlife standards, if construction occurs during the migratory bird nesting season (February 1 to August 31), surveys for nesting birds within a 1,000-foot radius of the construction area would be conducted. If nests were detected, then 250-foot buffers would be established around nests to ensure that breeding is not likely to be disrupted or adversely impacted by construction. Buffers would be maintained until the young have fledged or the nests become inactive. Therefore, construction impacts to migratory bird species would be less than significant if Alternative 1 were implemented. BCE Complex operational activities would not affect migratory birds; therefore, impacts to these bird species would not be significant under Alternative 1.

4.5.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed construction activities would not occur. Existing conditions (as described in Section 3.5) would remain unchanged. Therefore, no impacts to biological resources would occur.

4.6 Socioeconomic Resources

4.6.1 Methodology

Significance of population and expenditure impacts are assessed in terms of their direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary depending on the location of a proposed action; for example, implementation of an action that creates 20 employment positions may be unnoticed in an urban area but may have significant impacts in a more rural region. Socioeconomic impacts would be considered significant if they result in substantial shifts in population trends, or adversely affect regional spending and earning patterns.

4.6.2 Impacts

4.6.2.1 Alternative 1 (Preferred Alternative)

Construction

Construction of the BCE Complex would result in short-term economic activity associated with the hiring of temporary construction personnel and purchasing of materials. However, impacts resulting from construction payrolls and materials purchased would last only for the duration of construction activities (i.e., 1 year) and would be negligible on a regional scale. Accordingly, less than significant impacts to socioeconomic resources would result from constructing Alternative 1.

Operations

Operation of the BCE Complex would not increase the number of personnel that would be needed for operations and maintenance activities. The BCE Complex would be expected to consolidate activities, not increase number of personnel; therefore, any socioeconomic impacts would be negligible on a regional scale. No significant socioeconomic impacts are anticipated by operational activities under Alternative 1.

4.6.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed construction activities and the consolidation of the BCE Complex would not occur. Therefore, the temporary beneficial input from construction payrolls and materials purchased would not be realized.

4.7 Cultural Resources

4.7.1 Methodology

Cultural resources are subject to review under both federal and state laws and regulations. Section 106 of the NHPA of 1966 empowers the Advisory Council on Historic Preservation to comment on federally-initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion in the NRHP. Once cultural resources have been identified, significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the NHPA. Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by 1) physically altering, damaging, or destroying all or part of a resource; 2) altering the characteristics of the surrounding environment that contribute to resource significance; 3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or 4) neglecting the resource to the extent that it is deteriorated or destroyed.

Direct impacts can be assessed by identifying the type and location of a proposed action and determining the exact locations of cultural resources that could be affected. Indirect impacts primarily result from the effects of project-induced population increases and the resultant need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. These activities and facilities' subsequent use can disturb or destroy cultural resources.

4.7.2 Impacts

4.7.2.1 Alternative 1 (Preferred Alternative)

Construction and Operations

Construction and operational activities associated with the BCE Complex under Alternative 1 would occur in a previously disturbed area. The APE in the vicinity of the Alternative 1 was previously subject to an archaeological survey, and no NRHP-eligible resources including architectural or traditional resources were identified (Travis AFB 2016c). Therefore, construction and BCE Complex operations would not result in impacts to cultural resources. However, based on the geoarchaeological sensitivity model (Meyer 2017), an archaeological monitor should be present during subsurface excavations during the construction of the BCE Complex under Alternative 1.

As noted in Section 3.7.2.3, the Cortina Indian Rancheria of Wintun Indians of California verbally indicated that they had no issues with the construction and operation of the BCE Complex. Following a site visit of the Yocha Dehe, on June 1, 2017, the Tribe verbally indicated that they had no concerns with the BCE Proposed Action (Appendix B provides a summary of the site visit and correspondence).

4.7.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed construction activities would not occur. Existing conditions (as described in Section 3.7) would remain unchanged; therefore, no impacts to cultural resources would occur.

4.8 Cumulative Impacts

This section presents cumulative impacts that would result from implementation of the Preferred Alternative. Only resources with potential impacts are presented.

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the ROI. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over time by various agencies (federal, state, and local) or individuals. In accordance with NEPA and CEQA, a discussion of cumulative impacts resulting from projects that are proposed (or anticipated over the foreseeable future) is required.

Travis AFB is an active, dynamic base where operational changes and facility upgrades occur on a frequent basis. Projects that have been identified in the ROI, which have the potential to act in a cumulative manner with the Proposed Action alternatives are discussed in this section. The ROI for cumulative impacts is generally limited to the immediately adjacent properties on Travis AFB. This is because physical impacts related to the Proposed Action are confined to a limited area. Planning efforts in the ROI include the actions described within this SEA, as well as those other projects that are ongoing, or planned over the short term. Projects potentially interacting with the Proposed Action, within the ROI, are discussed below.

4.8.1 Current and Reasonably Foreseeable Actions in the Region of Influence

On-going and other proposed activities over the next 5 years within the vicinity of the Proposed Action are identified in Table 4.8-1 and based on best available information. No other activities were identified within the ROI. As Travis AFB undergoes changes in mission and training requirements, in response to defense policies, current threats, and tactical and technological advances, the base may require new construction,

facility improvements, infrastructure upgrades, and ongoing maintenance and repairs on a continual basis. Although some of these known projects are a part of the analysis contained in this section, some future requirements cannot be predicted. As those requirements are identified, future NEPA analysis would be conducted, as necessary.

Table 4.8-1. Current and Reasonably Foreseeable Actions Over the Next Five Years at Travis AFB and within the Vicinity of the Proposed Action

Project Name	Description
Family Camp (FamCamp) Relocation	Relocate FamCamp to create space for Main Gate expansion.
New City Light and Power Facility	Construction of a new electrical facility.
New Child Development Center (CDC)	New CDC to accommodate unmet demand for childcare services.
New School Age Facility	New school age facility to meet growing demand.
Mixed Use Enhanced-Use Lease	Possible development of an Enhanced Use Lease that would capitalize on plans for the new Fairfield Train Station.
New Soccer Field	Additional soccer field near the Consolidated Recreation Center.
Travis Crash Site Memorial	Formal memorial to honor and remember the crash of General Travis.
New Dormitory	Construction of new dormitory to accommodate demand.
New Multi-Purpose Recreation Building	Part of the Scandia Elementary School expansion.
Rails to Trails Project	The Jepson Parkway Project multi-use trail connecting the City of Vacaville to the proposed Fairfield Train Station and south to link to the existing bicycle lane on Air Base Parkway. Travis AFB taking lead role in developing new Rails-to-Trails location near the Georgetown property.
Well Water Pipeline	Modernize utility systems to current standards.
Defense Logistics Area G Fuel Storage Expansion	Construction of new fuel storage facility.
New Veterans Administration Dental Clinic	Construction of new Dental Clinic to meet growing demand.

Source: Travis AFB 2016e.

4.8.2 Air Quality

No significant cumulative impacts to air quality are expected by implementing Alternative 1 when considered along with other current and reasonably foreseeable actions. Construction and operational emissions, when considered with current and reasonably foreseeable projects would not exceed *de minimis* pollutant levels within the Air Quality Control Region or introduce emissions to affect the attainment status of criteria pollutants. In fact, there would be a decrease in vehicle emissions and facility power use resulting from the consolidation of BCE operations from 55 facilities in multiple locations into one contiguous site. Accordingly, construction and operational emissions resulting from Alternative 1, along with other current and reasonably foreseeable projects, would not introduce significant, cumulative impacts within the ROI.

4.8.3 Noise

No significant noise-related cumulative impacts would result from Alternative 1 and consideration of other current and reasonably foreseeable projects. Travis AFB is an active military installation, and significant portions of the base are located within the greater than 65 dB CNEL noise contours associated with aircraft flight operations. Ground-based activities in the vicinity of Alternative 1 and other current and foreseeable projects contribute to ambient noise levels; but they would be temporary during construction. In addition, noise associated with operations associated with Alternative 1 and other projects would not introduce noise levels to change the existing acoustic environment. Consequently, construction and operational activities

under Alternative 1, along with current and reasonably foreseeable projects, would not introduce significant, cumulatively impacts to the ambient noise environment at Travis AFB.

4.8.4 Water Resources

4.8.4.1 Groundwater and Surface Water

In addition to the 8.6 acres of increased impervious surface resulting from Alternative 1, current and reasonably foreseeable projects could introduce more impervious surfaces over the next several years. However, development projects that disturb more than 1 acre of soil would be required to develop a Storm Water Pollution Prevention Plan to prevent adverse water quality impacts. The minimization measures identified in the Storm Water Pollution Prevention Plan and corresponding erosion control measures must be adhered to regardless of the project. Therefore, construction of Alternative 1, when considered with current and reasonably foreseeable projects, would not result in significant, cumulative ground and surface water impacts.

Additionally, per UFC 3-210-10 (as amended 2015) and/or similar detention requirements by the State of California for those projects without a federal nexus, pre-development site hydrology must be maintained or restored to the maximum extent technically feasible and this applies to both Alternative 1 and current and reasonably foreseeable projects. Application of these requirements would result in minimal changes to storm water runoff, which would not cumulatively affect downstream flooding. Similarly, ground water recharge would be minimally affected by complying with UFC 3-210-10 design criteria. No significant, cumulative impacts to water resources are therefore, anticipated. Once operational, BCE Complex activities and those associated with current and reasonably foreseeable projects, are not anticipated to introduce significant, cumulative affects to ground or surface waters.

4.8.4.2 Floodplains, Wetlands, and Other Waters of the United States

Construction of multiple present and foreseeable projects could result in temporary, indirect impacts to wetlands and vernal pools. To reduce potential vernal pool and wetland impacts to the maximum extent practicable, project design and implementation of environmental protection measures would be undertaken. These measures could include flagging the vernal pool and/or wetland boundary; installing silt fencing; establishing a buffer; and following policies and procedures as detailed in erosion and sediment control plans, Storm Water Pollution Prevention Plans, and Spill Prevention, Control, and Countermeasures Plans. As no physical structures are proposed for the Preferred Alternative construction within the floodplain, long-term significant, cumulative effects on wetlands and other waters of the U.S., when considered cumulatively with other foreseeable projects, would be negligible.

4.8.5 Biological Resources

Under the Preferred Alternative, the BCE Complex would be constructed in an area dominated by non-native grassland that is regularly mowed and provides little value to biological resources. Although vernal pools and other waters in the ROI would potentially be subject to indirect impacts from changes in runoff patterns, it is not expected that such impacts would prevent these features from providing potential habitat for CCG and vernal pool branchiopods. Travis AFB oversees the management of natural resources under an INRMP (Travis AFB 2016a) and CMs in the Base-wide Biological Opinion issued by the USFWS (USFWS 2018). Therefore, through adherence to and implementation of the aforementioned management measures, no significant cumulative impacts would occur to biological resources by implementing the Preferred Alternative along with current and reasonably foreseeable projects in the ROI.

4.8.6 Socioeconomic Resources

Under Alternative 1, no significant impacts to socioeconomics would occur when considered with current and reasonably foreseeable actions. In terms of population and employment, Alternative 1 and other projects would not noticeably change population numbers. Other than a temporary beneficial input into the local economy generated by new construction, no significant, cumulative impacts are anticipated to employment and income.

4.8.7 Cultural Resources

There are no impacts to cultural resources under Alternative 1, therefore, no significant, cumulative cultural resources impacts would result from consideration of this alternative and other current and reasonably foreseeable projects.

4.9 Other NEPA Considerations

4.9.1 Unavoidable Adverse Impacts

This section presents unavoidable adverse impacts that would result from implementing the Proposed Action alternatives. Only resources with potential impacts are presented.

Air Quality. The emissions of air pollutants associated with construction and operation of the BCE Complex under the Proposed Action would be an unavoidable condition, but would not be considered significant and would not impede attainment or maintenance of standards within the Air Quality Control Region. Further, while emissions of the proposed BCE Complex would not be subject to the emissions cap currently permitted for Travis AFB by the BAAQMD, the amount of emissions associated with the proposed BCE Complex would not significantly impede the emissions cap.

Biological Resources. Per the Programmatic Agreement between Travis AFB and USFWS, a Project Analysis for the Proposed Action was submitted to the USFWS on January 19, 2021 that outlines potential impacts to federally listed species (see Appendix B for correspondence). Travis AFB will comply with any and all mitigation and conservation measures mandated by USFWS, and therefore, impacts to CCG, CTS, and vernal pool branchiopods will be less than significant.

4.9.2 Relationship Between Short-Term Uses and Enhancement of Long-Term Productivity

Alternative 1 would result in intensification of land uses within Travis AFB. Development of the Proposed Action would not represent a significant loss of open space. The BCE Complex would be installed in a location designated for industrial use, which was not planned for use as open space. Therefore, it is not anticipated that the Proposed Action would result in any cumulative land use or aesthetic impacts. Long-term productivity of the Alternative 1 site would be increased by development of a consolidated BCE Complex.

4.9.3 Irreversible and Irretrievable Commitment of Resources

This section presents the irreversible environmental changes resulting from implementation of the Preferred Alternative, which involve consumption of material resources, energy resources, land, water resources, biological habitat, and human resources. The use of these resources is considered permanent. NEPA CEQ regulations require environmental analyses to identify any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented (40 CFR § 1502.16). Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and

the effects the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Building construction material such as gravel, and gasoline used by construction equipment would constitute the consumption of non-renewable resources.

4.9.3.1 Material Resources

Building materials, concrete, asphalt, and various material supplies would be used for development of the BCE Complex. These materials are readily available from suppliers in the region and their use would not limit other unrelated construction activities in the region.

4.9.3.2 Energy Resources

Energy resources such as petroleum-based products (i.e., gasoline, diesel fuel, etc.), natural gas, and electricity would be used for development of the BCE Complex and would be irretrievably lost. Gasoline and diesel would be used for operation of construction vehicles and BCE operational vehicles and equipment, and natural gas and electricity would be used to operate other equipment. Consumption of these energy resources would not place a significant demand on their supply systems or within the region. There would be a net drop in energy use since older technology would be replaced with newer technologies and facility operations would be consolidated in one location vice the 55 separate locations they occur now.

4.9.3.3 Land

Constructing the BCE Complex would result in the loss of open land. However, this open land is designated for industrial use.

4.9.3.4 Water Resources

Implementation of the Preferred Alternative would result in the alteration of stormwater drainage in the vicinity of the BCE Complex. However, drainage design would comply with the Travis AFB National Pollutant Discharge Elimination System permit, Storm Water Pollution Prevention Plans specifications, and Low Impact Development techniques to minimize affects to water resources.

4.9.3.5 Biological Resources

Implementation of the Preferred Alternative would result in the permanent loss of grasslands that would provide foraging areas for birds, birds of prey, and small mammals. However, the BCE Complex footprint design would not extend beyond the area needed for construction and resources surrounding the BCE Complex would be left intact; foraging and nesting areas for these animals would be available and contiguous with surrounding grasslands.

4.9.3.6 Human Resources

There would be no irreversible or irretrievable impacts to human resources. The same people who work for BCE currently, would continue to do so after completion of the BCE Complex.

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