Draft

Environmental Assessment

for

Replacement of Overhead and Underground Distribution Line, Feeder D1

Vandenberg Air Force Base, California

30th Civil Engineer Squadron, Installation Management Flight (30 CES/CEIEA)
1515 Iceland Avenue
Vandenberg Air Force Base, CA 93437

6 December 2019

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Prepared for:

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FINDING OF NO SIGNIFICANT IMPACT

AND FINDING OF NO PRACTICABLE ALTERNATIVE

Replacement of Overhead and Underground Distribution Line, Feeder D1 at Vandenberg Air Force Base, California

Pursuant to provisions of the National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 to 4270d, implementing Council on Environmental Quality (CEQ) Regulations, 40 Code of Federal Regulations (CFR) 1500-1508, and 32 CFR Part 989, Environmental Impact Analysis Process, the U.S. Air Force (Air Force) assessed the potential environmental consequences associated with replacing an aging overhead electrical distribution line, Feeder D1, on Vandenberg Air Force Base (AFB) in Santa Barbara County, California.

These replacements are needed because existing conditions do not provide a reliable power source required by Vandenberg AFB's launch and range mission. As a result, many mission critical facilities are vulnerable to interruption of the main power supply or catastrophic powerline failure, which could result in a delay or cancellation of national defense missions.

The Environmental Assessment (EA), incorporated by reference into this finding, analyzes the potential environmental consequences of activities associated with replacing an overhead electrical distribution line, Feeder D1, and provides environmental protection measures to avoid or reduce adverse environmental impacts. The EA considers all potential impacts of the Proposed Action and the No-Action Alternative. The EA also considers cumulative environmental impacts with other projects at Vandenberg AFB.

PROPOSED ACTION

The Proposed Action includes demolition and replacement of existing electrical distribution lines and construction of new overhead electrical distribution lines and permanent access roads. Approximately 15 miles of existing overhead electrical distribution lines will be removed and replaced with approximately 14 miles of above- and below ground lines on North Vandenberg AFB. The new overhead electrical distribution lines will be adjacent to existing roads to the extent feasible, thus providing easy access and facilitating regular maintenance. In areas where new feeder alignments cannot be located near existing roads, access road segments will be established. To prevent electrical service interruptions on North Vandenberg AFB, the existing lines will remain operational until installation, testing, and initial operation of the new lines is completed. After the new lines are working properly, the existing lines (i.e., wires, electrical equipment, and poles) will be removed; however, some segments of the existing line will be abandoned in place or removed using non-invasive removal options to avoid sensitive archaeological resources. The new overhead electrical distribution lines will be inspected annually and maintained.

NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the Proposed Action would not occur and sections of North Vandenberg AFB would continue to encounter power losses. This alternative would not provide a reliable power source for facilities on North Vandenberg AFB.

SUMMARY OF FINDINGS

The analyses of the affected environment and environmental consequences of implementing the Proposed Action presented in the EA concluded that by implementing environmental protection measures (EA Section 2.4) as well as the avoidance, minimization, monitoring, and reporting measures in Appendix C of the EA, Vandenberg AFB will comply with all terms and conditions and reporting requirements for implementation of the reasonable and prudent

measures stipulated in the United States Fish and Wildlife Service's (USFWS) Biological Opinion, and adhere to the conditions stipulated in the State Historic Preservation Officer (SHPO) concurrence letter.

The Air Force concludes that no significant adverse effects will result to the following resources as a result of the Proposed Action: air quality, greenhouse gases, geology and earth resources, land use and coastal zone resources, noise, public health and safety, transportation, and water resources. No significant adverse cumulative impacts will result from activities associated with the Proposed Action when considered with past, present, or reasonably foreseeable future projects at Vandenberg AFB. In addition, the EA concludes that the Proposed Action do not affect environmental justice, socioeconomics, public services and utilities, or recreation.

Vandenberg AFB will comply with the conditions stipulated in SHPO's concurrence letter dated September 27, 2017 and the Memorandum of Agreement signed in August 2019.These conditions include the following: 1) installing temporary exclusionary fencing, 2) requiring archaeological and Native American monitoring, 3) restricting vehicular access within National Register of Historic Places (NRHP)-eligible sites, 4) modifying pole removal techniques within NRHP-eligible sites, 5) carrying out a program of controlled archaeological excavations (i.e., data recovery) for new poles located within an Archaeologically Sensitive Area, and 6) adhering to 36 CFR 800.13 (Post review discoveries) and Vandenberg AFB Integrated Cultural Resources Management Plan procedures if previously undocumented cultural resources are discovered during construction activities. Adherence to these measures avoids impacts on seven (7) NRHP-eligible sites within the project area, and data recovery will mitigate limited impacts on five (5) NRHP-eligible sites affected by new pole installation.

PREFERRED ALTERNATIVE

The Proposed Action Alternative is the Preferred Alternative because it is the only alternative that fulfills the purpose and need for the Proposed Action and avoids significant adverse impacts to sensitive archaeological sites.

FINDING OF NO SIGNIFICANT IMPACT

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

_____ _____

ANTHONY J. MASTALIR, Colonel, USAF Date

Commander

Attachment: FINAL ENVIRONMENTAL ASSESSMENT (2019)

Table of Contents

Appendices

List of Figures

List of Tables

Acronyms and Abbreviations

30 CES	30th Civil Engineer Squadron
30 CES/CEIEA	30th Civil Engineer Squadron, Installation Management Flight, Natural Resources Management
30 CES/CEIEC	30th Civil Engineer Squadron, Installation Management Environmental Compliance
30 SW/SEW	30th Space Wing Safety-Weapons Safety
30 CES/CEI	30th Civil Engineer Squadron, Installation Management Flight
30 CES/CEIEC	30th Civil Engineer Squadron, Installation Management, Environmental Compliance Element
30 SW/SE	30 SW Safety Office
30 SWP 32-7043A	Vandenberg AFB *Hazardous Waste Management Plan*
AB	Assembly Bill
AFB	Air Force Base
AFI	Air Force Instruction
AFOSH	Air Force Occupational Safety and Health
AOC	Area of Concern
AOI	Area of Interest
APE	Area of Potential Effects
ASA	Archaeologically Sensitive Area
ATC	Authority to Construct
Basin Plan	Central Coast Water Quality Control Plan
BMP	Best Management Practice
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Act
CAP	Collection Accumulation Point
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDMG	California Division of Mines and Geology
CEQ	Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CRPR	California Rare Plant Ranking
CSC	California Species of Concern
CWA	Clean Water Act
CY	calendar year
CZMA	Coastal Zone Management Act
dB	Decibel
dBA	A-Weighted Sound Level
DoD	Department of Defense

EA	Environmental Assessment
EISA	Energy Independence and Security Act
EESOH-MIS	Enterprise Environmental, Safety, and Occupational Health Information Management System
e-GGRT	Electronic GHG reporting tool
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPM	Environmental Protection Measures
EPP	Environmental Protection Plan
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
Fisheries Service	National Marine Fisheries Service
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GWP	Global Warming Potential
HazMart	Vandenberg Hazardous Materials Pharmacy
Hz	Frequency
IRP	Installation Restoration Program
kV	Kilovolt
L_{eq}	Equivalent Noise Level
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
mph	Miles Per Hour
MRR	EPA Mandatory Reporting Rule
MT	Metric tons
MW	Mega Watts
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NCA	Noise Control Act
NDAA	National Defense Authorization Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NO_X	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O&M	Operation and Maintenance
O_3	Ozone
OSHA	Occupational Safety and Health Act
PCBs	Polychlorinated Biphenyls
PM10	Particulate Matter Less Than 10 Microns in Diameter
PM2.5	Particulate Matter Less Than 2.5 Microns in Diameter
ppm	Parts Per Million
PTO	Permit to Operate
PV	Photovoltaic
ROG	Reactive Organic Gases
RWQCB	Central Coast Regional Water Quality Control Board
SAPs	Authorized satellite accumulation points
SARA	Superfund Amendments and Reauthorization Act
SATAD	San Antonio Terrace Archaeological District

SBCAPCD	Santa Barbara County Air Pollution Control District
SCCAB	South Central Coast Air Basin
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SLC	Vandenberg AFB Space Launch Complex
SO_2	Sulfur dioxide
SR	State Route
SWP	Space Wing Plan
SWRCB	State Water Resources Control Board
TPH	Total Petroleum Hydrocarbons
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
Western Range	Western Test Range/Pacific Missile Range
$\mu g/m^3$	Micrograms per cubic meter

Chapter 1. Purpose and Need for the Proposed Action

This Environmental Assessment (EA) evaluates the potential environmental impacts associated with replacing an aging overhead and underground electrical distribution line on Vandenberg Air Force Base (AFB) in Santa Barbara County, California. The current proposal addresses Feeder Line D1 on North Vandenberg AFB. Feeder D1 is an active circuit serving critical loads in highly secured facilities. The lines cover a distance of approximately 15 miles and are in need of new power poles and electrical equipment.

The National Environmental Policy Act (NEPA); Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508); and the Air Force's supplemental NEPA regulations (32 CFR Part 989) require lead agencies to evaluate the potential impacts of federal actions on the surrounding environment. The United States Air Force (Air Force or USAF) is the NEPA lead agency.

1.1 Purpose of the Proposed Action

The purpose of the Proposed Action is to ensure there is a reliable power source for facilities on North Vandenberg AFB by replacing the existing 12 kilovolt (kV) overhead and underground Feeder D1 electrical distribution line, from Substation D Building 1847 to Building 1967. The Proposed Action would also ensure access to Feeder D1 for scheduled routine maintenance.

1.2 Need for the Proposed Action

The Proposed Action is needed because existing conditions do not provide a reliable power source required by Vandenberg AFB's launch and range mission. As a result, many mission critical facilities are vulnerable to interruption of the main power supply or catastrophic powerline failure, which could result in a delay or cancellation of national defense missions.

The 12 kV electrical distribution lines were built in the 1960s and 1970s and are beginning to lose functionality due to old age. As a result, Vandenberg AFB is encountering loss of power in some sections. In addition, much of the existing electrical distribution lines, equipment, and hardware have served or exceeded their useful life. The existing wood poles for the Feeder D1 show signs of degradation due to age and require frequent inspections. Some of the aged wood poles and cross arms indicate presence of surface erosion and contamination such as dust, salt, and airborne pollution on the insulating equipment. Over time the wood poles will deteriorate further. The use of chemical preservative to prolong life in wood poles is an environmental concern, and is therefore not a viable option.

Portions of Feeder D1 are routed underground with high voltage (HV) cables to feed facilities along the way. Conditions of these HV cables are in question and require replacement. Riser conduits feeding Building 1987 were found to have eroded due to the use of rigid steel conduit. Few lateral feeders tapped from the main Feeder D1 do not have access roads making it difficult for maintenance crews to perform periodic maintenance and service. Additionally, the deteriorated powerlines are unsafe and substantially increase the risk of sparking and igniting wildfires.

1.3 Project Location

Vandenberg AFB is located on the south-central coast of California; approximately 55 miles northwest of Santa Barbara (Figure 1-1). Vandenberg AFB covers approximately 99,572 acres in western Santa Barbara County. The Santa Ynez River and State Route (SR) 246 divide Vandenberg AFB into two distinct areas: North Vandenberg AFB and South Vandenberg AFB. The Proposed Action is located on North Vandenberg AFB between Building 1847 on El Rancho Road (at the intersection of Curly Road and Sun Road) and Building 1967 on Dardo Road.

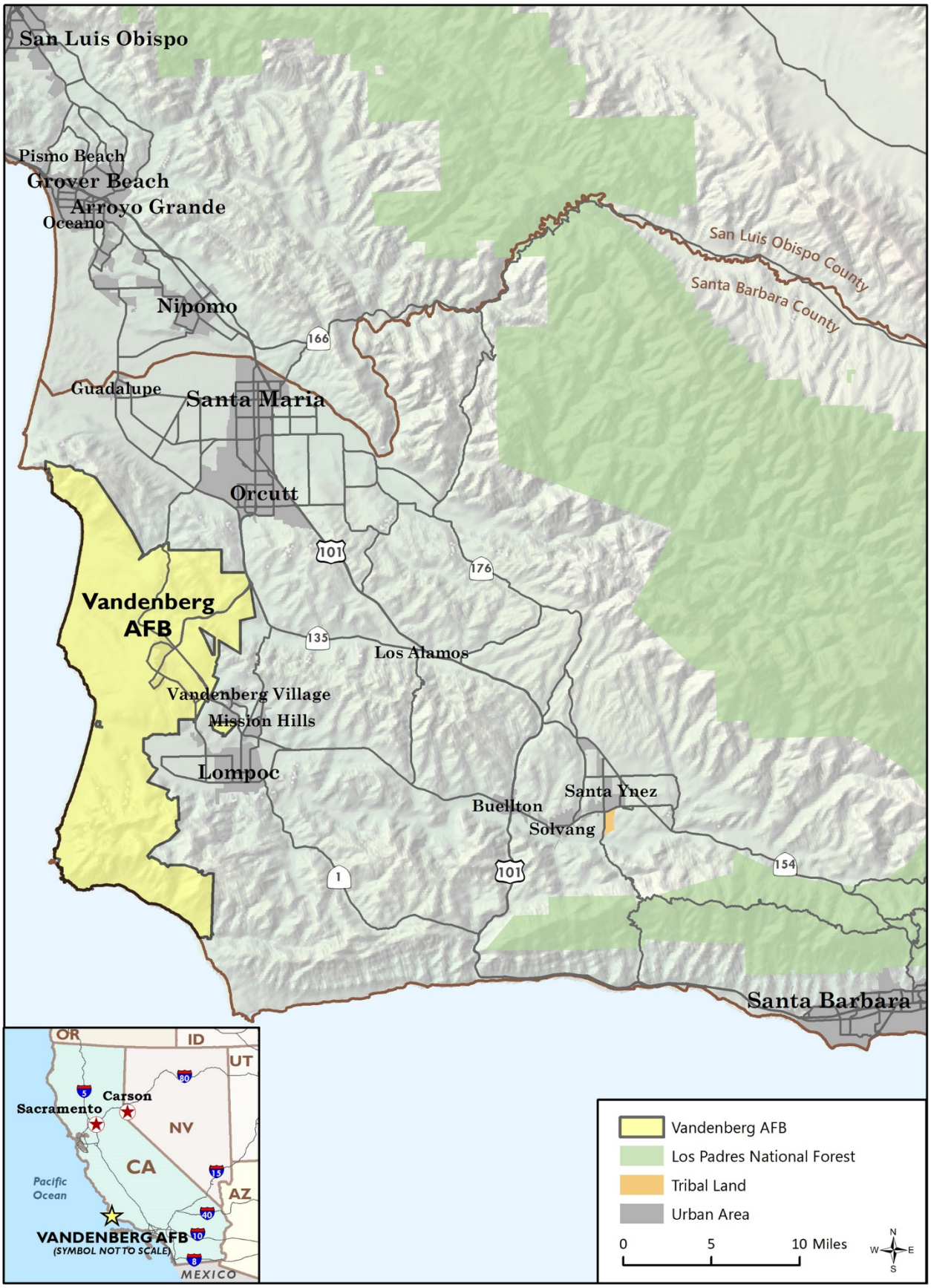

Figure 1-1. Regional Map

1.4 Legal Requirements

A required component of preparing this EA is a thorough identification of all environmental laws, regulations, and directives that would apply to the Proposed Action and alternatives. The Air Force determined that the following laws and regulations must be reviewed for their relevance to the Proposed Action:

Federal Laws and Regulations
American Indian Religious Freedom Act of 1978 (42 United States Code [U.S.C.] 1996)
Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a et seq.)
Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-mm), Supplemental Regulations of 1984
Clean Air Act (CAA) of 1970 (42 U.S.C. 7401 et seq.) and CAA Amendments of 1990
Clean Water Act (CWA) of 1977 as amended (33 U.S.C. 1251 et seq.)
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 U.S.C. 9601-9675)
Coastal Zone Management Act (CZMA) of 1972 (16 U.S.C. 1451-1464)
Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.)
Migratory Bird Treaty Act (MBTA) of 1918 as amended (16 U.S.C. 703-712)
National Environmental Policy Act (NEPA) of 1969 as amended (42 U.S.C. 4321-4347)
National Historic Preservation Act (NHPA) of 1966 as amended (16 U.S.C. 470 et seq.)
Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013)
Noise Control Act (NCA) of 1972 (42 U.S.C. 4901 et seq.)
Occupational Safety and Health Act (OSHA) of 1970 (29 U.S.C. 659-678)
Pollution Prevention Act of 1990 (42 U.S.C. 13101-13109)
Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 et seq.)
Superfund Amendments and Reauthorization Act (42 U.S.C. 9601-9675)
Title II of the Toxic Substances Control Act of 1976 (15 U.S.C. 2601 et seq.)
State Laws and Regulations
California Coastal Act of 1976
California Clean Air Act of 1988
Porter-Cologne Water Quality Control Act
California Integrated Waste Management Act of 1989, California Assembly Bill (AB) 939

1.5 Interagency Coordination and Consultation

Due to the known or potential occurrence of federally recognized threatened and endangered species within the project area, formal consultation with the United States Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act (ESA) was completed on March 21, 2018. USFWS concurred with a pre-notification under the Air Force's Programmatic Biological Opinion (PBO) stating that with implementation of reasonable and prudent measures the proposed activities would not jeopardize the continued existence of any federally listed species. Vandenberg AFB will comply with all terms and conditions and reporting requirements stipulated in the PBO (refer to Appendix B-1 for details). Vandenberg AFB would be responsible for the funding, implementation, monitoring, and reporting requirements as stipulated by USFWS.

The Proposed Action is a federal undertaking also subject to compliance with Section 106 of the National Historic Preservation Act (NHPA). As the Proposed Action has the potential to affect historic properties, Vandenberg AFB initiated consultation with the State Historic Preservation Officer (SHPO) under 36 Code of Federal Regulations (CFR) Part 800. Vandenberg AFB determined that the Proposed Action would have an adverse effect to historic

properties within the project area. The SHPO concurred with Vandenberg AFB's determination in a letter dated September 27, 2017. Vandenberg AFB will comply with all conditions stipulated in SHPO's concurrence letter and the Memorandum of Agreement signed August 2019 (refer to Appendix B-2 for details) to avoid and mitigate adverse effects. Vandenberg AFB would be responsible for the funding, implementation, monitoring, and reporting requirements as concurred upon by the SHPO.

The Air Force is required to consult with federally recognized Native American tribes that have an affiliation with Vandenberg AFB's property. The Air Force, therefore, consulted with the Santa Ynez Band of Chumash Indians (SYBCI). Vandenberg AFB sent a letter to the SYBCI informing them of the Proposed Action on September 5, 2017 (refer to Appendix B-3 for details). Mr. Freddie Romero of the SYBCI spoke with Mr. Roscoe Loetzerich (CES/CEIEA) and verbally concurred with the Air Force on the Proposed Action on 31 July 2018. No written response was submitted by the tribe.

Where federal projects occur within the coastal zone (i.e., coastal waters, to include lands lying in coastal waters and submerged there under and adjacent shore lands) as defined in Section 304(1) of the Coastal Zone Management Act (CZMA) and as described in a state's federally approved Coastal Management Program, or where such projects may affect coastal uses or resources, they are subject to federal consistency review. The Air Force submitted a Negative Determination letter to the California Coastal Commission (CCC) on 18 October 2018 indicating that replacing electrical distribution Feeder Line D1 would not affect the coastal zone. The Air Force concluded the Proposed Action does not require a consistency determination. The CCC concurred with Vandenberg AFB's determination in a letter dated November, 14, 2018 (refer to Appendix B-4 for details).

1.6 Objectives of the Environmental Assessment

Consistent with 32 CFR Part 989 and CEQ regulations (40 CFR 1500-1508), the scope of analysis presented in this EA is defined by the potential range of environmental impacts resulting from implementing the Proposed Action and Alternatives, including the No-Action Alternative.

Per 40 CFR Part 1501.4(c), This EA identifies, describes, and evaluates the affected environment and environmental consequences of the Proposed Action and identifies measures to prevent or minimize environmental impacts.

The resources analyzed in this EA include the following: air quality; biological resources; cultural resources; geology and earth resources; land use and coastal resources; public health and safety; transportation; and water resources.

The following resources were considered but eliminated from detailed analysis in this EA since potential impacts would be non-existent or considered negligible:

- **Environmental Justice.** Pursuant to EO 12898, Environmental Justice, the potential effects of the Proposed Action on minority and low-income communities were considered. Because the Proposed Action would occur within Vandenberg AFB boundaries, minority and/or low-income populations within the region of influence (Lompoc and Santa Maria Valleys) would not be affected.
- **Socioeconomics.** Construction and operation of the Proposed Action would not affect the socioeconomic conditions of the region (Lompoc and Santa Maria Valleys).
- **Public Services and Utilities.** There would be no personnel stationed at Vandenberg AFB as a result of the Proposed Action. Consequently, the

Proposed Action would not result in a need for substantial increases in public services or utilities.

- **Recreation.** Access to Vandenberg AFB is controlled by the Air Force; access to the project area is not open to the public for outdoor recreation.
- **Visual Resources.** Demolition of existing electrical distribution lines and construction and annual maintenance of new overhead and underground electrical distribution lines would be consistent with the general military setting of Vandenberg AFB and would not significantly impact the existing visual quality of the project site and surrounding areas. In addition, proposed activities would occur in an area that is accessible only to military and authorized personnel. Therefore, impacts on visual resources would not occur.

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Chapter 2. Proposed Action and Alternative

This chapter discusses the selection criteria for alternatives, and describes the Proposed Action and No-Action Alternative selected by the Air Force to be evaluated in this EA.

2.1 Selection Standards for Alternatives

CEQ Regulations for Implementing the Procedural Provisions of NEPA establish a number of policies for federal agencies, including "using the NEPA process to identify and assess the reasonable alternatives to the Proposed Action that will avoid or minimize adverse effects of these actions on the quality of the human environment" (40 CFR 1500.2 [e]). The range of reasonable alternatives in this EA was identified by evaluating their ability to meet the purpose and need of the Proposed Action and their ability to meet the following screening standards.

- Selection Standard 1: Be located on North Vandenberg AFB;
- Selection Standard 2: Provide a reliable power source required to provide power to sections of North Vandenberg AFB;
- Selection Standard 3: Be located within areas where reasonable access is available to the new poles and powerlines for annual maintenance; and,
- Selection Standard 4: Provide a redundant power source (i.e., one line operable at all times) during construction.

Alternative alignments were evaluated as part of the planning and subsequent design process. Alternatives energy sources considered but eliminated are described in Section 2.5, Other Alternatives Considered; however, existing infrastructure and the locations of key users limit alignment options (i.e. this is a replacement project with existing end users). The No-Action Alternative does not meet the purpose and need of the Proposed Action, but rather provides a measure of the baseline conditions against which the impacts of the Proposed Action can be compared. As a result, the Proposed Action represents the only reasonable alternative carried forward for detailed analysis.

2.2 Proposed Action

The Proposed Action includes demolition of existing electrical distribution lines and poles, and construction of new overhead and underground electrical distribution lines and poles over an approximately 16-month period, including 4 months for planning and contracting and 12 months for construction. The design and installation of the new 12 kV electrical distribution line will comply with the requirements of the National Electrical Safety Code (NESC) and the National Electrical Code (NEC) as required.

Approximately 15 miles of existing overhead electrical distribution lines on 339 wooden poles would be replaced with new lines and poles on North Vandenberg AFB spanning approximately 14 miles (Figure 2-1). Approximately 0.9 mile of permanent access roads would be constructed to reach segments of new line that do not currently have road access. For the purposes of evaluating effects, the project area is defined as a 65-foot-wide corridor centered on the proposed powerline route. Within this corridor, individual project activities could occur (e.g., pole installation/removal and development of new access roads). Specific project elements are described in the following sections.

2.2.1 Proposed Electrical Distribution Line Route

The existing Feeder Line D1 starts at the 12 kV switchgear in Substation D Building 1847 at the intersection of El Rancho Road and Curly Road, extends north on Point Sal Road, and terminates at the end of the feeder in Building 1967 on North Vandenberg AFB (Figures 2-2 and 2-3).

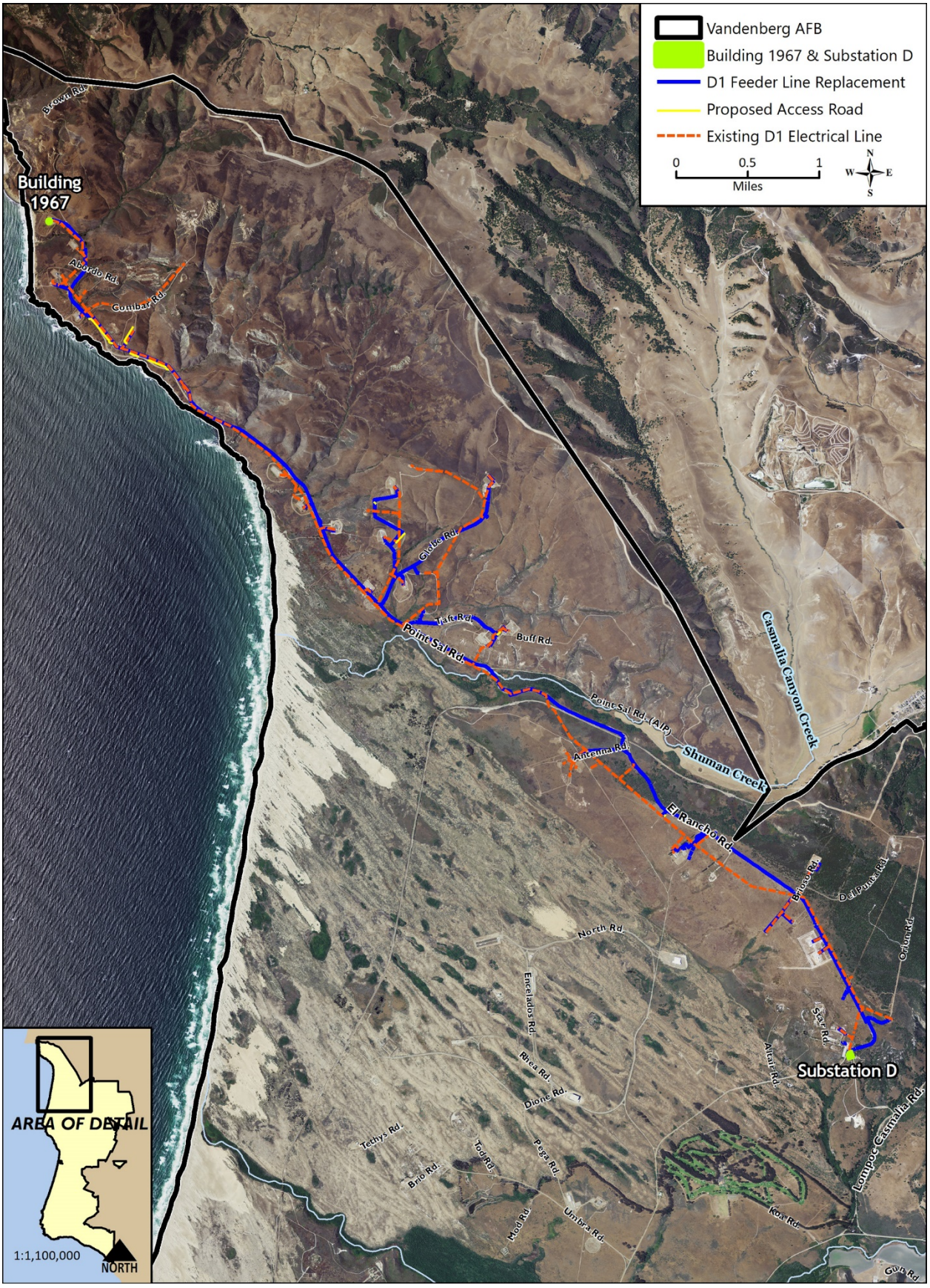


Figure 2-1. Proposed D1 Powerline

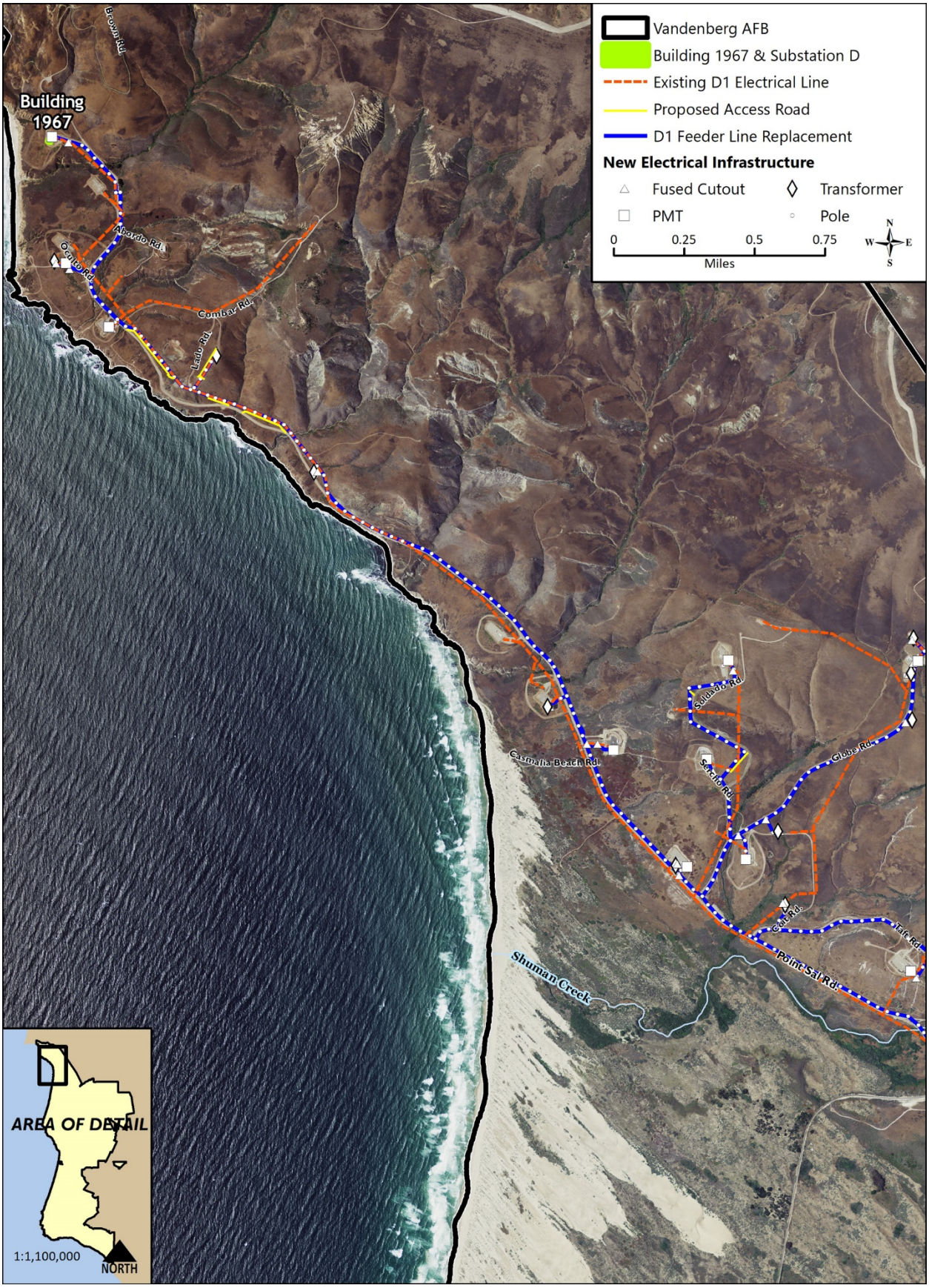


Figure 2-2. Proposed D1 Powerline - North Segment

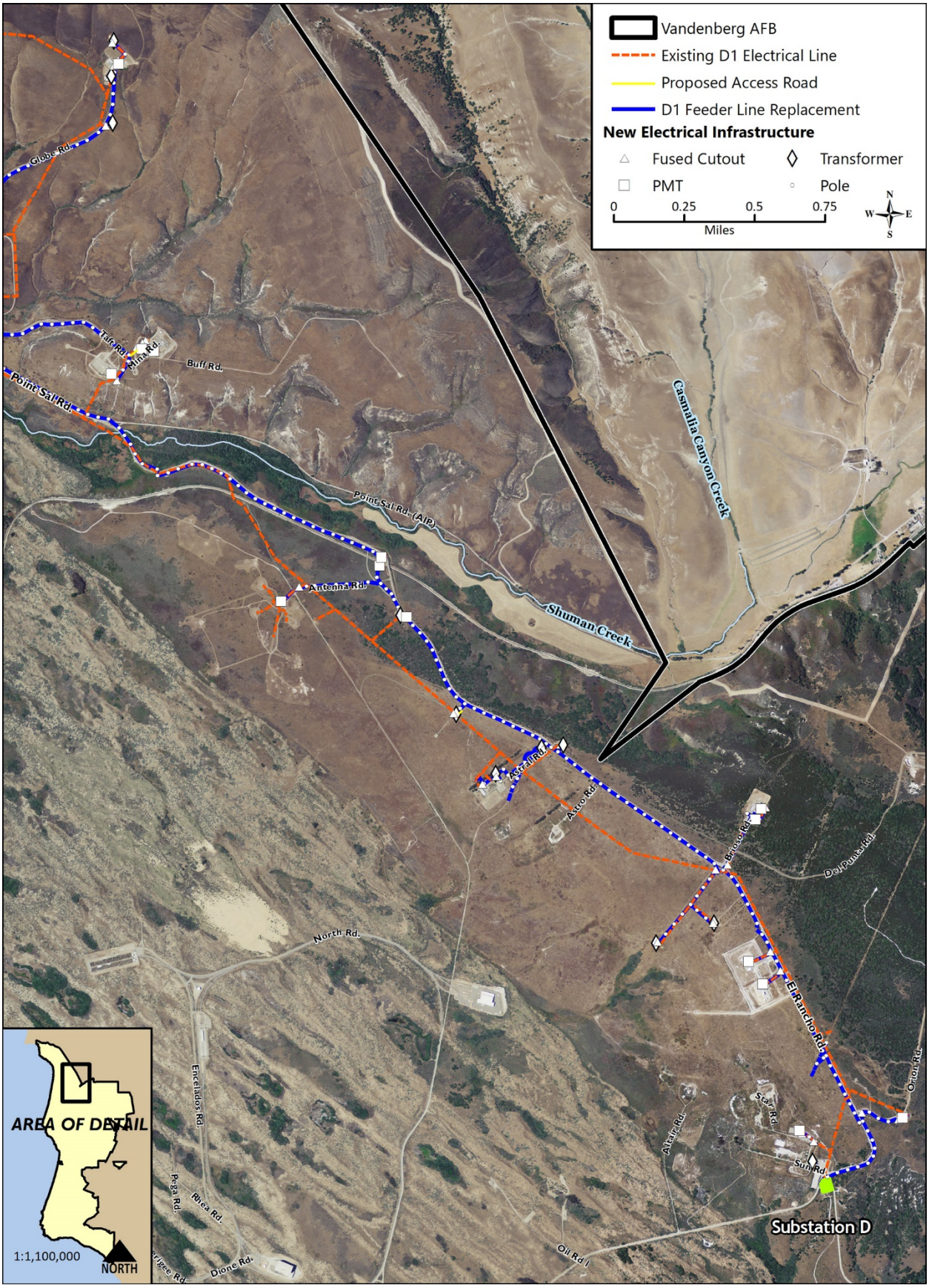


Figure 2-3. Proposed D1 Powerline - South Segment

The existing Feeder Line D1 route traverses through flat terrain and hilly areas to areas that serve launch facilities and tracking stations.

The new Feeder Line D1 would be installed on the opposite side of the existing route in most cases, and would run parallel to the main road or adjacent to existing roads as much as practicable at a minimum distance of 10 feet from the edge of the road to facilitate maintenance. Lateral feeds to various buildings along the route would be served from the main feeder overhead line. In areas where it is impractical to run overhead lines parallel to the road, or in curved roads, new access roads would be constructed. No power poles or new access roads would be placed directly in riparian channels and all electrical lines would span the width of riparian corridors.

2.2.2 Removal of Existing Feeder Line D1

Existing lines would remain in service while the replacement lines are installed. Subsequent to installation of the new lines, the existing lines (i.e., wires, electrical equipment, and poles) would be removed.

Segments of the existing line would be abandoned in place or removed using non-invasive removal options to avoid sensitive archaeological resources, as follows:

- The existing electrical distribution line segment on Combar Road would be abandoned in-place and vehicle traffic prohibited from leaving the existing road. Lay-down areas would not be permitted within the Archaeologically Sensitive Area (ASA). Abandoning the poles located within an archaeological site would avoid adverse impacts on National Register of Historic Places (NRHP)-eligible sites.
- The existing electrical distribution line segments identified within ASAs on portions of Point Sal Road north of Armar Road, Point Sal Road between Armar Road and Abordo Road, Point Sal Road between Combar Road and Cuatro Road, Point Sal Road at Cuatro Road, Soldado Road, and El Rancho Road between Point Sal Road and Antenna Road would require poles be cut off at grade and the underground portion be abandoned in-place to avoid adverse impacts on NRHP-eligible sites. The aboveground portions of existing poles should either be left on the ground surface or cut up into small segments and manually transported for disposal. Vehicle traffic would be prohibited within the ASA.
- The existing electrical distribution line segments identified within ASAs on portions of Point Sal Road south of Lado Road and El Rancho Road south of Astral Road would require poles be cut off at grade and the underground portion be abandoned in-place to avoid adverse impacts on NRHP-eligible sites. Vehicles accessing the ASA should either be restricted or travel atop a buffer that can be removed upon project completion.

Other segments of existing lines may also be abandoned in place or removed using non-invasive techniques for safety or other reasons. In addition, poles would be removed in stages to reduce impacts to the maximum extent feasible.

To prevent electrical service interruptions on North Vandenberg AFB, the existing lines would remain operational until installation, testing, and initial operation of the new lines is completed. The new overhead electrical distribution line would be maintained by annual inspections.

2.2.3 Modifications to Feeder Line D1

The overhead pole lines would conform to the requirements of the California Public Utilities Commission General Order 95 for grade B construction of overhead lines in light loading zone. The following modifications would occur to Feeder Line D1.

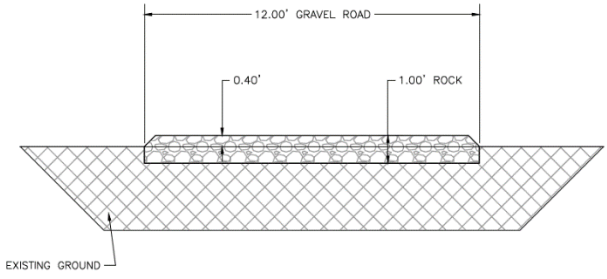
- Existing wood poles would be replaced with concrete poles, and wood cross arms will be replaced with fiberglass cross arms.
- Existing overhead copper conductors would be replaced with new copper conductors.
- Existing puffer switch (SF6) sectionalizing pole top switches would be replaced with gang operated three phase overhead load break switches.
- Existing pole hardware and accessories would be replaced with stainless steel hardware and accessories.
- Existing pole mounted transformers would be replaced with new transformers.
- Two existing 300 kVA pad mount transformers would be replaced with new transformers.
- Three existing 75 kVA 1-phase pole mount transformers would be replaced with one 225 kVA 3-phase pad mount transformer.
- All overhead hardware would be designed for 35 kV maximum.
- Existing underground feeders to facility pad mount transformers would be replaced with new underground conduits and 15 kV cables.
- New fuse cut outs rated 15 kV would be installed at select locations.
- PVC type riser conduits would be used in lieu of RGS because the area is prone to corrosive environment.
- Cross arm and equipment mounted lightning arresters would be provided at transformer locations and at the transition to the underground feed.

2.2.4 Site Improvements

Access Roads

The Proposed Action would require temporary access roads during demolition to facilitate removal of the existing lines where access does not currently exist. Temporary access roads would be stabilized by preserving existing vegetation to the extent feasible and revegetation.

New 20-foot wide permanent access roads would be constructed as necessary for new powerlines that are not located near existing roads to provide easy access for maintenance personnel and for wire stringing. The total length of new road is approximately 4,600 linear feet, primarily located near Point Sal/Lado Roads near the northern terminus of the line, and Sercho Road, approximately 0.7 mile north of Shuman Creek (Figure 2-2).



NOTES:
1. AGGREGATE TO BE COMPACTED TO A MINIMUM OF 90% MAXIMUM DENSITY.
2. SEE GEOTECHNICAL REPORT FOR OVEREXCAVATION AND GRADING REQUIREMENTS.
3. ACCESS ROAD LONGITUDINAL GRADE CANNOT EXCEED 20%.
4. CONSTRUCTION OF ACCESS ROAD NEEDS TO FOLLOW THE STANDARD SPECIFICATIONS FOR PUPLIC WORKS CONSTRUCTION UNLESS NOTED OTHERWISE.

DETAIL B: ACCESS ROAD SECTION (NTS)

Grading

Site development would require clearing and grading associated with new access roads. Other ground disturbance would occur associated with clearing around new pole installation and trenching where short segments of underground line would cross existing infrastructure (e.g., roads).

Slopes would be contoured, if necessary, to the extent practicable to provide smooth transitions between the proposed grading and adjacent landforms. Excavated soil would be balanced onsite to the extent feasible. Vegetation removal would be minimized and avoided in surface water drainages. Heavy equipment would be prohibited in surface water drainages.

Staging Areas

Staging areas would be established onsite for equipment, such as tractors, backhoes, and rubber-wheeled trucks, and for supplies, and vehicle parking. Staging areas would be located within existing parking lots, roads, or within areas of invasive plant species (e.g., iceplant) pre-identified by qualified Vandenberg AFB natural resources management personnel and outside of known cultural resources. Staging areas would be used for the temporary storage of excavated soils until the materials could be re-used and/or transported to a designated soil storage area on Vandenberg AFB or an appropriate offsite disposal facility. Cleared vegetation would be transported to the Vandenberg AFB Landfill.

Disposal of Construction Debris

Demolition of the existing electrical distribution lines and poles would generate construction debris.

Hazardous waste could be encountered during demolition activities, such as creosote treated poles. All hazardous waste would be stored, transported, and disposed of in accordance with federal, state, and local regulations. Hazardous waste would be transported to the Consolidated Collection Accumulation Point (CAP) at Building 3300 on Vandenberg AFB. Manifests would be signed by designated Vandenberg AFB staff prior to transporting the waste to a permitted offsite disposal facility.

2.2.5 Operations/Maintenance

The Proposed Action would result in a negligible increase in maintenance activities associated with the proposed overhead electrical distribution lines and permanent access roads. Accordingly, there would be no consequential change in the level of operations/maintenance activities associated with the Proposed Action of replacing the overhead electrical distribution lines on North Vandenberg AFB.

2.3 No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not occur and sections of North Vandenberg AFB will continue to encounter power losses. As discussed in Chapter 1, the existing Feeder Line D1 electrical distribution lines are beginning to lose functionality due to old age, and no longer provide a reliable power source for facilities on North Vandenberg AFB.

The No-Action Alternative is not considered a reasonable alternative because it does not meet the purpose and need of the Proposed Action; however, it provides a measure of the baseline conditions against which the impacts of the Proposed Action can be compared. In this EA, the No-Action Alternative is represented by the baseline conditions described in Chapter 3, Affected Environment.

2.4 Environmental Protection Measures

The following environmental protection measures are considered part of the proposed action. Measures are included in the 100% design drawings and/or will be included in all future contracting documents related to project completion. For a comprehensive list of steps the Air Force will employ to avoid and/or minimize

environmental impacts as well as monitor and report all protection measures, refer to Appendix C.

2.4.1 Air Quality

- Prior to proposed construction, portable equipment meeting the criteria defined in the statewide Portable Equipment Registration Program (PERP) would be registered in the program or would have a valid Santa Barbara County Air Pollution Control District (SBCAPCD) Permit to Operate.
- Equipment usage and fuel consumption would be documented and reported to 30th Civil Engineer Squadron, Asset Management Flight (30 CES/CEA) to facilitate tracking construction emissions for inclusion in the Vandenberg AFB Air Emissions Inventory.
- Idling of heavy-duty diesel trucks during loading and unloading activities would be limited to five minutes, with auxiliary power units used whenever practicable.

The following control measures would be implemented to decrease diesel emissions. Diesel engines operated in California are required to meet California Air Resource Board (CARB) established standards, which may be more stringent than federal mandates.

- Engine size in equipment used for the project would be minimized.
- The use of equipment would be managed to minimize the number of pieces of equipment operating simultaneously and total operation time for the project.
- Engines would be maintained in tune per manufacturer or operator specification.
- If applicable, CARB-certified diesel catalytic converters, diesel oxidation catalysts, and diesel particulate filters would be installed.
- When applicable, equipment powered by diesel engines would be retrofitted to meet the Air Toxics Control Measures for Off-Road Vehicles.
- Diesel construction equipment meeting the CARB Tier 4 emission standards for off-road heavy-duty diesel engines would be used to the maximum extent feasible.
- If appropriate, diesel powered equipment would be replaced by electric equipment.

The following dust control measures found in SBCAPCD Rule 345, Control of Fugitive Dust from Construction and Demolition Activities, would be implemented to further decrease fugitive dust emissions from ground disturbing activities.

- Dust would be controlled by watering. Water would be applied at least twice daily to dirt roads, graded areas, and dirt stockpiles to prevent excessive dust at the staging areas. Watering frequency would be increased whenever the wind speed exceeds 15 miles per hour. Watering will not be done when rain events or soil moisture obviate the need for it. Chlorinated water would not be allowed to run into any waterway.
- Vehicles speeds would be minimized on exposed earth.
- Ground disturbance would be limited to the smallest, practical area and to the least amount of time.
- Best Management Practices (BMPs) to reduce dust emissions would be implemented.

- Soil stockpiled for more than two days would be covered, kept moist, or treated with soil binders to prevent dust generation.
- No materials or soil would be loaded onto trucks for transport unless at least one of the following dust prevention techniques is utilized:
  - Properly secured tarps or cargo covering that covers the entire surface area of the load or a container-type enclosure is used.
  - Maintain a minimum of 6 inches of freeboard below the rim of the truck bed where the load touches the sides of the cargo area and ensure that peak loads do not extend above any part of the upper edge of the cargo area.
  - Water the bulk material to minimize the loss of material to wind or spillage.
  - Implement other effective dust prevention control measures approved in writing by the Control Officer.
- Visible roadway dust as a result of active operations, spillage from transport trucks, track-out/carry-out, and/or erosion would be controlled by implementing any of the following measures: track-out grates of gravel beds at each egress point; wheel-washing at each egress point during muddy conditions; soil binders; chemical soil stabilizers; geotextiles; mulching; or seeding.
- Visible roadway dust would be removed at the end of each work day when bulk material removal ceases.

Given the requirements of EO 13834, Efficient Operations, and the increasing concerns that greenhouse gases (GHGs) contribute to global climate change, the 30 CES/CEA would take into consideration and encourage measures that promote efficiency and conservation through education, programs, and incentives to increase efficiency and conserve energy in projects on Vandenberg AFB.

2.4.2 Biological Resources

- Vandenberg AFB will comply with all terms and conditions and reporting requirements for implementation of the reasonable and prudent measures stipulated in the PBO concurrence issued by USFWS on March 21, 2018 (refer to Appendix B-1 for details). These measures include reducing the potential for injury or mortality of California red-legged frogs and minimizing impacts to Gaviota tarplant communities and “suitable but not known to be occupied” El Segundo blue butterfly habitat.
- A qualified biological monitor would conduct pre-project briefings for all workers. A monitor would also be present for the entire first two weeks of the project and would be present for at least one day per week through the remainder of the project as well as in areas specifically determined as sensitive for any species.
- All construction personnel would be required to attend a mandatory educational program about all listed species in the project area and their habitats.
- Prior to use on Vandenberg AFB, equipment would be cleaned of all foreign weed seeds and debris. Whenever feasible, equipment would be cleaned between sites.
- A qualified biologist familiar with California red-legged frog would monitor activities within areas determined sensitive for this species.

- A qualified biologist familiar with Gaviota Tarplant would survey the project footprint and flag locations with Gaviota tarplant to be avoided.
- Fill material would not be placed or transported into areas flagged for Gaviota tarplant.
- Silt fencing, or other similar material, would be installed in areas determined appropriate by 30th Civil Engineer Squadron, Installation Management Flight, Natural Resources Management (30 CES/CEIEA) biologists.
- Prior to commencing the Proposed Action, the Air Force would survey the project area for areas that may fall within the definition of Waters of the U.S. under Section 404 of the Federal Water Pollution Control Act, including wetlands.
- A qualified biologist monitor would ensure construction of the Proposed Action would avoid Waters of the U.S., including wetland areas. Avoidance methods include ensuring the design includes installation of poles and construction of access roads outside jurisdictional areas. No vegetation removal would occur in Waters of the U.S. or wetland areas.

2.4.3 Cultural Resources

- Vandenberg AFB will comply with the conditions stipulated in SHPO's concurrence letter dated September 27, 2017 and the Memorandum of Agreement signed in August 2019 (refer to Appendix B-2 for details).
- Temporary exclusionary fencing would be installed between NRHP-eligible sites designated by the ASA and work areas to prohibit project personnel and vehicular access.
- All construction activities within NRHP-eligible archaeological sites would be monitored by a qualified archaeologist and Native American monitor.
- Off-road vehicular access would be prohibited within NRHP-eligible sites. In these areas, poles would be installed by a truck parked on existing roads.
- Potential pole removal options within NRHP-eligible sites would include the following: (1) abandoning the poles in place, (2) cutting the poles off at the base and leaving them on the ground, or (3) cutting the poles off at the base and removing the poles from within site boundaries using other methods that do not require vehicular travel across the ground surface.
- For any new poles that are located within an ASA, a program of controlled archaeological excavations (i.e., data recovery) would be carried out to mitigate adverse effects on NRHP-eligible sites, per the Memorandum of Agreement.
- If previously undocumented cultural resources are discovered during construction activities, procedures established in the 36 CFR 800.13 and the Vandenberg AFB Integrated Cultural Resources Management Plan would be followed.

2.4.4 Public Health and Safety

- Proper disposal of hazardous waste would be accomplished through identification, characterization, sampling, and analysis of wastes generated.
- All hazardous materials would be properly identified and used in accordance with manufacturer's specifications to avoid accidental exposure to or release of hazardous

materials required to operate and maintain construction equipment.

- All equipment would be properly maintained and free of leaks during construction and maintenance activities. All necessary equipment maintenance and repairs would be performed in pre-designated controlled, paved areas to minimize risks from accidental spillage or release. Prior to construction, a Spill Prevention Plan would be submitted to 30 CES Environmental Compliance Section for approval.

- Hazardous materials would be procured through or approved by the Vandenberg Hazardous Materials Pharmacy (HazMart). Monthly usage of hazardous materials would be reported to the HazMart to meet legal reporting requirements.

- The Air Force would comply with Air Force Occupational Safety and Health (AFOSH) or federal OSHA (Occupational Safety and Health Act) standards requirements during construction and annual maintenance activities, per Air Force Instruction (AFI) 91-202.

- A Health and Safety Plan would be developed and implemented. In addition, the Air Force would coordinate with the 30th Space Wing Safety-Weapon Safety (30 SW/SEW) prior to implementing the Proposed Action to ensure no adverse effects would occur from unexploded ordnance (UXO) issues.

- Awareness training would be incorporated into the worker health and safety protocol to minimize potential adverse impacts from UXO, biological hazards (e.g., snakes and poison oak) and physical hazards (e.g., rocky and unstable terrain).

- All ground disturbing activities in proximity to hazardous release sites would be monitored to minimize the risks of exposure to soil or groundwater contaminants.

2.4.5 Water Resources

The contractor shall comply with all measures prescribed in the General Requirements for Environmental Protection (Appendix C). Specific measures are highlighted here.

- Because the proposed action is likely to exceed one acre of total ground disturbance, the contractor shall review the Construction General Permit and confirm coverage applicability. Appendix C describes the specific elements of permit coverage required.

- The contractor shall implement and maintain BMPs to prevent sediment or other pollutants from entering a water natural water body or the stormwater system, as described in a current California Stormwater BMP Handbook (California Stormwater Quality Association, California Department of Parks and Recreation Off-Highway Vehicle BMP Manual).

- The contractor shall minimize temporary access where feasible. When required, the contractor shall minimize vegetation removal for temporary access roads. Vegetation that is removed for temporary access roads shall be revegetated to stabilize soil and prevent erosion.

- Permanent sediment and erosion control materials shall be biodegradable and may not contain any plastic. All temporary sediment and erosion control materials shall be removed upon site stabilization.

2.5 Other Alternatives Considered

As part of the Air Force's decision-making process, two alternatives were considered but not carried forward for detailed analysis as they were determined infeasible since they did not meet the purpose and need of the Proposed Action, as described below.

Alternative Energy Sources

Utilization of alternative energy sources was considered as a potential alternative.

Locations on North Vandenberg AFB where solar technologies (e.g., building roof-mounted and ground-mounted solar collectors) could be installed for the generation of electricity were considered. However, these technologies would not produce adequate electricity to provide a reliable power source on North Vandenberg AFB. In addition to solar technologies, onsite generators would be required at the facilities.

Wind energy technologies were also considered as an alternative power source. Although wind energy technologies are continually improving, this power source would not generate an adequate energy supply. Similar to solar technologies, onsite generators would be required at most facilities to provide a reliable power source.

Time constraints associated with permitting requirements and lease agreements for onsite generators could result in further power losses to North Vandenberg AFB facilities due to powerline failures. Furthermore, new powerlines would be required to transfer electricity from the generators. Therefore, these alternatives would not meet the purpose and need of the Proposed Action and was eliminated from further analysis.

Direct Replacement

An alternative was considered that included replacing the existing electrical distribution lines in the same location. This alternative would replace the existing wires and electrical equipment on the original poles. However, this alternative would not provide a redundant power source (i.e., one line operable at all times) during construction, which would result in electrical service interruptions on North Vandenberg AFB. In addition, the wood poles and cross arms would not be upgraded to concrete poles and fiberglass cross arms, which have superior load capacity and resistance to UV radiation and weathering. Therefore, this alternative was eliminated from further analysis.

Underground and In-Road Replacement

An alternative was considered that included construction of an underground electrical system and the subsequent removal of the existing overhead electrical distribution lines. This alternative would install electrical conduits below the surface of the existing roadways. However, due to the substantial cost associated with underground utility replacement, it would be economically infeasible to construct this alternative. Therefore, this alternative was eliminated from further analysis.

Chapter 3. Affected Environment

3.1 Air Quality

Air quality refers to the atmospheric concentration of a specific compound (i.e., amount of pollutants in a specified volume of air) that occurs in a particular geographic location. Air quality levels at a particular location are determined by the interaction of emissions (e.g., type and amount of pollutant emitted into the atmosphere), meteorology (e.g., weather patterns affecting pollutant dispersion), and chemistry (e.g., chemical reactions that transform emissions into other substances). Air quality is defined by pollutant concentrations that are often expressed in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

One aspect of significance is a pollutant's concentration in comparison to a national and/or state ambient air quality standard. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare with a reasonable margin of safety. The national standards for seven major pollutants of concern (i.e., criteria pollutants), established by the USEPA, are termed the National Ambient Air Quality Standards (NAAQS). Areas that violate a NAAQS are designated as nonattainment areas.

California standards, established by CARB, are termed the California Ambient Air Quality Standards (CAAQS). CAAQS are at least as restrictive as the NAAQS and include pollutants for which national standards do not exist. In addition to the national criteria pollutants, California has identified four other pollutants for ambient air quality standards. Areas within California with ambient air pollutant concentrations that are higher than a state standard are designated as nonattainment areas for that pollutant. Table 3.1-1 summarizes the national and state ambient air quality pollutant standards.

Toxic air contaminants include air pollutants that can cause serious illnesses or increased mortality, even in low concentrations. Toxic air contaminants are compounds that generally have no established ambient standards, but are known or suspected to cause short-term (acute) and/or long-term (chronic non-carcinogenic or carcinogenic) adverse health effects. The CARB designates diesel particulate matter from the combustion of diesel fuel as a toxic air contaminant.

The main pollutants of concern considered in this air quality analysis include volatile organic compounds (VOCs), ozone (O_3), carbon monoxide (CO), nitrogen oxides (NO_X), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Although VOCs or NO_X (other than nitrogen dioxide) have no established ambient standards, they are important as precursors to O_3 and $PM_{2.5}$ formation.

3.1.1 Regional Setting

The climate of the project area is Mediterranean, characterized by warm, dry summers and mild, relatively damp winters. The major influence of the regional climate is the Pacific Ocean and the Eastern Pacific High, a strong persistent atmospheric high-pressure system. Over 90 percent of the total annual precipitation in the project area occurs from polar storm systems that frequent the area during the months of November through April. The average annual precipitation is approximately 15 inches (NOAA 2016).

Due to the proximity of the project site to the coastline, marine air from the Pacific Ocean has a strong moderating effect on air temperatures at VAFB. The high and low temperatures during the summer months average in the low 70s (degrees Fahrenheit) and low 50s, respectively. The high and low temperatures during the winter months average in the mid-60s and low 40s.

Table 3.1-1. National and California Ambient Air Quality Standards

Pollutant	Averaging Period	NAAQS[a] Primary Standard[b,c]	NAAQS[a] Secondary Standard[b,d]	CAAQS
Ozone, O_3 (ppm)	1 hour	--	--	0.09
	8 hours	0.070	0.070	0.070
Carbon Monoxide, CO (ppm)	1 hour	35	--	20
	8 hours	9	--	9
Nitrogen Dioxide, NO_2 (ppm)	1 hour	0.10	--	0.18
	Annual	0.053	0.053	0.03
Sulfur Dioxide, SO_2 (ppm)[e]	1 hour	0.075	--	0.25
	3 hours	-	0.5	-
	24 hours	0.14	--	0.04
Respirable Particulate Matter (PM_{10}) ($\mu g/m^3$)	24 hours	150	150	50
	Annual	--	--	20
Fine Particulate Matter ($PM_{2.5}$) ($\mu g/m^3$)	24 hours	35	35	--
	Annual	12	15	12
Lead, Pb ($\mu g/m^3$)[f]	Rolling 3-month average	0.15	0.15	--
	30 day average	--	--	1.5
Vinyl chloride (ppm)[f]	24 hours	--	--	0.01
Sulfates ($\mu g/m^3$)	24 hours	--	--	25
Hydrogen Sulfide, H_2S (ppm)	1 hour	--	--	0.03
Visibility Reducing Particles	8 hours	--	--	--[e]

Sources: CARB 2017b, USEPA 2017

Notes:

a. Standards other than the 1-hour ozone, 24-hour PM_{10}, 24-hour $PM_{2.5}$, and those based on annual averages are not to be exceeded more than once a year. The 8-hour ozone national standard has replaced the 1-hour ozone national standard.
b. Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.
c. Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that states implementation plan is approved by the USEPA.
d. Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
e. In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
f. The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants

-- No standard.

Vandenberg AFB is located within Santa Barbara County, which is within the South Central Coast Air Basin (SCCAB). The SCCAB is composed of the counties of San Luis Obispo, Santa Barbara, and Ventura. The Santa Barbara County Air Pollution Control District (SBCAPCD) is responsible for regulating stationary sources of air emissions in Santa Barbara County.

The CARB and SBCAPCD operate a network of ambient air monitoring stations in Santa Barbara County. The purpose of the monitoring stations is to measure ambient concentrations of air pollutants and determine whether air quality meets the CAAQS and the NAAQS. The nearest air monitoring station to the project site, the South H Street station in Lompoc measures all criteria pollutants and began monitoring $PM_{2.5}$ in 2007. Presently, Santa Barbara County is in unclassified/attainment of all NAAQS for all criteria pollutants.

Additionally, Santa Barbara County is in attainment of all CAAQS except those for O_3, $PM_{2.5}$, and PM_{10} (CARB 2017c). Table 3.1-2 summarizes the county's attainment status.

Table 3.1-2. Santa Barbara County Air Quality Attainment Status

O_3		CO		NO_2		SO_2		$PM_{2.5}$		PM_{10}	
State	National	State	National	State	National	State	National	State	National	State	National
N	U/A	A	U/A	A	U/A	A	U	U	U/A	N	U

Sources: USEPA 2017a, USEPA 2017b, and CARB 2017c.
Notes:
A=Attainment; N=Nonattainment; U/A=Unclassified/Attainment; U=Unclassified.

3.1.2 Greenhouse Gas Emissions

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The accumulation of GHGs in the atmosphere influences the long-term range of average atmospheric temperatures. Scientific evidence indicates a trend of increasing global temperature over the past century due to an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

Recent observed changes due to global warming include shrinking glaciers, thawing permafrost, a lengthened growing season, and shifts in plant and animal ranges (IPCC 2014, USGCRP 2018, State of California 2019). Predictions of long-term environmental impacts due to global warming include sea level rise, changing weather patterns with increases in the severity of storms and droughts, changes to local and regional ecosystems including the potential loss of species, and a significant reduction in winter snow pack. In California, global warming effects are predicted to include exacerbation of air quality problems, a reduction in municipal water supply from the Sierra snowpack, a rise in sea level that would displace coastal businesses and residences, damage to marine and terrestrial ecosystems, and an increase in the incidence of infectious diseases, asthma, and other human health problems (Bedsworth, *et al*. 2018).

The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential (GWP), which equates to the ability of a gas or aerosol to trap heat in the atmosphere. The GWP rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a GWP of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its GWP and adding the results together to produce a single, combined emission rate representing all GHGs.

3.1.3 Applicable Regulations and Standards

Sources of air emissions in the SCCAB are regulated by the USEPA, CARB, and SBCAPCD. In addition, regional and local jurisdictions play a role in air quality management.

Federal Regulations

Clean Air Act

The Clean Air Act (CAA) of 1963 and subsequent amendments specify regulations for control of the nation's air quality. The USEPA is responsible for implementing most aspects of the CAA. Basic elements of the act include the NAAQS for criteria air pollutants, hazardous air pollutant standards, attainment plans,

motor vehicle emission standards, stationary source emission standards and permits, and enforcement provisions. The CAA regulates emissions of criteria pollutants and air toxics to protect human health and welfare.

The CAA delegates the enforcement of the national standards to the states. In California, the CARB is responsible for enforcing air pollution regulations. In Santa Barbara County, the SBCAPCD has this responsibility.

The CAA establishes air quality planning processes and requires areas in nonattainment of a NAAQS to develop a State Implementation Plan that details how the state will attain the standard within mandated time frames. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area.

Executive Order 12088

EO 12088, *Federal Compliance with Pollution Control Standards*, requires federal agencies to comply with applicable pollution control standards. The EO requires agencies to ensure that all necessary actions are taken to ensure the prevention, control, and abatement of environmental pollution with respect to federal activities and facilities. EO 12088 also requires federal agencies to cooperate with USEPA, state, and local regulatory agencies.

Executive Order 13432

EO 13432, *Cooperation Among Agencies in Protecting the Environment with Respect to Greenhouse Gas Emissions from Motor Vehicles, Nonroad Vehicles, and Nonroad Engines*, ensures the coordination between federal agencies to protect the environment with respect to GHGs emissions from vehicles, engines, and motor vehicle fuels. This EO requires the integration of environmental management into federal operations, policies, planning, and management.

Executive Order 13834

EO 13834, *Efficient Federal Operations*, requires federal agencies to meet statutory requirements in a manner that increases efficiency, optimizes performance, eliminates unnecessary use of resources, and protects the environment. This EO also requires Federal agencies to report their annual GHG emissions.

State Regulations

In California, the CARB is designated as the responsible agency for all air quality regulations.

California Clean Air Act

The California CAA of 1988 and its amendments outlines a program to attain the CAAQS for O_3, NO_2, SO_2, and CO by the earliest practical date. Since the CAAQS are more stringent than the NAAQS, attainment of the CAAQS will require more emission reductions than what will be required to show attainment of the NAAQS.

Similar to the federal system, the state requirements and compliance dates are based on the severity of the ambient air quality standard violation within a region.

Local Regulations

The SBCAPCD regulates stationary sources of air pollution and establishes emission limitations and control requirements for various sources, based upon their source type and magnitude of emissions. For example, SBCAPCD Rule 345, Control of Fugitive Dust from Construction and Demolition Activities, establishes limitations on the generation of fugitive dust emissions from construction and demolition sites. The SBCAPCD also implements a permit

program for new or modified stationary sources of air pollutants.

3.2 Biological Resources

Federal agencies are required by NEPA and Section 7 of the ESA of 1973, as amended (16 United States Code (USC) §§ 1531 to 1544), to seek to conserve and to assess the effect of any project on federally listed threatened and endangered species. Under Section 7, consultation with the USFWS and/or the National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (Fisheries Service) is required for federal projects if such actions could directly or indirectly adversely affect listed species or destroy or adversely modify designated critical habitat. In addition, when evaluating project impacts, Air Force policy considers state listed species when practicable and state law protected species when such protection does not directly conflict with the military mission.

Vandenberg AFB is located in a transitional ecological region that lies at the northern and southern distributional limits of many species, and contains diverse biological resources of considerable importance. Vandenberg AFB provides habitat for many federal and state listed threatened, endangered, and special concern plant and animal species.

3.2.1 Methodology

Potential occurrence of plant and wildlife species, including special status species, was determined based on project-specific field surveys conducted in the project vicinity, past documentation of special status species within the project vicinity, suitable habitat preferences, and known occurrence based on literature searches and other existing documentation. Sources used to determine potential occurrence include published literature, regulatory research documents, and Geographic Information System (GIS) maps of natural resources present at Vandenberg AFB. Special status species survey and location GIS maps were superimposed over the project area and intersecting occupied habitat was documented and/or reviewed.

3.2.2 Vegetation Types

The majority of the project area has been exposed to extensive disturbance from road and facility maintenance activities. Exotic species with the capacity to rapidly colonize disturbed areas dominate much of the project area. A large portion of the new powerline would be placed within ruderal/roadside habitat and in previously disturbed soils or habitats. Much of these areas have been subjected to extensive disturbance from road and facility maintenance activities.

Eight distinct vegetation types were identified within the approximate 65-foot wide corridor centered on the proposed line, with approximately 85 percent of the total area dominated by non-native or ruderal species and habitats, as described:

Ruderal

Ruderal vegetation is found growing in disturbed or developed areas adjacent to roads and is typically subjected to frequent disturbance, including mowing. Ruderal vegetation often receives enhanced moisture from road run-off. These areas are dominated by low growing herbaceous species, most of which are non-native iceplant, annual grasses and forbs. Ruderal vegetation may include seacliff buckwheat. However, repeated disturbances including mowing in most of the project area prevents the maturation and flowering of this species, which prevents it from being suitable for occupancy by the El Segundo blue butterfly.

Central Coast Scrub

Central coast scrub is the dominant native vegetation type found within the project area. This vegetation type is characterized by shallow-rooted, mesophyllic plant

species that are often drought-deciduous and summer-dormant. Both the density and composition of the shrub cover vary from site to site, as does the herbaceous understory. Past disturbances have facilitated the establishment of many non-native species such as iceplant within this vegetation type in some areas. However, most areas where non-natives are dominant are discussed above. Dominant species vary significantly with environmental factors such as geographic location, nature of habitat, and degree of disturbance. Species composition ranges from pure stands of coyote brush or purple sage to a mosaic of species including black sage, deerweed, California sagebrush, seacliff buckwheat, and sticky monkeyflower. Central coast scrub communities also intergrade gradually with other vegetation types within the project area including maritime chaparral. Central coast scrub forms successional stages in maritime chaparral following fire or other disturbances such as land clearing. Herbaceous species such as grassland tarplant may be present in clearings between shrubs.

Maritime Chaparral

Maritime chaparral is a dense, evergreen, rigid, fire-adapted form of shrubby vegetation unique to California's coastal areas. Chaparral provides valuable wildlife habitat and is important in providing vegetative cover that controls erosion, especially on steep slopes and ridges. Burton mesa chaparral is a type of maritime chaparral characterized by endemic species of manzanita (La Purisima manzanita and sand mesa manzanita), which have a limited distribution and rare plant status in California, and Santa Barbara lilac. It occurs on acidic substrates including stabilized sand, granite, and metamorphosed rock types found within the project area. Unusual multi-trunked coast live oaks are scattered in much of the Burton Mesa chaparral.

Willow Riparian

Willow riparian is a dense, low, closed canopy, broad-leafed winter-deciduous riparian forest. Arroyo willow dominates this vegetation type within the project area. This vegetation type is associated with the banks and floodplain of Shuman Creek and scattered various ephemeral or intermittent creeks.

Non-native Broadleaf

Non-native broadleaf occurs most commonly in areas that have been subjected to prior disturbance allowing weedy non-native species adapted to frequent disturbance to invade and dominate a site. Non-native herbaceous broadleaf species such as black mustard, onion weed, sweet fennel, and poison hemlock dominate most of the non-native broadleaf vegetation within the project area.

Non-native Grass

Non-native grass occurs most commonly in areas that have been subjected to prior disturbance, such as grazing, allowing weedy non-native species adapted to frequent disturbance to invade and dominate a site. Within some portions of the project area, a near monoculture of iceplant dominates much of the non-native grassland. This is the dominant vegetation type found within the project area.

Non-native Woodland

Areas with extensive growths of non-native trees within the project area are primarily dominated by eucalyptus, Monterey pines, and Monterey cypress. Monterey cypress is native to the Monterey coast area of California, but is considered moderately invasive in other parts of California. Many of these tree species were originally planted as wind breaks around buildings and agricultural fields and have expanded past their original distribution.

Iceplant

Areas dominated by more than 70 percent monotypic stands of invasive iceplant were characterized as this vegetation type.

3.2.3 Wildlife Species

The vegetation types present within the project area provide habitat for many wildlife species, including but not limited to birds commonly associated with coastal scrub and grassland vegetation including rufous-crowned sparrow, European starling, and yellow warbler. Nesting native birds such as red-tailed hawk and burrowing owl would also be expected to utilize the project site.

California red-legged frog are likely to be the most common amphibian species within the project area, western spadefoot and others could also be present. The California red-legged frog is federally listed as threatened and a California Species of Special Concern (refer to Section 3.2.4, Special Status Species). The California tiger salamander is also listed as a federally-threatened species and on the state's watch list, but has never been observed in the project area, despite numerous protocol level surveys.

Reptile species expected within the project area include northern California legless lizard, two-striped garter snake, and coast horned lizard.

A variety of mammal species are also expected to occur within the project area. These include various bat species including pallid bat, Townsend's big-eared bat, silver-haired bat, western red bat, hoary bat, and Yuma myotis. Other mammals include brush rabbit, badger, coyote, mule deer, and various species of mice and valley pocket gopher (CDFW 2017).

3.2.4 Special Status Species

Table 3.2-2 lists the federal and state threatened and endangered species and other special status species[1] that were evaluated due their potential to occur in the project area. Figure 3-1 depicts sensitive federally listed species known to occur in the vicinity of the Proposed Action.

Three special status species, El Segundo blue butterfly (listed as federally endangered), California red-legged frog (listed as federally threatened and a California Species of Concern), and Gaviota tarplant (listed as federally and state endangered) are known to occur within the project area.

California red-legged frog

The USFWS listed this species as federally threatened on May 23, 1996 (61 FR 25813) and designated critical habitat for the California red-legged frog on March 13, 2001 (66 FR 14626). The Final Rule for Revised Designation of Critical Habitat published on March 17, 2010 (75 FR 12816) also excluded Vandenberg AFB from critical habitat designation under section 4(b)(2) of the ESA. As a result, the Proposed Action is not in critical habitat for California red-legged frog.

California red-legged frogs have the potential to occur in nearly all permanent streams and ponds on Vandenberg AFB (Christopher 2004). California red-legged frogs occur in different habitats depending on their life stage, the season, and weather conditions. All life stages are most likely to be encountered in and around breeding sites, which are known to include coastal

[1] Special status species refers to those animals identified as a California Species of Concern (CSC) or those plants that maintain a California Rare Plant Ranking (CRPR), or other designations. State agencies are directed to pay additional attention to CSC species to limit the potential of future listing under the state endangered species act. Some or all CRPR species, depending on substatus, meet the definitions of the state endangered species act, with the highest ranking species eligible for listing.

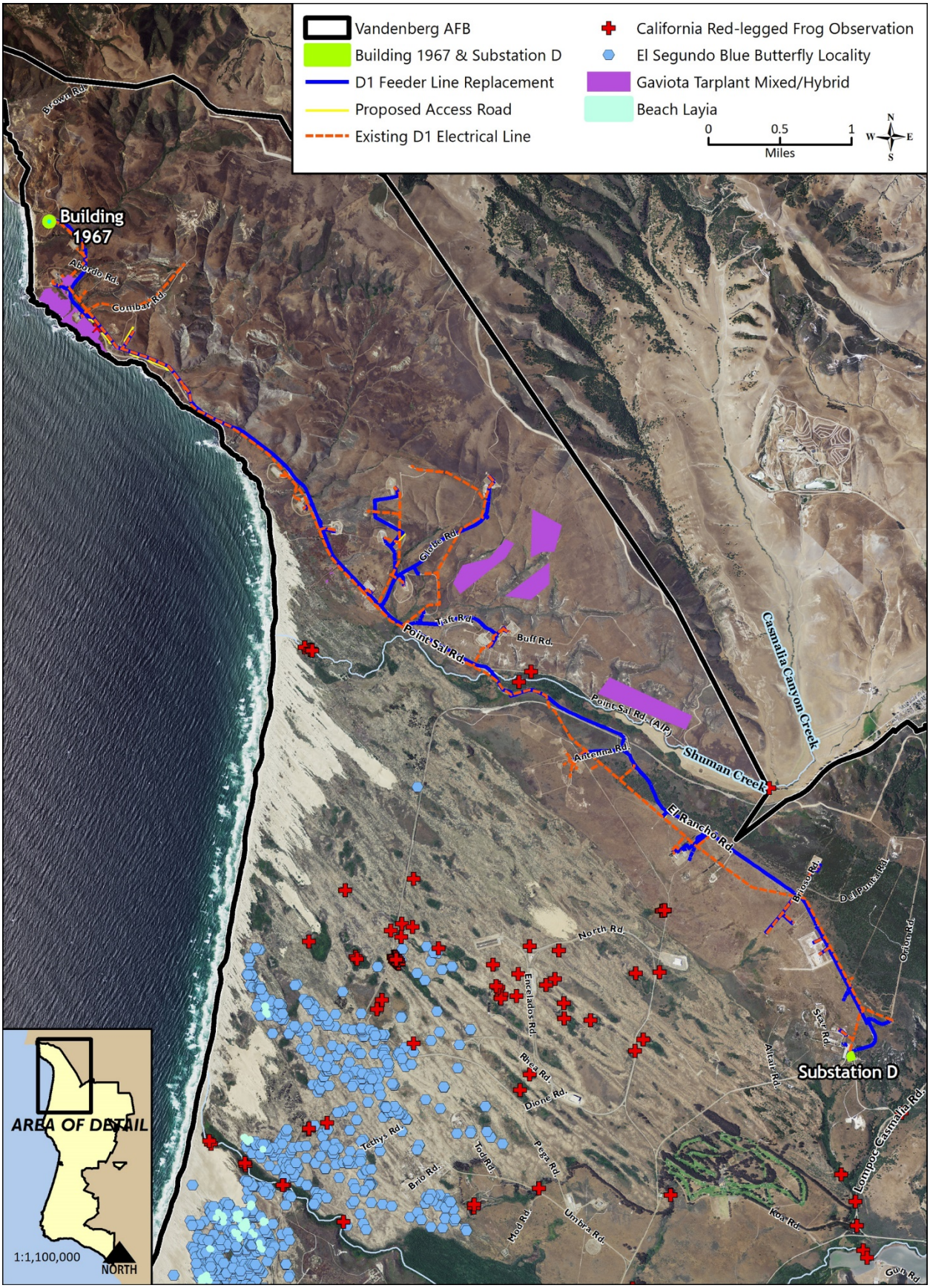


Figure 3-1. Federally Listed Species in the Vicinity of the D1 Powerline

lagoons, marshes, springs, permanent and semi-permanent natural ponds, ponded and backwater portions of streams, as well as bodies of water confined within an enclosure such as stock ponds, irrigation ponds, and siltation ponds. Dense, shrubby, or emergent vegetation closely associated with deep-water pools with fringes of cattails and dense stands of overhanging vegetation such as willows are considered optimal breeding habitat.

California red-legged frogs breed from November to April, usually laying egg masses during or shortly following large rainfall events from late December to late April.

California red-legged frogs require aquatic habitat for breeding and cover but also use a variety of other habitat types including riparian and upland areas during periods of wet weather, starting with the first rains of fall.

Table 3.2-2. Special Status Plant and Wildlife Species within the Project Area

Common Name	Status		Occurrence	Habitat	Comments
	USFWS[1]	CDFG[2]			
Amphibians					
California red-legged frog	FT	CSC	Documented	Perennial ponds and streams	Breeds February - April
California tiger salamander	FT	ST		Grasslands and low foothills with pools or ponds	Breeds in fall
Crustaceans					
Vernal pool fairy shrimp	FT	--	Documented nearby	Vernal pools and seasonal wetlands	Eggs hatch during rains
Fish					
Tidewater goby	FE	CSC	Documented nearby	Coastal estuaries and wetlands	Breeds year-round
Insects					
El Segundo blue butterfly	FE	--	Documented nearby	Coastal sand dunes	Adult flight period June - September
Plants					
Gaviota tarplant	FE	SE	Documented	Valley grassland and coastal sage scrub	CRPR[3] 1B.1
Beach layia	FE	SE	Documented nearby	Coastal sand dunes	CRPR[3] 1B.1

Notes:
1. FE = Federal Endangered Species; FT = Federal Threatened Species
2. SE = California Endangered Species; CSC = California Species of Concern; ST= California Threatened Species
3. CRPR = California Rare Plant Rank; 1B.1 = plants rare, threatened, or endangered in California and elsewhere

Yearly rainfall patterns may affect the breeding season duration in perennial streams on Vandenberg AFB due to the availability of deep water pools. Areas not suitable for breeding may function as foraging habitat or refuge for dispersing frogs. California red-legged frogs often disperse from their breeding habitat as water levels fall below approximately 1 meter, finding cover in upland areas under brush. Adult frogs that have access to permanent water will generally remain active throughout the year. Adult California red-legged frogs have been documented traveling distances of over 1-mile during the wet season and spending considerable time in terrestrial riparian vegetation (USFWS 2002).

The primary areas of concern for the project area as related to this species include Shuman Creek, or in upland habitat in various intermittent and ephemeral streams. The closest known record of this species is in Shuman Creek, about 175 feet from the project area. While the existing and new lines actually cross over Shuman Creek, both of these are in a developed corridor with no sightings documented.

El Segundo blue butterfly

The El Segundo blue butterfly was listed by the USFWS as federally endangered on June 1, 1976 (41 FR 22041). However, the El Segundo blue butterfly were not known to occur on Vandenberg AFB at that time and would likely be exempted from this designation under section 4(a)(3) or excluded under section 4(b)(2) of the Endangered Species Act. As a result, the proposed project is not in critical habitat. The El Segundo blue butterfly occurs in coastal dune scrub habitat, along coastal bluffs, and in coastal scrub habitats. The adult flight period is generally from mid-June through August, and coincides with the blooming period of its host plant, seacliff buckwheat.

Seacliff buckwheat, the host plant for the federally endangered El Segundo blue butterfly, occurs near the project site in areas dominated by iceplant, within coastal scrub, and in higher elevation areas. Seacliff buckwheat is the host plant for El Segundo blue butterfly and large portions of the project area were surveyed for the presence of seacliff buckwheat and El Segundo blue butterfly on several different dates in all years between 2007 and 2016. There are roughly forty seacliff buckwheat plants occurring within the project area that currently occupy approximately 0.41-acres of the project area. No El Segundo blue butterflies were documented in pre-project surveys conducted in 2016 (MSRS 2016a). Furthermore, the butterflies have not been documented near seacliff buckwheat stands in the Lion's Head vicinity to date.

The nearest documented El Segundo blue butterfly locality was observed west of the Antenna Farm approximately 0.93-miles southwest of the D1 proposed project area. This locality consisted of a single butterfly observed in 2007, perched on dead wood and not associated with seacliff buckwheat (MSRS 2008). El Segundo blue butterflies have not been detected near this locality since 2007 despite repeated survey efforts in subsequent years. The nearest consistently occupied El Segundo blue butterfly habitat is 2.9-miles to the southwest of the D1 proposed project area, in the vicinity of West Umbra Road. However, due to the occurrence seacliff buckwheat (the host plant for the El Segundo blue butterfly) within the project area, the entire project area was determined to constitute potential habitat.

Gaviota tarplant

The Gaviota Tarplant is listed as federally endangered. It is most often associated with disturbed areas that are inundated by grasses, and on occasion with coastal shrubs such as *Baccharis pilularis*. Because this is an annual species, its identifiable presence is highly variable from year to year. Pure Gaviota tarplant stands are not known to occur within the project area; however, Gaviota tarplant co-occurs with grassland tarplant to form mixed and hybrid tarplant stands. Project-specific surveys for this species were conducted from 2005 to 2016, to coincide with the blooming period, and both mixed and hybrid stands of the species are known to occur near the northern terminus of the D1 line.

Other Special Status Species Considered

Other special status species that are known to occur, or that have reasonable potential to occur within the proposed action areas based on occurrence information and the presence of suitable habitat include vernal pool fairy shrimp, beach layia, and tidewater goby.

Vernal Pool Fairy Shrimp [*Federally Threatened Species*] occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. It is most frequently found in pools measuring less than 0.05-acre located most commonly in grass or mud bottomed swales, or basalt flow depression pools in unplowed grasslands. Vernal pool fairy shrimp have

been collected from early December to early May (USFWS 2007).

The nearest known location for this species is 0.57-miles away and is not known to occur within the project area (SRS Technologies 2006) therefore; this species would not be affected by project activities.

Beach Layia [*Federally Endangered Species*] is a small, succulent annual herb in the sunflower family with low spreading branches and heads of small white to pink ray flowers and yellow disk flowers which occurs in coastal dune scrub. Beach layia occurs on semi-stabilized sand ridges and troughs in coastal dune scrub vegetation and is closely associated with open sparsely vegetated sandy areas. It is known from seven dune systems in northern Santa Barbara, Monterey, and Humboldt Counties (USFWS 1998). This species has not been documented within the project area. Because this species is restricted in habitat distribution and the project area does not occur in dune systems, this species would not be affected by project activities.

Tidewater Goby [*Federally Endangered Species*] is a small bottom dwelling fish found in California's coastal estuaries, wetlands, lagoons, and lower reaches of coastal streams and rivers. It is an annual species with individuals typically not living for more than a year (Swift et al. 1989)

Tidewater goby in Shuman Creek are limited to the lagoon which is approximately 0.8-miles away from the project area and have not been detected east of this location or within the project area in past survey efforts (MSRS 2010). Therefore, this species is not anticipated to be affected by project activities since it does not occur near the project area and minimization measures will prevent siltation or other impacts to downstream waters.

3.2.5 Waters of the U.S. and Wetlands

Under Section 404 of the Clean Water Act (CWA), wetlands are defined as areas that are "inundated or saturated by surface or ground water 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." Wetlands generally include swamps, marshes, bogs, and similar areas (USEPA, 40 CFR 230.3 and United States Army Corps of Engineers [USACE], 33 CFR 328.3). Non-wetland Waters of the U.S. are also subject to jurisdiction by the USACE; however, the definition of Waters of the U.S. is currently the subject of regulatory changes and ongoing litigation. In California, the term Waters of the U.S. aligns with the 2015 Clean Water Rule, which defines Waters in categories, including as "traditional navigable waters", "tributaries" as defined under the Rule, and "adjacent waters", including wetlands (80 FR 37053). Other features may also be considered Waters of the U.S. on a case by case basis.

EO 11990, *Protection of Wetlands*, requires federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies must avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative to such construction and the proposed action includes all feasible measures to minimize harm to wetlands that may result from such use.

No project-specific wetland delineation surveys were conducted for the Proposed Action. However, based on review of aerial photos and GIS information provided by USAF and understanding of the project area, it is likely the drainage features that traverse the project site could be considered jurisdictional by the USACE and other Waters of the U.S.

Shuman and Casmalia Canyon Creeks are the main dry or seasonally dry tributaries in the project area. Shuman Creek runs east to west and is located just north of El Rancho Road. Casmalia Canyon Creek is a tributary that drains into Shuman Creek. Several unnamed, small drainages that are tributary to Shuman Creek also traverse the project site (Figure 3-1).

3.3 Cultural Resources

Cultural resources are districts, buildings, sites, structures, areas of traditional use, or objects with historical, architectural, archeological, cultural, or of scientific importance. They include archeological resources (both prehistoric and historic), historic architectural resources (physical properties, structures, or built items), and traditional cultural properties (properties used by living communities of people over generations for religious, spiritual, ancestral, or traditional reasons).

The NHPA establishes national policy for protecting significant cultural resources that are defined as "historic properties." The term "historic property" refers to any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP" (36 CFR Part 800.16).

3.3.1 Area of Potential Effects

The Area of Potential Effects (APE) of an undertaking is defined at 36 CFR 800.16(d) as "the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist." The APE for the Proposed Action is defined as a 200 foot wide corridor, centered on the powerline alignment. The delineation of a 200 foot-wide APE ensures that all project related activities will be accommodated as planned as well as include any inevitable minor adjustments made during project execution.

3.3.2 Cultural Setting

The prehistory of California's central coast spans the entire Holocene (the last 11,000 years) and may extend back to late Pleistocene times (which began about 1.6 million years ago and ended about 11,000 years ago). Excavations on Vandenberg AFB reveal occupations dating back 9,000 to 10,000 years (Glassow 1990, 1996; Lebow et al. 2001, 2006, 2007). These early occupants are thought to have lived in small groups that had a relatively egalitarian social organization and a forager-type land-use strategy (Erlandson 1994; Glassow 1996; Greenwood 1972; Moratto 1984). Human population density was low throughout the early and middle Holocene (Lebow et al. 2007). Cultural complexity appears to have increased around 3,000 to 2,500 years ago (King 1981, 1990). At Vandenberg AFB, that interval also marks the beginning of increasing human population densities and appears to mark the shift from a foraging to a collecting land-use strategy (Lebow et al. 2006, 2007). Population densities reached their peak around 600 to 800 years ago, corresponding to the full emergence of Chumash cultural complexity (Arnold 1992).

People living in the Vandenberg AFB area prior to historic contact are grouped with the Purisimeno Chumash (Greenwood 1978; King 1984; Landberg 1965), one of several linguistically related members of the Chumash culture. In the Santa Barbara Channel area, the Chumash people lived in large, densely populated villages and had a culture that "was as elaborate as that of any hunter-gatherer society on earth" (Moratto 1984). Relatively little is known about the Chumash in the Vandenberg AFB region. Explorers noted that villages were smaller and lacked the formal structure found in the channel area (Greenwood 1978:520). About five ethnohistoric villages are identified by King (1984) on Vandenberg AFB, along with another five villages in the general vicinity. Diseases introduced by early Euroamerican explorers, beginning

with the maritime voyages of Cabrillo in A.D. 1542 to 1543, substantially impacted Chumash populations more than 200 years before Spanish occupation began (Erlandson and Bartoy 1995, 1996; Preston 1996). Drastic changes to Chumash lifeways resulted from the Spanish occupation that began with the Portolá expedition in A.D. 1769.

Vandenberg AFB history is divided into the Mission, Rancho, Anglo-Mexican, Americanization, Regional Culture, and Suburban periods. The Mission Period began with the early Spanish explorers and continued until 1820. Mission La Purísima encompassed the Vandenberg area. Farming and ranching were the primary economic activities at the Mission. The Rancho Period began in 1820 and continued until 1845. Following secularization in 1834, the Alta California government granted former mission lands to Mexican citizens as ranchos. Cattle ranching was the primary economic activity during this period. The Bear Flag Revolt and the Mexican War marked the beginning of the Anglo-Mexican Period (1845–1880). Cattle ranching continued to flourish during the early part of this period, but severe droughts during the 1860s decimated cattle herds. The combination of drought and change in government from Mexican to the U.S. caused substantial changes in land ownership. Sheep ranching and grain farming replaced the old rancho system. Increased population densities characterize the Americanization Period (1880–1915). Beginning in the late 1890s, the railroad provided a more efficient means of shipping and receiving goods and supplies, which in turn increased economic activity. Ranching and farming continued during the early part of the period of Regional Culture (1915–1945), until property was condemned for Camp Cooke.

The Suburban Period (1945–1965) began with the end of World War II. In 1956, the army transferred 64,000 acres of North Camp Cooke to the Air Force, and it was renamed Cooke AFB. Construction of missile launch complexes began in 1957 and in 1958 the AFB had its first missile launch, the Thor, and the base was renamed Vandenberg AFB (Palmer 1999). The AFB played a very important role in the Cold War, with every ballistic missile in the U.S. arsenal ground- and flight-tested at Vandenberg AFB and thousands of military personnel receiving training under operational conditions. In addition, the base was the only place where military satellites could be safely launched into polar orbit and thus proved critical to the military space program during the Cold War (Nowlan et al. 1996).

3.3.3 Cultural Resources within the Project Area

This section is based on a Vandenberg AFB archaeological study of the proposed project (Applied EarthWorks, Inc. 2017) and related correspondence with the California Office of Historic Preservation (OHP) in compliance with Section 106 of the NHPA. The archaeological study included background research to identify all recorded archaeological resources within and near the existing and proposed electrical lines, and investigations to determine if identified resources are significant (i.e., eligible for listing in the NRHP). In some cases where significance evaluations were not feasible, sites were assumed to be NRHP-eligible for purposes of this Proposed Action. The California OHP has reviewed the archaeological study and Vandenberg AFB's determinations based on the study's results and concurs with Vandenberg AFB's delineation of the APE, the identification of significant resources that could be affected, and Vandenberg AFB's assessment of project effects, as described below and in Chapter 4, Environmental Consequences.

The archaeological study indicates that the APE has been previously surveyed and is located in an area of high archaeological site density, including the San Antonio Terrace Archaeological District (SATAD).

See Table 3.3-1. Most of the 36 sites located within or near the APE are prehistoric or have prehistoric components and represent a wide range of site types, including villages, short- and long-term residential sites, and numerous special-use locations associated with hunting, gathering and/or resource processing. Historical sites in the APE include a farmstead, a townsite, a cemetery, a marine oil tank farm and transport terminal, a historic landing, and several historic quarries.

Site significance (i.e., eligibility for the NRHP) has been evaluated for 33 of the 36 sites located within or near the APE. Twenty-four have been determined or are assumed eligible, 9 have been determined ineligible, and three were not evaluated because they were determined to be outside the APE. Of the 24 eligible sites, 17 are located within the San Antonio Terrace Archaeological District.

Table 3.3-1. Cultural Resources within the Project Area

Site CA-SBA-	Site Type/Description[1]	NRHP Eligibility[2]	Archaeological Studies Beyond Recordation
228	Village	Eligible[4]	Kirkish 1990; Osland 1992; Gibson 1987; Lebow et al. 2010; Applied Earthworks, Inc. 2017
512	Village	Eligible[3,4]	Ruth 1936; Spanne 2003; Air Force 1984; Tetra-Tech, Inc. 1987; Osland 1992; Gibson 1987; Applied Earthworks 2002; Lebow et al. 2010; Nocerino and Lebow 2015; Applied Earthworks, Inc. 2017
513	Long-term residence	Eligible[3,4]	Tetra-Tech, Inc. 1987; Osland 1992; Gibson 1987; Applied Earthworks, Inc. 2017
722	Location (chipping station)	Eligible[3,4]	Peak and Associates 1988; Greenwood and Foster 1981; Tetra-Tech, Inc. 1987; Osland 1992; Applied Earthworks, Inc. 2017
730	Short-term residence	Eligible[3,5]	Tetra-Tech, Inc. 1987; Hodges and Lebow 2000; Applied Earthworks, Inc. 2017
733	Village	Eligible[3,4]	Tetra-Tech, Inc. 1987; Osland 1992; Clark 1997; Peterson and Lebow 2008; Applied Earthworks, Inc. 2017
739	Short-term residence	Eligible[3]	Tetra-Tech, Inc. 1987; Lebow et al. 2010; Applied Earthworks, Inc. 2017
740	Short-term residence	Eligible[3,4]	Tetra-Tech, Inc. 1987; Applied Earthworks 2002; Denardo 2000; Lebow 2000; Applied Earthworks, Inc. 2017
741	Location (chipping station/shell)	Eligible[3]	Applied Earthworks, Inc. 2017
743	Location (chipping station)	Unevaluated	Applied Earthworks, Inc. 2017
755/756/757	Long-term residence	Eligible[4]	Neff 1982; WESTEC Services, Inc. 1984; Osland 2006; Lebow, et al. 2006; Applied Earthworks, Inc. 2017
759/H	Location (chipping station/shell)	Unevaluated	Applied Earthworks, Inc. 2017
760/761/1748	Short-term residence	Eligible[5]	WESTEC Services, Inc. 1985; Lebow, et al. 2010; Applied Earthworks, Inc. 2017
939/H	Long-term residence	Eligible[3,4]	Neff 1982; Air Force 1984; Tetra-Tech, Inc. 1987; Clark 1997; Gibson 1987; Lebow 2000; Morlet, Linder, and Price 2010; Applied Earthworks, Inc. 2017
940	Village	Eligible[3,5]	Tetra-Tech, Inc. 1987; Osland 1992; Clark 1997; Gibson 1987; Hodges and Lebow 2000; Morlet, Linder, and Price 2010; Applied Earthworks, Inc. 2017
941	Short-term residence	Eligible[3,4]	Tetra-Tech, Inc. 1987; Osland 1992; Gibson 1987; Morlet, Linder, and Price 2010; Applied Earthworks, Inc. 2017
990	Short-term residence	Eligible[3,4]	Park and Associates 1988; Neff 1982; Kirkish 1990; Applied Earthworks, Inc. 1989; Hodges and Lebow 2000; Lebow et al. 2005; Lebow and Nocerino 2015; Applied Earthworks, Inc. 2017
1853	Long-term residence	Eligible[3,4]	Air Force 1984; Osland 1992; Gibson 1987; Flint 1999; Hodges and Lebow 2000; Moratto et al. 2009; Applied Earthworks, Inc. 2017

Table 3.3-1. Cultural Resources within the Project Area

Site CA-SBA-	Site Type/Description[1]	NRHP Eligibility[2]	Archaeological Studies Beyond Recordation
1865/H	Short-term residence (prehistoric component), historic landing ("Chute Landing"), and historic town site (Morrito)	Eligible[4]	Osland 1992; Gibson 1987; Applied Earthworks, Inc. 2017
1866	Location (chipping station/shell)	Ineligible	Kirkish 1990; Osland 1992; Gibson 1987; Anderson et al.1999; Hodges and Lebow 2000; Stevens and Lebow 2006; Moratto et al. 2009; Applied Earthworks, Inc. 2017
2127	Short-term residence	Eligible[5]	Osland 1992; McKim and Price 1996; Lebow 2000; Applied Earthworks, Inc. 2017
2128H	Historic "Charles Clark Farmstead"	Eligible[4]	Kirkish 1990; Osland 1992; Applied Earthworks, Inc. 2017
2164	Location (chipping station)	Ineligible	Hodges and Lebow 2000; Applied Earthworks, Inc. 2002; Applied Earthworks, Inc. 2017
2320	Location (chipping station)	Eligible[5,6]	Osland 1992; Applied Earthworks, Inc. 2017
2352	Location (chipping station/shell)	Eligible[4]	Kirkish 1990; Osland 1992; Lebow and Nocerino 2015; Applied Earthworks, Inc. 2017
2471/H	Location (chipping station/shell)	Eligible[4]	Osland 1992; Applied Earthworks, Inc. 2017
2565	Location (chipping station)	Ineligible	Lebow and Nocerino 2015; Applied Earthworks, Inc. 2017
2568	Location (chipping station/shell)	Unevaluated	Applied Earthworks, Inc. 2017
2575	Short-term residence	Eligible[4]	Lebow and Nocerino 2015; Applied Earthworks, Inc. 2017
3036	Location (chipping station/plant processing)	Ineligible	Applied Earthworks, Inc. 2017
3288/H	Historic Port Petrol Tank Farm and Oil Transport Terminal	Ineligible	Peterson and Lebow 2008; Denardo and McCarthy 2010; Applied Earthworks, Inc. 2017
3289	Location (chipping station/shell)	Ineligible	Hodges and Lebow 2000; Applied Earthworks, Inc. 2017
3294	Location (chipping station/plant processing)	Ineligible	Applied Earthworks, Inc. 2017
3503	Location (chipping station)	Eligible[3,4]	Applied Earthworks, Inc. 1999; Applied Earthworks, Inc. 2017
3563H	Historic quarry ("Camp Cook Quarry No. 1").	Ineligible	Applied Earthworks, Inc. 2017
3565H	Historic quarry ("Camp Cook Quarry No. 2")	Ineligible	Applied Earthworks, Inc. 2017

Notes:
1. Site Types are prehistoric unless noted otherwise and are derived from Applied Earthworks, Inc. 2017.
2. NRHP = National Register of Historic Places. Eligible or ineligible refers to a formal determination of NRHP eligibility in consultation with the California SHPO.
3. Determined eligible as a contributor to the San Antonio Terrace Archaeological District (SATAD).
4. Determined NRHP-eligible as a separate listing by consensus.
5. Assumed NRHP-eligible as a separate listing.
6. Assumed NRHP-eligible as a contributing member of the SATAD.

3.4 Geology and Earth Resources

Vandenberg AFB is situated along the coastline in the Santa Maria basin. Vandenberg AFB is a geologically complex area that includes the transition zone between the Southern Coast Range (on the northeast) and Western Transverse Range (on the south) geomorphic provinces.

Extensive geological activity in the Vandenberg AFB region has created four structural regions: the Santa Ynez Range; the Lompoc lowland; the Los Alamos syncline; and the San Rafael Mountain uplift. Vandenberg AFB is characterized by generally northwest trending ridges and valleys. Major geologic features within Vandenberg AFB include the Santa Ynez Mountains, Casmalia Hills, Purisima Hills,

Santa Ynez Valley Dune Complex, Sudden Flats, beaches, and rocky headlands. The Santa Ynez River and San Antonio Creek are the two major drainages that traverse Vandenberg AFB.

The near-surface geology along the southern portion of the Feeder D1 consists of Orcutt Sand, comprised primarily of wind-deposited, soft sand and pebble gravel bases (Dibblee 2009a). The area is also comprised of hard Monterey Shale deposits with white-weathering and thin bedded semi-siliceous shale with thin, hard, limestone strata. The Sisquoc Formation is also found here comprised of light gray claystone and slightly diatomaceous or siliceous clay shale. The northern portion of the Feeder D1 is underlain by silty shale, thin sandstone, and hard dolomite deposits of the Point Sal Formation, as well as intrusive rocks and point Sal Ophiliolite, consisting of serpentinized igneous and pelagic marine sedimentary rocks that have been slightly metamorphosed or altered (Dibblee 2009b).

3.4.1 Soils

Vandenberg AFB is characterized by coastal sand dunes and alluvium (i.e., sediment deposited by flowing water). Vandenberg AFB is underlain predominately by marine sedimentary rocks (e.g., shales and limestone) of Late Mesozoic period (140 to 70 million years before the present) and Cenozoic period (70 million years to the present). Basement rocks underlying Vandenberg AFB is the Franciscan Formation, which consists of a series of sedimentary and volcanic rocks (Dibblee 1950).

The main portion of Feeder D1 is underlain by Tangair-Narlon association soils, consisting of nearly level to strongly sloping, somewhat poorly drained and moderately well drained sands and loamy sands on terraces. The association is comprised of Tangair and Narlon soils as well as Santa Lucia, Oceano, Crow Hill, and Tierra soils and gullied land. Other portions of the alignment are underlain by Shedd- Santa Lucia-Diablo association and Toomes-Climara association soils. The Shedd-Santa Lucia-Diablo association consists of strongly sloping to very steep, well-drained shaly clay loams and silty clays on uplands. The Toomes-Climara association consists of moderately steep to very steep, somewhat excessively drained and well-drained clay loams and clays on uplands (Vandenberg AFB 2011; USDA Soil Conservation Service 1972).

3.4.2 Faulting and Seismicity

The California Geological Survey (CGS), formerly known as the California Division of Mines and Geology (CDMG), classifies faults as either active or potentially active, according to the Alquist-Priolo Special Studies Zone Act of 1972. A fault that has exhibited surface displacement within the Holocene Epoch (the last 11,000 years) is defined as active by the CGS. A fault that has exhibited surface displacement during the Pleistocene Epoch (which began about 1.6 million years ago and ended about 11,000 years ago) is defined as potentially active. Pre-Pleistocene faults are considered inactive. The CGS has established Alquist-Priolo Special Study Zones around faults identified by the State Geologist as being active. The Alquist-Priolo Special Studies Zone Act limits development along the surface trace of active faults to reduce the potential for structural damage and/or injury due to fault rupture. The CGS also suggests that active faults, located within a 60-mile radius of a project site, be evaluated with respect to regional seismicity (CDMG 1999, 1994).

Santa Barbara County is a seismically active region with a major earthquake occurring in the region about every 15 to 20 years (USAF 1987; Alterman et al. 1994).

One potentially active fault, the Lions Head fault, traverses the northern portion of the project area for the Feeder D1. This fault is capable of causing ground surface rupture or seismically induced ground shaking; however, the likelihood of those events occurring during the lifespan of the electrical distribution lines is very low. The active Lions Head-Los Alamos-Baseline fault zone that traverses the project area and the Casmalia fault zone approximately 1.5 mile north of the project would more likely cause ground motion or produce secondary effects (USGS 2012).

3.4.3 Geologic Hazards

One potentially active fault traverses the project site; however, the potential for surface fault rupture is low. The primary geologic hazard at the project site is strong seismically induced ground shaking. There are no known areas within the project area where liquefaction has occurred. The areas most prone to liquefaction on Vandenberg AFB are near San Antonio Creek and the Santa Ynez River. The potential for liquefaction on Vandenberg AFB, despite these areas, is considered low (USAF 1987).

3.5 Land Use and Coastal Zone Resources

Vandenberg AFB is located on approximately 99,572 acres along the coastline in Santa Barbara County (Figure 1-1). Although the project site is located within Santa Barbara County, the local government does not have any jurisdictional authority over federal land use on Vandenberg AFB because it is a federal military facility. General land uses at Vandenberg AFB include administrative Air Education and Training Command (AETC) (space and missile training area), agriculture/grazing, airfield, community (commercial and service), housing, industrial, launch operations, medical, open space, outdoor recreation, and water/coastal (Vandenberg AFB 2009).

The D1 project site is located within North Vandenberg AFB; starting at Substation D at the intersection of Curly Road, Sun Road, and El Rancho Road and continues in a north-northwest direction toward Dardo Road. The surrounding area is predominately undeveloped with the exception of launch operation support facilities, and utility infrastructure (e.g., existing electrical distribution lines and Substation D). Surrounding land uses to the north, east, west, and south include agricultural/grazing and open space interspersed with areas of industrial and community services uses.

3.5.1 Coastal Zone Management

Coastal Zone Management Act

In 1972, Congress passed the CZMA to "preserve, protect, develop, and where possible, to restore or enhance, the resources of the nation's coastal zone for this and succeeding generations" and to "encourage and assist the states to exercise effectively their responsibilities in the coastal zone through the development and implementation of management programs to achieve wise use of the land and water resources of the coastal zone" [16 U.S.C. 1452, Section 303(1) and (2)].

The Proposed Action is subject to a federal Coastal Zone Consistency Review because it would involve activities within the coastal zone of California. On Vandenberg AFB, the coastal zone extends inland from approximately 0.75 miles at the northern boundary to 4.5 miles at the southern boundary. California has a federally approved Coastal Management Program, which includes the California Coastal Act (CCA).

The Air Force submitted a Negative Determination letter to the CCC on October,

18, 2018 indicating that replacing electrical distribution line Feeder Line D1 would not affect natural, cultural and paleontological resources, access to the coast, or coastal scenic and visual qualities. Since the Proposed Action would not affect the coastal zone, the Air Force concluded the action does not require a consistency determination. The CCC concurred with Vandenberg AFB's determination in a letter dated November, 14, 2018 (refer to Appendix B-4 for details).

3.6 Noise

3.6.1 Descriptions of Sound

Noise is commonly defined as unwanted sound. Sound is the perception of tiny pressure variations in a medium such as air. Sounds can be characterized by their amplitude, pitch (frequency), and duration.

The amplitude of sounds is most often described using the decibel (dB) unit of measurement. Decibels are a logarithmic representation of sound energy levels. On this scale, an increase of 10 dB from any starting point represents a 10-fold increase in acoustic energy, a 20 dB increase is 100 times more intense, and 30 dB is 1,000 times more intense. Also, because the decibel is a logarithmic unit, sound pressure levels are not added arithmetically. When two sounds of equal sound pressure level are added (i.e., doubling the total sound energy), the overall sound pressure level increases by 3 dB. Although a 3 dB increase reflects a doubling of noise energy, changes of this magnitude are generally barely perceptible to people with healthy hearing in a non-laboratory setting. Increases of 5 dB are easily perceptible and increases of 10-dB are generally perceived as a doubling of loudness.

The frequency of sound energy (perceived as the sound's 'pitch') is the number of pressure oscillations per second (known as Hertz [Hz]). Higher pitched sounds are often perceived as screeches or whines while low-pitched sounds are often perceived as rumbles. The range of sound frequencies that can be heard by healthy human ears is from about 20 Hz at the low end of the frequency spectrum to 20,000 Hz at the high end. Human ears perceive sound energy in mid-range frequencies with greater efficiency than they perceive extremely high and extremely low-pitched sounds. Decibel levels are adjusted to reflect the way sounds are heard by the human ear using a process known as 'A-weighting'. This process mathematically de-emphasizes frequencies that are not heard well by human ears. Infrasound is sound energy at frequencies that are not perceptible to the human ear, and can sometimes be felt as vibrations. Table 3.6-1 lists typical A-weighted sound levels.

The duration of noise is also important in determining its effects. This EA will make use of the maximum noise level (L_{max}) and Day-Night Average Sound Level (DNL) noise metrics to describe noise sources that are not consistent over time. The L_{max} is simply the loudest noise level as would be measured by a sound level meter set to the 'fast' measurement cycle. The DNL is the average noise level over a 24-hour period with a 10 dB 'penalty' applied to noise events that occur between 10:00 PM and 7:00 AM. This metric has been found to correlate well with human annoyance, and has been adopted by several federal agencies, including DoD, as the primary metric for determining noise impacts. Department of Defense guidelines published in DoDI 4165.57, *Air Installations Compatible Use Zones*, categorize certain noise-sensitive land uses, such as residences, as incompatible at noise levels greater than 65 dBA DNL. Acoustical terms used in this section are listed in Table 3.6-2 for easy reference.

Table 3.6-1. Typical Noise Levels

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
Jet fly-over at 1,000 ft.	120	
	110	Rock concert
Pile driver at 100 ft.	100	
Large truck passing by at 50 ft.	90	Night club with live music
Gas lawn mower at 50 ft.	80	Noisy restaurant
	70	Vacuum cleaner at 10 ft.
Commercial/Urban area daytime		Normal speech at 3 ft.
Suburban daytime	60	Active office environment
Urban area nighttime	50	Quiet office environment
Suburban nighttime	40	
Quiet rural areas		
	30	Library
		Quiet bedroom at night
Wilderness area	20	
	10	Quiet recording studio
Threshold of human hearing	0	Threshold of human hearing

Source: Adapted from Caltrans 2008 in Noise Study Report Format Guidance Document.

Table 3.6-2. Definitions of Acoustical Terms

Term	Definition
Decibel (dB)	A dB is a unit describing the amplitude of sound, equal to 20 times the logarithm to the Base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for sound in air is 20 micro Pascals.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sounds are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Maximum Noise Level (L_{max})	The highest sound level during a noise event, as would be recorded on a sound level meter set to the 'fast' measurement cycle.
Day-Night Average Sound Level (DNL)	The average noise level over a 24-hour period with a 10 dB 'penalty' applied to noise events that occur between 10:00 PM and 7:00 AM. This metric has been found to correlate well with annoyance. Department of Defense guidelines categorize certain noise-sensitive land uses, such as residences, as incompatible at noise levels above 65 dB DNL.
Ambient Noise Level	The ambient noise level is the composite of noise from all sources near and far, and represents the normal or existing level of environmental noise at a given location.

3.6.2 Existing Noise Sources and Sensitivity

The Proposed Action would take place in sparsely-populated portions of Vandenberg AFB, and human-induced sound levels in the affected areas are low most of the time. Mission activities, including rocket launches and aircraft operations, result in temporary increases in noise level. Other noise sources include vehicular transportation along roadways, industrial facility operations, construction activities, and railroad operations (e.g., Union Pacific and AMTRAK). Ambient 1-hour average noise level measurements on Vandenberg AFB range from around 35 to 60 dB (Thorson *et al.* 2001).

The immediate vicinity of the project site includes open land, launch facilities, and other land uses that are not generally considered to be noise-sensitive. The closest noise-sensitive area to proposed powerline alignment is the town of Casmalia, approximately 6,000 feet from the closest powerline segment. Ambient noise levels in small towns (such as Casmalia) are typically approximately 50 dBA (USEPA 1974).

3.7 Public Health and Safety

A hazardous material or waste is a substance that due to its quantity, concentration, or chemical/physical characteristics, may present substantial risk to public health and welfare, workers, or the environment. Hazardous materials and wastes are those substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act, as amended by the Superfund Amendments and Reauthorization Act (42 USC 9601-9675), Toxic Substances Control Act (15 USC 2601- 2671), the Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (42 USC 6901-6992), and as defined in state laws and regulations.

Federal and state OSHA regulations govern protection of personnel in the workplace. All construction activities, facility operation, and maintenance on Vandenberg AFB are subject to AFOSH or federal OSHA regulations, per AFI 91-202. In addition, California OSHA has jurisdiction over nonfederal operations south of Honda Ridge Road on South Vandenberg AFB.

Vandenberg AFB is a secure, federal military installation. Access to Vandenberg AFB, including the project site, is controlled by the Air Force and restricted to military personnel and authorized contractors and visitors.

3.7.1 Hazardous Materials Management

Approximately 5,000 hazardous materials are used at Vandenberg AFB to support mission activities. To ensure compliance with applicable regulations for the transport, handling, storage, use, and disposal of hazardous materials, all Air Force personnel and contractors that handle hazardous materials are required to comply with California Business Plan requirements and/or EPCRA Tier II/Toxic Release Chemical Inventory Reports. In addition, management of hazardous materials used on Vandenberg AFB follows procedures stipulated in the Air Force Instruction 32-7086, Hazardous Materials Management, Hazardous Materials Management Plan. Vandenberg AFB's HazMart maintains inventories of hazardous materials purchased by the Air Force and its contractors. Before releasing hazardous materials to the user, HazMart staff ensures a copy of the Safety Data Sheet is available and verifies that the material is suitable for use on Vandenberg AFB. By providing handling and use information, Vandenberg AFB controls the potential misuse of hazardous materials, maintains an accounting of the types of hazardous materials used on the AFB, and prepares usage and emissions reports as required by federal, state and local regulations. In addition to Air Force, Vandenberg AFB is subject to all federal, state, and local hazardous materials regulations, including inspection by federal, state, and local regulatory agencies.

No hazardous materials may be brought on Vandenberg AFB without prior coordination, approval, and a tracking barcode issued by HazMart. All contractors must apply for a HazMart shop code and enroll in the Enterprise Environmental, Safety, and Occupational Health Information Management System hazardous materials authorization and tracking system.

Additionally, Vandenberg AFB has established health and safety requirements, including industrial hygiene and ground safety, to minimize potential risk to the general public and personnel. Industrial hygiene is the joint responsibility of the 30th Space Wing Safety Office (30 SW/SE) and the 30th Medical Operations Squadron, Bioenvironmental Engineering Element. Responsibilities include monitoring of exposure to workplace chemicals and physical hazards, hearing and respiratory protection, medical monitoring of workers subject to chemical exposures, and oversight of all hazardous or potentially

hazardous operations. Ground safety is the responsibility of the 30 SW/SE and includes protection from hazardous situations, including physical hazards (i.e., holes and ditches, uneven terrain, sharp or protruding objects, unstable ground) and biological hazards (e.g., vegetation [poison oak and stinging nettle], animals [insects, spiders, and snakes], and disease vectors [ticks and rodents]).

Hazardous materials potentially used during construction and annual maintenance activities include petroleum, oil, and lubricants (POLs) in equipment and vehicles.

3.7.2 Hazardous Waste Management

Hazardous waste management at Vandenberg AFB complies with the Resource Conservation and Recovery Act Subtitle C (40 CFR Part 240-299) and with California Hazardous Waste Control Laws as administered by CalEPA, Department of Toxic Substances Control, under Title 22, and Division 4.5 of the California Code of Regulations (CCR). These regulations require that hazardous wastes be handled, stored, transported, disposed of, or recycled according to defined procedures. The Vandenberg AFB *Hazardous Waste Management Plan* (30 SWP 32-7043A) outlines hazardous waste management procedures.

An Air Force Generator Identification Number is used to account for hazardous wastes generated on Vandenberg AFB. Because of the amount of hazardous waste generated per month, Vandenberg AFB is classified as a large quantity, fully regulated generator, and is required to comply with all federal, state, and local laws regulating the generation, storage, transportation, and disposal of hazardous waste. Vandenberg AFB uses a “cradle to grave” waste management approach. Generally, hazardous waste follows the 90-day accumulation rules as permitted by regulation, or is stored up to 270 days at authorized satellite accumulation points (SAPs). SAPs are located at the point of generation, and wastes may be stored until 55 gallons of hazardous waste or 1 quart of extremely or acutely hazardous waste is accumulated. When the SAP limit is reached, the waste is transferred in a properly labeled Department of Transportation approved container from its point of origin to the Consolidated CAP at Building 3300. All CAP and SAP managers require training prior to commencement of work. All hazardous waste is removed from Vandenberg AFB under a hazardous waste manifest, and shipped offsite for final disposal.

3.7.3 Installation Restoration Program

The federal Installation Restoration Program (IRP) was implemented at DoD facilities to identify, characterize, and restore hazardous substance release sites. There are currently 136 IRP sites throughout Vandenberg AFB grouped into six Operable Units based on similarity of their characteristics.

IRP sites are remediated through the Federal Facilities Site Remediation Agreement, a working agreement between the USAF, the Central Coast Regional Water Quality Control Board (RWQCB), and the Department of Toxic Substances Control. In addition to IRP sites, there are identified Areas of Concern (AOCs), where potential hazardous material releases are suspected; and Areas of Interest (AOIs), defined as areas with the potential for use and/or presence of a hazardous substance. Various contaminants could be present at these sites including trichloroethylene, PCBs, VOCs, total petroleum hydrocarbons, asbestos, and other hazardous contaminants. There are 30 open hazardous release sites, including two IRP sites, 14 AOCs, and 14 AOIs, located within the project area (Table 3.7-1).

Table 3.7-1. AOCs and AOIs in the Project Area

Site ID	Description	Status
AOC-055	Remote Launch Control Center/ part of MDA. Access limited.	open
AOC-175	Facility 1977, Minuteman	closed with land use control
AOC-177	Building 1962, Minuteman	closed with land use control
AOC-178	Building 1963, Minuteman	closed with land use control
AOC-179	Building 1976, Minuteman	closed with land use control
AOC-180	Building 1980, Minuteman	closed with land use control
AOC-181	Building 1981, Minuteman	closed with land use control
AOC-182	Building 1986, Minuteman	closed with land use control
AOC-183	Building 1993, Minuteman	closed with land use control
AOC-184	Building 1964, Minuteman	closed with land use control
AOC-185	Building 1965, Minuteman	closed with land use control
AOC-187	Building 1967, Minuteman	closed with land use control
AOC-218	Building 1971, Minuteman/Part of MDA. Access limited.	open
AOC-234	Building 1970, Research	closed
AOI-145	Building 1956	closed
AOI-239	Building 01847	closed
AOI-256	Building 1905	closed with land use control
AOI-257	Building 1937	closed
AOI-355	Building 01948	closed
AOI-356	Building 1947	closed
AOI-377	Building 1990 Radio Telemetry	closed
AOI-378	Building 1982 Radio Relay	closed
AOI-384	Building 1995	closed
AOI-410	Building 1871	closed
AOI-411	Building 1978	closed
AOI-412	Building 1978 Missile Operations	closed
AOI-413	Building 1945	closed
AOI-415	Building 1991	closed

Site 32 or SD032 includes IRP Site 32 (Missile Silo 576-D) and IRP Site 35 (Missile Silo 576-G). They are adjacent to each other and located at the intersection of El Rancho Road, Rancho Road, and to the North. Both sites were constructed and used for launching Atlas missiles. The Atlas missile engines were flushed with trichloroethene (TCE) to degrease them prior to each launch. Both sites have been investigated and currently both sites are going under remediation by ARCADIS. Information on the location and status of the AOCs and AOIs is provided in Table 3.7-1.

3.7.4 Unexploded Ordnance

Several areas on Vandenberg AFB were used as training ranges and have the potential to contain UXO. There are no UXO Closure Areas identified within the APE.

3.8 Transportation

The circulation system adjacent to the project site consists of regional highways and arterial streets (i.e., major road used for through traffic). Regional access to Vandenberg AFB is provided by a network of freeways, including Highway 101,

Highway 1, SR 135, and SR 246. Primary access to Vandenberg AFB is through three gates: the Santa Maria Gate (the main gate), Solvang Gate, and South Gate. The Santa Maria Gate provides access to the northern side of the cantonment area. The Solvang Gate provides access to North Vandenberg AFB and the South Gate provides access to South Vandenberg AFB.

Highway 101 is a four lane, north-south freeway and is the principal route between northern and southern California. Access between Vandenberg AFB and Highway 101 is provided via the Highway 1, SR 135, and SR 246 interchanges. Highway 1 is a north-south highway that provides direct access to Vandenberg AFB at the Santa Maria Gate. SR 135 is a two lane, east-west rural state highway that extends westward from Highway 101 and intersects with Highway 1 near Vandenberg AFB. SR 246 (West Ocean Avenue) is primarily a two lane, east-west rural highway that provides direct access to North Vandenberg AFB via the Solvang Gate and South Vandenberg AFB via the South Gate.

Roadways in the project vicinity are within Vandenberg AFB's jurisdiction. These roadways include El Rancho Road, Curly Road, Sun Road, Orion Road, Brioso Road, Astral Road, Mina Road, Taff Road, Pt. Sal Road, Globe Road, Tow Road, Soldado Road, Parquee Road, Casmalia Beach Road, Cinco Road, Combar Road, Oculto Road, Dardo Road, Armar Road, and unnamed access roads. The project site is accessible from the Main Gate via Lompoc-Casmalia Road.

3.8.1 Roadway Operations

Existing roadway conditions are evaluated based on roadway capacity and traffic volume. The capacity, which reflects the ability of the network to serve the traffic demand of a roadway, depends on the roadway width, number of lanes, intersection control, and other physical factors.

Level of Service (LOS) is used to characterize the overall traffic operations along a roadway. LOS A through F are used to rate roadway operations, with each level defined by a range of traffic volume to roadway capacity. LOS A, B, and C are considered good operating conditions with minor to tolerable delays experienced by motorists. LOS D represents below-average conditions. LOS E reflects a roadway at maximum capacity, and LOS F represents traffic congestion. Most roads on Vandenberg AFB operate at or better than the acceptable standard of LOS C (Vandenberg AFB 2009).

3.9 Water Resources

The federal CWA provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. The CWA and implementing USEPA regulations provide the authority and framework for state law and regulations. The Porter-Cologne Water Quality Act (California Water Code) is the State law for water quality protection in California. It provides a framework for establishing beneficial uses of water resources and the development of local water quality objectives to protect these beneficial uses. The Central Coast Water Quality Control Plan (Basin Plan) assigns beneficial uses to water bodies and provides local water quality objectives to protect these beneficial uses.

Section 303(d) of the federal CWA requires states to identify surface water bodies that are polluted (water quality limited segments). These surface water bodies do not meet water quality standards even after discharges of wastes from point sources have been treated by the minimum required levels of pollution control technology. The Shuman Creek and Casmalia Canyon Creek are both included on the CWA Section 303(d) List of Water Quality for sedimentation/siltation (USEPA 2019).

The CWA mandates the NPDES Program, which requires a permit for the discharge of any pollutant to Waters of the U.S. from point and non-point sources. Non-point sources include stormwater runoff from industrial, municipal, and construction sites.

EO 11988, *Floodplain Management*, requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the modification of flood plains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. In accomplishing this objective, "each agency shall provide leadership and shall take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by flood plains in carrying out its responsibilities" for federal actions.

In California, the State Water Resources Control Board (SWRCB) and the Central Coast Regional Water Quality Control Board (RWQCB) administer the NPDES Program for municipalities and construction activities through General Permits. The Central Coast RWQCB is the state agency responsible for the Vandenberg AFB area.

The NPDES Municipal General Permit prohibits discharges of material other than stormwater to waters of the U.S. and requires implementation of BMPs to reduce pollutants in stormwater to the maximum extent practicable.

The NPDES Construction General Permit regulates construction sites of one or more acre and regulates the discharge of pollutants in stormwater to waters of the U.S.

On Vandenberg AFB, the 30 CES Water Resources Section reviews all requests for discharges of wastewater to grade (Discharge to Grade Program) to protect groundwater quality and comply with state water quality regulations. Wastewater that contains contaminants above certain levels may not be discharged to grade.

3.9.1 Surface Water

The major of freshwater resources in the Vandenberg AFB region include six streams comprising two major and four minor drainages. The major drainages are San Antonio Creek and the Santa Ynez River. The minor drainages include Shuman Creek, Bear Creek, Cañada Honda Creek, and Jalama Creek (Vandenberg AFB 2010).

Monthly stream flow on Vandenberg AFB generally corresponds to trends in precipitation, although minor increases in precipitation are not always reflected in the flows. Generally, peak rainfall occurs between November and April. Average annual precipitation is approximately 14 inches per year (NOAA 2016).

Shuman Creek and the Casmalia Canyon Creek are the main drainages in the project area. Both creeks are dry or seasonally dry. Several unnamed, small drainages also traverse the project site. Project-specific biological surveys were conducted for the Proposed Action during April and May 2016 to identify the habitat types and wildlife and plant species. It is likely the drainage features that traverse the project site could be considered jurisdictional (i.e., under the authority of USACE per the CWA) by USACE as Waters of the U.S.

Floodplain

The Feeder D1 is not located within a FEMA designated 100-year floodplain.

3.9.2 Groundwater

Feeder D1 is located just north of the Santa Ynez River Valley Aquifer. Groundwater is present in unconsolidated alluvial and terrace deposits, including the Orcutt Sand, which underlies much of the project area. The Lions Head fault zone, which traverses the project area, does not directly affect the flow of groundwater entering the basin from

the Santa Ynez Mountains. Water quality in this (western) portion of the Santa Ynez River Valley Aquifer is generally poor, with total dissolved solids concentrations up to 2,000 to 8,000 milligrams per liter (California Department of Water Resources 2003).

The southern portion of the Feeder D1 is underlain by volcanic rocks, shale, and sandstone units that are generally non-water-bearing.

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Chapter 4. Environmental Consequences

The following analysis of environmental consequences is based on the potential direct, indirect, short-term and long-term, and cumulative effects of the Proposed Action. A list of factors to be considered in determining if impacts are significant, for purposes of NEPA, are provided in each subsection, but the decision to prepare an Environmental Impact Statement (EIS) is based on the impacts of the action as a whole considering context and intensity of the potential impacts.

4.1 Air Quality

Factors considered in determining if implementing an alternative would have adverse impacts on air quality include the extent or degree to which implementation of an alternative would:

- Expose people to localized (as opposed to regional) air pollutant concentrations that potentially violate federal or state ambient air quality standards;
- Cause a net increase in a pollutant or pollutant precursor emission that exceeds relevant emission significance thresholds (such as the numerical values of major source thresholds for nonattainment pollutants);
- Conflict with adopted air quality management plan policies or programs; or
- Generate GHG emissions that would have an adverse effect on the environment.

Criteria to determine the significance of air quality impacts are based on federal, state, and local air pollution standards and regulations. The SBCAPCD has not established criteria for assessing the significance of air quality impacts for NEPA purposes. However, since Santa Barbara County violates the state standard for PM_{10}, dust mitigation measures are required for all discretionary construction activities regardless of the significance of the fugitive dust impacts based on the policies in the 1979 Air Quality Attainment Plan. Construction activities also must comply with the requirements of SBCAPCD Rule 345, Control of Fugitive Dust from Construction and Demolition Activities. Under Rule 345, construction, demolition, and/or earthmoving activities are prohibited from causing discharge of visible dust outside the property line, and must utilize standard BMPs to minimize dust from truck hauling, track-out/carry-out from active construction sites, and demolition activities. These requirements are identified as project environmental protection measures in Section 2.4, Environmental Protection Measures. If emissions exceed a significance threshold described above, further analysis of the emissions and their consequences would be performed to assess if there was likelihood of an adverse impact to air quality. The nature and extent of such analysis would depend on the specific circumstances. The analysis could range from simply a more detailed and precise examination of the likely emitting activities and equipment, to air dispersion modeling analyses. If proposed emissions were determined to increase ambient pollutant levels from below to above a federal or state ambient air quality standard, these emissions would be adverse.

4.1.1 Proposed Action

Air quality impacts from activities due to the proposed replacement of the Feeder Line D1 overhead electrical distribution lines would occur from (1) combustive emissions due to the use of fossil fuel-powered equipment and (2) fugitive dust emissions (PM_{10}/ $PM_{2.5}$) due to the operation of equipment on exposed soil. Construction activity data associated with each project

alternative were used to estimate proposed combustive and fugitive dust emissions.

Factors needed to derive construction source emission rates were obtained from *Compilation of Air Pollution Emission Factors, AP-42, Volume I* (USEPA 1995), the *OFFROAD2011 Model* for off-road construction equipment (Breeze Software 2017), and the *EMFAC2017 Model* for on-road vehicles (CARB 2018). Appendix A includes data and assumptions used to calculate proposed construction emissions.

Table 4.1-1 summarizes the emissions estimated for replacement of the overhead electrical distribution lines under the Proposed Action. These data show that proposed emissions should not exceed the significance threshold for any criteria pollutant. As a result, proposed activities from should not produce adverse air quality impacts.

Greenhouse Gases and Global Climate Change

Emissions of GHGs are considered to have a potential cumulative impact on global climate. As shown in Table 4.1-1, the Proposed Action would incrementally increase emissions of CO_2 and other GHGs. Scientists are in general agreement that the Earth's climate is gradually changing and this change is due in part to emissions of CO_2 and other GHGs from manmade sources. The anticipated magnitude of global climate change is such that an adverse cumulative impact on global climate exists.

There are no adopted federal plans, policies, regulations, or laws mandating reductions in the GHG emissions from sources proposed by the Proposed Action. The climate change research community has yet to develop tools specifically intended to evaluate or to quantify end-point impacts attributable to the emissions of GHGs from a single source.

Currently, there are no formally adopted or published NEPA thresholds for GHG emissions. On June 21, 2019 the Council on Environmental Quality (CEQ) released draft guidance on addressing climate change in NEPA documents (CEQ 2019). This draft guidance suggests that agencies should use estimated GHG emissions as a proxy for assessing potential effects on climate change and that emissions should be quantified when practicable. The Proposed Action should result in very minor increases in GHGs. Therefore, the Proposed Action should not produce adverse cumulative impacts to global climate change.

Table 4.1-1. Proposed Emissions (Tons/Year)

	VOC	CO	NO_x	SO_x	PM_{10}	$PM_{2.5}$	CO_2e
Construction Equipment	0.15	0.87	1.81	0.00	0.07	0.06	309
Fugitive Dust	-	-	-	-	0.07	0.01	-
Total	**0.15**	**0.87**	**1.81**	**0.00**	**0.14**	**0.07**	**309**
Significance threshold	25	25	25	25	25	25	-
Exceeds threshold?	No	No	No	No	No	No	-

4.1.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur. Therefore, no impacts to air quality would occur as a result of emissions associated with project activities.

4.2 Biological Resources

Impacts to biological resources would occur if special status species (i.e., endangered, threatened, rare, or candidate) or their habitats, as designated by federal and state agencies, would be directly or indirectly affected by project-related activities. In addition, impacts to biological resources are

considered adverse if substantial loss, reduction, degradation, disturbance, or fragmentation would occur to native species or their habitats. Potential effects can be short-term (e.g., noise and dust during construction) or long-term impacts, including the permanent loss of vegetation and, consequently, loss of the capacity of habitats to support wildlife populations.

4.2.1 Proposed Action

Effects on Vegetation

All of the plant communities affected by construction under the Proposed Action are mixed non-native and native habitats that are well represented in the region. No project related construction or activities would occur in riparian areas, and therefore no direct impacts to riparian plant communities or habitats are expected. Approximately 2.5 acres of vegetation would be removed associated with installation of the new D1 powerline: for pole installation, less than one acre of vegetation would be removed (419 poles with a 10-foot diameter circle); approximately 1.5 acres of vegetation would be removed associated with new access roads. Other activities would result in temporary or negligible removal of well-represented plant communities.

Potential permanent removal of seacliff buckwheat is discussed in the El Segundo blue butterfly section, page 4-4.

Wildlife Species

The small amounts of native and nonnative plant communities permanently removed associated with the project should not measurably reduce regional populations of common wildlife species. No natural riparian or wetland habitat would be lost. Consequently, no direct adverse impacts to common terrestrial wildlife should occur.

Temporary, indirect impacts to wildlife species may occur within adjacent wildlife habitat due to an increase in dust, noise, and other construction related disturbances for the duration of the activity. Temporary disturbances due to noise and human presence could disrupt foraging and roosting activities, or cause common bird and wildlife species to avoid the work area during construction periods. Noise and human presence would be limited to daytime hours for the extent of the activity, and the specific area disturbed would change as construction progresses. In addition, the proposed temporary disturbances are similar to the military industrial activity that routinely occurs at Vandenberg AFB. Wildlife species in the project area have adapted to some level of ongoing human activity and would continue to use the adjacent areas in the intervals between disturbances. Therefore, temporary, incidental disturbances during construction should not result in adverse indirect impacts to wildlife species.

Special Status Species

Projects similar in nature to the Proposed Action were described and recognized as "Utility Installation, Maintenance, and Removal" (Electrical Lines and Poles; pages 19-21) projects in the Vandenberg PBO (8-8-13-F-49R). The USFWS issued concurrence on March 21, 2018 that the Proposed Action can be considered a covered action under the Terms and Conditions of the Vandenberg PBO (refer to Appendix B-1).

The concurrence recognizes implementation of all measures described in Sections 7.1 and 7.2 of the PBO as well as additional species-specific measures and reporting requirements. Potential effects of the Proposed Action on federally and state listed species are discussed below. Implementation of the environmental protection measures described in Section 2.4, Environmental Protection Measures, and complying with all the terms and conditions and reporting requirements in the Biological Opinion should ensure that

impacts on special status species would be minimized.

California red-legged frog

California red-legged frogs have the potential to be present in any permanent water bodies on Vandenberg AFB. However, proposed demolition and construction activities would not occur in any water bodies that could provide breeding habitat for this species. Additionally, Feeder D1 would not cross any permanent water bodies, although several dry or seasonally dry tributaries to Shuman Creek would be traversed. Nonetheless, the California red-legged frog has been found up to 140-700 feet from occupied habitat into adjacent upland areas (Christopher 2018). Therefore, proposed activities that occur outside riparian corridors have the potential to encounter and adversely affect California red-legged frogs, if present. No permanent water bodies are within close proximity to the proposed construction activities.

Proposed activities would not occur in standing or flowing water that would provide habitat for eggs or juveniles. All overhead electrical distribution lines would span riparian corridors and no access road would be constructed within riparian areas. Potential impacts would be limited to construction personnel and equipment transiting through project areas. All personnel would be required to attend a mandatory education program about all listed species in the project area and their habitats. Furthermore, a qualified biologist familiar with California red-legged frogs would monitor construction activities within areas determined sensitive for this species. Implementation of the environmental protection measures described in Section 2.4, Environmental Protection Measures, and complying with all the terms and conditions and reporting requirements included in the Biological Opinion should ensure no adverse impacts to California red-legged frogs would occur.

El Segundo blue butterfly

Although no El Segundo blue butterflies have been observed within the project site, proposed activities could occur during the flight season of the El Segundo blue butterfly. Activities within the area with seacliff buckwheat (the host plant for El Segundo blue butterfly) would not occur between June 15 and August 15. Proposed activities that could have direct effects on El Segundo blue butterflies include removal and disturbance of seacliff buckwheat and vehicle traffic in proximity to seacliff buckwheat. Removal of mature seacliff buckwheat plants would eliminate potential habitat for El Segundo blue butterfly within the project area. Soil compaction activities, including vehicular traffic, have the potential to crush dispausing pupae (nonfeeding stage between the larva and adult), resulting in the mortality of individuals. Temporary disturbances could also promote growth of non-native plant species as native vegetation is removed.

Implementation of the environmental protection measures described in Section 2.4, Environmental Protection Measures, including enhancing suitable habitat for El Segundo blue butterfly at a 2:1 ratio in nearby areas when avoidance is not feasible, and complying with all the terms and conditions and reporting requirements included in the Biological Opinion should ensure no adverse impacts to this species would occur.

Gaviota tarplant

Proposed activities could affect the Gaviota tarplant in the project area. Although pure Gaviota tarplant stands do not occur within the project area, Gaviota tarplant co-occurs with grassland tarplant to form hybrid tarplant stands. It is most often associated with disturbed areas that are inundated by grasses and because this is an annual species, its presence is highly variable from year to year.

Implementation of the environmental protection measures described in Section 2.4, Environmental Protection Measures, including flagging and identifying Gaviota tarplant and complying with all the terms and conditions and reporting requirements included in the Biological Opinion should ensure no adverse impacts to this species would occur.

Waters of the U.S. and Wetlands

Impacts to jurisdictional Waters of the U.S. and wetlands are considered adverse if the Proposed Action results in a net loss of wetland area or habitat value, either through direct or indirect impacts to wetland vegetation, loss of habitat for wildlife, degradation of water quality, or alternations in hydrological function.

Implementation of environmental protection measures described in Section 2.4, Environmental Protection Measures, would include avoiding construction and vegetation removal within Waters of the U.S. and wetland areas and monitoring of these areas by a qualified biologist during construction. This avoidance approach should ensure that impacts to wetlands and Waters of the U.S. would not be adverse.

4.2.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur; therefore, no impacts to biological resources would occur.

4.3 Cultural Resources

The Proposed Action is subject to compliance with all relevant authorities governing cultural resources, including Section 106 of the NHPA and Air Force Instruction 32-7065. Compliance with Section 106 of the NHPA also satisfies federal agencies responsibilities for considering potential project related effects to cultural resources under NEPA. Section 106 of the NHPA requires federal agencies to consider the effects of proposed federal undertakings on cultural resources that are listed in or eligible for listing in the NRHP (i.e., historic properties). Part of Section 106 compliance requires the federal agency to determine if the undertaking would have no effect to historic properties, no adverse effect to historic properties, or an adverse effect to historic properties. The Section 106 implementing regulations (36 CFR Part 800) prescribe the process for making these determinations.

4.3.1 Proposed Action

Thirty-six archaeological sites are identified within or immediately adjacent to the Proposed Action (see Table 3.3-1). A detailed analysis of the environmental consequences at each archaeological site was prepared for compliance with Section 106 of the NHPA (Applied Earthworks, Inc., 2017). Five sites (CA-SBA-739, -741, -743, -759/H, and -2568) were determined to be outside the area of direct impact, and are not discussed further.

Table 4.3-1 summarizes the environmental consequences associated with the Proposed Action for the remaining 31 sites. Nine of the 31 archaeological sites do not have the significant characteristics that qualify them as “historic properties” and are ineligible for listing in the NRHP. Thus, the Proposed Action would not have significant consequences to these nine sites.

For the purposes of the Proposed Action, 22 of the 31 archaeological sites have been determined or are assumed eligible for the National Register, of which 15 eligible sites are located within the San Antonio Terrace Archaeological District.

As described in Table 4.3-1 below, the Proposed Action has the potential to adversely affect 12 of the 22 eligible sites. However, Vandenberg AFB will comply with the conditions stipulated in SHPO’s concurrence letter dated September 27, 2017 and the Memorandum of Agreement signed in August 2019 (refer to Appendix

B-2 for details).These conditions, as described further under the environmental protection measures in Section 2.4, Environmental Protection Measures, include the following: 1) installing temporary exclusionary fencing, 2) requiring archaeological and Native American monitoring, 3) restricting vehicular access within NRHP-eligible sites, 4) modifying pole removal techniques within NRHP-eligible sites, 5) carrying out a program of controlled archaeological excavations (i.e., data recovery) for new poles located within an ASA, and 6) adhering to 36 CFR 800.13 (Post review discoveries) and Vandenberg AFB Integrated Cultural Resources Management Plan procedures if previously undocumented cultural resources are discovered during construction activities. Adherence to these measures should avoid impacts on 7 NRHP-eligible sites within the project area, and data recovery should mitigate the limited impacts on the remaining 5 NRHP-eligible sites affected by new pole installations.

Table 4.3-1. Environmental Consequences to Cultural Resources from the Proposed Action

Site CA-SBA-	NRHP Eligibility[1]	Environmental Consequences
228	Eligible[3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. Data recovery excavations would mitigate adverse effects from installing the replacement line (outlined in a Memorandum of Agreement).
512	Eligible[2,3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. Data recovery excavations would mitigate adverse effects from installing the replacement line (outlined in a Memorandum of Agreement).
513	Eligible[2,3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. Data recovery excavations would mitigate adverse effects from installing the replacement line (outlined in a Memorandum of Agreement).
722	Eligible[2,3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
730	Eligible[2,4]	No adverse effects.
733	Eligible[2,3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
740	Eligible[2,3]	No adverse effects.
755/756/757	Eligible[3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
760/761/1748	Eligible[4]	No adverse effects.
939	Eligible[2,3]	No adverse effects from demolishing the existing line. Data recovery excavations would mitigate the adverse effect from installing the replacement line (outlined in a Memorandum of Agreement).
940	Eligible[2,4]	No adverse effects.
941	Eligible[2,3]	No adverse effects from demolishing the existing line. Data recovery excavations would mitigate the adverse effect from installing the replacement line (outlined in a Memorandum of Agreement).
990	Eligible[2,3]	No adverse effects.
1853	Eligible[2,3]	No adverse effects.
1865/H	Eligible[3]	Adverse effects from demolishing the existing line and installing the replacement line would be avoided/minimized with implementation of environmental protection measures.
1866	Ineligible	No adverse effects.
2127	Eligible[4]	No adverse effects.
2128/H	Eligible[3]	No adverse effects.
2164	Ineligible	No adverse effects.

Table 4.3-1. Environmental Consequences to Cultural Resources from the Proposed Action

Site CA-SBA-	NRHP Eligibility[1]	Environmental Consequences
2320	Eligible[4,5]	No adverse effects.
2352	Eligible[3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
2471/H	Eligible[3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
2565	Ineligible	No adverse effects.
2575	Eligible[3]	Adverse effects from demolishing the existing line would be avoided with implementation of environmental protection measures. No adverse effects from installing the replacement line.
3036	Ineligible	No adverse effects.
3288/H	Ineligible	No adverse effects.
3289	Ineligible	No adverse effects.
3294	Ineligible	No adverse effects.
3503	Eligible[2,3]	No adverse effects.
3563H	Ineligible	No adverse effects.
3565H	Ineligible	No adverse effects.

Source: Applied Earthworks, Inc., 2017

Notes:

1. NRHP = National Register of Historic Places. Eligible or ineligible refers to a formal determination of NRHP eligibility in consultation with the California State Historic Preservation Officer (SHPO).
2. Determined eligible as a contributor to the San Antonio Terrace Archaeological District (SATAD).
3. Determined NRHP-eligible as a separate listing by consensus.
4. Assumed NRHP-eligible as a separate listing.
5. Assumed NRHP-eligible as a contributing member of the SATAD.

4.3.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur. Therefore, no impacts on cultural resources would occur.

4.4 Geology and Earth Resources

Factors considered in determining if an alternative would have adverse impacts on geology and earth resources include the extent or degree to which implementation of an alternative would:

- Result in substantial soil erosion or the loss of topsoil; or
- Expose people or structures to potential substantial adverse effects, involving rupture of a known earthquake fault, strong seismic ground shaking, and/or liquefaction.

4.4.1 Proposed Action

Soils and Erosion

Site development would result in removal of vegetation and associated soil disturbance; thus, temporarily exacerbating the potential for erosion-induced sedimentation of Shuman Creek, Casmalia Canyon Creek, and other unnamed drainages that traverse the site. Measures implemented to avoid and/or minimize surface erosion are discussed in Section 3.9, Water Resources. As a result, significant impacts resulting from erosion should not occur.

Seismicity

Because of the seismic nature of the region, active faults located both in the vicinity of the Proposed Action and regionally could result in strong seismically induced ground shaking. The potential for surface fault rupture and liquefaction on Vandenberg AFB would be minimal due to natural conditions in the area.

The project does not include development of any new structures beyond roads and new power poles; therefore, no increase in risk to personnel or the public resulting from geologic hazards should occur. As a result, adverse impacts associated with seismically induced ground shaking should not occur.

4.4.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur; therefore, no impacts on geology and earth resources would occur.

4.5 Land Use and Coastal Zone Resources

Factors considered in determining if an alternative would have adverse impacts on land use and coastal zone resources include the extent or degree to which implementation of an alternative would:

- Result in land uses on the project site that are incompatible with, or would have a substantial adverse impact on, the existing character of adjacent land uses; or
- Conflict with substantive requirements of land use plans or policies.

4.5.1 Proposed Action

Land Use

As stated in Section 3.5, Land Use and Coastal Zone Resources, the project site is predominately undeveloped/open space and agriculture with the exception of launch operation support facilities associated with LFs, utility infrastructure, and miscellaneous mission support facilities. The Proposed Action would replace the overhead electrical distribution line, Feeder Line D1 on North Vandenberg AFB. This alternative would be compatible with the existing facilities in the project area, and land use would be the same as existing uses onsite. Therefore, no adverse impacts on land use should occur.

Coastal Zone Management

The Air Force has analyzed the effects of the Proposed Action by evaluating reasonable foreseeable direct and indirect effects on coastal uses and resources and has determined there would be no effects to coastal uses or resources. The Proposed Action would be consistent with the existing land uses in the project area and would not substantially differ from existing military and industrial activities in the project vicinity. Notification of this determination was filed with the CCC on October, 18, 2018. The CCC concurred with Vandenberg AFB's determination in a letter dated September November, 14, 2018 (refer to Appendix B-4 for details).

4.5.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur. Therefore, no impacts on land use and coastal zone resources would occur.

4.6 Noise

The significance of noise is assessed in terms of impact context and intensity. Noise impacts would be considered potentially significant if noise levels at a noise-sensitive location were to increase to greater than 65 dBA DNL, the noise level above which certain land uses are considered to be not compatible in accordance with DoD guidelines.

4.6.1 Proposed Action

Activities associated with the Proposed Action would involve demolition of existing electrical distribution lines, construction of new overhead electrical distribution lines and access roads, and annual maintenance activities. The construction activities would use standard equipment including trucks, earthmovers (e.g., dozers, scrapers,

loaders, excavators), and compressors, over an approximate 12-month period.

The Proposed Action would take place within the boundaries of Vandenberg AFB. Areas immediately surrounding the project site include open land and facilities that are not considered to be noise-sensitive or vibration-sensitive (e.g., launch facilities). In general, only construction workers and persons working on Vandenberg AFB would come within 50 feet of the proposed construction, demolition, and maintenance activities. The closest known noise-sensitive location to any segment of proposed project activities is the town of Casmalia, at a distance of approximately 6,000 feet.

Maximum noise levels generated by representative types of construction equipment at a reference distance of 50 feet are presented in Table 4.6-1. Construction workers would wear hearing protection, as appropriate, in accordance with applicable regulations. Other persons on Vandenberg AFB would typically be exposed to project noise only for brief periods of time (e.g., while driving along on-base roads) and would not be adversely affected.

Construction noise and vibration may be perceptible in existing on-base facilities during certain phases of the project, but would not be expected to be disruptive to workers. Noise generated by a point-source (e.g., a piece of construction equipment) typically decreases by 6 dB with every doubling of distance. Applying this conservative and simplistic relationship, noise generated by the loudest pieces of equipment listed in Table 4.6-1 (i.e., 85 dBA L_{max} at 50 feet) would decrease to approximately 45 dBA by the time it reaches the town of Casmalia. This sound level is below the presumed typical ambient sound level in Casmalia (50 dBA) and would not be audible under normal circumstances. Noise levels at the closest noise-sensitive location would remain well below 65 dBA DNL, and no significant noise impacts should occur.

4.6.2 No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not be carried out, and noise levels would remain as they are under baseline conditions. No noise impacts would occur under the No Action Alternative.

Table 4.6-1. Estimated Construction/Demolition Equipment Noise Levels

Equipment	Estimated Maximum Noise Level (dBA L_{max}) at 50 feet
Air compressor	80
Backhoe	80
Compactor (ground)	80
Concrete Mixer Truck	85
Crane, mobile or stationary	85
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Front End Loader	80
Generator (more than 25 kVA)	82
Grader	85
Jack Hammer	85
Paver	85
Pump	77
Rock Drill	85
Scraper	85

Sources: FHWA 2006; National Cooperative Highway Research Program (1999).

4.7 Public Health and Safety

Potential impacts associated with public health and safety are evaluated using federal, state, and local regulatory requirements, contract specifications, and Base operating constraints, as outlined in Section 3.7, Public Health and Safety. Hazardous materials management requirements are stipulated in federal and state EPA and OSHA regulations, contract specifications, and the Vandenberg AFB Hazardous Material Management Plan (30 SWP 32-7086).

Non-compliance with applicable regulatory requirements, human exposure to hazardous materials and wastes, or environmental release above permitted limits, would be considered adverse impacts.

4.7.1 Proposed Action

Hazardous Materials and Waste

Compliance with all applicable federal, state, and local rules and regulations would govern all activities associated with the Proposed Action, which should minimize the potential for adverse effects. Specifically, hazardous materials and waste would be regulated by the procedures outlined in the Vandenberg AFB Hazardous Materials Management AFI 32-7086, and Vandenberg AFB Hazardous Waste Management Plan, 30 SWP 32-7043A.

Proposed construction activities would require the use of hazardous materials similar to those currently used and managed on Vandenberg AFB. However, only a small number of equipment would be operating at any one time and there would not be a significant increase in the amounts of hazardous materials present on Base. Demolition activities, including removal and disposal of existing creosote-treated wood poles and transformers containing PCBs, would be disposed of in compliance with federal and state EPA and OSHA regulations, the Vandenberg AFB Hazardous Material Management Plan (AFI 32-7086), and applicable hazardous waste regulations. Therefore, impacts to hazardous materials and waste management should not be adverse.

Potential adverse effects could result from accidental releases of POLs from vehicle and equipment leaks. All hazardous wastes would be properly managed and disposed of in accordance with applicable federal, state, and local hazardous waste regulations, including the Vandenberg AFB Hazardous Waste Management Plan (30 SWP 32- 7043A). All hazardous wastes would be managed during release response and cleanup, and no adverse impacts should occur.

Installation Restoration Sites

As described in Section 3.7.1, Hazardous Materials Management, there are 30 open hazardous release sites, including two IRP sites, 14 AOCs, and 14 AOIs, located within the project area. As various contaminants could be present at these sites, there is a potential that contaminants would be encountered during ground disturbing activities. Consequently, all ground disturbing activities in proximity of hazardous release sites would be monitored to minimize the risks of exposure to soil or groundwater contaminants (refer to Section 2.4, Environmental Protection Measures). However, if contamination is discovered during construction activities, the AFCEC/CZOW Edwards ISS, Environmental Restoration Office would be contacted immediately for necessary remedial requirements. In addition, the Proposed Action would comply with all federal regulations governing IRP activities, including the procedures stipulated in the Federal Facilities Site Remediation Agreement. As the Proposed Action would comply with federal regulations that would minimize human exposure to contaminants, no adverse impacts on public health and safety should occur.

Unexploded Ordnance

There are no UXO Closure Areas identified within the project site. However, it is Air Force policy that all construction is coordinated through 30 SW/SEW to determine what level of UXO support is needed. Additionally, the Air Force would provide specialized training to the construction contractor to assist with recognizing potential UXO (refer to Section 2.4, Environmental Protection Measures). All UXO would be removed by authorized personnel.

Federal Health and Safety Requirements

All applicable OSHA requirements and Air Force regulations would be specified in construction contracts and implemented with standard BMPs associated with the Proposed Action. As discussed in Section 2.4, Environmental Protection Measures, a health and safety plan would be implemented and a formally trained individual would be the safety officer and the main point of contact for all job site safety issues. Impacts from potential health risks to construction personnel and the public should not be significant because work would be done by an experienced, licensed contractor and the work would follow an approved health and safety plan. Therefore, adverse impacts associated with environmental health risks should not occur.

Biological hazards, including vegetation (i.e., poison oak and stinging nettle), animals (i.e., insects, spiders, and snakes), disease vectors (i.e., ticks and rodents), and physical hazards (i.e., holes and ditches, uneven terrain, sharp or protruding objects, unstable ground) exist within the project area, and have the potential to adversely impact the health and safety of construction and/or maintenance personnel. Adherence to federal OSHA regulations would minimize the exposure of workers to these hazards. In addition, awareness training would be incorporated into health and safety protocol (refer to Section 2.4, Environmental Protection Measures).

The Proposed Action would include annual maintenance activities along the new overhead electrical distribution line corridor. As there would be no consequential change in the level of maintenance activities compared to existing conditions, adverse impacts on public health and safety should not occur.

4.7.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur; therefore, no impacts on public health and safety would occur.

4.8 Transportation

Factors considered in determining if an alternative would have adverse impacts on transportation include the extent or degree to which implementation of an alternative would:

- Result in a primary roadway no longer being able to service existing traffic demands; or
- Result in traffic to shift to a roadway that was incompatible with those traffic increases (e.g., inadequate pavement structure or design capacity), or could cause potential safety problems.

4.8.1 Proposed Action

Implementation of the Proposed Action would temporarily affect the local roadway network through the delivery of materials during site construction. However, since increases in traffic volumes associated with construction activities would be temporary, no long-term impacts to the regional transportation network should occur.

Heavy construction vehicles would be kept onsite for the duration of their use. Thus, increases in traffic volumes would mainly result from construction workers traveling to and from the project site and trucks

delivering materials to and removing material from the project site.

Traffic impacts during construction are anticipated to be minimal. Anticipated traffic volumes during construction would be within the capacity of surrounding roadways, including El Rancho Road, Curly Road, Sun Road, Orion Road, Brioso Road, Astral Road, Mina Road, Taff Road, Pt. Sal Road, Globe Road, Tow Road, Soldado Road, Parquee Road, Casmalia Beach Road, Cinco Road, Combar Road, Oculto Road, Dardo Road, and Armar Road. Existing levels of service along these roadways are adequate to accommodate proposed traffic increases during construction. Therefore, no adverse impacts to traffic should occur.

Proposed annual maintenance activities would not substantially increase overall traffic volumes or circulation patterns within the AFB. As there would be no consequential change in the level of operational activities associated with the Proposed Action, no adverse impacts should occur.

4.8.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur. Therefore, no impacts on transportation would occur.

4.9 Water Resources

Adverse impacts to water resources would occur if the Proposed Action caused substantial flooding or erosion; reduced surface water quality to creeks, rivers, streams, lakes, or the ocean; or reduced surface or groundwater quality or quantity.

4.9.1 Proposed Action

The Proposed Action would not create any structures that would affect the volumes or patterns of surface flows or increase potential for flooding within the drainage areas flowing into Shuman Creek, Casmalia Canyon Creek, and the other unnamed drainages that traverse the site.

The Proposed Action is exempt from coverage under the NPDES Construction General Permit because it is a replacement of an existing utility. Storm water pollution prevention and erosion control is still required by the California Water Code, Water Quality Control Plan for the Central Coast Basin (Basin Plan) and the Clean Water Act. As stated in Section 2.4, Environmental Protection Measures, the construction contractor would implement standard erosion and sediment control measures that would prevent or minimize dispersion of soils to surface waters. BMPs would also include spill prevention and control, vehicle and equipment fueling and maintenance, solid waste management, concrete waste management, stockpile management, and septic waste management.

Implementing measures described in Section 2.4, Environmental Protection Measures, would preclude direct impacts to potential Waters of the U.S. These measures include avoiding construction and vegetation removal within Waters of the U.S. and monitoring of these areas by a qualified biologist during construction. This avoidance approach should ensure that construction of the Proposed Action would not place dredge or fill material in Waters of the U.S. Accordingly, a CWA Section 401 Water Quality Certification from the Central Coast RWQCB and CWA Section 404 Permit from the USACE would not be required for the Proposed Action because no direct impacts to water bodies or wetlands should occur.

Erosion

Increased short and long-term erosion potential during construction could result from demolition of the existing electrical distribution line and poles, grading (cut and fill operations), removal of vegetation, soil compaction by heavy equipment, and offsite transport of soils in vehicle tires.

Construction of new access roads would increase the potential for long-term erosion on the project site. As discussed in Section 2.4, Environmental Protection Measures, BMPs and environmental protection measures are included in the 100% design drawings and/or will be included in all future contracting documents related to project completion. New roads would be designed and constructed to prevent erosion following a BMP Manual, such as the California Stormwater BMP Handbook. The Proposed Action would also include implementation of BMPs to prevent or minimize potential effects to water quality and increased sedimentation in potential Waters of the U.S., including nearby surface drainages (i.e., Shuman Creek and Casmalia Canyon Creek) as well as other unnamed drainages that traverse the project site. In addition, access roads would be constructed outside surface water drainages (refer to Section 2.4, Environmental Protection Measures). Vegetation removal would be minimized and avoided in surface water drainages. All heavy equipment would be prohibited in surface water drainages. Vegetation that is removed for temporary access roads shall be revegetated to stabilize soil and prevent erosion. Therefore, erosion related, water quality impacts of nearby surface water drainages should not be adverse with implementation of these project design components and BMPs. Thus, no adverse impacts should occur.

Water Quality

Surface water quality impacts, although unlikely, could potentially occur as a result of inadvertent dispersion of contaminants during demolition, construction, and subsequent maintenance. No project activities would occur within any water body and the amount of construction or maintenance-generated contaminants (such as an oil leak from a vehicle) would be minimal; therefore, any accidental spills would remain localized and small. Nonetheless, demolition and construction activities would require the use of vehicles and equipment powered by diesel fuel/gasoline and lubricated with oil and other mechanical fluids, which are considered hazardous substances. Accidental releases of such substances (e.g., spills arising from leakage of fuel, motor oil, or hydraulic fluid during operation and/or equipment maintenance) also could occur. All hazardous wastes would be properly managed and disposed of in accordance with applicable federal, state, and local hazardous waste regulations, including the Vandenberg AFB Hazardous Waste Management Plan (30 SWP 32-7043A). The contractor would follow a spill prevention and response plan, have spill kits, and clean-up spills immediately. Any resulting hazardous waste would be properly disposed of in accordance with Vandenberg AFB procedures. Therefore, no adverse impacts on water quality should occur.

Floodplains and Flooding

The Feeder Line D1 is not located within a FEMA designated 100-year floodplain.

4.9.2 No-Action Alternative

Under the No-Action Alternative, replacing the overhead electrical distribution lines on North Vandenberg AFB would not occur; therefore, no impacts on water resources would occur.

4.10 Cumulative Impacts

CEQ regulations implementing NEPA require that the cumulative impacts of a Proposed Action be assessed (40 CFR Parts 1500- 1508). A cumulative impact is defined as the following:

> "*the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions.*

Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." (40 CFR § 1508.7)

CEQ's guidance for considering cumulative effects states that NEPA documents "should compare the cumulative effects of multiple actions with appropriate national, regional, state, or community goals to determine whether the total effect is significant" (CEQ 1997). The first step in assessing cumulative effects, therefore, involves identifying and defining the scope of other actions and their interrelationship with the Proposed Action or alternatives. The scope must consider other projects that coincide with the location and timing of the Proposed Action and other actions, and the duration of potential effects on the environment.

4.10.1 Projects Considered in the Cumulative Analysis

For the purposes of this EA, the project vicinity is defined as the area over which effects of the Proposed Action could contribute to cumulative effects. The effect of the Proposed Action on specific resources has been evaluated to include the addition of present and future effects added to those that have occurred in the past. Such cumulative effects have also been added to effects (past, present, and future) caused by all other actions that affect the same resource. Due to the localized and short-term nature of the Proposed Action, a limited number of existing or reasonably foreseeable projects that would be constructed, and would coincide with the location and timing of the Proposed Action exist (Table 4.10-1).

Table 4.10-1. Related and Cumulative Projects

Project Title	Project Status
Golf Course	NEPA underway.

4.10.2 Cumulative Impact Analysis

Air Quality

Air quality impacts were considered in conjunction with on-going and future projects planned at Vandenberg AFB. As described in Section 4.1, Air Quality, construction activities from the Proposed Action would produce emissions that would remain below applicable emission significance thresholds. Any concurrent emission generating action that occurs in the project vicinity would potentially contribute to ambient impacts from these emissions. Since the proposed construction activities would produce a nominal amount of emissions, the combination of the proposed construction and future project air quality impacts would not contribute to an exceedance of an ambient air quality standard. As a result, the Proposed Action would not be cumulatively significant. Thus, there should be no significant cumulative impacts.

Biological Resources

The Golf Course project and others involving ground disturbing activities such as grading, paving, landscaping, construction of roads and buildings, and related noise and traffic impacts could result in temporary and localized effects to biological resources that would be individually comparable to those associated with the Proposed Action. Similar to these alternatives, implementation of environmental protection measures into the project design and compliance with regulatory consultation requirements would minimize adverse impacts on biological resources. In addition, adverse effects on sensitive species, including those identified associated with the Proposed Action, would be subject to the terms and conditions of the Vandenberg AFB Programmatic BO (which

considers adverse effects of all covered activities), or other individual project consultation. As a result, the Proposed Action, when combined with other past and planned activities, should not result in adverse cumulative impacts on biological resources.

Cultural Resources

Regional development and urbanization in California has resulted in extensive impacts on cultural resources, especially the destruction of archaeological sites and historic buildings. These types of cultural resources are limited, which is one of the reasons why strict federal regulations have been implemented to provide management and regulatory oversight.

Present and reasonably foreseeable projects on Vandenberg AFB (e.g., List of cumulative project sites) involving ground disturbing activities within intact, native soils (i.e., not artificial fill areas) and modification and/or demolition of structures over 50 years of age could result in impacts on cultural resources. In particular, archaeological sites are a limited resource and, therefore, any impact on an archaeological site that qualifies as a historic property may contribute to a cumulative impact. Federal actions that potentially disturb subsurface prehistoric or historic archaeological resources would undergo NHPA Section 106 review to consider any effects that the project may have on historic properties (as defined at 36 CFR 800.16). This includes mitigation of adverse impacts that could not be avoided or minimized, thereby addressing the cumulative impact of those actions. This includes the actions listed in Table 4.10-1 as well as future projects related to other powerline upgrades or replacement projects.

The Proposed Action would include implementation of environmental protection measures described in Section 2.4, Environmental Protection Measures, including 1) installing temporary exclusionary fencing, 2) requiring archaeological and Native American monitoring, 3) restricting vehicular access within NRHP-eligible sites, 4) modifying pole removal techniques within NRHP-eligible sites, 5) carrying out a program of controlled archaeological excavations (i.e., data recovery) for new poles located within an ASA, and 6) adhering to 36 CFR 800.13 (Post review discoveries) and Vandenberg AFB Integrated Cultural Resources Management Plan procedures if previously undocumented cultural resources are discovered during construction activities. Adherence to these measures would avoid impacts on 7 NRHP-eligible sites within the project area, and data recovery would mitigate the limited impacts on the remaining 5 NRHP-eligible sites affected by new pole installations.

Other projects involving ground disturbance such as bridge improvements, golf courses, or wastewater treatment plants, have the potential to encounter archaeological resources. In all cases, Vandenberg AFB would comply with Section 106 of the NHPA by identifying the presence of historic properties, evaluating their NRHP eligibility, assessing impacts, and consulting with the State Historic Preservation Officer and tribes on the mitigation of any adverse impacts and would take the same action if any unanticipated archaeological resources are discovered. With these procedures in place, the Proposed Action would not add to the cumulative impacts on cultural resources. As a result, the Proposed Action, combined with other cumulative projects, should not result in significant cumulative impacts on cultural resources.

Geology and Earth Resources

Cumulative projects at Vandenberg involving grading, excavations, and construction/demolition (e.g., list of cumulative project sites) could result in erosion-induced sedimentation of adjacent drainages and water bodies. The Proposed Action would include construction activities that would temporarily exacerbate the potential for erosion-induced sedimentation

of Cañada Honda Creek, Santa Ynez River, and surface drainages (e.g., Lompoc Canyon, Red Roof Canyon, and seven unnamed drainages tributary to Cañada Honda Creek) that traverse the site. Construction at cumulative project sites involving grading and construction, in combination with construction for the Proposed Action, should not result in significant cumulative erosional impacts, due to small and localized nature of the activity, implementation of BMPs, compliance with established plans and policies, and incorporation of standard erosion control measures into the project design.

All projects located on Vandenberg AFB are subject to seismically induced ground shaking due to an earthquake on a local or regional fault. Seismic-related impacts at the project site, in combination with probable future projects, should not be cumulatively significant with incorporation of modern construction engineering and safety standards.

Land Use and Coastal Zone Resources

Replacement of the D1 powerline would not introduce incompatible land uses and would be consistent with guidelines for preservation of natural resources within the coastal zone stipulated in the CZMA. Similarly, construction or operation of related and cumulative projects would be modified during the project review process to ensure compatibility with existing land uses and consistency with provisions stipulated in the applicable federal, state, and/or local land use management plans. Implementation of the Proposed Action, in conjunction with development of reasonably foreseeable projects, should not result in any adverse cumulative impacts to land use and coastal zone resources.

Noise

Development throughout Vandenberg AFB results in intermittent, short-term noise impacts throughout the region. The duration of these localized impacts would be limited to the construction phases of the individual projects. The Golf Course project, and any other future construction activities occurring within the region, would be subject to the standard measures and conditions regulating construction activities to ensure consistency with OSHA noise standards and guidelines. The contribution of the Proposed Action to incremental short term construction impacts would not be cumulatively significant, as these activities would be temporary and intermittent. Impacts associated with generating noise at cumulative project sites during construction periods, in combination with construction of D1 powerline replacement project would not result in significant cumulative impacts, as such impacts are generally localized and confined to the immediate construction area.

Noise generated by annual maintenance activities would be consistent with the existing uses in the project area and would not substantially differ from the existing noise environment within the project vicinity. Therefore, the contribution to cumulative operational noise impacts should not be adverse.

Public Health and Safety

The Proposed Action along with other related projects proposed at Vandenberg AFB, such as the Golf Course project, could result in increased risks to public health and safety. The identified projects, along with any other construction and operational activities occurring on Vandenberg AFB would be subject to federal, state, and local guidelines regulating public health and safety and hazardous materials. Construction activities associated with the Proposed Action would occur at a military facility with limited public access. Impacts from these alternatives to public safety and environmental health would not be significant because the risks to demolition/construction workers, potentials for offsite dispersion of contaminants, and future exposure to residual onsite

contamination would be minimal and likely confined to the immediate project site. Implementation of the D1 powerline replacement project, in conjunction with development of reasonably foreseeable projects, should not result in any adverse cumulative impacts to public health and safety. Thus, there should be no significant impacts.

Transportation

Cumulative project buildout on Vandenberg AFB would result in additional traffic volumes within the region. Cumulative project-related auto and truck traffic could utilize streets and intersections in the project vicinity, as well as those streets that would be used by project related construction traffic (i.e., equipment and commuting workers). When considered cumulatively, projects would generate increased levels of vehicular activity that would increase traffic trips on the local roadway network. The D1 powerline replacement project would temporarily affect the local roadway network during project construction due to minor, short-term increases in truck and equipment traffic. However, anticipated traffic volumes during construction would be within the capacity of surrounding roadways and existing levels of service along these roadways would be adequate to accommodate proposed traffic increases during construction. Proposed annual maintenance activities would not substantially increase traffic entering the project site.

Given the minimal, short-term increases in traffic, the contribution of the Proposed Action to cumulative traffic impacts would not be significant. As a result, the Proposed Action, combined with other cumulative projects, should not result in adverse cumulative impacts on transportation, and there should be no significant impacts.

Water Resources

Cumulative development within or adjacent to water bodies could result in temporary and localized effects to water quality. Significant surface water and groundwater quality impacts would not occur as a result of construction-induced erosion or contamination. In addition, the D1 powerline replacement project would not result in increased flooding potential onsite or offsite. Less than significant impacts, when added to the impacts from the other related and cumulative projects, should not result in associated adverse cumulative impacts.

Summary

In summary, Vandenberg AFB includes environmental contract specifications and environmental protection measures into all projects to ensure that no adverse cumulative impacts result from development projects. Projects are reviewed and modified, as necessary, during the NEPA planning process to ensure adverse impacts are avoided or minimized to the extent feasible. As all Vandenberg AFB projects are designed and implemented in compliance with applicable statutes and regulations and environmental protection measures are developed in coordination with the appropriate regulatory agencies, impacts associated with the Proposed Action, when added to the impacts from other related and cumulative projects, should not result in significant cumulative impacts.

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Chapter 5. List of Agencies, Organizations, and Persons Contacted

California Coastal Commission, San Francisco, CA

California Native Plant Society, Los Osos, CA

California Regional Water Quality Control Board, Central Coast Region, San Luis Obispo, CA

California State Historic Preservation Officer, Sacramento, CA

Environmental Defense Center, Santa Barbara, CA

La Purisima Audubon Society, Lompoc, CA

Lompoc Public Library, Lompoc, CA

Santa Barbara County Air Pollution Control District, Santa Barbara, CA

Santa Barbara Museum of Natural History, Santa Barbara, CA

Santa Barbara Public Library, Santa Barbara, CA

Santa Maria Public Library, Santa Maria, CA

Santa Ynez Band of Chumash Indians, Tribal Elders Council, Santa Ynez, CA

University of California, Library, Santa Barbara, CA

United States Fish and Wildlife Service, Ventura Field Office, Ventura, CA

Vandenberg Air Force Base Library, Vandenberg AFB, CA

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Appendix A
Air Quality Emissions Calculations

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Appendix A - Air Emission Calculations for Replacement of Electrical Feeder Line D1 - VAFB.

	A	B	C	D	E	F	G	H	I
1	**Table A-1. Equipment Usage Data for Replacement of Electrical Feeder Line D1 on VAFB.**								
2		*Power*	*Load*	*#*	*Hourly*	*Hours*	*Daily*	*Work*	*Total*
3	*Activity/Equipment Type*	*Rating (Hp)*	*Factor*	*Active*	*Hp-Hrs*	*Per Day*	*Hp-Hrs*	*Days*	*Hp-Hrs*
4	*Clear Right of Way*								
5	Brush Cutter	60	0.50	1	30	8	240	3.5	837
6	Loader - 2 CY	110	0.60	1	66	6	396	3.5	1,381
7	Water Truck	175	0.25	1	44	4	175	3.5	610
8	Fugitive Dust (1)			0.35				3.5	1.2
9	*Construct New Access Roads*								
10	Bulldozer - D6	165	0.55	1	91	8	726	9.2	6,683
11	Grader	150	0.40	1	60	8	480	9.2	4,418
12	Water Truck	175	0.25	1	44	4	175	9.2	1,611
13	Fugitive Dust (1)			0.25				9.2	2.3
14	*Haul New Line Poles*								
15	Flat Bed Truck (2)			1		150		70	10,475
16	*Erect New Line Poles*								
17	Heavy Line Truck (2)			1		25		419	10,475
18	Boom/Crane Truck	190	0.30	1	57	4	228	419	95,532
19	*Install Conductors/insulators*								
20	Bucket/Truck			1		20		419	8,380
21	Heavy Line Truck			1		10		419	4,190
22	Boom/Crane Truck	190	0.30	1	57	2	114	419	47,766
23	3 Drum Sock Line Puller	150	0.62	1	93	5	465	22	10,254
24	Bull Wheel Puller	263	0.62	1	163	5	814	22	17,945
25	Static Truck/Tensioner			1		20		419	8,380
26	Backhoe/Loader	120	0.55	1	66	2	132	419	55,308
27	Materials Truck - Deliveries (2)			1		150		35	5,238
28	*Remove Existing Conductor*								
29	Bucket Truck			1		15		68	1,017
30	Boom/Crane Truck	190	0.30	1	57	4	228	68	15,458
31	Bull Wheel Puller	263	0.62	1	163	3	488	68	33,103
32	Static Truck/Tensioner			1		25		68	1,695
33	*Remove Existing Wood Poles*								
34	Bucket Truck			1		25		68	1,695
35	Boom/Crane Truck	190	0.30	1	57	4	228	68	15,458
36	Auger/Line Truck w/Compressor	210	0.48	1	101	4	403	68	27,337
37	Flat Bed Truck (2)			1		40		68	2,712
38	Dump Truck			1		30		68	2,034
39	Backhoe/Loader	120	0.55	1	66	3	198	68	13,424
40	*Install Underground Cable and Ductbank*								
41	Backhoe/Loader	92	0.30	1	28	6	166	9.0	1,488
42	Paving Machine	110	0.48	1	53	8	422	1.8	759
43	Roller	80	0.48	1	38	8	307	1.8	552
44	Fugitive Dust (1)			0.15				10.8	1.62
45	Concrete Truck - 9 CY (2)			1		40		9.0	359
46	Materials Truck - Deliveries (2)			1		150		1.8	270
47	Paving Truck - 20 CY (2)			1		40		3.6	144
48	Notes: (1) # active = acres distrubed/day and Total Hp=Hrs = total acre-days.								
49	(2) Hours/Day = miles/roundtrip, Work Days = total trips, and Total Hp-Hrs = total miles.								

	K	L	M	N	O	P	Q	R	S	T
1	**Table A-2. Air Emission Factors for Replacement of Electrical Feeder Line D1 - VAFB.**									
2		*Fuel*	*Emission Factors (Grams/Horsepower-Hour)*							
3	*Project Year/Source Type*	*Type*	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*	*References*
4	**Year 2019**									
5	Off-Road Equipment - 51-120 Hp	D	0.48	3.68	4.27	0.005	0.30	0.28	505	(1)
6	Off-Road Equipment - 121-175 Hp	D	0.37	3.21	3.61	0.005	0.19	0.17	506	(1)
7	Off-Road Equipment - 176-250 Hp	D	0.29	1.35	3.31	0.005	0.12	0.11	508	(1)
8	Off-Road Equipment - 251-500 Hp	D	0.25	1.64	2.73	0.005	0.10	0.09	500	(1)
9	On-road Truck - 5 mph (Gms/Mi)	D	3.09	5.96	19.99	0.04	0.40	0.38	3,708	(2)
10	On-road Truck - 25 mph (Gms/Mi)	D	0.47	1.70	8.03	0.02	0.13	0.12	1,916	(2)
11	On-road Truck - 55 mph (Gms/Mi)	D	0.19	0.75	5.44	0.01	0.13	0.13	1,380	(2)
12	On-Road Trucks - Composite (Gms/Mi)	D	0.39	1.20	6.69	0.02	0.14	0.14	1,604	(3)
13	Fugitive Dust (Lbs/acre-day)	- - -					27.3	2.7		(4)
14	Notes: (1) Statewide average emission factors from the OFFROAD2011 model and found in CalEEMod Appendix D for year 2019 (BREEZE Software 2017).									
15	(2) Heavy duty diesel truck running emission factors developed from EMFAC2017 for year 2019 (ARB 2018). Units in grams/mile.									
16	(3) Composite factors based on a round trip of 75% at 55 mph, 20% at 25 mph, and 5% at 5 mph. Units in grams/mile. These factors apply to the flatbed and									
17	materials truck trips. All other on-road truck usages evaluated with 25 mph emission factors.									
18	(4) Units in lbs/acre-day (*AP-42* Section 11.2.3 [USEPA 1995]) and based upon 22 work days/month and a PM10/PM fraction of 0.5.									
19	Factors reduced by 50% from uncontrolled levels to simulate use of standard dust control measures.									

	V	W	X	Y	Z	AA	AB	AC
1	**Table A-3. Annual Emissions from Replacement of Electrical Feeder Line K1 - VAFB.**							
2		*Tons per Year*						
3	*Location/Equipment Type*	*VOC*	*CO*	*NOx*	*SOx*	*PM10*	*PM2.5*	*CO2*
4	*Clear Right of Way*							
5	Brush Cutter	0.00	0.00	0.00	0.00	0.00	0.00	0.47
6	Loader - 2 CY	0.00	0.01	0.01	0.00	0.00	0.00	0.77
7	Water Truck	0.00	0.00	0.00	0.00	0.00	0.00	0.34
8	Fugitive Dust					0.02	0.00	
9	**Subtotal**	**0.00**	**0.01**	**0.01**	**0.00**	**0.02**	**0.00**	**1.58**
10	*Construct New Access Roads*							
11	Bulldozer - D6	0.00	0.02	0.03	0.00	0.00	0.00	3.72
12	Grader	0.00	0.02	0.02	0.00	0.00	0.00	2.46
13	Water Truck	0.00	0.01	0.01	0.00	0.00	0.00	0.90
14	Fugitive Dust					0.03	0.00	
15	**Subtotal**	**0.01**	**0.04**	**0.05**	**0.00**	**0.03**	**0.01**	**7.08**
16	*Haul New Line Poles*							
17	Flat Bed Truck	0.00	0.01	0.08	0.00	0.00	0.00	18.52
18	*Erect New Line Poles*							
19	Heavy Line Truck	0.01	0.02	0.09	0.00	0.00	0.00	22.12
20	Boom/Crane Truck	0.03	0.14	0.35	0.00	0.01	0.01	53.51
21	**Subtotal**	**0.04**	**0.16**	**0.44**	**0.00**	**0.01**	**0.01**	**75.63**
22	*Install Conductors*							
23	Bucket/Truck	0.00	0.02	0.07	0.00	0.00	0.00	17.70
24	Heavy Line Truck	0.00	0.01	0.04	0.00	0.00	0.00	8.85
25	Boom/Crane Truck	0.02	0.07	0.17	0.00	0.01	0.01	26.76
26	3 Drum Sock Line Puller	0.00	0.04	0.04	0.00	0.00	0.00	5.71
27	Bull Wheel Puller	0.00	0.03	0.05	0.00	0.00	0.00	9.88
28	Static Truck/Tensioner	0.00	0.02	0.07	0.00	0.00	0.00	17.70
29	Backhoe/Loader	0.03	0.22	0.26	0.00	0.02	0.02	30.82
30	Flat Bed Truck	0.00	0.01	0.04	0.00	0.00	0.00	9.26
31	**Subtotal**	**0.07**	**0.41**	**0.75**	**0.00**	**0.03**	**0.03**	**126.67**
32	*Remove Existing Conductor*							
33	Bucket Truck	0.00	0.00	0.01	0.00	0.00	0.00	2.15
34	Boom/Crane Truck	0.00	0.02	0.06	0.00	0.00	0.00	8.66
35	Bull Wheel Puller	0.01	0.06	0.10	0.00	0.00	0.00	18.23
36	Static Truck/Tensioner	0.00	0.00	0.02	0.00	0.00	0.00	3.58
37	**Subtotal**	**0.02**	**0.09**	**0.18**	**0.00**	**0.01**	**0.01**	**32.62**
38	*Remove Existing Wood Poles*							
39	Bucket Truck	0.00	0.00	0.02	0.00	0.00	0.00	3.58
40	Boom/Crane Truck	0.00	0.02	0.06	0.00	0.00	0.00	8.66
41	Auger/Line Truck w/Compressor	0.01	0.04	0.10	0.00	0.00	0.00	15.31
42	Flat Bed Truck	0.00	0.00	0.02	0.00	0.00	0.00	4.79
43	Dump Truck	0.00	0.00	0.02	0.00	0.00	0.00	4.29
44	Backhoe/Loader	0.01	0.05	0.06	0.00	0.00	0.00	7.48
45	**Subtotal**	**0.02**	**0.13**	**0.27**	**0.00**	**0.01**	**0.01**	**44.12**
46	*Install Underground Cable and Ductbank*							
47	Backhoe/Loader	0.00	0.01	0.01	0.00	0.00	0.00	0.83
48	Paving Machine	0.00	0.00	0.00	0.00	0.00	0.00	0.42
49	Roller	0.00	0.00	0.00	0.00	0.00	0.00	0.31
50	Fugitive Dust					0.02	0.00	
51	Concrete Truck - 9 CY	0.00	0.00	0.00	0.00	0.00	0.00	0.76
52	Materials Truck - Deliveries	0.00	0.00	0.00	0.00	0.00	0.00	0.48
53	Paving Truck - 20 CY	0.00	0.00	0.00	0.00	0.00	0.00	0.30
54	**Subtotal**	**0.00**	**0.01**	**0.02**	**0.00**	**0.02**	**0.00**	**3.10**
55								
56	**Total Project Emissions**							
57	Construction Equipment	0.15	0.87	1.81	0.00	0.07	0.06	309
58	Fugitive Dust					0.07	0.01	
59	**Total Project Emissions**	**0.15**	**0.87**	**1.81**	**0.00**	**0.14**	**0.07**	**309**

Table A-4. Data for Replacement of Electrical Feeder Line D1 on VAFB.

	New Access Road		*# of Poles*		New Underground Lines
Alternative	*(Feet)*	*(Miles)*	*Existing*	*New*	*(Feet)*
Alternative A	4,603	0.9	339	419	5,656

Table A-5. New Underground Lines Distances for the Electrical Feeder Line D1 on VAFB.

Drawing	*Length (Feet)*
Alternative A	
C-101	360
C-102	1,188
C-103	72
C-104	372
C-105	272
C-106	240
C-107	220
C-108	400
C-109	200
C-110	120
C-111	-
C-112	-
C-113	-
C-114	100
C-115	80
C-116	692
C-117	-
C-118	160
C-119	392
C-120	-
C-121	-
C-122	-
C-123	80
C-124	-
C-125	408
C-126	300
Total	**5,656**

Source: File 111046B4 Combined PDF.pdf, Drawings C-101 through C-126.

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Appendix B
Regulatory Correspondence

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Appendix B-1
Endangered Species Act Regulatory Consultation

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Date sent to FWS: 12 March 2018

Project Title: Replacement of Electrical Distribution Feeder D1

Project Proponent: CENMP, Heslop

CEAN POC: Evans, (805) 606-4198

Location: North Base, generally parallel to El Rancho and Point Sal Roads

Species impacted: Likely to adversely affect: Gaviota tarplant ("mixed" and "hybrid" stands), California red-legged frog, El Segundo blue butterfly.

Expected start date of project: Fall 2018 or later. NEPA is the primary factor requiring this pre-notification at this time.

Project Description:

This pre-notification replaces a version sent in December 2016. Install new and remove old electrical poles and lines along approximately 15 miles (25 km) of North Vandenberg Air Force Base (Figures 1 and 2). New poles will be placed and tested prior to the removal of existing poles. Approximately 15 miles of existing line will be removed and replaced by 11 miles of new line; the new alignment is generally quite close to the existing alignment, so the total project length is less than 17 miles (27.4 km). We consider the action area to include 10 meters (32.8 feet) on either side of the roads for a total of 135.4 acres; however as that calculation includes existing roads, the project area is intentionally overestimated. Staging areas are also required. Five potential staging areas were identified in the Biological Assessment (BA) transmitted to the USFWS in December 2016 (see BA, Figure 2-2); these totaled an additional 4 acres, which is again a significant overestimate. All proposed staging areas are on previously disturbed lands, most of them are on existing paved parking lots.

In most areas, the new alignment is immediately adjacent to paved roads, in previously disturbed areas. In some areas, the new alignment is directly opposite a paved or unpaved road from the existing alignment. Some existing poles will be "partially abandoned in place," meaning the wire will be removed, the poles will be cut at grade and removed, but the foundation will remain in place (reducing ground and vegetation disturbance).

Shuman Creek will be spanned at only one location, with poles on either side being spaced apart at the longest possible distance; no heavy equipment, vehicles or personnel will traverse through running or standing water. Although it is not an ESA section 7 issue, the existing D-1 powerline has been documented as presenting a significant electrocution hazard to raptors and other large birds (and this in turn increases risk of wildfires caused by electrical system failures).

30 CES/CEAN Analysis:

The large majority of this project follows existing paved (major) roads or unpaved access roads; most of the habitat is dominated by invasive species, primarily veldtgrass (*Ehrharta calycina*). A service-approved biological monitor will be required on site during all actions in sensitive areas, including every day activity is occurring within an agreed-upon distance from Shuman Creek. No work will take place after dark or within 24 hours of significant rainfall (defined as greater than 0.5 inches of rain received in a 24-hour period).

Gaviota tarplant: Plants in Area A are classified as both "mixed" and "hybrid" stands. Plants in Area B are considered "hybrids." The former Launch Facility-6 (see Figure 3-A) will no longer require electrical power following completion of this project. Existing poles near this area (and in sensitive Gaviota tarplant habitat) will be cut at grade, and removed by crane minimizing soil disturbance. The replacement poles feeding a weather station west of LF-06 will be installed approximately 40 feet west, on the opposite side of Occulto Road

California red-legged frog: The closest known record of this species is in Shuman Creek, about 175 feet from the project area (see figure 4). While the existing and new lines actually cross over Shuman Creek, both of these are in a developed corridor with no CRLF sightings documented.

El Segundo blue butterfly: Seacliff buckwheat (*Eriogonum parvifolium*), host plant of the ESBB was documented in an area of 0.41 acres within the project area (figure 5); as biological surveys for this project initially occurred in 2016, it is possible that distribution of this species has changed. The nearest known locality for an ESBB is approximately 1500 meters south (figure 6), however this represents an observation of one male ESBB in 2007; the nearest known recurring locality is approximately 3600 meters from the project area.

Beach layia, Vernal pool fairy shrimp and Tidewater goby were considered in the previously transmitted pre-notification on this project. None of these species are known within the action area (discussion with USFWS regarding tidewater goby was resolved with additional information provided, showing that this species was unable to reach the action area due to a "waterfall" near the upstream end of the "Shuman Lagoon").

Programmatic Biological Opinion Reference:

Section: 2.2 Utility Installation, Maintenance and Removal (Electrical Lines and Poles) Page: 19

Analysis of Effects:

Gaviota tarplant: In discussions with USFWS, we concluded that the sum of actions would not reduce the quality of Gaviota tarplant or its habitat on VAFB beyond its current condition.

California red-legged frog: Surveys and monitoring will be conducted during all actions in accordance with the guidance as required by the PBO at the time of construction. No heavy equipment, vehicles or personnel will cross running or flowing water (primarily due to the presence of impenetrable poison oak).

El Segundo blue butterfly: No disturbance to ESBB is expected, however a small amount of "suitable but not known to be occupied habitat" may be impacted. Work will NOT be able to avoid ESBB flight season, however the project is not located within known occupied habitat for ESBB. Compensatory habitat enhancement will be required at a 2:1 ratio, however this may be in an area distant from the project area in an area more suitable for ESBB recovery.

Maximum expected disturbance area: 139.4 acres

Impact if project not completed: Existing conditions do not provide a reliable power source required by VAFB's launch and range mission. Failure to complete this project will leave many mission critical facilities vulnerable to interruption of the main power supply or catastrophic powerline failure, resulting in a delay or cancellation of national defense missions.

Minimization Measures which will NOT be implemented for this project:

PBO Section 7.1 (Basewide): None

PBO Section 7.2 (Species-specific): None

Summary:

CEAN has determined that the proposed project should be considered and authorized for action because:

a.) the project fits within the scope of the actions described in the PBO,
b.) the effects analyzed are identical or similar to those that were analyzed in the PBO,
c.) sensitive time periods for listed species will be avoided to the extent practicable, and
d.) all pertinent minimization measures will be implemented.

We request concurrence from FWS within 30 days of the date of this document. This project will also be discussed and/or listed within our annual report.

Site Map or Imagery:

See additional pages

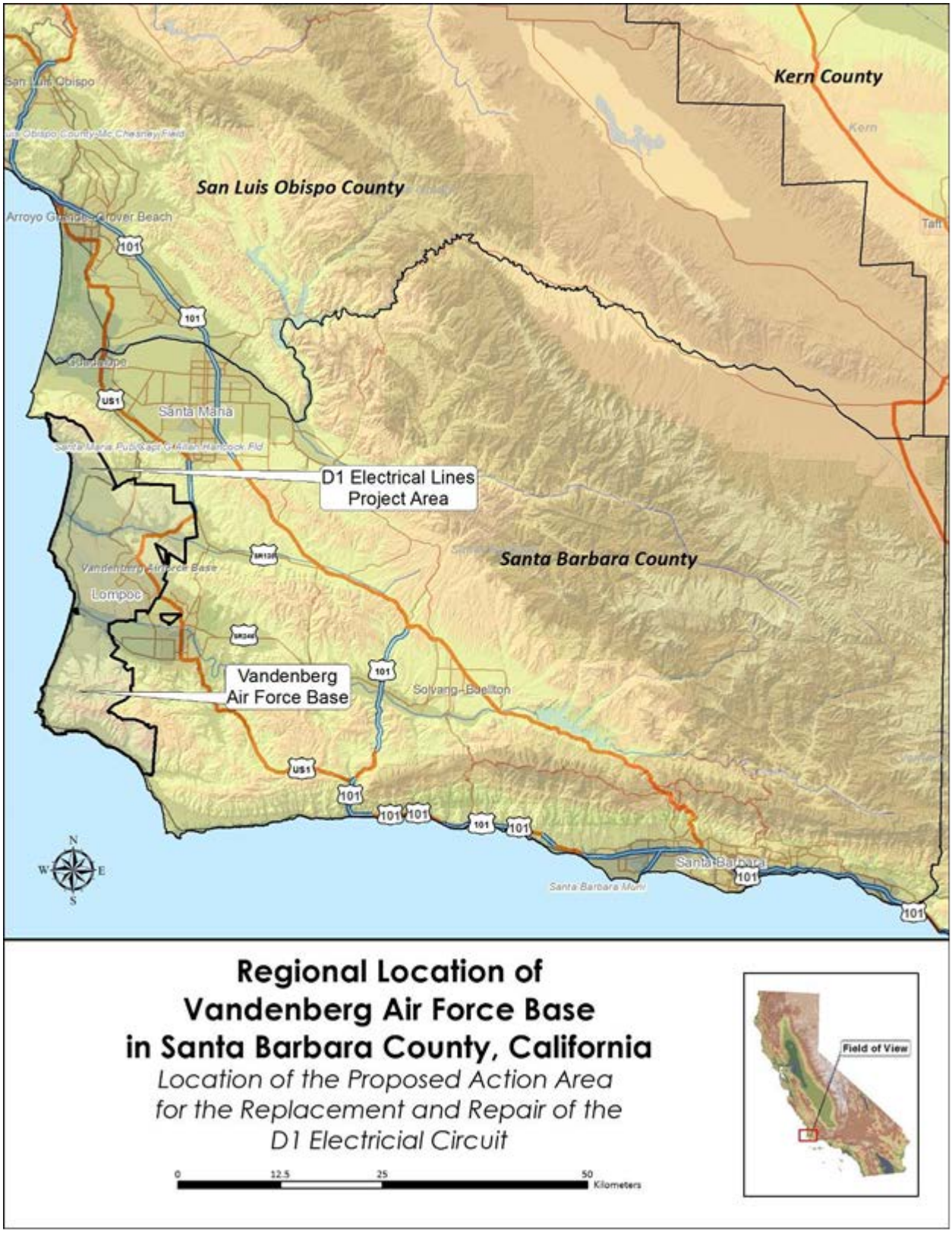

Figure 1: Regional area and location of D-1 Electrical Line replacement project

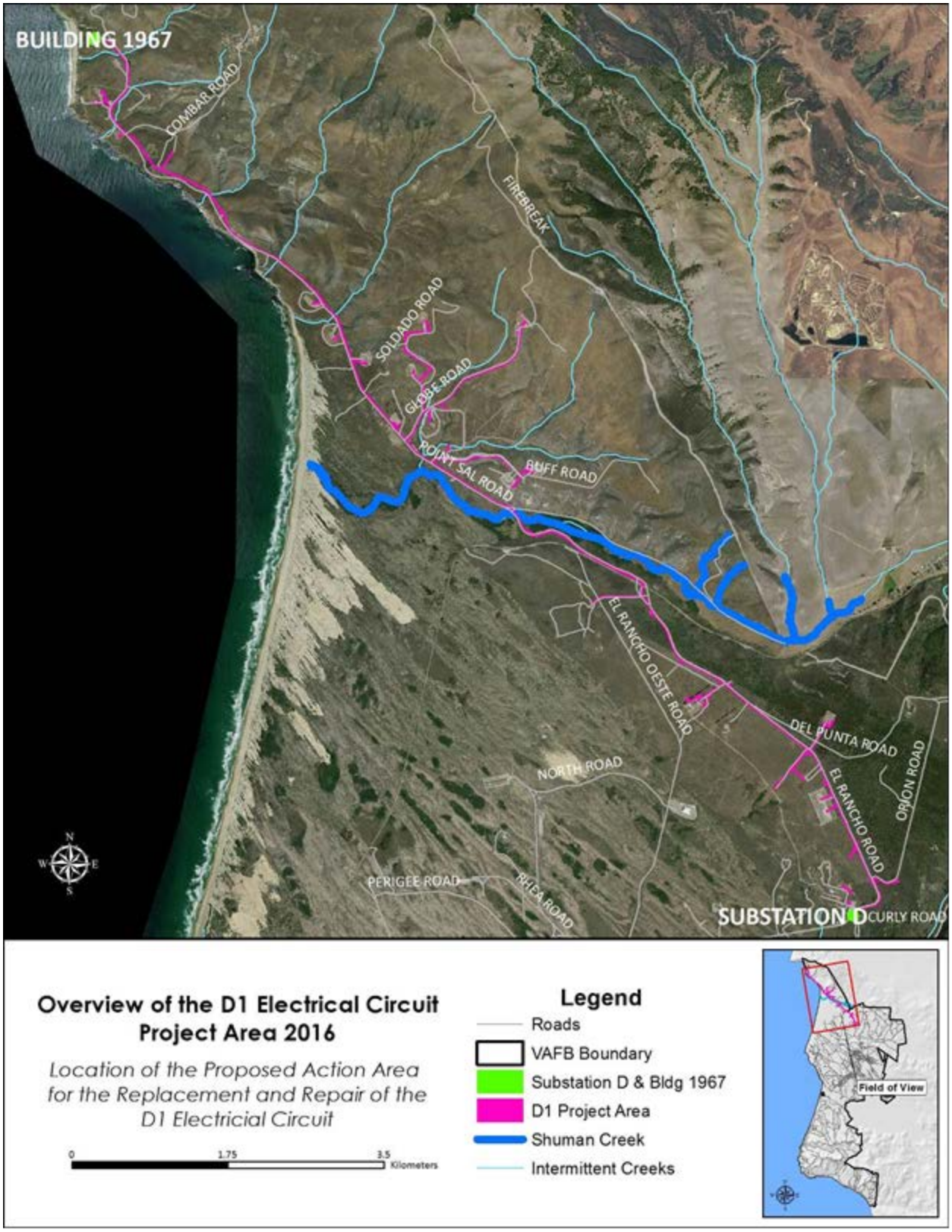

Figure 2: Project overview

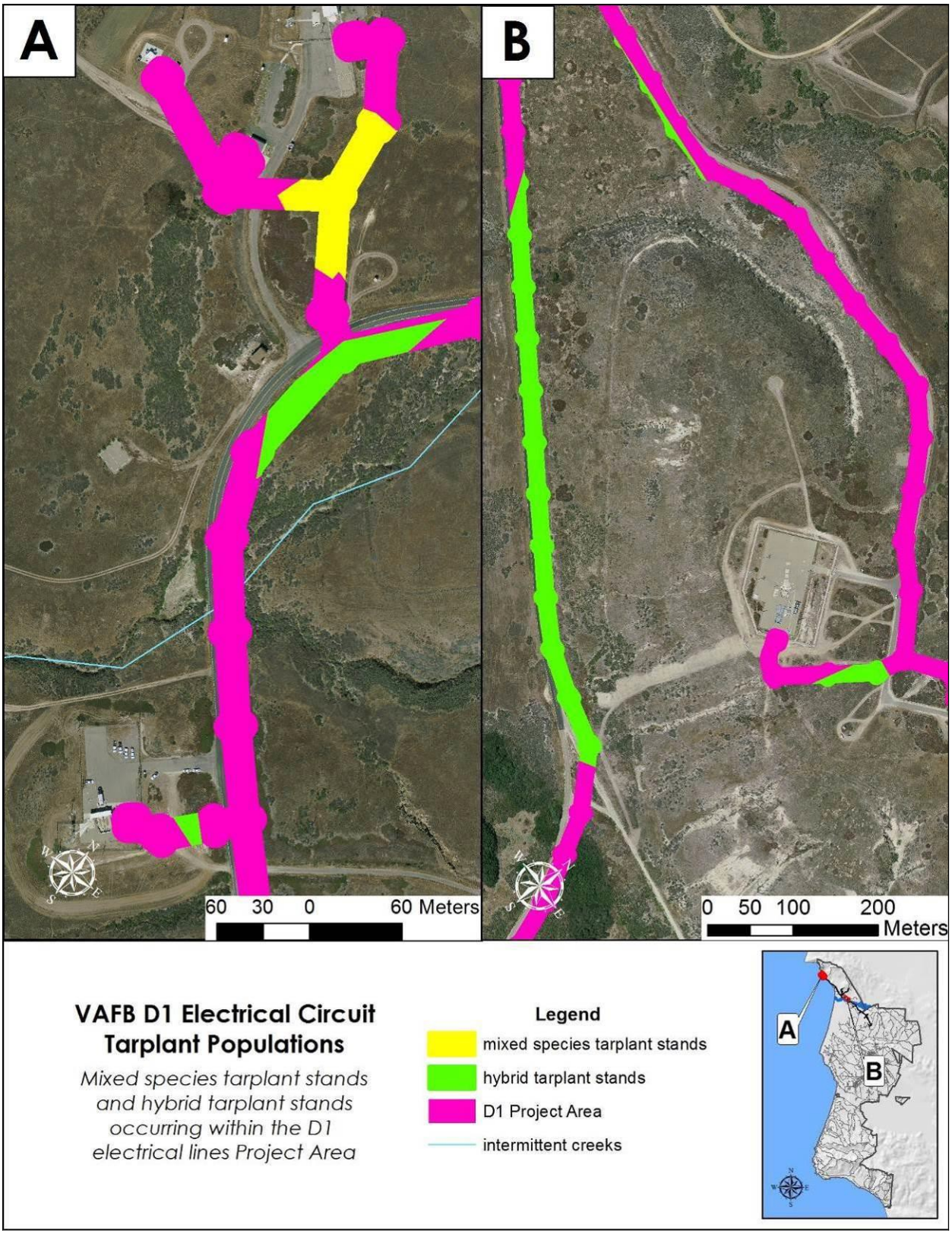

Figure 3: Gaviota tarplant in northern end of action area. Two poles within the yellow portion of section A will be cut at grade and removed by crane. This poles will NOT be replaced with new poles, as the former Launch Facility 06 no longer requires electrical power.

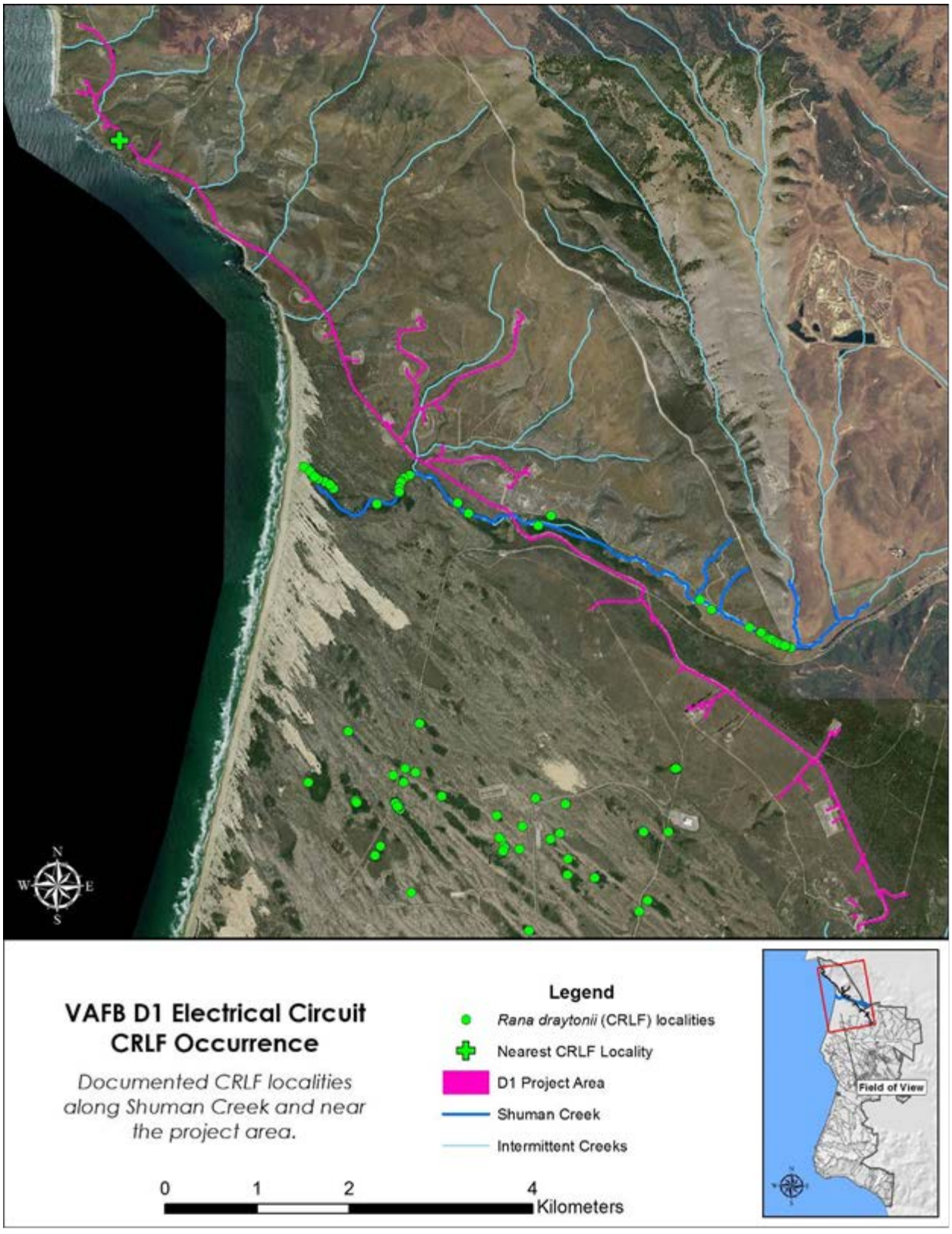

Figure 4: California red-legged frogs in the action area

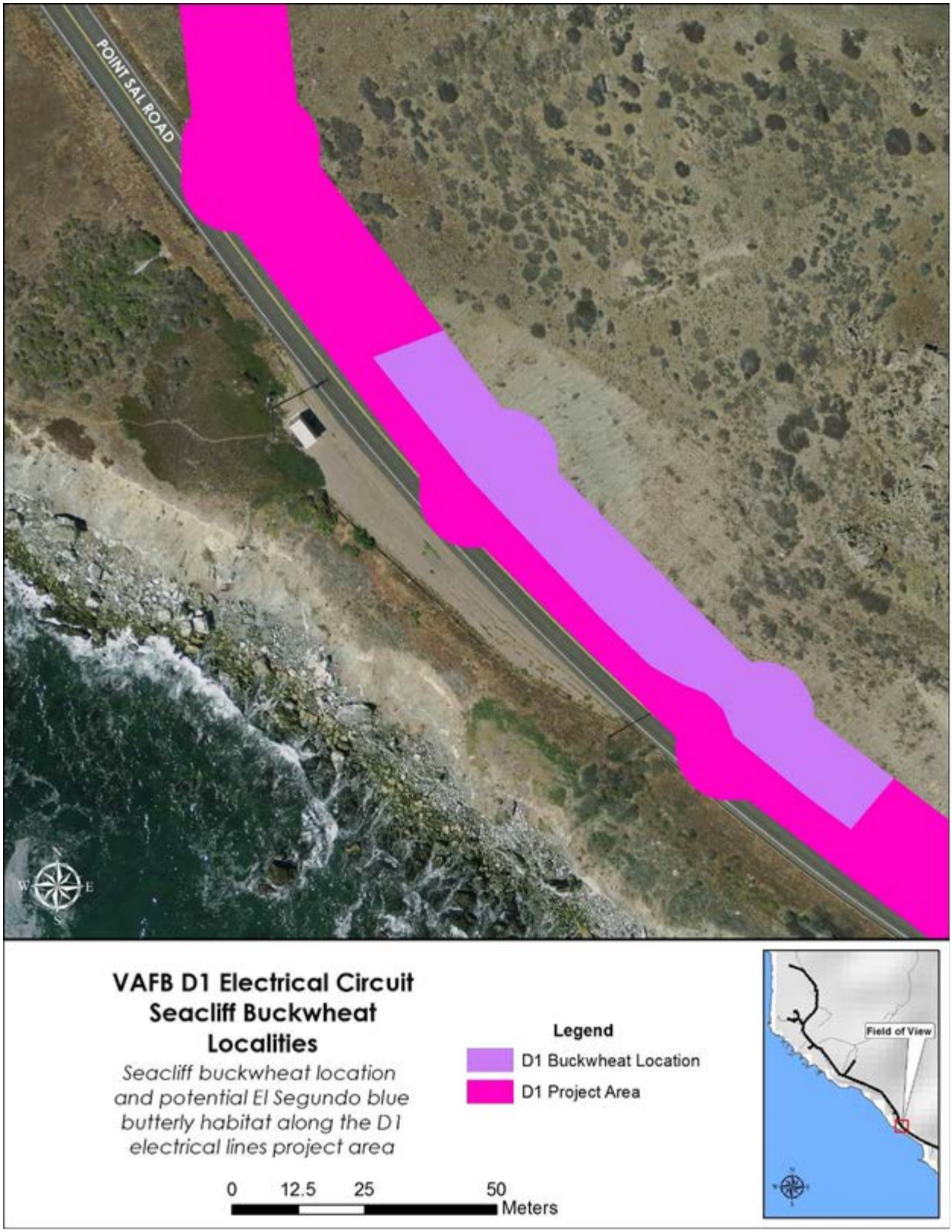

Figure 5: Seacliff buckwheat (host plant of the Endangered El Segundo blue butterfly) within the Action Area.

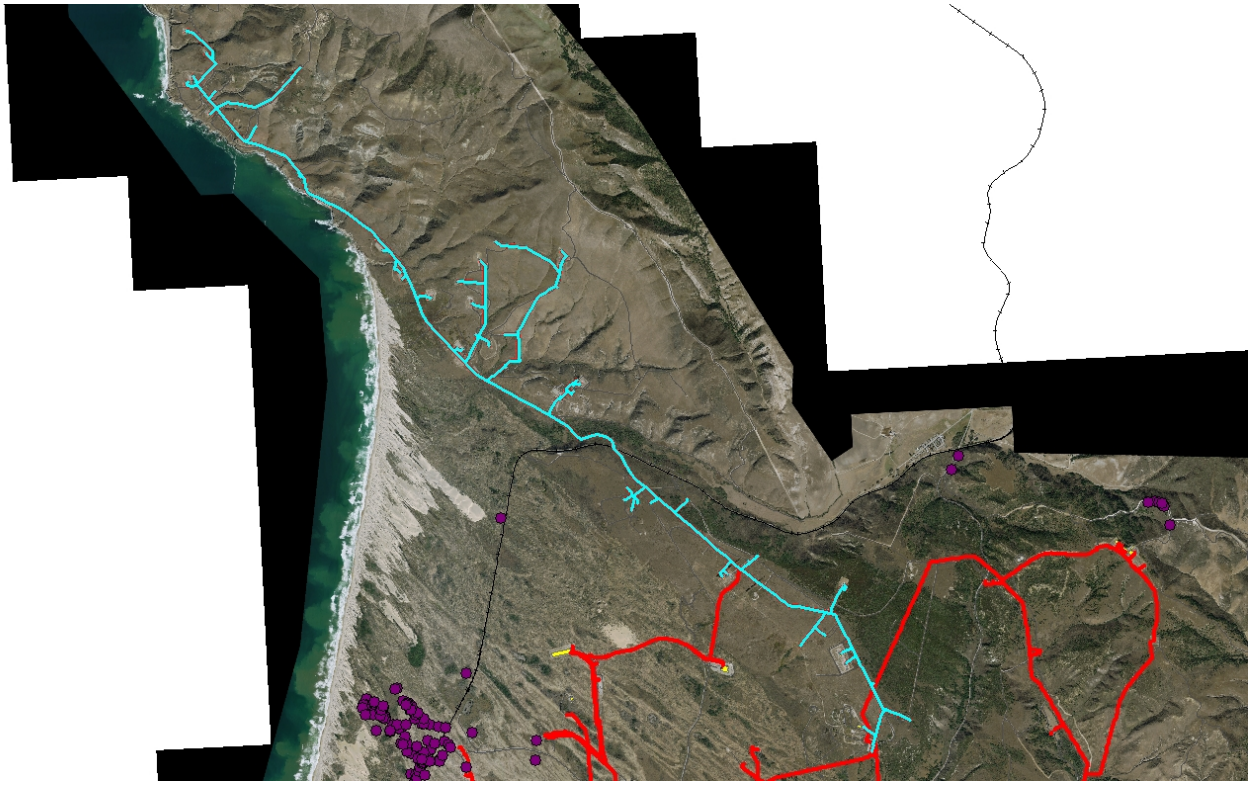

Figure 6: D-1 project (light blue line) with nearest known ESBB (purple dots). Note: Nearest location is one male observed in 2007 approximately 1500 meters from the project area; the nearest known repeated observations are approximately 3600 meters south of the project area.

Appendix B-2
National Historic Preservation Act Regulatory Consultation

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MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES AIR FORCE
AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE D1 CIRCUIT REPLACEMENT PROJECT,
SANTA BARBARA COUNTY, CALIFORNIA

WHEREAS, the 30th Space Wing of the United States Air Force, Vandenberg Air Force Base (USAF), proposes to implement the D1 Circuit Replacement Project for the purposes of ensuring a reliable supply of electricity to north base missile defense launch facilities; and

WHEREAS, USAF determined the proposed project is an undertaking subject to compliance with Section 106 of the National Historic Preservation Act of 1966 as amended through 2016 (54 U.S.C. 300101 et seq.) and has consulted with the California State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800; and

WHEREAS, USAF delineated the area of potential effects (APE) to encompass all project-related ground-disturbing activities associated with demolishing the existing power line and constructing the new power line, and the dimensions of the APE equal a 20-meter-wide corridor (65-foot-wide) centered on both the existing alignment and proposed new alignment and inclusive of the entirety of all overlapping cultural resources as shown in Attachment 1 (1a-1h); and

WHEREAS, as listed in Attachment 2, USAF determined there are 32 cultural resources within the APE and, of these, 19 cultural resources are historic properties (including the San Antonio Terrace Archaeological District, hereafter SATAD), and five cultural resources are assumed to be historic properties for the purposes of this undertaking only, and nine cultural resources are not historic properties, and the SHPO concurred with these findings in a letter dated 31 August 2018; and

WHEREAS, USAF determined the undertaking would adversely affect five historic properties listed in or eligible for listing in the National Register of Historic Places (NRHP) identified as—CA-SBA-228, -512, -513, -939, and -941—and the SHPO concurred with these findings in the letter dated 31 August 2018; and

WHEREAS, the USAF notified the Advisory Council on Historic Preservation (ACHP) of the adverse effect finding pursuant to 36 CFR § 800.6(a)(1) and the ACHP did not elect to participate in consultation; and

WHEREAS, the Santa Ynez Band of Chumash Indians (Tribe), who may attach religious or cultural importance to the historic properties, has been consulted regarding the undertaking and its adverse effects on the five historic properties, and will be afforded the opportunity to participate in the implementation of this MOA and the undertaking, and has been invited to concur in this MOA;

NOW, THEREFORE, the USAF and the SHPO agree that, upon the USAF's decision to proceed with the undertaking, the USAF shall ensure the undertaking is implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on five historic properties and further agree that these stipulations shall govern the undertaking and all of its parts until this MOA expires or is terminated.

STIPULATIONS

The USAF will ensure that the following measures are carried out:

I. AREA OF POTENTIAL EFFECTS

A. If modifications to the undertaking take place subsequent to the execution of this MOA that necessitate the revision of the APE as described above and depicted in Attachment 1 (1a-1h), USAF will consult with the SHPO to facilitate mutual agreement on the subject revisions. If USAF and the SHPO cannot reach agreement, then the parties will resolve the dispute in accordance with Stipulation IV.B below. If the USAF and the SHPO reach mutual agreement on the proposed revisions, then the USAF will submit a final map of the revisions no later than 30 days following such agreement.

II. TREATMENT OF HISTORIC PROPERTIES

A. USAF shall ensure adverse effects to historic properties are resolved by carrying out a program of controlled archaeological excavations where the proposed undertaking would result in adverse effects upon significant archaeological deposits in accordance with the research design extracted from Chapter 3 of *Archaeological Investigations Supporting Section 106 Compliance for the D1 Circuit Electric Line Replacement Project* (Nocerino et al. 2017), and included here as Attachment 3.

B. More specifically, adverse effects to five historic properties would be resolved to acceptable levels by employing the following mitigation measures:

1. CA-SBA-228: Adverse effects from demolishing four poles located within the archaeologically sensitive area (ASA) will be avoided by cutting the poles just above the ground surface and leaving the downed poles on the ground, or by lifting the downed poles out of the ASA with a crane or a helicopter, or by cutting the poles into short lengths and carrying the poles to Point Sal Road. No vehicles will be allowed to enter the ASA during demolition. Adverse effects from installing two poles within the ASA will be resolved by excavating a 1 meter-by-1 meter Controlled Excavation Unit (CEU) in a location that is adjacent to where each new pole will be placed. CEUs will be terminated after two successive culturally-sterile levels are excavated or to a maximum depth of five feet. If cultural deposits continue beyond a depth of five feet, a 50 centimeter-by-50

centimeter unit will be excavated into the floor of the CEU. The holes for the new poles will be eight feet deep; as such, excavation will not exceed a depth of eight feet. These parameters pertain to all CEUs described herein. The holes for the new poles will be drilled from a truck-mounted auger parked on Point Sal Road. A map of CA-SBA-228 showing the existing poles, the new poles, the location of excavation units, and the ASA is provided as Figure 8-3 in *Archaeological Investigations Supporting Section 106 Compliance for the D1 Circuit Electric Line Replacement Project* (Nocerino et al. 2017), and is included here as Attachment 4a. Initial ground disturbing project activities throughout the entire site will be monitored by an archaeologist and a representative from the Santa Ynez Band of Chumash Indians.

2. CA-SBA-512 and -513: Adverse effects from demolishing nine poles located within the ASAs of these two adjacent sites will be avoided by cutting the poles just above the ground surface and leaving the downed poles on the ground, or by lifting the downed poles out of the ASA with a crane or a helicopter, or by cutting the poles into short lengths and carrying the poles to Point Sal Road. Vehicles will be allowed to enter the ASA by traveling on the driveway to Launch Facility 4 (LF-04) and by traveling on the annually-disked firebreak that encircles LF-04. Adverse effects from installing two poles within the ASA for CA-SBA-512 and from installing two poles within the ASA for CA-SBA-513 will be resolved by excavating a 1 meter-by-1 meter CEU in a location that is adjacent to where each new pole will be placed. The holes for the new poles will be drilled from a truck-mounted auger parked on Point Sal Road. One pole will be installed in an area that is just southeast of the fence line surrounding LF-04. That hole will be drilled from the road that encircles the outer edge of the fence line. A map of CA-SBA-512 and -513 showing the existing poles, the new poles, the location of excavation units, and the ASA is provided as Figure 8-6 in Nocerino et al. 2017, and is included here as attachment 4b. Initial ground disturbing project activities throughout the entire site will be monitored by an archaeologist and a representative from the Santa Ynez Band of Chumash Indians.

3. CA-SBA-939: The existing power line does not intersect CA-SBA-939. Adverse effects from installing five poles within the ASA for CA-SBA-939 will be resolved by excavating a 1 meter-by-1 meter CEU in a location that is adjacent to where each pole will be placed. The holes for the new poles will be drilled from a truck-mounted auger parked on Globe Road. A map of CA-SBA-939 showing the new poles and the location of positive excavation units is provided as Figure 8-19 in Nocerino et al. 2017, and is included here as Attachment 4c. Ground disturbing project activities at the site will be monitored by an archaeologist and a representative from the Santa Ynez Band of Chumash Indians.

4. CA-SBA-941: The power line intersects the western edge of CA-SBA-941, but no poles are within that portion of the site. Adverse effects from installing one pole within CA-SBA-941 will be resolved by excavating a 1 meter-by-1 meter CEU adjacent to where this new pole will be placed. The holes for the poles will

be drilled from a truck-mounted auger parked on Point Sal Road. A map of CA-SBA-941 showing the new poles and the location of excavation units is provided as Figure 8-6 in Nocerino et al. 2017, and is included here as Attachment 4a. The pole where Shovel Test Pit (STP) 262 was excavated is where data recovery excavation will take place. Initial ground disturbing project activities throughout the entire site will be monitored by an archaeologist and a representative from the Santa Ynez Band of Chumash Indians.

C. Adverse effects to eight historic properties (CA-SBA-722, -733, -755/756/757, 1856/H, -2352, -2471/H, -2575, and -Z00021H) will be avoided by demolishing poles located within the respective ASAs by cutting the poles just above the ground surface and leaving the downed poles on the ground, or by lifting the downed poles out of the ASA with a crane or a helicopter, or by cutting the poles into short lengths and carrying the poles to Point Sal Road. No vehicles will be allowed to enter the ASA during demolition.

D. Adverse effects to nine historic properties (CA-SBA-730, -740, -760/761/1748, -940, -990, -1853, -2127, -2128H, and -3503) will not occur during project implementation because archaeological deposits that contribute to the eligibility of these historic properties are absent within the area of ground disturbance.

E. The USAF will not authorize the execution of any project activity that may affect [36 CFR§ 800.16(i)] historic properties in the APE until the requirements set forth in sections B and C of this stipulation have been met.

F. USAF shall prepare a draft technical report that includes all data collected during the Data Recovery,

i. The USAF shall submit the draft technical report to the Tribe for 45-day review period. The USAF shall address any comments received within the 45-day review period and prepares a revised draft technical report.
ii. The USAF shall submit the revised draft technical report to SHPO who shall have 30 days to review and approve the report. If the SHPO fails to comment within 30 days, USAF may finalize the report. If the SHPO comments, USAF and SHPO shall consult to resolve any comments. Should USAF and SHPO be unable to come to agreement and finalize the report, the USAF shall follow Stipulation V.
iii. The USAF will provide copies of the final report to all parties of this MOA, the Council, and the Central Coast Information Center.

III. DISCOVERIES AND UNANTICIPATED EFFECTS

If the USAF determines during implementation of the MOA or construction of the undertaking that either the implementation of the MOA or the undertaking will affect a previously unidentified property that may be eligible for the National Register, or affect a known historic property in an unanticipated manner, the USAF will address the discovery

or unanticipated effect in accordance with 36 CFR § 800.13(b)(3). The USAF at its discretion may hereunder, and pursuant to 36 CFR § 800.13(c), assume any discovered property to be eligible for inclusion in the National Register.

IV. ADMINISTRATIVE PROVISIONS

A. STANDARDS

1. Professional Qualifications. All activities prescribed by stipulations II of this MOA shall be carried out under the authority of the USAF by or under the direct supervision of a person or persons meeting at a minimum the Secretary of the Interior's *Professional Qualifications Standards* (48 FR 44738-39, September 29, 1983) (hereafter PQS) in the appropriate disciplines.

2. Documentation Standards. Activities prescribed by stipulations II and III of this MOA shall conform to the *Secretary of the Interior's Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44740), as well as to applicable standards and guidelines established by the SHPO.

3. Curation and Curation Standards. the USAF shall ensure that, to the extent permitted under §§ 5097.98 and 5097.991 of the California Public Resources Code, the materials and records resulting from the historic preservation work prescribed by this MOA are curated in accordance with 36 CFR Part 79.

V. DISPUTE RESOLUTION

A. Should the USAF or the SHPO object at any time to any actions related to the undertaking or the manner in which the terms of this MOA are implemented, the USAF shall notify the SHPO in writing and consult with the SHPO to resolve with the objection. If the USAF determines that such objection cannot be resolved, the USAF shall:

1. Forward all documentation relevant to the dispute, including the USAF's proposed resolution, to the ACHP. The ACHP shall provide the USAF with its comments on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the USAF shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and signatories, and provide them with a copy of this written response. The USAF will then proceed according to its final decision.

2. If the ACHP does not provide its comments regarding the dispute within the thirty (30) day time period, the USAF may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the USAF shall prepare a written response that takes into account any

timely comments regarding the dispute from the signatories to the MOA and provide them and the ACHP with a copy of such written response. The USAF's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged**.**

VI. AMENDMENT AND TERMINATION

A. If the USAF or the SHPO determines that the MOA's terms shall not or cannot be carried out, that party shall immediately consult with the other signatory to attempt to develop an amendment.

1. This MOA may be amended if a signatory requests an amendment and it is agreed to in writing by both signatories. The amendment is effective when signed by all parties.

B. If within 30 days an amendment cannot be reached, the USAF or the SHPO may terminate the MOA upon written notification to the other signatory.

1. Upon termination of this MOA, the USAF shall either consult to execute another agreement or request comments from the ACHP pursuant to 36 CFR §800.6(c)(8). This MOA may be terminated without further consultation by the execution of a subsequent agreement that explicitly terminates or supersedes this MOA.

VII. MONITORING AND REPORTING

Each calendar year following the execution of this MOA until its expiration or termination, the USAF shall provide the SHPO a summary report detailing work undertaken pursuant to its terms. This report shall also include any proposed scheduling changes, unanticipated discoveries, any issues or problems encountered during the undertaking's implementation and any disputes and objections received in the USAF's efforts to fulfill the terms of this MOA.

VIII. DURATION

This MOA shall expire if its stipulations are not carried out within five (5) years from the date of its execution.

Execution of this MOA by the USAF and the SHPO and implementation of its terms evidence that the USAF has taken into account the potential effects of this undertaking on historic properties and afforded the ACHP an opportunity to comment.

IX. REFERENCES

Nocerino, Eric S., Clayton G. Lebow, Ryan E. Wendel, and Karin Pitts-Olmedo
2017 Archaeological Investigations Supporting Section 106 Compliance for the D1 Circuit Electric Line Replacement Project, Vandenberg Air Force Base, Santa Barbara County, California.

MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES AIR FORCE
AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE D1 CIRCUIT REPLACEMENT PROJECT,
SANTA BARBARA COUNTY, CALIFORNIA

SIGNATORY:

30th Space Wing of the United States Air Force, Vandenberg Air Force Base

By: _____ Date: 12 AUG 19

JASON M. AFTANAS, Lt Col, USAF
Commander, 30th Civil Engineer Squadron

MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES AIR FORCE
AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE D1 CIRCUIT REPLACEMENT PROJECT,
SANTA BARBARA COUNTY, CALIFORNIA

SIGNATORY:

California State Historic Preservation Officer

By: _____ Date: 20 August 2019

Julianne Polanco
State Historic Preservation Officer

MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES AIR FORCE
AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE D1 CIRCUIT REPLACEMENT PROJECT,
SANTA BARBARA COUNTY, CALIFORNIA

INVITED CONCURRING SIGNATORY:

Santa Ynez Band of Chumash Indians

By: _____ Date: 8/22/19

The Honorable Kenneth Kahn
Tribal Chairman

Appendix B-3
Native American Consultation

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MEMORANDUM OF AGREEMENT
BETWEEN
THE UNITED STATES AIR FORCE
AND THE
CALIFORNIA STATE HISTORIC PRESERVATION OFFICER
REGARDING THE D1 CIRCUIT REPLACEMENT PROJECT,
SANTA BARBARA COUNTY, CALIFORNIA

INVITED CONCURRING SIGNATORY:

Santa Ynez Band of Chumash Indians

By: _____ Date: 8/22/19

The Honorable Kenneth Kahn
Tribal Chairman

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Appendix B-4
Coastal Zone Management Act Regulatory Consultation

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CALIFORNIA COASTAL COMMISSION
45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105- 2219
VOICE (415) 904- 5200
FAX (415) 904- 5400
TDD (415) 597-5885

November 14, 2018

Beatrice L. Kephart
Chief, Installation Management Flight
ATTN: Tracy Curry
30 CES/CEI
1028 Iceland Avenue
Vandenberg AFB, CA 93437-6010

Subject: Negative Determination ND-0038-18 (Replacement of Overhead and Underground Electrical Distribution Feeder Line D1, North Vandenberg Air Force Base, Santa Barbara County)

Dear Ms. Kephart:

The Coastal Commission staff has reviewed the above-referenced negative determination. The Air Force proposes to replace the existing overhead and underground electrical distribution feeder line D1 which powers numerous space launch facilities on north Vandenberg Air Force Base (AFB). The new route will run parallel to and on the opposite side of the main road in this area of the base, and will be placed above and below ground. The existing D1 line will remain operational until installation, testing, and operation of the new line is completed. Subsequently, the existing wires and electrical equipment will be removed and wooden power poles will be removed and/or cut off at ground level to avoid soil disturbance.

The Air Force completed Endangered Species Act Section 7 consultation with the U.S. Fish and Wildlife Service. The Air Force will comply with all terms, conditions, and reporting requirements for implementation of the reasonable and prudent measures stipulated in the Biological Opinion issued by the Service on March 21, 2018. These measures include reducing the potential for injury or mortality of California red-legged frogs, and minimizing impacts to Gaviota tarplant communities and Western snowy plover habitat.

The Air Force completed National Historic Preservation Act Section 106 consultation with the California State Historic Preservation Officer (SHPO), who concurred on September 27, 2017, with the Air Force's finding that the project would not affect historic properties. The Air Force also states that should previously undocumented cultural resources be discovered during construction activities, procedures contained in the Vandenberg AFB Integrated Cultural Resources Management Plan would be followed. Project construction activities hold the potential to temporarily affect soils, vegetation, and water quality at and adjacent to work areas. All exposed soil areas will be revegetated with a native seed mix and sufficient mulch to prevent

erosion. The Air Force will implement a Storm Water Pollution Prevention Plan and incorporate best management practices into the project design to avoid adverse effects to water quality.

Under the federal consistency regulations (15 CFR Section 930.35), a negative determination can be submitted for an activity "which is the same as or similar to activities for which consistency determinations have been prepared in the past." In July 2012 the Executive Director concurred with ND-022-12 for an electrical distribution line replacement project on south Vandenberg AFB. In August 2016 the Executive Director concurred with ND-0027-16 for an electrical distribution line replacement project on north Vandenberg AFB. The proposed electrical distribution line project on north Vandenberg Air Force Base is similar to these previous projects. In conclusion, the Commission staff **agrees** that the proposed project will not adversely affect coastal resources. We therefore **concur** with your negative determination made pursuant to 15 CFR 930.35 of the NOAA implementing regulations. Please contact Larry Simon at (415) 904-5288 should you have any questions regarding this matter.

Sincerely,

(for) JOHN AINSWORTH
Executive Director

cc: CCC – South Central Coast District

Appendix C
General Requirements for Environmental Protection

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DIVISION 01 - GENERAL REQUIREMENTS
SECTION 01 57 20
ENVIRONMENTAL PROTECTION

(Updated April 2018)

TABLE OF CONTENTS

PART 2 PRODUCTS

PART 3 EXECUTION

3.1 ENVIRONMENTAL COMPLIANCE REQUIREMENTS

3.2 Licenses and Permits

3.3 PROTECTION OF NATURAL RESOURCES

3.3.1 Erosion and Sediment Control Measures

3.3.1.1 Burnoff

3.3.1.2 Protection of Erodible Soils

3.3.2 Minimization and Monitoring Measures

3.4 STORM WATER POLLUTION PREVENTION, *CONSTRUCTION* GENERAL PERMIT AND POST-CONSTRUCTION REQUIREMENTS

3.4.1 Storm Water Best Management Practices

3.4.2 Storm Water *Construction* General Permit Requirements

3.4.3 Environmental Protection and Mitigation Measures

3.4.4 Post-Construction Storm Water

3.5 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES MANAGEMENT

3.6 SOLID WASTE MANAGEMENT PLAN

3.6.1 Solid Waste Management Report

3.6.2 Control and Management of Solid Wastes

3.7 WHM/HW MATERIALS PROHIBITION

3.8 HAZARDOUS MATERIAL MANAGEMENT

3.8.1 Asbestos Management

3.8.2 Polychlorinated Biphenyls (PCBs) Management

3.8.3 Radioactive or Radionuclides Materials Management

3.8.4 Lead Based Paint (LBP) Management

3.9 PETROLEUM PRODUCTS AND REFUELING

3.9.1 Oily and Hazardous Substances

3.9.2 Inadvertent Discovery of Petroleum Contaminated Soil or Hazardous Wastes

3.10 FUEL TANKS

3.11 RELEASES/SPILLS OF OIL AND HAZARDOUS SUBSTANCES

3.12 CONTROL AND MANAGEMENT OF HAZARDOUS WASTES

3.12.1 Facility Hazardous Waste Generator Status

3.12.2 Regulated Waste Storage/Satellite Accumulation/90 Day Storage Areas

3.12.3 Class I [and II] ODS Prohibition

3.12.3.1 Universal Waste/e-Waste Management

3.13 WATER RESOURCES AND WATER QUALITY REQUIREMENTS

3.12.1 Surface and Ground Water

3.13.2 Storm Water
3.12.2.1 Storm Water Best Management Practices
3.12.2.2 Construction General Permit Requirements
3.13.3 Post-Construction Storm Water
3.13.4 Domestic Wastewater
3.13.5 Industrial Wastewater
3.13.6 Miscellaneous Wastewater
3.13.7 Drinking Water

3.14 AIR QUALITY REQUIREMENTS

3.14.1 Demolition, Site Clearing, Grading, Excavation, Backfilling, and Trenching
3.14.2 Asphalt Paving
3.14.3 Coating, Painting, Adhering, and Sealing
3.14.4 Abrasive Blasting and Corrosion Control
3.14.5 Use of Portable Equipment Powered by Internal Combustion Engines
3.14.6 Gasoline/E-85 Storage Tanks
3.14.7 Ozone Depleting Substances (ODS)
3.14.8 Operation of Vandenberg Owned Permitted Equipment
3.14.9 Installation of Boilers, Hot Water Heaters, Furnaces, Process Heaters, and Internal Combustion Engines
3.14.10 Circuit Breakers, Puffer Switches, and Storage Containers with Sulphur Hexafluoride (SF6)

3.15 ABOVE GROUND STORAGE TANKS (AST) MANAGEMENT

3.16 UNDERGROUND STORAGE TANKS (UST) MANAGEMENT

3.16.1 SOIL CONTAMINATION MANAGEMENT

3.17 LANDSCAPING REQUIREMENTS

3.18 GREEN PROCUREMENT PROGRAM (GPP)

3.19 ENERGY USAGE MANAGEMENT

3.20 IRP and MMRP

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only. Unless otherwise noted, the latest published version and/or revision shall be used.

1.1.1 PERMITTING AGENCY OPINION

1. U.S. Fish and Wildlife Service Biological Opinion for the replacement of D1 Powerline, Vandenberg Air Force Base, Santa Barbara County

2. SHPO Consultation, and MOA.

1.1.2 U.S. AIR FORCE (USAF)

a. AFI 23-204 Organizational Fuel Tanks
b. AFI 32-1053 Pest Management Program
c. AFI 32-7040 Air Quality Compliance
d. AFI 32-7042 Waste Management
e. AFI 32-7044 Storage Tank Environmental Compliance
f. AFI 32-7064 Conservation and Management of Natural Resources
g. AFI 32-7065 Cultural Resources Management
h. AFI 32-7080 Compliance Assurance and Pollution Prevention
i. AFI 32-7086 Hazardous Materials Management
j. AFI 40-201 Radioactive Materials (RAM) Management
k. 30 SWI 32-702 Environmental Management Air Emission Inventories
l. 30 SW Plan 32-1002 Lead-Based Paint Management Plan
m. 30 SW Plan 32-1052-A Asbestos Management Plan
n. 30 SW Plan 32-1052-B Asbestos Operating Plan
o. 30 SW Plan 32-4002-A HAZMAT Emergency Response Plan
p. 30 SW Plan 32-7044 Spill Prevention Control and Countermeasure Plan
q. 30 SW Plan 32-7041-A Wastewater Management Plan
r. 30 SW Plan 32-7042 Integrated Solid Waste Management Plan
s. 30 SW Plan 32-7043-A Hazardous Waste Management Plan
t. 30 SW Plan 32-7043-E Recoverable and Waste Petroleum Products Management Plan
u. 30 SW Plan 32-7080 Green Procurement Program Plan
v. Integrated Natural Resources Management Plan for Vandenberg AFB, Plan Period 2011-2016
w. Vandenberg AFB Energy Management Plan
x. Vandenberg AFB Facilities Excellence Plan & Standards
y. Vandenberg AFB Landscaping Guidelines
z. HQ AFSPC CEI Policy Letter P01009, Tracking and Reporting Solid Waste Disposal and Diversions (30 Apr 01)
aa. VAFB Environmental Management System (EMS) Guide 2007
bb. California Stormwater BMP Handbook (2009, California Stormwater Quality Association)
cc. Off-Highway Vehicle BMP Manual for Erosion and Sediment Control (2007, California Department of Parks and Recreation)
dd. Vandenberg AFB Post-Construction Storm Water Standards (2014).

1.1.2 CALIFORNIA CODE OF REGULATIONS (CCR) & STATE OF CALIFORNIA

a. 8 CCR, Chapter 3.22, Subchapter 2 Article 2.6 Asbestos Consultants and Site Surveillance Technicians, §341.15 Certification of Asbestos Consultants

		and Site Surveillance Technicians
b.	8 CCR, Chapter 4, Subchapter 4	Article 4 Dusts, Fumes, Mists, Vapors, and Gases, §1529 Asbestos
c.	17 CCR, Division 1, Chapter 8	Accreditation, Certification, and Work Practices for Lead-Based Paint and Lead Hazards
	19 CCR, Division 2, Chapter 4.5	California Accidental Release Prevention (CalARP) Program
d.	22 CCR, Chapters 10-20	§66260-66270, Hazardous Waste Regulation
e.	California Coastal Act	Public Resources Code, Division 20
f.	California Assembly Bill AB 939	California Integrated Waste Management Act of 1989
g.	California Assembly Bill AB 32	California Global Warming Solutions Act
h.	Santa Barbara County Air Pollution Control District (SBCAPCD) Rules & Regulations	http://www.sbcapcd.org/rules/rules.htm
i.	23 CCR, Waters	

j. State Water Resources Control Board (SWRCB) National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities. Order No. 2009-0009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002; Construction General Permit (CGP)

k. SWRCB Waste Discharge Requirements for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), Water Quality Order, No. 2013-0001-DWQ, NPDES General Permit CAS000004; Small MS4 General Permit)

1.1.3 U.S. GOVERNMENT

a.	Asbestos Hazard Emergency	Public Law 99-519, 15 USC Section 2651 Response Act of 1986 (AHERA)
b.	Archaeological Resources	16 U.S.C. 470 aa-mm Protection Act of 1979
c.	Clean Water Act of 1972	33 U.S.C., §1251 et seq.
d.	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	42 USC §§ 9601 to 9675
e.	Government's Green Procurement	Section 6002, Federal Procurement of the Resource Program Conservation and Recovery Act (RCRA)
f.	Endangered Species Act	Public Law 93-205, 35 U.S.C. §1531
g.	Energy Policy ActPublic Law 109-58	
h.	Environmental Protection Agency	Comprehensive Procurement

		Guidelines (EPA-CPG)
i.	Environmental Protection Agency	Toxic Substances Control Act (TSCA)
j.	Executive Order 13112	Invasive Species
k.	Executive Order 11990	Protection of Wetlands
l.	Executive Order 13150	Federal Workforce Transportation
m.	Executive Order 13186	Responsibilities of Federal Agencies to Protect Migratory Birds
n.	Executive Order 13211	Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use
o.	Executive Order 13221	Energy Efficient Standby Power Devices
p.	Executive Order 13423	Strengthening Federal Environmental, Energy and Transportation Management
q.	Executive Order 13514	Federal Leadership in Environmental, Energy and Economic Performance
r.	Marine Mammal Protection Act	50 CFR Part 218
s.	Migratory Bird Treaty Act	16 U.S.C. 703-712
t.	National Historic Preservation Act of 1966	16 U.S.C. 470 et seq.
u.	National Environmental Policy Act	Public Law 91-190
v.	Native American Graves Protection and Repatriation Act of 1990	Public Law 101-601
w.	American Indian Religious Freedom Act of 1978	Public Law 95-341
x.	White House Memorandum, Environmentally and Economically Beneficial Practices on Federal Landscaped Grounds	
y.	Energy Independence and Security Act (EISA), Section 438 (2008)	

1.1.4 U.S. ARMY CORPS OF ENGINEERS (USACE)

a.	EM 385-1-1	(2003) Safety -- Safety and Health Requirements
b.	WETLAND MANUAL	Corps of Engineers Wetlands Delineation Manual Technical Report Y-87-1

1.1.5 U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

a.	10 CFR 19	Notices, Instructions and Reports to Workers: Inspection and Investigations
b.	10 CFR 20	Standards for Protection Against Radiation
c.	10 CFR 36	Licenses and Radiation Safety Requirements for

		Irradiators
d.	10 CFR 39	Licenses and Radiation Safety Requirements for Well Logging
e.	29 CFR 1910	Occupational Safety and Health Standards
f.	29 CFR 1910.120	Hazardous Waste Operations and Emergency Response
g.	29 CFR 1926	Safety and Health Regulations for Construction
h.	33 CFR 328	Definitions of Waters of the United States
i.	40 CFR 61	National Emission Standards for Hazardous Air Pollutants (NESHAPS)
j.	40 CFR 68	Chemical Accident Prevention Provisions
k.	40 CFR 82	Protection of Stratospheric Ozone
l.	40 CFR 98	Mandatory Reporting of Greenhouse Gas
m.	40 CFR 112	Oil Pollution Prevention
n.	40 CFR 122.26	Storm Water Discharges (Applicable to State NPDES Programs, see section 123.25)
o.	40 CFR 152 - 186	Pesticide Programs
p.	40 CFR 190	Environmental Radiation Protection Standards for Nuclear Power Operations
q.	40 CFR 191	Environmental Radiation Protection Standards for Management and Disposal of Spent Nuclear Fuel, High-Level and Transuranic Radioactive Wastes
r.	40 CFR 192	Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings
s.	40 CFR 241	Guidelines for Disposal of Solid Waste 40 CFR 243 Guidelines for the Storage and Collection of residential, Commercial, and Institutional Solid Waste
t.	40 CFR 258	Subtitle D Landfill Requirements
u.	40 CFR Parts 260-273	Hazardous Waste Regulations
v.	40 CFR 279	Standards for the Management of Used Oil
w.	40 CFR 280	Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks (UST)
x.	40 CFR 300	National Oil and Hazardous Substances Pollution Contingency Plan
y.	40 CFR 302	Designation, Reportable Quantities, and Notification
z.	40 CFR 355	Emergency Planning and Notification
aa.	40 CFR 370	Hazardous Chemical Reporting Community Right-To-Know
bb.	40 CFR 372	Toxic Chemical Release Reporting Community Right-To-Know
cc.	40 CFR 372-Subpart D	Specific Toxic Chemical Listings
dd.	40 CFR 761	PCB Manufacturing, Processing, Distribution in

		Commerce, and Use Prohibitions
ee.	40 CFR 763	Asbestos-Containing Materials in Schools
ff.	49 CFR 171 - 178	Hazardous Materials Regulations

1.2 DEFINITIONS

1.2.1 Environmental Pollution and Damage

Environmental pollution and damage is the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to humankind; or degrade the environment aesthetically, culturally and/or historically.

1.2.2 Environmental Protection

Environmental protection is the prevention/control of pollution and habitat disruption that may occur to the environment during construction. The control of environmental pollution and damage requires consideration of land, water, and air; biological and cultural resources; and includes management of visual aesthetics; noise; solid, chemical, gaseous, and liquid waste; radiant energy and radioactive material as well as other pollutants.

1.2.3 Contractor Generated Hazardous Waste

Contractor generated hazardous waste means materials that, if abandoned or disposed of, may meet the definition of a hazardous waste. These waste streams would typically consist of material brought on site by the Contractor to execute work, but are not fully consumed during the course of construction. Examples include, but are not limited to, excess paint thinners (i.e. methyl ethyl ketone, toluene etc.), waste thinners, excess paints, excess solvents, waste solvents, and excess pesticides, and contaminated pesticide equipment rinse water.

1.2.4 Pesticide

Pesticide is defined as any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant or desiccant.

1.2.5 Pests

The term "pests" means arthropods, birds, rodents, nematodes, fungi, bacteria, viruses, algae, snails, marine borers, snakes, weeds and other organisms (except for human or animal disease-causing organisms) that adversely affect readiness, military operations, or the well-being of personnel and animals; attack or damage real property, supplies, equipment, or vegetation; or are otherwise undesirable.

1.2.6 Land Application for Discharge Water

The term "Land Application" for discharge water implies that the Contractor must discharge water at a rate which allows the water to percolate into the soil. No sheeting action, soil erosion, discharge into storm sewers, discharge into defined drainage areas, or discharge into the "waters of the United States" must occur. Land Application must be in compliance with all applicable Federal, State, and local laws and regulations.

1.2.7 Surface Discharge

The term "Surface Discharge" implies that the water is discharged with possible sheeting action and subsequent soil erosion may occur. Waters that are surface discharged may terminate in drainage ditches, storm sewers, creeks, and/or "waters of the United States" and would require

a permit to discharge water from the governing agency.

1.2.8 Waters of the United States

All waters which are under the jurisdiction of the Clean Water Act, as defined in 33 CFR 328.

1.2.9 Wetlands

Those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, and bogs. Official determination of whether or not an area is classified as a wetland must be done in accordance with all applicable Federal, State, and local laws and regulations.

1.2.10 Sediment

Soil and other debris that have eroded and have been transported by runoff water or wind.

1.2.11 Solid Waste

Garbage, refuse, debris, sludge, or other discharged material, including solid, liquid, semisolid, or contained gaseous materials resulting from domestic, industrial, commercial, mining, or agricultural operations. Types of solid waste typically generated at construction sites may include:

a. Green waste: The vegetative matter from landscaping, land clearing and grubbing, including but not limited to, grass, bushes, scrubs, small trees and saplings, tree stumps and plant roots. Marketable trees, grasses and plants that are indicated to remain, be re-located, or be re-used are not included.

b. Surplus soil: Excavated soil that is in excess of the volume required for the specific project, (including aggregates) intended, but not used, for on-site mixing of concrete, mortars and paving. Contaminated soil meeting the definition of a designated waste, a hazardous material or hazardous waste are not included in this definition.

c. Debris: Non-hazardous solid material generated during the construction, demolition, or renovation of a structure which exceeds 60 mm 2.5 inch particle size that is: a manufactured object; plant or animal matter; or natural geologic material (e.g. cobbles and boulders), broken or removed concrete, masonry, and rock asphalt paving; ceramics; roofing paper and shingles. Inert materials [may] [may not] be reinforced with or contain ferrous wire, rods, accessories and weldments. A mixture of debris and other material such as soil or sludge is also subject to regulation as debris if the mixture is comprised primarily of debris by volume, based on visual inspection.

d. Wood: Dimension and non-dimension lumber, plywood, chipboard, hardboard. Treated and/or painted wood that meets the definition of lead contaminated or lead based contaminated paint is not included.

e. Scrap metal: Scrap and excess ferrous and non-ferrous metals such as reinforcing steel, structural shapes, pipe and wire that are recovered or collected and disposed of as scrap. Scrap metal meeting the definition of hazardous material or hazardous waste is not included.

f. Paint cans: Metal cans that are empty of paints, solvents, thinners and adhesives. If permitted by the paint can label, a thin dry film may remain in the can.

g. Recyclables: Materials, equipment and assemblies such as doors, windows, door and window frames, plumbing fixtures, glazing and mirrors that are recovered and sold as recyclable. Metal meeting the definition of lead contaminated or lead based paint contaminated [may] [may not] be included as recyclable if sold to a scrap metal company. Paint cans [may] [may not] be included as recyclable if sold to a scrap metal company. Plastics and glass, with CRV ratings are also defined as recyclables.

h. Hazardous Waste: By definition, to be a hazardous waste a material must first meet the definition of a solid waste. Regulated wastes, hazardous waste and hazardous debris are special cases of solid waste. They have additional regulatory controls and must be handled separately. They are thus defined separately in this document.

   Material not regulated as solid waste are: nuclear source or byproduct materials regulated under the Federal Atomic Energy Act of 1954 as amended; suspended or dissolved materials in domestic sewage effluent or irrigation return flows, or other regulated point source discharges; regulated air emissions; and fluids or wastes associated with natural gas or crude oil exploration or production.

1.2.12 Garbage

Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.13 Chemical Waste

This includes salts, acids, alkalizes, herbicides, pesticides, and organic chemicals.

1.2.14 Hazardous Waste

Any discarded material, liquid, solid, or gas, which meets the definition of hazardous material or is designated hazardous waste by the Environmental Protection Agency or State Hazardous Control Authority as defined in 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, 40 CFR 268, 40 CFR 270, 40 CFR 271, 40 CFR 272, 40 CFR 273, 40 CFR 279, and 40 CFR 280.

1.2.15 Hazardous Debris

As defined in Solid Waste paragraph, debris that contains listed hazardous waste (either on the debris surface, or in its interstices, such as pore structure) per 40 CFR 261; or debris that exhibits a characteristic of hazardous waste per 40 CFR 261.

1.2.16 Hazardous Materials

Hazardous materials as defined in 49 CFR 171 and listed in 49 CFR 172. Hazardous material is any material that:

a. Is regulated as a hazardous material per 49 CFR 173, or

b. Requires a Safety Data Sheet (SDS) per 29 CFR 1910.120, or

c. During end use, treatment, handling, packaging, storage, transpiration, or disposal meets or has components that meet or have potential to meet the definition of a hazardous waste as defined by 40 CFR 261 Subparts A, B, C, or D.

Designation of a material by this definition, when separately regulated or controlled by other instructions or directives, does not eliminate the need for adherence to that hazard-specific guidance which takes precedence over this instruction for "control" purposes. Such material include ammunition, weapons, explosive actuated devices, propellants, pyrotechnics, chemical and biological warfare materials, medical and pharmaceutical supplies, medical waste and infectious materials, bulk fuels, radioactive materials, and other materials such as asbestos, mercury, and polychlorinated biphenyls (PCBs). Nonetheless, the exposure may incur incident to manufacture, storage, use and demilitarization of these items.

1.2.17 Waste Hazardous Material (WHM)

Any waste material which because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial hazard to human health or the environment and which has been so designated. Used oil not containing any hazardous waste, as defined above, falls under this definition.

1.2.18 Oily Waste

Those materials which are, or were, mixed with used oil and have become separated from that used oil. Oily wastes also means materials, including wastewaters, centrifuge solids, filter residues or sludges, bottom sediments, tank bottoms, and sorbents which have come into contact with and have been contaminated by, used oil and may be appropriately tested and discarded in a manner which is in compliance with other State and local requirements. This definition includes materials such as oily rags, "kitty litter" sorbent clay and organic sorbent material. These materials may be land filled provided that:

a. It is not prohibited in other State regulations or local ordinances

b. The amount generated is "de minimus" (a small amount)

c. It is the result of minor leaks or spills resulting from normal process operations

d. All free-flowing oil has been removed to the practical extent possible

Large quantities of this material, generated as a result of a major spill or in lieu of proper maintenance of the processing equipment, are a solid waste. As a solid waste, a hazardous waste determination must be performed prior to disposal. As this can be an expensive process, it is recommended that this type of waste be minimized through good housekeeping practices and employee education.

1.2.19 Regulated Waste

Regulated wastes include types of solid waste that have specific additional Federal, state, or local controls for handling, storage, or disposal. These wastes may include designated wastes and biohazardous wastes.

1.2.20 Ozone Depleting Substance (ODS)

Class I ODS is defined in Section 602(a) of The Clean Air Act and includes the following chemicals:

- chlorofluorocarbon-11 (CFC-11)
- chlorofluorocarbon-12 (CFC-12)
- chlorofluorocarbon-13 (CFC-13)

- chlorofluorocarbon-111 (CFC-111)
- chlorofluorocarbon-112 (CFC-112)
- chlorofluorocarbon-113 (CFC-113)
- chlorofluorocarbon-114 (CFC-114)
- chlorofluorocarbon-115 (CFC-115)
- chlorofluorocarbon-211 (CFC-211)
- chlorofluorocarbon-212 (CFC-212)
- chlorofluorocarbon-213 (CFC-213)
- chlorofluorocarbon-214 (CFC-214)
- chlorofluorocarbon-215 (CFC-215)
- chlorofluorocarbon-216 (CFC-216)
- chlorofluorocarbon-217 (CFC-217)
- chlorofluorocarbon-500 (CFC-500)
- chlorofluorocarbon-502 (CFC-502)
- chlorofluorocarbon-503 (CFC-503)
- halon-1211
- halon-1301
- halon-2402
- carbon tetrachloride
- methyl bromide
- methyl chloroform

Class II ODS is defined in Section 602(s) of The Clean Air Act and includes the following chemicals:

- hydrochlorofluorocarbon-21 (HCFC-21)
- hydrochlorofluorocarbon-22 (HCFC-22)
- hydrochlorofluorocarbon-31 (HCFC-31)
- hydrochlorofluorocarbon-121 (HCFC-121)
- hydrochlorofluorocarbon-122 (HCFC-122)
- hydrochlorofluorocarbon-123 (HCFC-123)
- hydrochlorofluorocarbon-124 (HCFC-124)
- hydrochlorofluorocarbon-131 (HCFC-131)
- hydrochlorofluorocarbon-132 (HCFC-132)
- hydrochlorofluorocarbon-133 (HCFC-133)
- hydrochlorofluorocarbon-141 (HCFC-141)
- hydrochlorofluorocarbon-142 (HCFC-142)
- hydrochlorofluorocarbon-221 (HCFC-221)
- hydrochlorofluorocarbon-222 (HCFC-222)
- hydrochlorofluorocarbon-223 (HCFC-223)
- hydrochlorofluorocarbon-224 (HCFC-224)
- hydrochlorofluorocarbon-225 (HCFC-225)
- hydrochlorofluorocarbon-226 (HCFC-226)
- hydrochlorofluorocarbon-231 (HCFC-231)
- hydrochlorofluorocarbon-232 (HCFC-232)
- hydrochlorofluorocarbon-233 (HCFC-233)
- hydrochlorofluorocarbon-234 (HCFC-234)
- hydrochlorofluorocarbon-235 (HCFC-235)

- hydrochlorofluorocarbon-241 (HCFC-241)
- hydrochlorofluorocarbon-242 (HCFC-242)
- hydrochlorofluorocarbon-243 (HCFC-243)
- hydrochlorofluorocarbon-244 (HCFC-244)
- hydrochlorofluorocarbon-251 (HCFC-251)
- hydrochlorofluorocarbon-252 (HCFC-252)
- hydrochlorofluorocarbon-253 (HCFC-253)
- hydrochlorofluorocarbon-261 (HCFC-261)
- hydrochlorofluorocarbon-262 (HCFC-262)
- hydrochlorofluorocarbon-271 (HCFC-271)

1.2.21 Universal Waste

The universal waste regulations streamline collection requirements for certain hazardous wastes in the following categories: batteries, pesticides, mercury-containing equipment (e.g., thermostats) and lamps (e.g., fluorescent bulbs). The rule is designed to reduce hazardous waste in the municipal solid waste (MSW) stream by making it easier for universal waste handlers to collect these items and send them for recycling or proper disposal. These regulations can be found at 40 CFR 273.

1.3 SUBMITTALS

The Contractor shall submit the following to 30 CES/CEIE and the Contracting Officer for government review in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

1. Air Emissions data; G, 30 CES/CEIE (Section 3.6).
2. Monthly Hazardous Material (HAZMAT) usage totals; G, 30 CES/CEIE (Section 3.8.c).
3. A Recovered Materials Determination Form (RMDF); G, 30 CES/CEIE (Section 3.18.b).
4. An Estimate of Percentage of Recovered Material Content for EPA-Designated Products; G, 30 CES/CEIE(Section 3.18.d).
5. Monthly Solid Waste Report, to include the weight and quantity of Solid Waste and Construction & Demolition debris both disposed and diverted; G, 30 CES/CEIE (Section 3.5.2.c. 8).
6. Industrial Wastewater Treatment Plant Processing Request; G, 30 CES/CEIE (Section 3.12.5).
7. Discharge to Grade Characterization Form; G, 30 CES/CEIE (Section 3.12.6).
8. Notice of Intent (NOI) to comply with the Terms of the General Permit to Discharge Storm Water Associated with Construction Activity; G, 30 CES/CEIE (Section 3.12.2.2).
9. Risk Assessment; G, 30 CES/CEIE (Section 3.12.2.2)
10. Draft and Final Storm Water Pollution Prevention Plan (SWPPP) and amendments; G, 30 CES/CEIE (Section 3.12.2.2).
11. Annual Report; G, 30 CES/CEIE (Section 3.12.2.2).
12. Notice of Termination of Coverage (NOT) and NOT Photographs (Section 3.12.2.2).
13. Inspection Reports, Inspection Photographs, Rain Event Action Plans; G, 30 CES/CEIE (Section 3.12.2.2)
14. Effluent Monitoring Results; G, 30 CES/CEIEC (Section 3.12.2.2)
15. Exceedance Reports; G, 30 CES/CEIE (Section 3.12.2.2)

16. Storm Water Control Plan (Section 3.12.3)
17. Aboveground Storage Tank (AST) technical information; G, 30 CES/CEIE (Section 3.15.b)
18. 30 SW Form 160 – Air Quality Recordkeeping Form Fuel Storage Tanks; G, 30 CES/CEIE
19. Qualified biologists names and credentials; G, 30 CES/CEIEA (Section 1.5.5.1)
20. Notices of Violations; G, 30 ECS/CECI (Section 3.1.5)
21. Spill Prevention Plan; G, 30 CES/CEIE (Sections 3.3.2.1.6 and 3.15.4)
22. Nesting Bird Survey; G, 30 CES/CEIE (Section 3.3.2.1.10)
23. *GIS As-Builts; G, 30 CES/CECI (Section 3.3.2.5)*

1.4 ENVIRONMENTAL REQUIREMENTS

Comply with Federal, State, and local regulations pertaining to the environment, including water, air, solid waste, hazardous waste and substances, oily substances, and noise pollution.

The Contractor may be required to promptly conduct tests and procedures for the purpose of assessing whether construction operations are in compliance with Applicable Environmental Laws. Analytical work shall be done by qualified laboratories; and where required by law, the laboratories shall be certified.

1.4.1 Conformance with the Environmental Management System

The Contractor shall perform work under this contract consistent with the policy and objectives identified in the installation's Environmental Management System (EMS). The Contractor shall perform work in a manner that conforms to objectives and targets, environmental programs and operational controls identified by the EMS. The Contractor will provide monitoring and measurement information as necessary to address environmental performance relative to environmental, energy, and transportation management goals. In the event an EMS nonconformance or environmental noncompliance associated with the contracted services, tasks, or actions occurs, the Contractor shall take corrective and/or preventative actions. In addition, the Contractor shall ensure that its employees are aware of their roles and responsibilities under the EMS and how these EMS roles and responsibilities affect work performed under the contract. The Contractor is responsible for ensuring that their employees receive applicable environmental and occupational health and safety training, and keep up to date on regulatory required specific training for the type of work to be conducted onsite. All on-site Contractor personnel, and their subcontractor personnel, performing tasks that have the potential to cause a significant environmental impact shall be competent on the basis of appropriate education, training or experience. Upon contract award, the Contracting Officer's Representative will notify the installation's EMS coordinator to arrange EMS training. Refer to the Installation’s EMS Coordinator for additional site specific EMS requirements related to construction. The installation's EMS coordinator shall identify training needs associated with environmental aspects and the EMS, and arrange training or take other action to meet these needs. The Contractor shall provide training documentation to the Contracting Officer. Delete, retaining contractor’s training records is not a function of the EMS coordinator. That function is the responsibility of the contractor to maintain training records for onsite inspection.

1.5 QUALITY ASSURANCE

1.5.1 Preconstruction Survey

Not used unless directed by the Contracting Officer. Environmental Impact Analysis is conducted via AF Form 813 for all construction activities.

1.5.2 Regulatory Notifications

The Contractor is responsible for all regulatory notification requirements in accordance with Federal, State and local regulations. In cases where the Air Force must also provide public notification (such as storm water permitting), the Contractor must coordinate with the Contracting Officer. The Contractor shall submit copies of all regulatory notifications to the Contracting Officer prior to commencement of work activities. Typically, regulatory notifications must be provided for the following (this listing is not all inclusive): demolition, renovation, NPDES defined site work, remediation of controlled substances (asbestos, hazardous waste, lead paint).

1.5.3 Environmental Brief

Attend an environmental brief to be included in the preconstruction meeting. Provide the following information: types, quantities, and use of hazardous materials that will be brought onto the activity; types and quantities of solid wastes and/or wastewater that may be generated during the contract. Discuss the results of the Environmental Impact Analysis at this time. Prior to initiating any work on site, meet with the Contracting Officer and activity environmental staff to discuss the proposed Environmental Management Plan. Develop a mutual understanding relative to the details of environmental protection, including measures for protecting natural resources, required reports, required permits, permit requirements, and other measures to be taken.

1.5.4 Environmental Manager

Appoint in writing an Environmental Manager for the project site. The Environmental Manager will be directly responsible for coordinating contractor compliance with Federal, State, local, and station requirements. The Environmental Manager will ensure compliance with Hazardous Waste Program requirements (including hazardous waste handling, storage, manifesting, and disposal are all conducted in accordance with installation requirements and applicable laws and regulations); implement the Environmental Management Plan; ensure that all environmental permits are obtained, maintained, and closed out; ensure compliance with Storm Water Program Management requirements; ensure compliance with Hazardous Materials (authorizations, storage, handling, and reporting) requirements; and coordinate any remediation of regulated substances (lead, asbestos, PCB transformers). This can be a collateral position; however the person in this position must be trained to adequately accomplish the following duties: ensure waste segregation and storage compatibility requirements are met; inspect and manage Satellite Accumulation areas; ensure only authorized personnel add wastes to containers; ensure all Contractor personnel are trained in 40 CFR requirements in accordance with their position requirements; coordinate removal of waste containers; and maintain the Environmental Records binder and required documentation, including environmental permits compliance and close-out.

1.5.5 Biological Monitoring

1. Contractor must hire / subcontract for biological monitoring. At least one biological monitor must be on site for first 8-10 days of work, at least ½ day per week of work, and

then the final 8-10 days of work on the project.30 CES/CEIEA, including personnel who are familiar with and possess necessary permits to capture, handle, and release tidewater goby, southern steelhead, and California red-legged frogs. *Submit names and credentials for approval at least 15 days prior to ground disturbing activities.*

2. Qualified biologists shall train all project personnel prior to participating in project implementation activities. At a minimum, the training shall include a description of the listed species occurring in the area, the general provisions of the ESA and the necessity of adhering to the provisions of the ESA, the penalties associated with violations of the ESA, the general measures being implemented to conserve these species in the project area, and the specific measures and restrictions regarding project implementation.

Habitat restoration/compensatory invasive plant species removal.

1.5.6 Contractor 40 CFR Employee Training Records

Prepare and maintain employee training records throughout the term of the contract meeting applicable 40 CFR requirements. [The Contractor will ensure every employee completes a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures compliance with Federal, State and local regulatory requirements for RCRA Large Quantity Generator. The Contractor will provide a Position Description for each employee, by subcontractor, based on the Davis-Bacon Wage Rate designation or other equivalent method, evaluating the employee's association with hazardous and regulated wastes. This Position Description will include training requirements as defined in 40 CFR 265 for a Large Quantity Generator facility.] Submit these training records to the Contracting Officer at the conclusion of the project, unless otherwise directed.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 ENVIRONMENTAL COMPLIANCE REQUIREMENTS

a. General: Vandenberg Air Force Base (VAFB) Contractors, and their subcontractors, shall comply with the most stringent federal, state, and local environmental laws, regulations, and Air Force policies, instructions, and plans. The federal government is not exempt from compliance with environmental regulations. The Contractor shall maintain an awareness of changing environmental regulatory requirements to avoid environmental deficiencies for activities on VAFB.

b. Environmental Coordination: The 30th Civil Engineer Squadron, Installation Management Flight (30 CES/CEIE) is the single point of contact for coordination with all environmental regulatory agencies. Prior to coordinating with any environmental regulatory agency, the contractor shall obtain approval from 30 CES/CEIE. The Contractor shall provide copies of any regulatory agency notification, report, consultation, permit, and/or regulatory document to 30 CES/CEIE. Obtaining and complying with all environmental permits and

commitments required by Federal, State, Regional, and local environmental laws and regulations is the Contractor's responsibility.

(1) The Contractor shall comply with all permit conditions and consultation requirements.

(2) The Contractor shall provide all required testing analysis and monitoring.

(3) The contractor may obtain VAFB environmental documents and plans from 30 CES/CEIE.

c. Environmental Planning: The Contractor shall comply with all testing, monitoring, recordkeeping, reporting, mitigation, and protection measure requirements resulting from the National Environmental Policy Act (NEPA), the Environmental Impact Analysis Process (EIAP), and the VAFB 332 process. To initiate NEPA and EIAP, submit an AF Form 813 to the Environmental Planning Office in 30 CES/CEIEA. Completion of the NEPA and EIAP processes can take between three weeks to one year or more to complete. Early coordination is highly advised.

d. Environmental Audits/Inspections: The Contractor shall support the government with all federal, state, local, and Air Force environmental inspections, audits, or assessments.

e. Notices of Violations (NOV): The Contractor shall be liable for any Notices of Violation (NOV), enforcement action, fine, penalty, and/or corrective action imposed by federal, state, or local environmental regulatory agencies for activities under the Contractor's control. The Contractor shall provide verbal notification to 30 CES/CEIE and the Contracting Officer within 24-hours of receiving an NOV followed by written notification within three (3) working days.

3.2 Licenses and Permits

Obtaining and complying with all environmental permits and commitments required by Federal, State, Regional, and local environmental laws and regulations is the Contractor's responsibility.

The following existing permits will be followed by the Contractor:

a. State Water Resources Control Board National Pollutant Discharge Elimination System (NPDES) General Permit Water Quality Order No. 2009-0009-DWQ (Construction General Permit); Refer to Section 3.12.2.

b. NPDES General Permit Water Quality Order No. 2013-0001-DWQ, Municipal General Permit. Refer to Section 3.12.3.

d. Lompoc Publicly Owned Treatment Works (POTW) Permit (Permit # I004)

The following permits will be obtained by the contractor via 30 CES/CEIE (if applicable):

a. California Air Resource Board (CARB) Registration and SBCAPCD Permits.

b. Clean Water Act 401/402/404 Permits

The Contractor is responsible for conforming to all permit requirements and performing all quality control inspections of the work in progress, and to submit notifications and certifications to the applicable regulatory agency via the Contracting Officer.

3.3 PROTECTION OF NATURAL RESOURCES

Preserve the natural resources within the project boundaries and outside the limits of permanent work. Restore to an equivalent or improved condition upon completion of work.

a. General: The Contractor shall comply with, but not limited to: the National Environmental Policy Act (NEPA); the Endangered Species Act; the Marine Mammal Protection Act, the Migratory Bird Treaty Act, Executive Order 11990, Protection of Wetlands; Executive Order 13112, Executive Order 13186, California Coastal Act of 1976; AFI 32-7064, Conservation and Management of Natural Resources; and Vandenberg's Integrated Natural Resources Management Plan. If the work is near streams, lakes, or other waterways, conform to the national permitting requirements of the Clean Water Act. The Contractor shall keep activities under surveillance and control to minimize disturbances and damage to the natural resources on VAFB.

b. Notification: The Contractor shall immediately notify 30 CES/CEIE, Chief of Natural Resources, if the Contractor or their biological monitors suspect the presence and impacts to any federally listed endangered or threatened species or their habitat. Vandenberg currently manages for 18 threatened and endangered species, including but not limited to the California red-legged frog, unarmored three-spine stickleback, Western snowy plover, California least tern, Gaviota tarplant, Vernal Pool fairy shrimp, and El Segundo Blue Butterfly.

c. Encountering Natural Resources: The Contractor shall not feed wild animals or cause litter (especially from lunch activities). The Contractor shall not travel in unauthorized areas or off-road to avoid disturbing sensitive resources or potentially coming in contact with ticks, hantavirus, wild animals, unstable coastline areas, and unsafe water situations.

c. Nesting Sites: The Contractor shall immediately notify 30 CES/CEIE of any nesting sites for avian species, nesting sites containing eggs and/or chicks, or roosting birds. If vegetation removal is to take place in nesting bird season, 15 February to 15 August, nesting bird surveys will need to be conducted in accordance with the Migratory Bird Treaty Act. If nesting birds are found, work may be delayed until the young have fledged.

d. Disturbance of Plants: Contractors shall adhere to requirements stated in the AF Form 332, AF Form 813 or Environmental Assessment with respect to disturbance or removal of all plants and trees on VAFB. Mitigation may be required, including restoration with native seed mixes. Coordinate with CEIEA regarding approval of any plantings and seed mix. Trees or large shrubs (greater than 6-in dbh) cut and left standing shall be properly pruned with a sharp blade and shall have a clean, smooth cut. No standing tree or large shrub, trunk, branch, or stump shall be left with frays, incisions, or scars.

e. Contractor Equipment/Vehicles: Equipment vehicles (dozers, mowers etc.) shall be cleaned of weed seeds prior to use in the project area to prevent the introduction of weeds. Prior to site transport, any skid plates shall be removed and cleaned. Equipment should be cleaned of weed seeds daily especially wheels, undercarriages, and bumpers. Prior to leaving the project area, for vehicles that have caked-on dirt or mud, vehicles shall be cleaned with hand tools such as bristle brushes and brooms at a designated exit area; vehicles may subsequently be washed at the AAFES car wash or approved wash area. For vehicles with dry dusted dirt on vehicles (and no caked-on dirt or mud), prior to leaving a site, if washing and proper water disposal is not available, equipment vehicles may be thoroughly air blasted on site. Please coordinate with CEIEA (805) 606-5299 for required briefing and inspection of equipment vehicles on site.

f. Wetland/Riparian protection matting: Equipment vehicles should minimize work in riparian and wet/ponded areas during the dry season; avoid work in these areas during the wet season. If any equipment and/or vehicles enter the riparian, or known seasonally wet areas, on a regular basis during construction activities, protective matting such as Dura-Base mats that are designed for wetland protection shall be used to cross or to protect moist riparian and known wet/ponded areas.

3.3.1 Erosion and Sediment Control Measures

Refer to Section 3.16, *Landscaping and* Section 3.12, *Storm Water Best Management Practices*. If soil disturbance is one acre or more, refer to Section 3.12, *Construction General Permit Requirements*.

3.3.1.1 Erosion Control

Preserve vegetation to the maximum extent practicable. Plan and conduct earthwork to minimize the duration of exposure of unprotected soils. Provide erosion control for all exposed soil areas upon completion of final grading or as soon as feasible. All non-biodegradable materials shall be removed by the Contractor when no longer needed.

3.3.1.2 Sediment Control

Implement sediment control practices to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Implement sediment control practices prior to soil disturbance and prior to creating areas with concentrated flow, during the construction process to minimize erosion and sediment laden runoff. Use of hay bales is prohibited. All non-biodegradable materials shall be removed by the Contractor when no longer needed.

3.4 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: the National Historic Preservation Act of 1966, Archaeological Resources Protection Act of 1979, Native American Graves Protection and Repatriation Act of 1990, American Indian Religious Freedom Act of 1978, State of California Health and Safety Statutes; and AFI 32-7065, Cultural Resources Management.

b. Base Historic Preservation Officer (BHPO): The Contractor shall not disturb any historical, archaeological, or cultural sites or collect any prehistoric and/or historic artifacts on VAFB without proper authorization from 30 CES/CEIE, BHPO.

c. Cultural Resources: Cultural resources are sites, structures, features, artifacts, and other human derived items. These include, but are not limited to: arrowheads and other flaked stone tools, beads, ornaments, sacred objects such as charmstones, hammerstones, stone bowls, bone tools, human remains, non-human bone, charcoal concentrations, unnatural concentrations of stone, shellfish remains, fossils, asphaltum, old bottles, cans, coins, buttons, antiques, foundations, early military materials, and other historical items. As a general rule, any cultural resource item over 50 years of age is protected. If any previously unidentified materials of these types are found individually or in concentrated deposits within the project area, the Contractor shall report these to the on-site CEIE environmental representative archaeological monitor,

CEIE, or the BHPO. Cultural resources are not to be collected or disturbed without approval from the on-site archaeological monitor or the BHPO.

d. Avoidance and Mitigation: The Contractor is responsible, unless otherwise noted, for implementation of any cultural resources avoidance or mitigation measures assigned to projects as a condition of approval for their activities. These measures may include, but are not limited to, literature searches, archaeological and American Indian monitoring, flagging or fencing to protect resources, avoidance of resource areas, archaeological testing, data recovery, and report preparation. The Contractor shall coordinate with the BHPO who will provide Statements of Work for contracted archaeological work that implements project specific required mitigation measures.

e. Encountering Cultural Resources: The Contractor shall cease work if undocumented cultural resource items are found during excavation, grading, or other ground-disturbing activities. Work must be temporarily suspended within 100 feet of the discovery until it has been properly evaluated and secured. In some instances, the Contractor may be directed to protect the immediate discovery area with temporary fencing. The Contractor or their Archaeological Monitor shall immediately report any discovery of previously unidentified cultural resources to the BHPO.

3.5 SOLID WASTE MANAGEMENT PLAN

Each project shall generate a site specific Solid Waste Management Plan prior to commencement of work on Vandenberg AFB. The contractor shall provide a copy of this plan to their contracting officer and the 30 CES/CEIEC Solid Waste Manager and include a written notification of the projected quantity of solid waste/debris anticipated to be generated by the project. The contractor shall include in the report all facilities and locations expected to be used for all waste disposal or recycling.

3.5.1 Solid Waste Management Report (monthly)

The Contractor shall submit monthly reports to the contracting officer for the 30 CES/CEO Solid Waste Activity Owner no later than the 5th calendar day after the end of each month. The reports shall contain the weight, type and quantity of Solid Waste and/or Construction & Demolition Debris (mixed solid waste, scrap metal, scrap lumber, inert C&D, non-inert C&D, green waste, mixed paper, soil, wood debris, tires, card board,) transported off base for recycling, sale, or disposal. Copies of the weight tickets, sales receipts, and disposal certificates shall be included in the submittal when available. The Contractor must identify where each type of material was transported for processing or disposal. Any materials shipped out of state must be annotated.

3.5.2 Control and Management of Solid Wastes

a. General: The Contractor shall comply with, but not limited to: California Integrated Waste Management Act of 1989; California Assembly Bill AB 939; HQ AFSPC CEIE policy Letter P01009, dated 30 April 2001 (Tracking and Reporting Solid Waste Disposal and Diversions); 30 SW Plans, 32-7043-A, Hazardous Waste Management Plan; 32-7080, Pollution Prevention Management Plan; and the VAFB Integrated Solid Waste Management Guide.

b. Generation: The Contractor shall generate the least amount of solid waste possible, maximize pollution prevention processes, and maximize landfill diversion efforts through source reduction, reuse of materials, and recycling. All

projects will be required at minimum to divert or recycle at minimum 50% of their solid waste and 54% of their C&D waste.

c. Segregation: The Contractor shall segregate all divertible, reusable, and recyclable materials including, but not limited to: wood; green waste; concrete; asphalt; brick; cardboard; metals; paper, plastics, glass, serviceable items, salvageable items, and clean soils so that these items can be diverted for disposal.

(1) Waste generation is inevitable and should be managed in accordance with the P2 hierarchy – source reduction, reuse, recycle, treatment, and as a last resort disposal.

(2) Unless otherwise specified in contract documents, all demolition or scrap items generated from the project with commodity value are the property of the government, and any revenue generated from reuse, sales or recycling transactions is to be retained by the installation QRP program. Materials that shall be recycled to the maximum extent possible include cardboard, paper, paper packaging, clean wood, pallets, beverage containers, land clearing debris, concrete, bricks, concrete masonry units, asphalt, drywall. carpet and pad, useable paint, asphalt roof shingles, rigid foam, glass, plastics, and metals from banding, stud trim, ductwork, piping, rebar, roofing, steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.

d. Locks, Latches, and Cylinders: Must be salvaged by turning them in to the Base Lockshop, 30 CES/CEOHV, Building 11439, extension 606-5236.

e. Recycling and Refuse Containers: Containers located outside facilities on VAFB are intended for solid waste and recycling associated with the VAFB mission. Materials that are generated from off base activities or by activities not associated with the VAFB mission are not acceptable.

f. Turn-in of Recyclable and Reusable Materials: The contractor shall pre-coordinate the turn-in of all recyclable and reusable items with the Vandenberg Recycling Center (VRC) located in building 11510. Prior to turn-in, the contractor shall segregate all material to the greatest extent feasible. Consult with VRC staff at (805) 605-0102 or (805) 605-1143 to assess items for correct handling procedures.

The following list contains the primary materials accepted by the VRC:

1. Scrap metal: copper, aluminum, steel, stainless steel, iron, bronze, brass, lead and others, which are contained in items such as wire, cable, pipe, conduit, duct work, beams, siding, roofing, doors, framing, water heaters, remnants, etc.
2. Government-procured Furniture: either serviceable or unserviceable, from areas such as offices, classrooms, waiting areas, or conference rooms.
3. Wood of all types: treated or untreated wood items such as pallets, dimensional lumber, crates, spools, power poles, railroad ties and tree logs (including unusable treated or untreated scrap wood).

The following list contains items that shall be turned-in to DLA Disposition Services (formerly DRMO) located in building 11510:

1. All accountable equipment items [those listed on a government Customer Authorization/Customer Receipt Listing (CA/CRL)(aka, accountable equipment list)]
2. Electrical or electronic components, that is, anything powered by electricity or containing electronic circuit cards.
3. Precious metals, such as gold, silver, and platinum (Note: copper is not a precious metal and should be taken to the VRC)
4. Munitions or Strategic Listed Items
5. Military or Aerospace-unique items: those items manufactured/modified specifically for military and/or aerospace use.

Note: The VRC is a separate organization from DLA Disposition Services, so please ensure material is delivered to the correct recipient. If the items are not accepted by the VRC or DLA Disposition Services, then the contractor shall investigate other diversion alternatives prior to recommending items for disposal.

g. Vandenberg AFB Landfill: The VAFB permitted Class III Municipal Solid Waste (MSW) landfill has ceased the routine acceptance and disposal of MSW and operates at a reduced level of service. Acceptance of any waste generated from contractor related project activities are prohibited. Only preapproved loads, transported by 30 CES personnel are allowed to utilize the landfill. Contractor generated MSW and recyclables are required to be transported to off-base facilities for disposal and recycling. Contractors are required to submit quarterly reports to their contracting officer and the 30 CES/CEO Solid Waste Activity Owner no later than the 5TH calendar day after the end of each month. Each Quarterly report shall contain the total weight, type and quantity of solid waste and/or construction & demolition (C&D) debris (mixed solid waste, scrap metal, scrap lumber, inert C&D, non-inert C&D, green waste, mixed paper, soil, wood debris, tires, card board) transported off base for recycling, sale, or disposal. Copies of weight tickets, sales receipts, and disposal certificates shall be included in the submitted report. The Contractor must identify the facility where MSW or recyclables are processed or disposed. Any materials shipped out of county and/or state must be annotated.

3.6 WHM/HW MATERIALS PROHIBITION

No waste hazardous material or hazardous waste shall be disposed of on government property. No hazardous material shall be brought onto government property that does not directly relate to requirements for the performance of this contract. All hazardous materials must be approved by the Installation's HAZMART prior to bringing on base (See Section 3.8, *Hazardous Material Management*). The government is not responsible for disposal of Contractor's waste material brought on the job site and not required in the performance of this contract. The intent of this provision is to dispose of that waste identified as waste hazardous material/hazardous waste as defined herein that was generated as part of this contract and existed within the boundary of the Contract limits and SECTION 01 57 19.00 20 Page 26 not brought in from offsite by the Contractor. Incidental materials used to support the contract including, but not limited to aerosol cans, waste paint, cleaning solvents, contaminated brushes, rags, clothing, etc. are the responsibility of the Contractor. The list is illustrative rather than inclusive. The Contractor is not authorized to discharge any materials to sanitary sewer, storm

drain, or to the river or conduct waste treatment or disposal on government property without written approval of the Contracting Officer.

3.7 HAZARDOUS MATERIAL MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: AFI 32-7086, Hazardous Materials Management. Within 2 weeks of contract award, the contractor must contact the Installation Hazardous Materials Program Manager (30 CES/CEIEC) at (805) 605-7573, (805) 605-3870 or (805) 605-3976 to review hazardous materials authorization procedures.

b. HAZMART: The contractor shall first obtain approval from the HAZMART for all HAZMAT (including pesticides) usage on VAFB except for the commodities exempted on the Installation Management Flight approved exemption list. The contractor with access to government computer must attend applicable training for the installation's hazardous material authorization and tracking processes. The contractor must submit an AF Form 3952, Chemical/Hazardous Material Request Authorization (or an electronic equivalent) with current manufacturer's Safety Data Sheets (SDSs) for all materials purchased outside of the HAZMART supply system. Notify HAZMART to establish a shop account code and 30 CES/CEIEC, Environmental Support at (805) 605-3870 or (805) 605-7573 for authorization and approval process before using any hazardous materials on VAFB. The HAZMART Environmental Support staff will process, review and approve all submitted HAZMAT once in compliance. All HAZMART registered HAZMAT shall have appropriate bar codes issued and must be attached to each HAZMAT container. Upon contract termination, contractor must remove all excess HAZMAT on the job site and clear or return all unused and issued bar codes to the HAZMART located in Building 5500, Bay "C" Room 10, and can be reached at (805) 605-3870.

c. Reporting: The contractor shall provide a monthly hazardous materials usage report with corresponding container's bar code number to the HAZMART Environmental Support to include electronic reporting NOTE: Contractors reporting all of their monthly hazardous materials usage through the HAZMART should meet the air emissions, Emergency Planning and Community Right-to-Know Act Section 313, Toxic Chemical Release Inventory (TRI), solvent usage, and HAZMAT VAFB database/report requirements.

e. Pesticides: The Contractor shall comply with, but not limited to: Clean Water Act; Federal Insecticide, Fungicide, and Rodenticide Act; California Regional Water Quality Control Board permits; HQ AFSPC Policy P01014, dated 24 May 2001 (NPDES permit for Pesticides); AFI 32-1053, Integrated Pest Management Program, Executive Order 13112, and the base Integrated Pest Management Plan.

(1) Contractors using pesticides on VAFB shall obtain approval from the base Pesticide Manager, 30 CES/CEOHP, phone number (805) 606-3235/7596 or (805) 606-5059, 30 CES/CEIEC, Water Resource Manager, and 30 CES/CEIE, Natural Resources Manager prior to using any "pesticide" on VAFB. Pesticides include, but are not limited to, herbicides, fungicides, algaecides, and larvicides. The contractor shall obtain approval from the Government's HAZMART for all pesticide usage by processing an AF Form 3952, Chemical/Hazardous Material Request Authorization, prior to using only DOD-approved pesticides on VAFB.

(2) The Contractor shall possess a California pest control license for the type of pesticide work being performed and type of pesticide being applied on VAFB. The Contractor shall obtain any county, local, state, or federal permits required

for any pesticide work being done or pesticide materials to be used on VAFB. The Contractor will also obtain a login/password on Integrated Pest Management System (IPMIS) Web (http://web.ipmis-helpdesk.org) where they will record all chemical usage/tasks performed on VAFB. The Contractor shall prepare, maintain, and/or submit to the appropriate agency the required reports and/or records. The Contractor shall provide electronic copies of all licenses and permits to the Pesticide Manager within 10 days of contract award and 10 days after receiving a new license or getting a license renewed.

(3) The Contractor shall record on a daily basis all pesticide products that are consumed that day. The report shall include the date, location, type of operation; target pest, pesticide used, EPA number, percent concentration, amount of concentrate, amount of finished product, units of measure in square feet, and applicator's initials. This information shall be recorded in IPMIS Web, and VAFB Pesticide Manager notified that the updates have been made by the 5th of each month for the prior month's pesticide applications.

(4) The contractor shall keep copies of monthly pesticide usage. Notify VAFB Pesticide Manager when all updates have been completed as well as to the HAZMART. Pesticides do have additional compliance requirements in addition to typical HAZMAT requirements.

(5) The contractor shall not apply pesticides in or near water bodies, storm drains or channels.

(6) The contractor shall only use DoD approved pesticides on VAFB. If the contractor wants to use a pesticide that is not on the approved list, they will need to fill out an AFCEC NON-STANDARD PESTICIDE APPROVAL FORM 20140101 that can be obtained from VAFB Pest manager. Request will then be sent to command Entomologist for approval. If pesticide is approved, contractor will be contacted.

f. Preferred Substitutions: The Contractor shall evaluate all Hazardous Material requisitions for appropriate environmentally preferred substitutions in an effort to reduce or eliminate the associated wastes at the source. These preferred products will be submitted for approval (per paragraph B). In some cases, the proposed products may not require bar-coding or subsequent reporting. Also see Green Procurement Program (GPP requirements, Section 3.14).

(1) As applicable to project requirements, the Contractor is required to reduce products that contain materials found on EPA's Priority Chemical Reduction List at http://www.epa.gov/wastemin/chemlist.htm, with immediate emphasis on reducing cadmium, lead, mercury, naphthalene, and polychlorinated biphenyls (PCBs).

(2) For cleaners, floor care products, paints & coatings, paper & newsprint, and windows & doors: http://www.greenseal.org/findaproduct/index.cfm

(3) For cleaning products: http://www.epa.gov/epp/pubs/products/index.htm

g. Submittals: The Contractor shall provide the following to the Contracting Officer for any hazardous material activities on VAFB.

(1) Monthly Hazardous Material (HAZMAT) quantity usage totals.

(2) Upon contract termination, contractor must remove all excess HAZMAT on the job site. Excess hazardous materials must be properly dispose and clear or return all unused and issued bar codes to the HAZMART Environmental Support. Contact the HAZMART Environmental Support, at (805) 605-3870 or (805) 605-3976, located in Building 5500, Bay "C", Room 10.

No hazardous material shall be brought onto government property that does not directly relate to requirements for the performance of this contract. Include hazardous material control procedures in the Safety Plan. Address procedures and proper handling of hazardous materials, including the appropriate transportation requirements. Typical materials requiring SDS and quantity reporting include, but are not limited to, oil and latex based painting and caulking products, stains and varnishes, solvents, adhesives, aerosol, petroleum products and asbestos containing material, At the end of the project, provide the Contracting Officer with the maximum quantity of each material that was present at the site at any one time, the dates the material was present, the amount of each material that was used during the project, and how the material was used. Ensure that hazardous materials are utilized in a manner that will minimize the amount of hazardous waste that is generated. Ensure that all containers of hazardous materials have NFPA labels or their equivalent. Keep copies of the SDS for hazardous materials on site at all times and provide them to the Contracting Officer at the end of the project. Certify that all hazardous materials removed from the site are hazardous materials and do not meet the definition of hazardous waste per 40 CFR 261.

3.7.1 Asbestos Management

a. General: The Contractor shall comply with the following regulations:

(1) California Health and Safety Code Section 25143.7

(2) 40 CFR Part 61 Subpart M (National Emission Standards for Asbestos)

(3) Santa Barbara County Air Pollution Control District (SBCAPCD) Rule 1001

(4) 40 CFR Part 763, Asbestos-Containing Materials in Schools

(5) 29 CFR 1926.1101, Safety and Health Regulations for Construction

(6) 8 California Code of Regulations, Subchapter 4, Section 1529, Asbestos

(7) 8 California Code of Regulations, Subchapter 2, Section 341.15

(8) 22 California Code of Regulations, Sections 66260-66270, Hazardous Waste Regulation

(9) 40 CFR Part 260-270, Hazardous Waste Regulations

(10) 30 SW Plan, 32-7043-A, Hazardous Waste Management Plan

(11) 30 SW Plan 32-7042, Solid Waste Management Plan

(12) 30 SW Plan 32-1052-A, Asbestos Management Plan

(13) 30 SW 32-1052-B, Asbestos Operating Plan

(14) Specification Section 02075, Removal and Disposal of Asbestos Materials

(15) Specification Section 02081/0282, Asbestos Abatement-Small Scale/Large-Scale

b. Asbestos Hazard Response Act (AHERA): Federal and contractor employees that affect asbestos processes in construction shall possess current certification and training in accordance with AHERA described in 40 CFR 763.92 and Appendix C, Asbestos Model Accreditation Plan.

c. Miscellaneous: The Contractor shall be competent with all relevant asbestos survey observations, results, and findings prior to the start of asbestos activities on VAFB. The government will make every effort to locate and identify all asbestos prior to contract award, however this is not always possible.

(1) The Contractor shall make a commitment not to undertake any general construction work or any other activities that would break-up, dislodge, or similarly disturb ACM until a licensed asbestos Contractor has been approved.

(2) The Contractor shall conduct an asbestos safety conference for construction projects prior to the start of actual work. The asbestos safety conference shall include representatives of the contracting agency, 30 CES/CEIE, the employer, employees, and employee representatives.

(3) In the discussion of the Contractor's asbestos safety program, the Contractor shall include, but not limited to: methods, devices, processes, practices, conditions, or activities the Contractor intends to use in providing a safe place of work.

(4) The Contractor shall maintain written documentation of topics discussed and persons attending these asbestos safety meetings, and upon request, provide a copy to the Contracting Officer.

(5) The Contractor's competent person shall meet the definitions described in both 29 CFR 1926.1101(b) and 29 CFR 1926.32(f). 29 CFR 1926.32(f) defines the competent person as one who is capable of identifying asbestos hazards, capable of controlling the asbestos exposure, and possesses the authority to eliminate exposure to asbestos as specified in 29 CFR 1926.32(f). The Contractor's competent person shall be trained according to the criteria specified in the EPA's Model Accreditation Plan, which is described in 40 CFR 763 for the contractor/supervisor.

d. Work Plan: The Contractor shall submit, for approval, the Site-Specific Asbestos Work Plan to the 30 CES/CEIE Asbestos Manager prior to the start of any asbestos work on VAFB. The Contractor shall update the Site-Specific Asbestos Work Plan as required. It is a violation of California state law to design and/or provide asbestos abatement specifications and also perform the asbestos abatement associated with the design and/or specification. The Site-Specific Work Plan shall include, at a minimum, the following:

(1) Name and contact information of all parties involved with the project, including general contractor, asbestos abatement contractor, and project monitor. The asbestos project design shall be performed by an accredited AHERA Asbestos Abatement Project Designer. The asbestos contractor/supervisor shall be accredited by AHERA.

(2) Description of methods and procedures for handling, removal, and disposal of ACM as well as the quantities of ACM to be removed

(3) Statement of compliance IAW OSHA regulation 29 CFR 1926.1101 and Title 8 CCR 1529

(4) Air monitoring plan (40 CFR 763)

(5) Description of engineering controls, equipment staging, containment construction, decontamination units and operational guidelines, clean room, equipment room, negative pressure air flow devices, and containment certification by the project monitor

(6) On-site safety and health plan, training certificates, medical and respiratory fit test records, material safety data sheets, work place entry & exit procedures, emergency contact list, California OSHA posters, OHSA Notification procedures, entry/exit logs, and air sampling monitoring results

(7) Site security plan

(8) Emergency contingency plan and contact information

(9) Personnel protective equipment list

(10) Description of work clearance and final inspection procedures

e. Encountering ACM: When suspected ACM is encountered during the construction phase, then the Contractor shall immediately cease work and make arrangements for sampling of the material prior to resuming work. The Contractor shall be responsible for identifying suspected ACM encountered during activities that were not previously identified in the asbestos survey. An updated and/or approved site specific asbestos abatement plan shall be required in this case.

f. Air monitoring: Required for all VAFB asbestos abatement contracted activities and shall meet the minimum criteria specified in 40 CFR 763, Appendix A. Air monitoring activities will include, at a minimum, a baseline analysis, work area analysis during abatement activities, and outside air monitoring. California Asbestos Consultants/California Site Surveillance Technicians shall be responsible for ensuring compliance of Contractor's asbestos abatement activities.

3.7.2 Polychlorinated Biphenyls (PCB) Management

a. General: The Contractor shall comply with, but not limited to: Toxic Substances Control Act (TSCA), 40 CFR 761 (PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions); and 30 SW Plans, 32-7043-A, Hazardous Waste Management Plan, Appendix 12, Special Topics; 32-7086, Hazardous Materials Management Plan, Chapter IX, PCB Management.

b. PCB Generated on VAFB: The Contractor shall coordinate all PCB waste disposal documentation through the base CCAP contract operator prior to PCB waste handling.

c. Management: The Contractor shall, if required, test all electrical equipment removed for the presence of PCBs or the potential to contain PCBs. The Contractor shall manage the PCB waste or potential PCB waste as a PCB waste until it is determined that the items do not contain PCBs. The Contractor shall pay for testing

and laboratory analyses. The Government will make every effort to locate and identify all PCBs prior to contract bid, however, this is not always possible. If positive PCB identification has been made, then the Contractor shall coordinate with 30 CES/CEIE prior to handling any PCB waste or PCB contaminated equipment. All PCB containing waste shall be coordinated and managed through 30 CES/CEIE and the CCAP (NO EXCEPTIONS). Please contact the Hazardous Waste Program Manager at 606-2359 for all projects with PCB containing equipment or waste.

3.7.3 Radioactive or Radionuclides Material Management

a. General: The Contractor shall comply with, but not limited to: 40 CFR Part 61, 190, 191, and 192; 10 CFR 19; 10 CFR 20; 10 CFR 36; 10 CFR 39; 20 CFR 21; Air Force Instruction (AFI) 40-201, Managing Radioactive Materials In The USAF; 30 SW AFI 40-101, Managing Radioactive Materials; and 30 SW Plan 32-7043-A, Hazardous Waste Management Plan (especially Appendix 12, Special Topics titled Radioactives/Radionuclides).

b. Transporting Material onto Base: The Contractor shall contact the Contracting Officer, via the Vandenberg Radiation Safety Officer, 30 MDOS/SGOAB, in order to submit the appropriate documents and permits. They are required at least 30 days prior to bringing the radioactive material or equipment containing radioactive material onto VAFB. Radioactive or Radionuclide materials brought onto VAFB are subject to inspections by the Nuclear Regulatory Commission. The Contractor shall support all regulatory agency inspections on VAFB.

c. Radioactive Exit Signs: The Contractor shall contact the Vandenberg Radiation Safety Officer, 30 MDOS/SGOAB in order to determine proper disposal requirements of these signs. These exit signs cannot be disposed of in the VAFB landfill or the hazardous waste CCAP. The contractor shall not install any new radioactive exit signs on VAFB.

3.7.4 Lead Based Paint (LBP) Management

a. General: The Contractor shall comply with, but not limited to: Title 17, CCR, Division 1 Chapter 8, Accreditation, Certification, and Work Practices For Lead-based Paint and Lead hazards; 30 SW Plans, 32-1002, Lead-Based Paint Management Plan; 32-7042, Solid Waste Management Plan; Plan 32-7043-A, Hazardous Waste Management Plan (especially Appendix 12, Special Topics); and Specification Section 02084, Lead based Paint Abatement and Disposal.

b. Management Plan: The Contractor shall submit the LBP Management Plan for approval to 30 CES/CEIE prior to the start of any LBP work on VAFB.

c. Encountering LBP: If unspecified LBP is encountered during the construction phase, the Contractor shall cease work and make arrangements for sampling of the material prior to resuming. The Government will make every effort to locate and identify all LBP prior to bidding, however this is not always possible. These materials are often hidden and cannot be discovered until demolition activities begin or after the start of construction activities. The Contractor shall not resume LBP work until the sampled material results are known and the LBP Management Plan has been submitted, updated, and any compliance actions required or approved by 30 CES/CEIE.

3.8 PETROLEUM PRODUCTS AND REFUELING

Conduct the fueling and lubricating of equipment and motor vehicles in a manner that protects against spills and evaporation. Manage all used oil generated on site in accordance with 40 CFR 279. Determine if any used oil generated while on-site exhibits a characteristic of hazardous waste. Used oil containing 1000 parts per million of solvents will be considered a hazardous waste and disposed of at Contractor's expense. Used oil mixed with a hazardous waste will also be considered a hazardous waste.

3.8.1 Oily and Hazardous Substances

Prevent oil or hazardous substances from entering the ground, drainage areas, or navigable waters. In accordance with 40 CFR 112, surround all temporary fuel oil or petroleum storage tanks with a temporary berm or containment of sufficient size and strength to contain the contents of the tanks, plus 10 percent freeboard for precipitation. The berm will be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs.

3.8.2 Inadvertent Discovery of Petroleum Contaminated Soil or Hazardous Wastes

If petroleum contaminated soil or suspected hazardous waste is found during construction that was not identified in the contract documents, the contractor shall immediately notify the contracting officer. The contractor shall not disturb this material until authorized by the contracting officer.

3.9 FUEL TANKS

Petroleum products and lubricants required to sustain up to 30 days of construction activity may be kept on site. Storage and refilling practices shall comply with 40 CFR Part 112. Secondary containment shall be provided and be no less than 110 percent of the tank volume plus five inches of free-board. If a secondary berm is used for containment then the berm shall be impervious to oil for 72 hours and be constructed so that any discharge will not permeate, drain, infiltrate, or otherwise escape before cleanup occurs. Drips pans are required and the tanks must be covered during inclement weather.

3.10 RELEASES/SPILLS OF OIL AND HAZARDOUS SUBSTANCES

a. General: The Contractor shall comply with, but not limited to: 30 SW Plans, 32-7044, Spill Prevention Control and Countermeasure Plan; 32-7043-A, Hazardous Waste Management Plan; 32-7043-E, Recoverable and Waste Petroleum Products Management Plan; 32-7086, HAZMAT Management Plan; and 32-4002-A, HAZMAT Emergency Response Plan.

b. Notification: When the Contractor has a spill or release, then the Contractor shall immediately notify 30 CES/CEIE, (805) 606-1921 / 605-2015, fax (805) 734-1339, the Command Post, (805) 606-9961, and the Contracting Officer. Based on the Reportable Quantity of the contractor's spill or release, 30 CES/CEIE will determine if an environmental regulatory agency Incident Release Report will need to be prepared and submitted based on the Reportable Quantity of the contractor's spill or release. (Note: If a regulatory agency incident release reporting action is required for the Contractor’s spill or release on VAFB, then 30 CES/CEIE is responsible to notify the appropriate regulatory agency within the mandated reporting period).

c. Reporting: When the Contractor has a spill or release, then the Contractor shall provide a copy of the Community Awareness and Emergency Response (CAER) Hazardous Materials Incident Reporting Form and any other required documentation to 30 CES/CEIE, (805) 606-1921 / 605-2015, fax (805) 734-1339, for 30 CES/CEIE to provide the appropriate regulatory agency's mandatory reporting. (References: 30 SW Plan, 32-7043-A, Hazardous Waste Management Plan, Appendix 8; EPP; or 30 SW Plan, 32-4002-A, HAZMAT Emergency Response Plan).

d. Clean-up: The Contractor shall take immediate actions involving hazardous material spill or release to properly contain, clean up, make notifications, and provide final cleanup documentation for their spill or release. When the Contractor is unable to conduct proper cleanup activities for a spill or release, then immediate notification to the government is required. The Government reserves the right to conduct the mandatory clean-up activities until the Contractor is able. All costs incurred by the Government until the Contractor is capable of taking control of the clean-up activities are the sole responsibility of the Contractor.

e. 30 SW 32-7043-A: The contractor is responsible for the characterization and disposal of cleanup materials and/or hazardous waste generated from its spill, release, and cleanup activities. (Reference the 30 SW Plan, 32-7043-A, Hazardous Waste Management Plan).

(1) For generally "large" hazardous waste or hazardous material spills or releases, the Contractor shall comply with, but not limited to: 30 SW Plan 32-4002-A, Hazardous Materials (HAZMAT) Emergency Response Plan.

(2) For generally "small" hazardous waste or hazardous material spills or releases, the Contractor shall comply with, but not limited to: 30 SW Plan 32-7043-A, Hazardous Waste Management Plan.

3.11 CONTROL AND MANAGEMENT OF HAZARDOUS WASTES

Minimize the use of hazardous materials and the generation of hazardous waste. Include procedures for pollution prevention/ hazardous waste minimization in the Hazardous Waste Management Section of Environmental Protection Plan Consult with the Installation Pollution Prevention Manager (30 CES/CEIEC) for suggestions and to obtain a copy of the installation's pollution prevention/hazardous waste minimization plan for reference material when preparing this part of the plan. Describe the types of the hazardous materials expected to be used in the construction when requesting information.

a. General: The Contractor shall comply with, but not limited to: Resource Conservation and Recovery Act; 40 CFR Parts 240-299 (Protection of Environment), 49 CFR Parts 171-180 (Transportation), EPA Hazardous Waste Training Modules; Title 22 California Code of Regulations (CCR), Division 4.5 (Environmental Health Standards for Management of Hazardous Waste); the California Hazardous Waste Source Reduction and Management Act of 1989 (Senate Bill 14); 30 SW Plans 32-4002-A, *Hazardous Materials Emergency Response Plan*, 32-7043-A, *Hazardous Waste Management Plan*, and DOD Instruction 4000.19, *Interservice and Intragovernmental Support*.

b. Hazardous Waste Disposal on VAFB: The Contractor shall manage, track and dispose of all hazardous waste generated on VAFB through the Government contracted and operated Consolidated Collection Accumulation Point (CCAP). The CCAP personnel assist the waste generators with waste stream classification including Land Disposal Restrictions and

generate shipping documents and manifests to ensure hazardous waste transportation and disposal regulations are strictly adhered to.

c. Hazardous Waste Removal from VAFB: The Contractor shall not remove any hazardous waste generated on VAFB without approval from 30 CES/CEIEC or the authorized CCAP representative. Only the 30 CES/CEIEC or the CCAP representative is authorized to sign Uniform Hazardous Waste Manifests. The Contractor shall not sign any of their own Uniform Hazardous Waste Manifests unless they have their own established EPA Generator ID number.

d. Reimbursement: In accordance with DoD Instruction 4000.19, *Interservice and Intragovernmental Support,* the Contractor generating hazardous waste may be held responsible for the direct costs and support costs incurred by VAFB to dispose of hazardous wastes that are directly attributable to contract activities. Reimbursement for such costs is subject to conditions specified in the contract-specific support agreement, memorandum of agreement (MOA) or memorandum of understanding (MOU). The decision to seek reimbursement lies with the Government agent, and should consider the anticipated expense of billing and disbursing funds.

e. Miscellaneous: The Contractor is required to provide hazardous waste characterization documentation, including Material Safety Data Sheets, sample requests and product and or process user knowledge for coordination through the CCAP. Coordination is requested prior to waste generation in order for the Government to properly characterize and manage all hazardous waste generated on VAFB.

    (1) The Contractor is responsible for all costs and management processes associated with the proper site management, Site-Specific Contingency Plan, Spill Control and Cleanup Equipment/Supplies, profiling, accurate waste characterization, temporary site storage areas, containerization, labeling, obtaining drum numbers, and transportation to the CCAP facility, and the implementation of source reduction measures prior to waste turn-in. The Contractor is responsible for their hazardous waste management up to and until their waste is delivered and signed over to CCAP personnel via a hazardous waste turn-in sheet.

    (2) To establish new hazardous waste accumulation sites, waste generators are required to submit an authorization request to 30 CES/CEIEC as required by the 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, Appendix 4. The 30 CES/CEIEC Hazardous Waste Program Manager will provide a letter of authorization and conduct a site visit to ensure all waste generation compliance concerns are in practice.

f. 30 SW Plan 32-7043-A: The Contractor shall provide a “Certification of Hazardous Waste Compliance” on company letter head to the Contracting Officer for 30 CES/CEIEC indicating that the Contractor shall comply with the 30 SW Plan 32-7043A, Hazardous Waste Management Plan for all hazardous waste activities. The Contractor is required to include this certification as an Appendix to their Environmental Protection Plan.

    (1) The Contractor shall understand and comply with the Hazardous Waste Generator's Responsibilities in 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, Basic Plan.

(2) The Contractor shall understand and comply with the Hazardous Waste Site Storage Timelines and criteria in 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, Appendix 4, Hazardous Waste Accumulation.

(3) The Contractor shall understand and comply with the construction procedures in 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, Appendix 12, Special Topics, "Construction".

(4) The Contractor shall have access to and maintain a copy (electronic or hard copy) of the latest 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, onsite for each hazardous waste accumulation area under the contractor's purview.

g. Training Requirements: The Contractor shall complete all required hazardous waste training requirements for their hazardous waste site management. This can be completed through 30 CES/CEIEC's training program or the EPA hazardous waste training modules available for site Collection Accumulation Point (CAP) / Satellite Accumulation Point (SAP) managers. If the Contractor uses the EPA training modules for their CAP / SAP hazardous waste training, then the Contractor shall provide a copy of the signed training module completion to 30 CES/CEIEC Hazardous Waste Manager, and keep a copy with the Contractor's Environmental Protection Plan or CAP / SAP authorization letter as proof of completed required hazardous waste training. The Contractor shall also attend a one-time training session with the CCAP Contractor to review hazardous waste turn in procedures. CAP / SAP turn in training is offered on the third Tuesday of every month. The 30 CES/CEIEC Hazardous Waste Program Manager can make special arrangements for out of cycle training.

Identify all construction activities which will generate hazardous waste/debris. Provide a documented waste determination for all resultant waste streams. Hazardous waste/debris will be identified, labeled, handled, stored, and disposed of in accordance with all Federal, State, and local regulations including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 266, and 40 CFR 268.

Hazardous waste will also be managed in accordance with the approved Hazardous Waste Management Section of the Environmental Protection Plan. Store hazardous wastes in approved containers in accordance with 49 CFR 173 and 49 CFR 178. Hazardous waste generated within the confines of Government facilities will be identified as being generated by the Government. Prior to removal of any hazardous waste from Government property, all hazardous waste manifests must be signed by the Hazardous Waste Program Manager or an appointed representative. No hazardous waste will be brought onto Government property. Provide to the Contracting Officer a copy of waste determination documentation for any solid waste streams that have any potential to be hazardous waste or contain any chemical constituents listed in 40 CFR 372-SUBPART D. For hazardous wastes spills, verbally notify the Contracting Officer immediately.

3.11.1 Facility Hazardous Waste Generator Status

Vandenberg AFB is designated as a Large Quantity Generator. All work conducted within the boundaries of this activity must meet the regulatory requirements of this generator designation. The Contractor will comply with all provisions of Federal, State and local regulatory requirements applicable to this generator status regarding training and storage, handling, and disposal of all construction derived wastes.

3.11.2 Regulated Waste Storage/Satellite Accumulation/90 Day Storage Areas

If the work requires the temporary storage/collection of regulated or hazardous wastes, the Contractor will request the establishment of a Regulated Waste Storage Area, a Satellite Accumulation Area, or a 90 Day Storage Area at the point of generation. The Contractor must submit a request in writing to the Contracting Officer providing the following information:

Contract Number _____ Contractor _____

Haz/Waste or Regulated Waste POC _____ Phone Number _____

Type of Waste _____ Source of Waste _____

Emergency POC _____ Phone Number _____

Location of the Site: _____ (Attach Site Plan to the Request)

To establish new hazardous waste accumulation sites, waste generators are required to submit an authorization request to 30 CES/CEIEC as required by the 30 SW Plan 32-7043-A, Hazardous Waste Management Plan, Appendix 4. The 30 CES/CEIEC Hazardous Waste Program Manager will provide a letter of authorization and conduct a site visit to ensure all waste generation compliance concern are in practice.

Allow ten working days for processing this request. The designated area where waste is being stored shall be barricaded and a sign identifying as follows:

"DANGER - UNAUTHORIZED PERSONNEL KEEP OUT"

3.11.3 Class I [and II] ODS Prohibition

Class I [and II] ODS as defined and identified herein will not be used in the performance of this contract, nor be provided as part of the equipment. This prohibition will be considered to prevail over any other provision, specification, drawing, or referenced documents.

Regulations related to the protection of stratosphere ozone may be found in 40 CFR 82.

Heating and air conditioning technicians must be certified through an EPA-approved program. Copies of certifications shall be maintained at the employees' place of business and be carried as a wallet card by the technician, as provided by environmental law. Accidental venting of a refrigerant is a release and shall be reported to the Contracting Officer.

3.11.3.1 *Universal Waste/e-Waste Management*

Universal waste including but not limited to some mercury containing building products such florescent lamps, mercury vapor lamps, high pressure sodium lamps, CRTs, batteries, aerosol paint containers, electrical equipment containing PCBs, and consumed electronic devices, shall be managed in accordance with applicable environmental law and installation instructions. Contact 30 CES/CEIEC or refer to the HWMP for additional assistance.

3.12 WATER RESOURCES AND WATER QUALITY Requirements

3.12.1 Surface and Ground Water

a. There will be no discharge of wastewater, waste or debris into storm drains, stormwater conveyance systems or surface waters. The discharge of potable water into storm drains or storm water conveyance systems may or may not be authorized under the NPDES MS4 General Permit. There will be no discharge of excavation ground water to the sanitary sewer, storm drains, or to surface waters. Discharge of hazardous substances will not be permitted under any circumstances. Notify a 30 CES/CEIE, Water Resources Program Manager prior to any planned discharge or threat of discharge into storm drains, stormwater conveyance systems or surface waters to maintain compliance with Section 402 of the Clean Water Act.

b. The Contractor shall follow all Clean Water Act Section 401 Water Quality Certification and Section 404 Permit requirements for activities that affect Waters of the United States. The Contractor shall notify 30 CES/CEIE prior to any activity expected to affect jurisdictional waters (by discharge of pollutant, dredge, or fill material or by structural modification within Waters of the United States). Any affect will require a State 401 Water Quality Certification and Section 404 permit.

3.12.2 Storm Water

3.12.2.1 Storm Water Best Management Practices (BMPs)

The Contractor shall implement and maintain BMPs to effectively prevent sediment, chemicals, or other pollutants from migrating into the storm water system, Waters of the U.S. and surface waters via stormwater, non-stormwater or wind. BMPs will include erosion and sediment controls, tracking controls, vehicle and equipment fueling and maintenance, spill prevention and control, concrete waste management, solid waste management, liquid waste management and septic waste management as applicable. BMPs shall be implemented and maintained as described in a current California Stormwater BMP Handbook (California Stormwater Quality Association, California Department of Parks and Recreation Off-Highway Vehicle BMP Manual).

a. Exposed soils remaining upon completion of construction shall be permanently stabilized with vegetation to prevent erosion due to wind and rain. Refer to Section 3.16, *Landscaping.* When the construction activity is covered by the Construction General Permit refer to Section 3.12.2.2 and the Construction General Permit for Conditions for Termination of Coverage.

b. Netting of permanent fiber rolls (wattles) and erosion control blankets shall be of biodegradable material only.

c. Do not use sand bags as inlet and drainage protection. Use gravel bags, inlet protection devices, inlet covers or absorbents as applicable.

d. Do not use straw bales for sediment control.

3.12.2.2 Construction General Permit Requirements

a. The contractor shall obtain coverage under the State Water Resources Control Board NPDES General Permit Order No. 2009-0009-DWQ (Construction General Permit) for construction activities of one acre or greater of disturbed soil unless a

permit exemption applies. Contact 30 CES/CEIE Water Resources one month prior to construction to begin the process.

b. A Storm Water Pollution Prevention Plan (SWPPP) and Risk Assessment or Erosivity Waiver documents shall be developed by a Qualified SWPPP Developer per the Construction General Permit. The Contractor shall provide drafts and a final copy of their SWPPP and Risk Assessment or Erosivity Waiver documents to 30 CES/CEIE Water Resources for review and approval.

c. The Contractor shall assist 30 CES/CEIE with electronic filing of Permit Registration Documents (NOI, Risk Assessment, SWPPP) in the State Water Board's SMARTS website. The Contractor shall file the associated annual fee with the SWRCB. 30 CES/CEIE will obtain certification from 30 CES.

d. <u>SWPPP Implementation</u>

The Contractor shall implement a SWPPP, including but not limited to BMPs, inspections, Rain Event Action Plans, effluent sampling and analysis requirements photographs, Exceedance Reports and Annual Reports in accordance with the Construction General Permit.

Contractor personnel implementing SWPPPs shall meet Permit requirements for Qualified Stormwater Practitioners and shall have attended one storm water Construction General Permit compliance and BMP training within the last five years.

The Contractor shall maintain a current copy of their SWPPP at the construction site per the permit requirements and shall provide a copy of any amendments to 30 CES/CEIE Water Resources and in SMARTS.

The Contractor shall provide copies of required inspection forms, Rain Event Action Plans, Construction Site and Run-on Evaluations and effluent sampling results (as applicable) to 30 CES/CEIE Water Resources upon request.

Linear Underground/Overhead Project Contractors shall ensure that photographs of the site taken before, during, and after storm events are taken during inspections, and submitted through the State Water Board's SMARTS website once every three qualified rain events.

Whenever the results from a storm event daily average indicate that the discharge is below the lower Numeric Action Level (NAL) for pH, exceeds the upper NAL for pH, or exceeds the turbidity NAL, the Contractor shall conduct a Construction Site and Run-on Evaluation to determine whether pollutant source(s) associated with the site's construction activity may have caused or contributed to the NAL exceedance and shall immediately implement corrective actions.

e. <u>Exceedance Report</u>

In the event that any effluent sample exceeds an NAL, submit the storm event sampling results to 30 CES/CEIEC no later than 5 days after the conclusion of the storm event. NAL exceedances are reported in SMARTS and the Contractor is required to provide an Exceedance Report when requested by the Regional Water Board. Include in the Exceedance Report:

The analytical method(s), method reporting unit(s), and method detection limit(s)

of each analytical parameter (analytical results that are less than the method detection limit must be reported as "less than the method detection limit");

The date, place, time of sampling, visual observation (inspections), and/or measurements, including precipitation; and

A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

f. Annual Report

The Contractor's Qualified SWPPP Practitioner shall provide 30 CES/CEIE Water Resources, an Annual Report in the State Water Board's SMARTS website by 15 August every year that the permit is active (between 1 July of the current year and 30 June of the previous year and for which a Notice of Termination (NOT) has not been submitted). 30 CES/CEIE will obtain certification from 30 CES.

30 CES shall electronically file the Annual Report with the SWRCB by the due date of 1 September.

As part of the annual report, the Contractor shall electronically submit water quality sampling results in SMARTS.

The Contractor shall pay their annual fee before the end of their billing month every year until the NOT has been approved. This requirement may be waived by the SWRCB upon 30 CES/CEIE request.

g. Notice of Termination of Coverage under the General Construction Storm Water Permit (NOT).

The Construction General Permits' Conditions for Termination of Coverage shall be met prior to NOT submittal. Vegetation shall cover 70 percent of 100 percent of the disturbed soil area or it must be demonstrated that the site will not pose any additional sediment discharge risk per the Construction General Permit Conditions. Refer to Section 3.16, *Landscaping.*

The Contractor shall submit the NOT and photos of the entire stabilized disturbed soil area to 30 CES/CEIE Water Resources in the State Water Board's SMARTS website for review and approval. Photos shall be labeled and their location described in relation to the SWPPP site map. 30 CES/CEIE will obtain the required certification signature from 30 CES.

It may take several months before a NOT can be approved by the SWRCB. Permit requirements are still enforceable until the NOT is approved by the Regional Water Quality Control Board. Once construction is completed, the Contractor will be required to perform storm water inspection monitoring, water quality sampling, BMP maintenance and shall be required to repair erosion, reseed, mulch and provide irrigation to ensure seeded or planted areas achieve 70 percent soil coverage.

3.12.3 Post-Construction Storm Water

Vandenberg Post-Construction Storm Water Standards apply to projects that create and/or replace 2,500 square feet (SF) or more of new or replaced impervious surface area within the cantonment areas and those projects that create and/or replace 5,000 square feet or more of

impervious surface area within the Vandenberg AFB boundary. Drafts and a final Storm Water Control Plan shall be prepared, preferably during design, for review and approval by 30 CES/CEIE Water Resources.

a. Projects that create and/or replace 2,500 square feet or more square feet of impervious surface will implement one or more of the following site design measures to reduce project site runoff: Preservation of existing vegetation to the maximum extent feasible (minimum requirement), Stream Setbacks and vegetated buffers (30-foot minimum); Improvement and maintenance of soil through soil amendments; Tree planting and preservation; Rooftop and Impervious Area Disconnection; Vegetated Swales; Green Roofs; or equivalent measures.

b. Projects that create and/or replace 5,000 square feet or more of impervious surface shall implement Low Impact Development measures to include: Site Design Measures, Source Control Measures, and Storm Water Retention and Treatment Measures. Storm water retention and treatment measures will maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the drainage area or areas with regard to the temperature, rate, volume, and duration of flow. Storm water retention and treatment measures should only be used if the drainage area or areas flows to a natural surface water drainage.

Project design A-E consultants or in-house design engineers shall use the *Low Impact Development (LID) Sizing Toolbox* (Tool) for selecting and sizing appropriate structural runoff controls (i.e., sand filter, bioretention, infiltration basin, infiltration trench, and permeable pavers). This Tool can be obtained from the 30th Civil Engineer Squadron, Environmental Section (30 CES/CEIEC, 805-606-7541).

If design A-E consultants or in-house design engineers determine that structural runoff controls are unnecessary based on the Site Design Measures selected then the engineer shall demonstrate via Option 1 or Option 2 how the chosen methods satisfy Section 438 of the *Energy Independence and Security Act* (EISA) in the Storm Water Control Plan.

3.12.4 Domestic Wastewater

a. Sanitary Sewer: VAFB sanitary sewer connections are authorized for discharges of approved domestic wastewater as defined by discharge standards set by the City of Lompoc. Discharge of any wastewater on VAFB, other than routine domestic wastewater, into the sanitary sewer system requires pre-authorization from 30CES/CEIE. Ensure that sanitary sewer lines that are no longer needed are capped, permanently closed, and/or made inert to prevent storm water/groundwater inflow infiltration into the wastewater collection system. Report any sanitary sewer blockages and/or sewer system overflows to 30 CES/CEIE.

b. Grease Interceptors, Traps, and Oil Water Separators: Grease traps and oil water separators (OWS), must be routinely cleaned and maintained to ensure they are functioning properly. Oil, grease, or oily sludge removed from restaurant traps, interceptors, and OWS units must be removed from base for disposition.

c. Septic Systems: Septage recovered from routine maintenance or decommissioned septic systems must be disposed of by discharge into a sanitary sewer manhole (approved by 30 CES/CEIE) or an off-base collection point.

3.12.5 Industrial Wastewater

a. Discharge: Approval from the City of Lompoc, an industrial discharge permit, or waiver from the Regional Water Quality Control Board is required to discharge process or industrial wastewater. 30 CES/CEIE Water Resources coordination and approval is required.

b. Treatment: If contract allows generator to dispose of their industrial or process wastewater at the VAFB Industrial Wastewater Treatment Plant (IWTP), 30 CES/CEIE coordination and approval of an Industrial Wastewater Treatment Plant Processing Request is required. Sampling is required to determine hazardous characteristics. A Sampling Request Form and Industrial Wastewater Characterization Form are required for sampling conducted by the Water Resources consultant. The VAFB IWTP may not be able to accept all industrial or process wastewater.

3.12.6 Miscellaneous Wastewater

a. Discharge to Grade (DTG): A DTG Characterization Form shall be completed and approved by 30 CES/CEIE Water Resources prior to discharge of any low-level contaminated wastewater. Discharge of hazardous substances will not be permitted under any circumstances. A DTG Form may also be required for discharge of other types of wastewater to grade.

b. Aqueous Unknowns: Storm water, non-storm water, groundwater, or wastewater that is collected in any kind of structure or container must be analyzed prior to removal and disposition. 30 CES/CEIE coordination and approval is required.

c. Vehicle and Equipment Cleaning: The Contractor shall not perform vehicle and equipment cleaning onsite using soaps, solvents, degreasers, steam cleaning equipment or equivalent methods. The Contractor shall perform vehicle or equipment cleaning offsite or onsite with water only, in a designated area that will not allow water to enter storm drain inlets, drainage systems or surface waters.

d. Building and Structural Preparation Washing: If pressure washing will occur on an area that is not painted, sediment and debris shall be prevented from entering a storm drain inlet or conveyance. Prior to pressure washing, the paint content of the affected area must be known. If the paint contains hazardous constituents (lead, chromium, zinc, etc.), another method of structural surface preparation may be required. If paint content is unknown, representative samples of washdown waters shall be collected prior to wash-down in order to determine the chemical properties of the effluent. Separate representative samples are required for each specific material (roof and exterior walls must have separate analysis). Based on the results of the analysis, the effluent will either require capture, collection, and removal or be allowed to discharge to grade. Prior to disposition, 30 CES/CEIE coordination and approval is required. Prior to using any chemical cleaner, an MSDS must be submitted in order to determine whether the wastewater must be captured, collected and removed or allowed to discharge to grade. Wastewater that requires capture and removal may require additional sampling to determine proper disposal (IWTP or hazardous waste).

3.12.7 Drinking Water

a. Backflow Prevention: Ensure that new or renovated drinking water supply connections and valves are equipped with backflow assemblies to protect Potable

water quality from contact with non-potable irrigation system backflows, stagnant water distribution lines, fire suppression system lines, and other backflow sourced cross-contamination. All new or renovated backflow assemblies must be tested and test results submitted to the cross-connection control program manager at the 30th Civil Engineering Utilities Shop.

b. Cross Connection: All abandoned potable water tanks, distribution lines, hydrants, and drinking water system components must be capped off, removed, permanently closed, or made inert. Maintained potable lines must be protected against cross-contamination by preventing contact with abandoned line segments or non-potable connections. If necessary, backflow assemblies must be installed to remediate the potential for cross- connections. Ensure all encountered storm sewer lines, sanitary sewer lines, industrial feeder lines, and drinking water distribution lines no longer needed are capped off, removed, permanently closed, or made inert in order to prevent inflow-infiltration issues, cross-connections, and/or health-related hazards.

c. Non-potable Water: All non-potable water supplies must be clearly identified as non-potable through use of visible markings or signage.

d. Potable Water Supply – Tanks: New or refurbished water tanks that have recently undergone interior coating maintenance must be VOC water-tested prior to placement into use as a water supply reservoir.

e. Drinking water treatment and distribution system operation and maintenance is now performed by American Water. Please contact American Water if you have any questions or require coordination on drinking water issues.

3.13 AIR QUALITY REQUIREMENTS

a. General**:** The Contractor, and their subcontractors, shall comply with all applicable, but not limited to: Federal and state Clean Air Acts; Santa Barbara County Air Pollution Control District (SBCAPCD) rules and regulations; SBCAPCD Permit To Operate (PTO) or Authority to Construct requirements (ATC); California Air Resources Board (CARB) regulations, standards, controls, and portable equipment registration requirements; any applicable US EPA Best Achievable Control Technology (BACT) standards; AFI 32-7040, Air Quality Compliance; 30 SWI 32-702, Environmental Management Air Emission Inventories; and base Fuel Use Monitoring Plan (FUMP) and Greenhouse Gas (GHG) Monitoring Plan. The contractor/subcontractor shall comply with all the applicable air quality requirements and implement accepted construction best management practices.

b. Authority to Construct or Permit to Operate**:** Prior to beginning an activity on VAFB which requires an ATC or PTO, the Contractor will coordinate with 30 CES/CEIEC. ATCs and PTOs are required for the installation of new generators, internal combustion engine powered equipment or devices, and modification or installation of boilers, steam generators, furnaces, process heaters, water heater units, paint spray booths, abrasive blasting booths, gasoline dispensing facilities, etc. The ATC or PTO approval can take up to 210 days. Due to strict emissions requirements, all equipment or processes requiring a permit must comply with applicable SBCAPCD rules and be approved by 30 CES/CEIEC Air Quality staff prior to procurement.

c. Violations: The Contractor shall immediately report air permit violations to 30 CES/CEIEC and to the Contracting Officer within 24-hours.

d. Submittals: The Contractor shall provide the following to the Contracting Officer.

(1) Air Emissions data, to include criteria pollutants and greenhouse gases.

(2) 30 SW Form 154/155/156/157/158/159, prior to installation of an abrasive blast equipment; boiler hot water heater; internal combustion engine; fuel storage tank; degreaser or solvent cleaning machine; or other emission source.

(3) Boiler Emission Certification and/or Source Test with applicable compliance certification data that verifying the equipment to be installed is in compliance with applicable boiler, steam generator, furnace, process heater, and/or water heater regulations. Submittal required prior to purchase and installation.

(4) Generator engine specifications indicating compliance with Federal, State and Local regulatory requirements. Submittal required prior to purchase and installation.

(4) Any logs, records or reports required by SBCAPCD ATCs and/or PTOs as applicable.

3.13.1 Demolition, Site Clearing, Grading, Excavation, Backfilling, and Trenching

Contractor shall implement measures to comply with the requirements of SBCAPCD Rule 345, Control of Fugitive Dust from Construction and Demolition Activities. When work involves demolition of load bearing wall or regulated structure; asbestos abatement and/or removal; or work trailer removal from VAFB, the Contractor shall submit the SBCAPCD "Notification for Renovation and Demolition" form to 30 CES/CEIEC for approval and signature a minimum of 15 working days prior to the proposed start date of demolition or trailer removal.

3.13.2 Asphalt Paving

Contractor shall comply with the VAFB Cutback and Emulsified Asphalt Paving Materials Recordkeeping and Compliance Plan which incorporates the ROC content and recordkeeping requirements specified by SBCAPCD 329, Cutback and Emulsified Asphalt Paving Materials. This plan is only applicable to the use of cutback and emulsified asphalt paving materials as defined in the plan. All asphalt products must be enrolled in the HAZMART.

3.13.3 Coating, Painting, Adhering, and Sealing

Contractor shall use compliant coatings as specified in SBCAPCD Rule 323.1, Architectural Coatings; Rule 330, Surface Coating of Metal Parts and Products; Rule 351, Surface Coatings of Wood Products; and Rule 353, Adhesives and Sealants. The contractor must also comply with the operational requirements specified in SBCAPCD Rules. The Contractor shall not dispose of solvents by evaporation. Recordkeeping requirements can be met through enrollment in the HAZMART.

3.13.4 Abrasive Blasting and Corrosion Control

Contractor shall use CARB approved abrasive blasting media and implement dust control measures in order to prevent the creation of a nuisance dust incident. If the Contractor would like to use a confined abrasive blast cabinet, the Contractor will contact 30 CES/CEIEC for assistance A permit may be required for a confined abrasive blast cabinet. All blast media must be enrolled in the HAZMART.

3.13.5 Use of Portable Equipment Powered by Internal Combustion Engines

Contractor shall register all portable equipment used for projects on VAFB with a rated brake horsepower of 50 bhp or greater in the California Air Resources Board (CARB) Portable Equipment Registration Program (PERP).

If the equipment is not registered in the CARB PERP, all internal combustion engines(ICEs) greater or equal to the brake horsepower thresholds listed above must be properly permitted by the SBCAPCD for use at various locations within the county.

3.13.6 Gasoline/E-85 Storage Tanks

Contractor shall only use fuel storage tanks with a capacity less than 250 gallons and is only allowed one storage tank for each commodity (No multiple tanks for storing the same commodity). If the Contractor would like to use more than one tank for each commodity or a tank greater than 250 gallons, prior approval is required by 30 CES/CEIEC. The Contractor shall submit a 30 SW Form 157, Source Profiling Form for Fuel Storage Tanks, detailing tank specific information to 30 CES/CEIEC prior to installing the tanks. The Contractor shall report the amount of gasoline and E-85 used to 30 CES/CEIEC at the end of the contract or by 31 Jan for the previous year's activities, whichever occurs first. A 30 SW Form 160, Recordkeeping Form Fuel Storage Tanks, shall be used for reporting fuel usage.

3.13.7 Ozone Depleting Substances (ODS)

When the Contractor is required to work on any equipment with ODS refrigerants, the Contractor shall comply with, at a minimum, all of the requirements identified in 40 CFR Part 82, Section 608, Ozone Protection Regulations: Stationary Refrigeration and Air Conditioning, Halon Handling of the Clean Air Act. The Contractor shall supply copies of the technician certifications to 30 CES/CEIEC. The Contractor shall report the amount of ODS used to 30 CES/CEIEC at the end of the contract, or by 31 Jan for the previous year's activities, whichever occurs first. If work is done on regulated refrigerant systems, the Contractor must also hold a current and active California contractor's license in the C38-Refrigeration Contractor licensing classification, or by an employee of a contractor with these qualifications. As applicable to project requirements, the Contractor is required to use non-Ozone Depleting Substance (non-ODS) replacement products found on EPA's Significant New Alternatives Policy (SNAP) at www.epa.gov/ozone/snap/lists/index.html. The Contractor must also comply with California Greenhouse Gas (GHG) requirements, regulating ODS/GHG with high global warming potential refrigerants. For ODS/GHG recordkeeping purposes the Contractor shall notify 30 CES/CEIEQ with the nameplate data and refrigerant type and capacity of any refrigerant system installed on VAFB.

3.13.8 Operation of Vandenberg Owned Permitted Equipment

All Air Forced owned permitted equipment operated by the Contractor shall be operated in compliance with the requirements of the PTO. All records required by such permits will be maintained according to the permit and will be provided to 30CES/CEIEC as requested.

3.13.9 Installation of Boilers, Hot Water Heaters, Furnaces, Process Heaters and Internal Combustion Engines

Contractor shall contact 30 CES/CEIEC prior to procurement to ensure selected boilers, water heaters, furnaces, process heaters and internal combustion engines comply with the most current emission standards, and greenhouse gas regulations.

3.13.10 Circuit Breakers, Puffer Switches, and Storage Containers with Sulphur Hexafluoride (SF6)

Contractor shall contact 30 CES/CEIEC and 30 CES/CEOFE prior to removing or installing equipment that contain SF6.

3.14 ABOVE GROUND STORAGE TANK (AST) MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: SBCAPCD rules and regulations; AFI 23-204, Organizational Fuel Tanks; AFI 32-7044, Storage Tank Environmental Compliance; 30 SWI 32-702, Environmental Management Air Emission Inventories; 30 SW Plans, 32-7044, Spill Prevention Control and Countermeasure Plan; 32-7041-A, Wastewater Management Plan; 32-7043-E, Recoverable and Waste Petroleum Products Management Plan; and 32-7086, Hazardous Materials Management Plan.

b. Installing, modifying, or removal: The Contractor must provide the following information to 30 CES/CEIE for approval:

(1) Contract and/or Civil Engineer project number and emergency point of contact

(2) Time period the AST is expected to be in operational use

(3) Size and type of the AST and type of material to be used in the AST

(4) Maps to include site location, include GPS information if available

(5) Information on secondary containment (capacity equal to or greater than the tank)

(6) Overfill protection features (alarm, automatic shut off system, and fill sump)

(7) Access and security of the AST and spill/release cleanup procedures

8) Spill Prevention Plan and Rainwater Release Plan for secondary containment system (Reference the 30 SW Plan 32-7041-A, Wastewater Management Plan, Appendix 11, Discharge to Grade Program and Characterization Form).

c. Spill Prevention Control and Countermeasure Plan (SPCC): The Contractor shall provide a site specific SPCC to the Contracting Officer through, 30 CES/CEIE, for any storage tank capacity to be used for activities on VAFB.

(1) Containers, tanks, or vessels with capacity of 55 gallons or more must be added to the SPCC Plan. All containers, tanks, and vessels must have secondary containment or double-walled.

(2) *Construction Sites or Temporary Tank Use*: Portable equipment with fuel tank 55 gallons or more must be double-walled or positioned on a secondary containment structure.

(3) *New Tank Installation or Replacement*: Tanks must be double-walled or a secondary containment structure must be constructed to contain 100 percent of the tank capacity.

(4) Piping: Any pipe required to connect the fuel tank to equipment such as a generator will require the installation of an anti-siphon valve.

(5) All oil-filled equipment including but limited to transforms, transmitters, elevators, cooking oil, mobile towers, hydraulic equipment must be added to the SPCC Plan.

d. Reporting: The Contractor shall comply with release or spill procedures and immediately report any releases per 30 SW Plan 32-4002-A, the Hazardous Materials (HAZMAT) Emergency Response Plan, Chapter 4, Response Functions, Section A, Initial Notification of Response Functions, and the 30 SW Plan 32-7044, SPCC Plan, Appendix 3, paragraph 9, Spill Response.

e. Submittals: The Contractor shall provide the following to the Contracting Officer for approval through 30 CES/CEIE prior to the start of any Storage Tank activities on VAFB.

(1) AST technical information

(2) 30 SW Form 160

3.15 UNDERGROUND STORAGE TANK (UST) MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: Clean Water Act; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); California Regional Water Quality Control Board; Santa Barbara County Air Pollution Control District rules and regulations; 30 SWI 32-702, Environmental Management Air Emission Inventories; AFI 23-204, Organizational Fuel Tanks; AFI 32-7044, Storage Tank Environmental Compliance; 30 SW Plans, 32-7044, Spill Prevention Control and Countermeasure Plan; 32-7041-A, Wastewater Management Plan; and 32-7086, Hazardous Materials Management Plan.

(1) USTs are permitted and must be coordinated before any action occurs.

(2) USTs are permitted with the SBCAPCD and the CUPA.

b. Coordination: Prior to installing, modifying, or removing a UST, the Contractor shall obtain approval from and provide required technical information to 30 CES/CEIE, Storage Tank Manager and Installation Restoration Manager.

3.15.1 SOIL CONTAMINATION MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: Clean Water Act; Resource Conservation and Recovery Act; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); California Health and Safety Codes; California Regional Water Quality Control Board; and the California Department of Toxic Substances Control.

b. Encountering Contaminated Soil and USTs: The Contractor shall report to 30 CES/CEIE any unidentified potential or actual contaminated soil, UST, associated UST piping, and oil-based soil beneath storage tanks. The Contractor shall characterize, through sampling, and dispose of the soil or UST and its parts. The Contractor shall provide sample results to prove that the contaminated soil was removed. The Contractor shall obtain government approval prior to backfilling all “clean” excavated areas with clean fill material. The Contractor shall immediately notify the

Contracting Officer of this situation. The Contractor shall take the appropriate actions to protect their personnel working around the area identified as potential or actual contaminated soil.

3.16 LANDSCAPING REQUIREMENTS

a. General: The Contractor shall comply with, but not limited to: the White House Memorandum, Environmentally and Economically Beneficial Practices on Federal Landscaping Grounds, 26 April 1994; AFI 32-7064, Integrated Natural Resources Management; Executive Order 13112; Vandenberg Facility Excellence Standards; and Vandenberg's Base Lands and Grounds Maintenance Management Plan. Refer to Natural Resources Conservation Service (NRCS) Specification for Range Planting 550A sections III, IV, V, and VI.

b. Restoration: The Contractor shall restore all landscape features disturbed during construction activities to the site's original or improved condition, as required.

c. Disturbed soil areas remaining upon completion of construction shall be permanently stabilized with native vegetation to prevent erosion due to wind and rain. It is recommended that a professional landscape contractor familiar with the local area be contracted to provide landscaping and maintenance services. It is recommended that seed and mulch be applied at the beginning of the rainy season (15 October – 30 April). Planting may take place outside of the rainy season if sufficient irrigation can take place to ensure establishment. If construction or demolition is completed during the dry season, and it is not feasible to water, disturbed soil areas shall be stabilized with temporary soil cover, such as certified compost, as needed to prevent erosion and meet Construction General Permit requirements. Seeding then must take place as close to the beginning of the rainy season as possible.

   Contractor's erosion control designer shall conduct a soil assessment to properly determine the condition of the soil and determine appropriate soil amendments if needed for successful establishment of California native seeds and vegetation.

   Soils test will be taken to analyze macro and micro nutrients, pH and organic matter content to determine fertilizer and soil amendment needs. Fertilizer and pH modifier shall be added as needed to establish vegetation and ensure its success. Fine grade compost certified by the US Composting Council (USCC), and that has undergone macro and micro nutrient testing, may also be used in the proper proportions indicated by the soil testing. Native plants must not be over-fertilized. Seeds will be chosen based on the soils and their endemic species as described in the NRCS Ecological Site Description for the area and as approved by 30 CES/CEIEA. Native plants chosen must also be compatible with the texture, pH and chemistry of the soil to be planted. Native plant lists and seeding rates will be developed by Contractor and submitted to 30CES/CEIEA for approval.

   The soil surface shall be loosened and properly prepared, or topsoil added to a sufficient depth to allow for seed germination as approved by the 30 CES/CEPM Project Manager. Seeding may be conducted by band seeding and fertilizing with grain drill, drilling with special range drills including no-till drills, or by broadcasting using a calibrated broadcast seeder or aircraft with appropriate calibrated machinery designed to evenly distribute seed. If a no-till drill is used, drill directly into existing annual plant community after excess mulch has been removed. If a drill is not used, proper seed bed preparation will be conducted by lightly disking or harrowing to loosen the top 1" of soil, and broadcast the seed. Sites with

compacted surfaces will be disked or ripped 4-16 inches deep prior to seeding to prepare a proper seedbed. Hydro-seeding will be acceptable on slopes of 33.33% or greater only.

d. When the construction activity is covered by the Construction General Permit (Water Quality Order No 2009-0009-DWQ) refer to Section 3.4.2 and the Construction General Permit for Conditions for Termination of Coverage.

e. In unimproved areas, the seed mix shall be submitted to and approved by 30 CES/CEIEA Natural Resources Section. The seed mix shall include Triticale or other sterile annual grass to serve as a nurse crop and California native vegetation to provide erosion control. The Contractor shall ensure that any local or imported soil used shall be free of weed seeds. If local topsoil is salvaged and re-used, methods to successfully remove weed seeds shall be specified. Local topsoil shall be capable of sustaining healthy plant life. Any imported topsoil shall consist of fertile, friable soil, with similar texture, chemical and organic matter content characteristics of surrounding soil types. It shall be obtained from well-drained arable land and shall be reasonably free from subsoil, refuse, roots, stones larger than one inch in size, noxious seeds, sticks, brush, litter and other deleterious substances. Imported topsoil shall be capable of sustaining healthy plant life.

f. The soil surface shall be loosened and properly prepared, or topsoil added to a sufficient depth to allow for seed germination. The depth of loose soil is 6 inches at a minimum and up to 1 meter (39 inches) if acceptable to the 30 CES/CEPM Project Manager.

g. Certified weed-free wood or straw mulch shall be applied at a minimum rate of 3,000 lbs per acre covering 80% of the soil surface. Paper mulch shall not be used.

h. The Contractor shall adequately water seeded areas to achieve germination and permanent vegetation establishment. Certain native plants must not be over irrigated. Watering by truck or temporary irrigation system shall not cause erosion or disturb seed application.

i. Seed applied during the rainy season (15 November – 30 April) which has failed to germinate after 21 days shall be re-seeded and mulched. Seed applied during the dry season (May – October) which has failed to germinate after 45 days shall be re-seeded and mulched. Seed applied during the dry season must be irrigated until cover reaches an even minimum height of 6 inches. Please confirm minimum height requirements with Water Resource Manager and Natural Resources of 30 CES/CEI.

j. Erosion in seeded areas shall be repaired as soon as possible.

k. Temporary barriers shall be installed to prevent vehicles from damaging seeded areas.

l. Water Efficient Landscaping: Contractor and government shall select drought-tolerant plants.

3.17 GREEN PROCUREMENT PROGRAM (GPP)

a. General: The Contractor shall comply with the Government's Green Procurement Program (GPP), formerly known as Affirmative Procurement (AP), requirements include, but are not limited to: Section 6002, Federal Procurement, of the Resource Conservation and Recovery Act; (RCRA); Executive Order (EO) 13423, Strengthening Federal Environmental, Energy and Transportation Management; EO 13150, Federal Workforce Transportation; EO 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use; EO 13221, Energy Efficient Standby Power Devices; AFI 32-7080, Compliance Assurance and

Pollution Prevention; and 30 SW Plans, 32-7080, Green Procurement Program (GPP) Plan; and 32-7042, Solid Waste Management Plan.

b. GPP: The Contractor's green procurement program shall use specified Environmental Protection Agency's Comprehensive Procurement Guidelines (EPA-CPG, http://www.epa.gov/cpg/products) materials with recycled and recovered content as the minimum standard. The Contractor shall consider other green materials and products not listed, but commonly used in industry outside of the Government as a means of further reducing hazardous waste and solid waste. The Contractor shall ensure these materials and products meet the requirements of the specifications, must not delay the progress of construction, and must not be cost-prohibitive. The Government's Green Procurement programs are mandated to use recycled and recovered materials and products identified in the EPA-CPG. The Contractor shall use the Recovered Materials Determination Form (RMDF) to document the products that fall into the Recycled Content Product categories.

c. Mandatory Products: Contractors shall use products made from biobased materials, rapidly renewable materials, and certified wood.

d. Contracts over $100,000: The Contractor, on completion of the contract, shall estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of post-consumer material content, per FAR Clause 52.223-9.

e. Submittals: The Contractor shall provide the following to the Contracting Officer for any project on VAFB that contains EPA-CPG items.

(1) A Recovered Materials Determination Form (RMDF) (paragraph b).

(2) An Estimate of Percentage of Recovered Material Content for EPA-Designated Products (paragraph d).

3.18 ENERGY USAGE MANAGEMENT

a. General: The Contractor shall comply with, but not limited to: the Energy Policy Act (EPACT), along with its amendments to the National Energy Conservation Policy Act, as specified in Subtitle F of EPACT 1992 and EPACT 2005; Executive Order (EO) 13423, Strengthening Federal Environmental, Energy and Transportation Management; EO 13221, "Energy Efficient Standby Power Devices; 30 SW Plans 32-7080, Green Procurement Program (GPP) Plan; 32-7042, Solid Waste Management Plan; and the Vandenberg Energy Management Plan.

b. Optimize Energy Performance: Use Energy-Efficient Products listed under the Energy Star® and the Federal Energy Management Program (FEMP) Energy-Efficient Products lists, including appliances and equipment used in building construction and renovation projects, computers, peripherals, fax machines and Low Stand-by Power items. Also, generating power from renewable resources must also be implemented, as applicable to the program requirements. Product information and sources of supply are available at the following links:

(1) Energy-efficient products and services: Energy Star®, Low Standby Power and Federal Energy Management Program (FEMP) Energy Efficiency

(2) Renewable energy sources: DOE Energy Efficiency and Renewable Energy.

3.19 IRP and MMRP

a. IRP: In 1980, DOD established an environmental program in response to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This program established the Installation Restoration Program (IRP) to investigate and clean up hazardous material disposal sites at DOD installations. There are 25 Active IRP sites and it is currently under investigation by the IRP contractor. In June 1993, VAFB initiated a basewide preliminary assessment (PA) and site investigation (SI) under the Installation Restoration Program (IRP). The final PA identified 168Areas of Concern (AOCs) where hazardous substances may have been released. The PA also identified 666 Areas of Interest (AOIs). VAFB defined an AOI as an area with the possible use or presence of a potentially hazardous substance. Majority of these AOIs and AOCs have been investigated and closed with the State agencies. Prior to any work the contractor must submit an AF Form 332 BCE Work Request to the coordinating agencies. Additionally the AF Form 103 process will be followed for clearance of all sites. The contractor is responsible to protect all the groundwater monitoring wells, vapor probes and soil Vapor extraction system at all IRP sites.

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MMRP: Vandenberg AFB began operations in 1941 as Camp Cooke, and was home to artillery, infantry, and armor training activities through the mid-1950s. Portions of the installation were designated as firing points, impact areas, or safety fans for various types of weapons. As a result, there is risk of potential unexploded ordnance (UXO) within these areas. Contractor personnel performing work within these areas must complete an annual UXO awareness briefing, about an hour in duration and usually offered weekly. Ground-disturbing activities will usually require the contractor to provide a Level III UXO Technician to first scan the area for UXO, and to avoid any anomalies encountered. Although maps with neatly-drawn lines show the boundaries of former weapons training areas, there is potential to encounter UXO outside of those boundaries.

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