

**DRAFT ENVIRONMENTAL ASSESSMENT  
FOR THE  
*BEALE WAPA INTERCONNECTION PROJECT***

PREPARED FOR:

**Department of Energy, Western Area Power Administration  
U.S. Air Force, Beale Air Force Base**

*January 2020*

Letters or other written comments provided may be published in the Final Environmental Assessment (EA). As required by law, substantive comments will be addressed in the Final EA and made available to the public. Any personal information provided will be kept confidential. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the Final EA.

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**EXECUTIVE SUMMARY**

The U.S. Air Force, Beale Air Force Base (AFB), in response to a 2013 Electric Power Resilience memorandum from the Department of Defense, is working to build a resilient power network to support missions on Beale AFB. Currently, Beale AFB is provided Western Area Power Administration (WAPA) electricity via one Pacific Gas and Electric Company (PG&E) pole line and has requested interconnection with WAPA's Cottonwood-Roseville transmission line located about 6 miles west of Beale AFB. This interconnection, with the existing power via the PG&E line, would provide Beale AFB a redundant supply of energy, reducing the risk of interruptions to missions during power outages or emergencies.

WAPA and Beale AFB are joint lead agencies on the Project, each constructing and owning portions of the interconnection line, and each with separate Decisions and permits to issue relevant to the Project. WAPA and Beale AFB shared consultation responsibilities on this Project, with WAPA leading National Historic Preservation Act Section 106 consultation and Beale AFB leading Endangered Species Act Section 7 consultation (see Section 1.3, Cooperating Agency and Intergovernmental Coordination/Consultation).

In 2016, Beale AFB requested interconnection with WAPA's Cottonwood-Roseville line and proposed two alternative routes for consideration. A third alternative was added to consideration as a result of public scoping. As Project planning progressed, WAPA and Beale AFB jointly decided their Preferred Alternative is the route introduced during scoping (the Northern B Alternative). The original two routes are included in analysis as they remain feasible alternatives (the Northern A and Southern Alternatives).

The Project includes an electric transmission line consisting of overhead 230-kilovolt (kV) structures and underground 60-kV lines. The line would be stepped down at a proposed new substation located on Beale AFB and would terminate at an existing substation on Beale AFB. These Project components are consistent across all action alternatives.

This Environmental Assessment (EA) was prepared to satisfy the National Environmental Policy Act. The purpose of the EA is to provide WAPA and Beale AFB sufficient information and analysis for decision-makers to make a significance determination and choose to select an action alternative or the No Action Alternative or to develop an Environmental Impact Statement if significance thresholds are met. In an effort to streamline permitting processes, this EA also includes California Environmental Quality Act (CEQA) elements (e.g., significance thresholds, completed checklist as Appendix A) to assist WAPA and Beale comply with CEQA should that be required in future Project planning and engineering.

**Recommended Findings**

Summaries of the recommended impact findings for all resources considered (see Section 3.1, Scope of the Analysis) are listed below. The qualifiers used (e.g., short-term, minor, etc.) are defined in the introduction to Chapter 4, Environmental Consequences.

- *Aesthetics/Visual Resources*: no impact to scenic viewpoints or highways; long-term minor impacts to residents in the immediate Proposed Action area.
- *Agriculture and Forestry Resources*: no impact to forestland; long-term negligible impacts to agricultural use, short-term moderate during construction; long-term minor impacts to farming operations.

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- *Air Quality, Greenhouse Gas Emissions, and Climate Change*: short-term and negligible to no impacts during construction; long-term negligible to no impacts during operation; short-term negligible to no impacts to greenhouse gas emissions and climate change.
- *Biological Resources*: short-term and long-term minor to negligible impacts to vegetation communities and plants; short-term moderate to negligible impacts to wildlife.
- *Cultural, Tribal, and Paleontological Resources*: no impacts.
- *Geology/Soils*: short-term (soil disturbance during construction) and long-term (permanent facility placement) minor impacts to geology and soils; no impact to geological hazards.
- *Hydrology/Water Quality*: no impacts to floodplains; no impact to groundwater or water quality; short-term and negligible impacts to surface water and wetlands due to temporary disturbance during construction.
- *Land Use and Planning, AICUZ Compatibility, Population Growth, and Recreation*: no impacts to land use; no impacts to population growth; short-term negligible to no impacts to recreation.
- *Noise*: short-term negligible to no impacts from noise due to construction activities; long-term negligible to no impacts during operation.
- *Public Health and Safety and Hazardous Material*: no impact to from hazardous materials; short-term negligible impact from wildfire risk during construction; long-term negligible to no impacts from electromagnetic field exposure.
- *Transportation/Traffic*: short-term minor impacts to transportation and traffic during construction activities.
- *Utilities/Service System*: no impact to water supply; no impact to wastewater facilities; long-term beneficial impacts to storm drainage from upgraded culverts; short-term negligible impacts from construction-related stormwater runoff; long-term beneficial impacts to the Beale AFB electrical and communications systems; short-term negligible to no impacts to solid waste management.

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**GLOSSARY OF ABBREVIATIONS AND ACRONYMS**

AB 52	Assembly Bill 52
ACAM	Air Conformity Applicability Model
ACSR	Aluminum conductor steel reinforced
AE-80	Agricultural Exclusive 80
AFB	Air Force Base
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
AMM	Avoidance and Minimization Measures
APE	Area of potential effects
AQMD	Air quality management district
BCE	Base Civil Engineer
bgs	Below ground surface
BMP	Best management practices
CAA	Clean Air Act
Cal/OSHA	California Occupational Health and Safety Administration
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CRPR	California Rare Plant Ranks
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2e</sub>	Carbon dioxide equivalent
CWA	Clean Water Act of 1977
dB	Decibel
dba	A-weighting
DOC	Department of Conservation
DoD	Department of Defense
EA	Environmental Assessment
EDC	Environmental Design Criteria
EIR	Environmental Impact Report

## DRAFT ENVIRONMENTAL ASSESSMENT

### Environmental Assessment Acronyms and Abbreviations

### *Beale WAPA Interconnection Project* Yuba County, California

EMF	Electric and magnetic field
EO	Executive Order
EPA	Environmental Protection Agency
ERP	Electric Power Resilience
ESA	Endangered Species Act
FMMP	Farmland Mapping and Monitoring Program
FRAQMD	Feather River Air Quality Management District
GHG	Greenhouse gas
GRI	General Requirements for Interconnection
HUD	U.S. Department of Housing and Urban Development
ICP	Integrated Contingency Plan
IDP	Installation Development Plan
ISR	Indirect source review
ISWMP	Integrated Solid Waste Management Plan
kcmil	Circular mills
kV	Kilovolt
L <sub>dn</sub>	Average sound level (in dBA) occurring over a 24-hour day-night period
Leq	Equivalent sound level over a given time period
L <sub>max</sub>	Maximum decibel noise level
mgd	Million gallons per day
MW	Megawatt
NAAQS	National Ambient Air Quality Standard
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act of 1966
NOI	Notice of Intent
NO <sub>x</sub>	Nitrogen oxides
NO <sub>2</sub>	Nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NR	Natural Resources
NRHP	National Register of Historic Places
NRM	Natural resources manager
O&M	Operations and maintenance
O <sub>3</sub>	Ozone
pB	Lead
PCM	Project Conservation Measure
PGA	Peak ground acceleration
PG&E	Pacific Gas and Electric Company
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in diameter

**DRAFT ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Acronyms and Abbreviations**

*Beale WAPA Interconnection Project  
Yuba County, California*

PM <sub>10</sub>	Particulate matter less than 10 microns in diameter
POW	Prisoner of war
PRC	Public Resources Code
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl chloride
ROW	Right-of-way
RWQCB	Regional Water Quality Control Board
SF <sub>6</sub>	Sulfur hexafluoride
SHPO	State Historic Preservation Officer
SOP	Standard Operating Procedure
SO <sub>x</sub>	Sulfur oxide
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
TCP	Traditional cultural property
tpy	Tons per year
TRLIA	Three Rivers Levee Improvement Authority
TSP	Tubular steel pole
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USFWS	U.S. Fish and Wildlife Service
WAPA	Western Area Power Administration
WOTUS	Waters of the U.S.

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## 1 1.0 INTRODUCTION

2 The U.S. Air Force (USAF), through Beale Air Force Base (AFB), herein Beale AFB, requests  
3 that the Western Area Power Administration (WAPA) provide interconnection to WAPA's  
4 Cottonwood-Roseville transmission line in Yuba County, California. The Project, referred to as  
5 the Beale WAPA Interconnection Project (Project), would include a new 230-kilovolt (kV)/60-kV  
6 transmission line that would extend approximately 5 miles from its connection point at the  
7 existing WAPA Cottonwood-Roseville transmission line located east of Yuba City and would  
8 terminate on Beale AFB at an existing substation.

9 Project facilities would include a new 230-kV overhead transmission line, a new substation  
10 located on Beale AFB, and an underground 60-kV line. WAPA would construct, own, operate,  
11 and maintain the 230-kV overhead portion of the Project up to and including the new substation;  
12 Beale AFB would construct, own, operate, and maintain the 60-kV portion up to and including  
13 the existing substation where the Project terminates. Three alternative alignments are being  
14 considered: the Northern A Alternative, Northern B Alternative, and Southern Alternative (see  
15 **Figure 2-1**, Project Alternatives Map). Chapter 2 describes these alternative alignments and  
16 how the agencies identified and narrowed a broader range of alternatives down to these three  
17 options. The Northern B Alternative has been determined by WAPA and Beale AFB to be the  
18 Preferred Alternative for the Project, as described in Chapter 2.

19 This Environmental Assessment (EA) has been prepared to support Beale AFB's  
20 interconnection request to WAPA in compliance with the National Environmental Policy Act  
21 (NEPA). WAPA and Beale are joint leads for this Project under NEPA, and this EA was written  
22 by a third-party NEPA preparer ("consultant") in coordination with both agencies to evaluate the  
23 possible impacts to the environment from all alternatives. This EA recommends conclusions on  
24 the significance of these impacts; for the purposes of this EA, the term "impacts" and "effects"  
25 are synonymous. Should California Environmental Quality Act (CEQA) compliance be required  
26 during the permitting process, this EA has also been prepared to satisfy CEQA requirements.  
27 The CEQA Checklist is included as **Appendix A**.

### 28 1.1 PURPOSE AND NEED FOR THE PROJECT

#### 29 1.1.1 Beale AFB Purpose and Need

30 The Department of Defense (DoD) issued an Electric Power Resilience (ERP) memorandum in  
31 December 2013 that documented key resilience policies and requested that DoD installations  
32 adhere to them. It directed an ERP review to examine installation adherence to key resilience  
33 policies, identify gaps in policy, and define future energy resilience requirements.

34 In response to this directive, Beale AFB began planning to repair aged and outdated electrical  
35 infrastructure following the components defined in satisfying critical energy/power supply  
36 requirements. Currently, all electricity to Beale AFB is WAPA power delivered via Pacific Gas  
37 and Electric Company (PG&E) infrastructure; specifically, PG&E is contracted to deliver 25  
38 megawatts (MW) to Beale AFB through two existing PG&E lines. As part of the planning  
39 activities in response to the DoD's memorandum, it was determined that Beale AFB is expected  
40 to require 38 MW by 2022 (personal communication Kemp 2019). Additionally, communications  
41 between Beale AFB and PG&E revealed that in the event of a power outage PG&E would  
42 prioritize first responders and other institutions (e.g., hospitals) before Beale AFB.

43 For these reasons, Beale AFB is requesting an interconnection with WAPA's existing  
44 Cottonwood-Roseville line to provide Beale AFB with an electricity supply that would support  
45 their current and future missions.

#### 46 **1.1.2 WAPA Purpose and Need**

47 WAPA's purpose and need is to consider and respond to Beale AFB's interconnection request  
48 submitted in accordance with WAPA's General Requirements for Interconnection (GRI). WAPA  
49 is responsible for receiving and processing interconnection requests received under the GRI. In  
50 processing interconnection requests, WAPA must ensure that existing reliability and service is  
51 not degraded. WAPA provides transmission and system studies to ensure that system reliability  
52 and service to existing customers are not adversely affected by new interconnections. These  
53 studies also identify system upgrades or additions necessary to accommodate the proposed  
54 request and address whether the upgrades or additions are within the proposed Project scope.  
55 The results of the System Impact Study Report dated April 2017 indicated that no mitigation or  
56 system improvement of the existing system is required to accommodate Beale AFB's request.

### 57 **1.2 DECISION TO BE MADE**

#### 58 **1.2.1 Beale AFB Decision to be Made**

59 Beale AFB is the Project proponent and joint-lead agency under NEPA. After the appropriate  
60 environmental analysis has been completed, the USAF would then decide whether to proceed  
61 with the Project and request final funding. Beale AFB would then work with WAPA on  
62 interconnection design/engineering, construction, installation, and operations and maintenance  
63 (O&M).

#### 64 **1.2.2 WAPA Decision to be Made**

65 WAPA would respond to Beale's interconnection request and work with Beale AFB to choose  
66 the final route where Project components would be built. In reviewing this interconnection  
67 request, WAPA must ensure that its existing reliability and service is not degraded. WAPA's  
68 approval of this interconnection would enable the proposed Project to proceed. Based on the  
69 analysis presented in this EA, WAPA would determine whether to issue a Finding of No  
70 Significant Impact for the Project's Preferred Alternative.

### 71 **1.3 COOPERATING AGENCY AND INTERGOVERNMENTAL COORDINATION/ 72 CONSULTATIONS**

#### 73 **1.3.1 Interagency and Intergovernmental Coordination and Consultations**

74 Because the Project crosses only private and Beale AFB land, no other land management  
75 agencies were invited to cooperate for this EA. A total of 4 federal, 9 state, and 16 local  
76 agencies were notified and invited to provide comments during the scoping period of the  
77 Project. The details of agency scoping efforts, including a list of agencies contacted, copies of  
78 correspondence, and the comments received, are described in the Scoping Summary Report  
79 (**Appendix B**).

80 WAPA and Beale AFB, as joint leads, are sharing consultation responsibilities for the Project.  
81 Pursuant to the federal Endangered Species Act of 1973 (ESA), Beale AFB is leading

82 consultation efforts with the U.S. Fish and Wildlife Service (USFWS) on potential impacts from  
83 the Project to threatened and endangered species. Pursuant to the Clean Water Act of 1977  
84 (CWA), WAPA notified the California State Regional Water Quality Control Board (RWQCB)  
85 regarding potential impacts to state waters. The RWQCB would engage with the Project if an  
86 application for a Section 401 Certification is required. WAPA would apply for a CWA Section  
87 404 permit from the U.S. Army Corps of Engineers (USACE) and a CWA Section 401 permit  
88 (Water Quality Certification) from the RWQCB should the Project impact wetlands or water  
89 features, as informed by the completed environmental analysis and final engineering.

## 90 **1.3.2 National Historic Preservation Act and Tribal Consultations**

### 91 *1.3.2.1 Regulatory Framework*

92 A variety of federal statutes specifically address cultural resources. These statutes generally  
93 become applicable to specific projects if the project involves: 1) a federal agency license,  
94 permit, approval, or funding and/or if it 2) crosses federal lands. The cornerstone of modern  
95 heritage preservation legislation is the National Historic Preservation Act of 1966 (NHPA), as  
96 amended. The NHPA defines historic properties as districts, sites, buildings, structures, or  
97 objects included in, or eligible for inclusion in, the National Register of Historic Places (NRHP)  
98 as well as artifacts, records, and remains related to such properties. According to 36 Code of  
99 Federal Regulations (CFR) Part 800, Protection of Historic Properties (amended 8-5-2004) are  
100 the implementing regulations for compliance with Section 106 and define key procedures for  
101 consulting with State Historic Preservation Officers (SHPOs), the Advisory Council on Historic  
102 Preservation, and other interested parties to ensure that historic properties are duly considered  
103 when federal projects are planned and implemented. The proposed Project is considered a  
104 federal undertaking; therefore, it is subject to NHPA regulations and review.

105 A number of less relevant federal statutes address cultural and tribal resources. These are: the  
106 Antiquities Act of 1906 (16 USC § 431 et seq.); Historic Sites Act of 1935 (PL 74-292; 49 Stat.  
107 666; 16 USC 461-467); NEPA; Executive Order (EO) No. 11593; American Indian Religious  
108 Freedom Act of 1978; Archaeological Resources Protection Act of 1979, as amended (PL 96-  
109 95: 93 Stat 721; 16 USC 470 aa et seq.); Native American Graves Protection and Repatriation  
110 Act, Pub. L. 101-601, 25 U.S.C. 3001 et seq., 104 Stat. 3048; EO 13007 (Indian Sacred Sites);  
111 and EO 13175.

112 As part of WAPA's environmental compliance review, it is required under Section 106 of the  
113 NHPA (54 USC 300101 et seq.) to take into account the effects its proposed construction  
114 activities would have on historic properties included in or eligible for listing on the NRHP. As  
115 federal agencies, WAPA and Beale AFB must follow the implementing regulations of Section  
116 106 of the NHPA as found in 36 CFR 800. These regulations describe the steps that federal  
117 agencies must take to identify and evaluate historic properties and assess the potential of the  
118 undertaking (in this case, new interconnecting transmission line) on such properties, and under  
119 these regulations, they must take into consideration any adverse effects of the undertaking on  
120 historic properties by implementing avoidance or mitigation measures. While both WAPA and  
121 Beale AFB have the same NHPA responsibilities as federal agencies, WAPA has been  
122 designated as Lead Federal Agency for the purposes of Section 106 compliance.

### 123 *State Regulations*

124 If CEQA analysis is triggered for the Project, the following California state laws are applicable:

- 125       • The California Health and Safety Code (Section 7050.5) and the California Public  
126       Resources Code (PRC) (Section 5097.98) covers any human remains recognized in any  
127       location other than in a dedicated cemetery.
- 128       • Paleontological resources are protected under CEQA [Article 1, Section 15002(a)(3)],  
129       the PRC (5097.5) Section 50987.5, and the California Code of Regulations (CCR) (Title  
130       14, Division 3, Chapter 1) Section 4307.

#### 131 *Tribal Consultation Regulations*

132 EO 13175, Consultation and Coordination with Indian Tribal Governments (6 November 2000),  
133 directs federal agencies to coordinate and consult with Native American tribal governments  
134 whose interests might be directly and substantially affected by activities on federally  
135 administered lands. To comply with legal mandates, federally recognized tribes that are  
136 affiliated historically with the Beale AFB geographic region are invited to consult on all proposed  
137 undertakings that have a potential to affect properties of cultural, historical, or religious  
138 significance to the tribes. The tribal coordination process is distinct from NEPA consultation or  
139 from the Interagency/Intergovernmental Coordination for Environmental Planning processes and  
140 requires separate notification to all relevant tribes. The timelines for tribal consultation are also  
141 distinct from those of intergovernmental consultations.

#### 142 *Paleontological Resources Regulations*

143 Regulations are listed for Paleontological Resources because it is described and analyzed in  
144 Chapters 3 and 4 as a sub-section under Cultural and Tribal Resources. Protection of  
145 paleontological resources within the Project is regulated by the Antiquities Act of 1906 (16 USC  
146 431-433), the Archaeological and Paleontological Salvage Act (23 USC 305), the NHPA (54  
147 USC 300101 et. Seq), and NEPA (42 USC 4321).

#### 148 *1.3.2.2 Lead Section 106 Agency*

149 Pursuant to Section 106 of the NHPA, WAPA is leading consultations with Native American  
150 tribes and the SHPO. Consultation was carried out and continues to be ongoing with 13 tribes.  
151 This list of tribes was obtained from the Native American Heritage Commission and from Beale  
152 AFB. Additional details about results of tribal consultation can be found in Section 3.6, Cultural  
153 and Tribal, and Paleontological Resources Affected Environment.

### 154 **1.4 PUBLIC SCOPING**

155 The Project included two rounds of scoping. The initial round of scoping occurred December  
156 2017/January 2018 and included two Project route alternatives. As a result of public and  
157 landowner feedback during scoping, and more information obtained regarding natural resources  
158 in the area, a third alternative was added to the Project, and scoping was reinitiated in July  
159 2018/August 2018 to inform the public of the newly added alternative. The Scoping Summary  
160 Report is included in **Appendix B** and contains a description of public outreach methods, details  
161 on public meetings, and a full list of comments received during both scoping periods.



162 **2.0 PROJECT DESCRIPTION**

163 The Project includes three action alternatives: the Northern A Alternative, Northern B  
164 Alternative, and Southern Alternative. The Northern B Alternative, which is also the WAPA and  
165 Beale AFB Preferred Alternative, was identified as a result of public scoping.

166 **2.1 PROJECT LOCATION**

167 The Project area comprises all action alternatives, located within and extending west from Beale  
168 AFB, which is located approximately 8 miles east of Yuba City, California. Specifically, it is  
169 located within Section 13 of Township 15 North, Range 4 East, and Section 18 of Township 15  
170 North and Range 5 East. The interconnection line, for all action alternatives, traverses generally  
171 east-to-west from its interconnection point with WAPA's Cottonwood-Roseville transmission line  
172 west into Beale AFB. **Figure 2-1** is a map of the Project area, including all action alternatives.

173 The specific right-of-way (ROW) would be defined after WAPA and Beale AFB issue final  
174 decisions on their preferred route. This EA evaluates potential impacts to Project alternative  
175 corridors, rather than to specific Project facility sites; these study corridors are wider than what  
176 the final ROW would be in order to account for areas needed for construction.

177 **2.2 PROJECT DESIGN FEATURES**

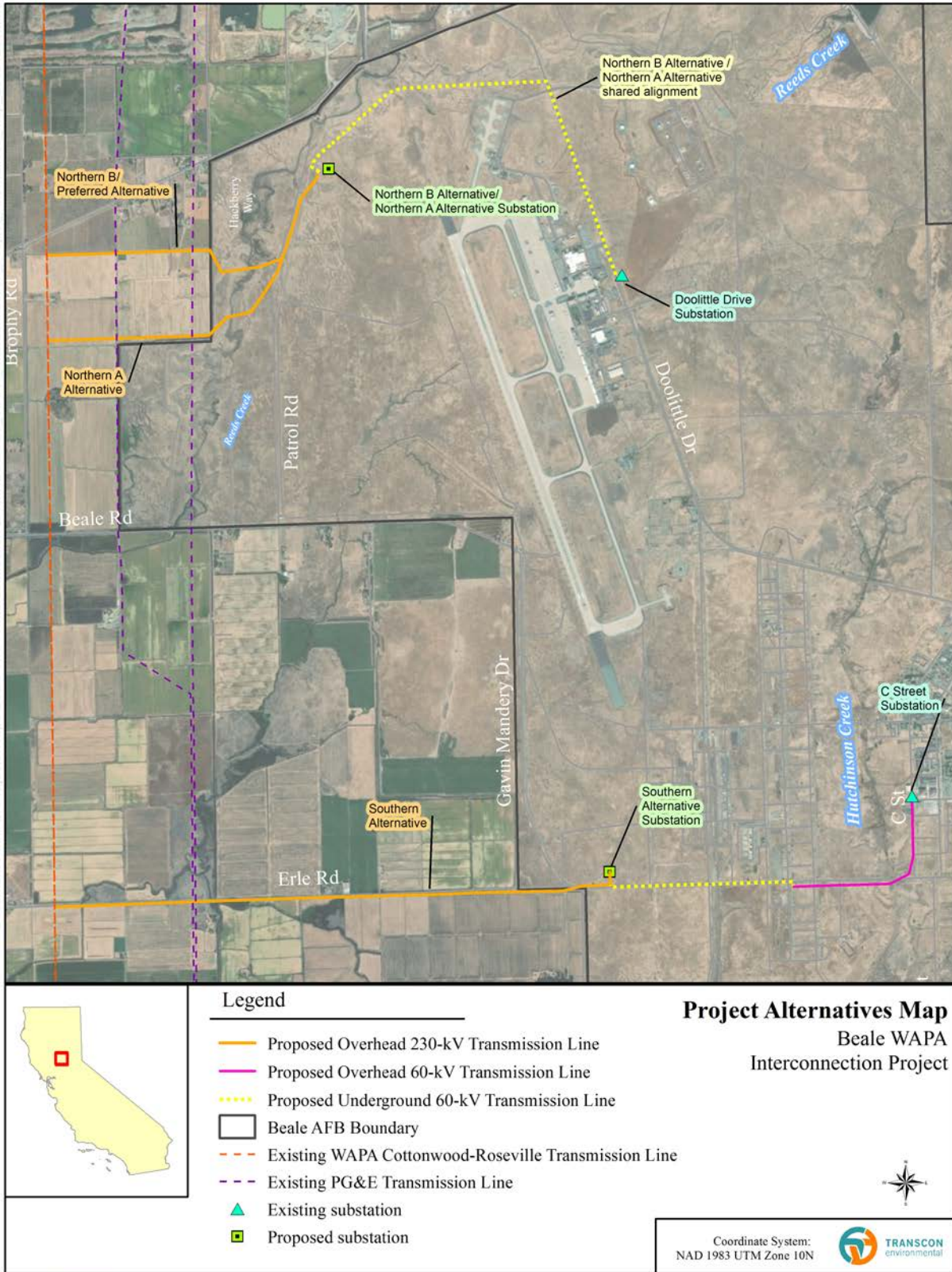
178 Beale AFB and WAPA have worked to design all Project alternatives to avoid wetlands and  
179 endangered species habitat to the extent possible and to work around Beale AFB infrastructure  
180 and flight/radar requirements. The proposed Project has also been designed to take advantage  
181 of upland areas that do not provide habitat for threatened or endangered species. These  
182 considerations were taken into account since the beginning of Beale's planning phase, prior to  
183 requesting interconnection with WAPA's existing line.

184 Final engineering is not expected to be complete for the Project prior to issuance of the Final  
185 EA. Specific structures would be located in areas to limit impacts to wetlands. Disturbance  
186 acreages for all action alternatives are included **Appendix C** and represent the maximum  
187 needed for typical WAPA standard facilities and operations.

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Figure 2-1. Project Alternatives Map

191 **2.3 ACTION ALTERNATIVES**

192 After analysis of 15 potential routes (see Section 2.5, Alternative Eliminated from Further  
193 Consideration), Beale AFB proposed two alternative alignments to WAPA for the  
194 interconnection line: the Northern A Alternative and the Southern Alternative. As a result of  
195 public scoping and additional data collection, the Northern B Alternative was added for  
196 consideration. As analysis of the alternatives continued, WAPA and Beale AFB agreed that the  
197 Northern B Alternative is their Preferred Alternative, but that the EA shall consider impacts from  
198 all alternatives equally.

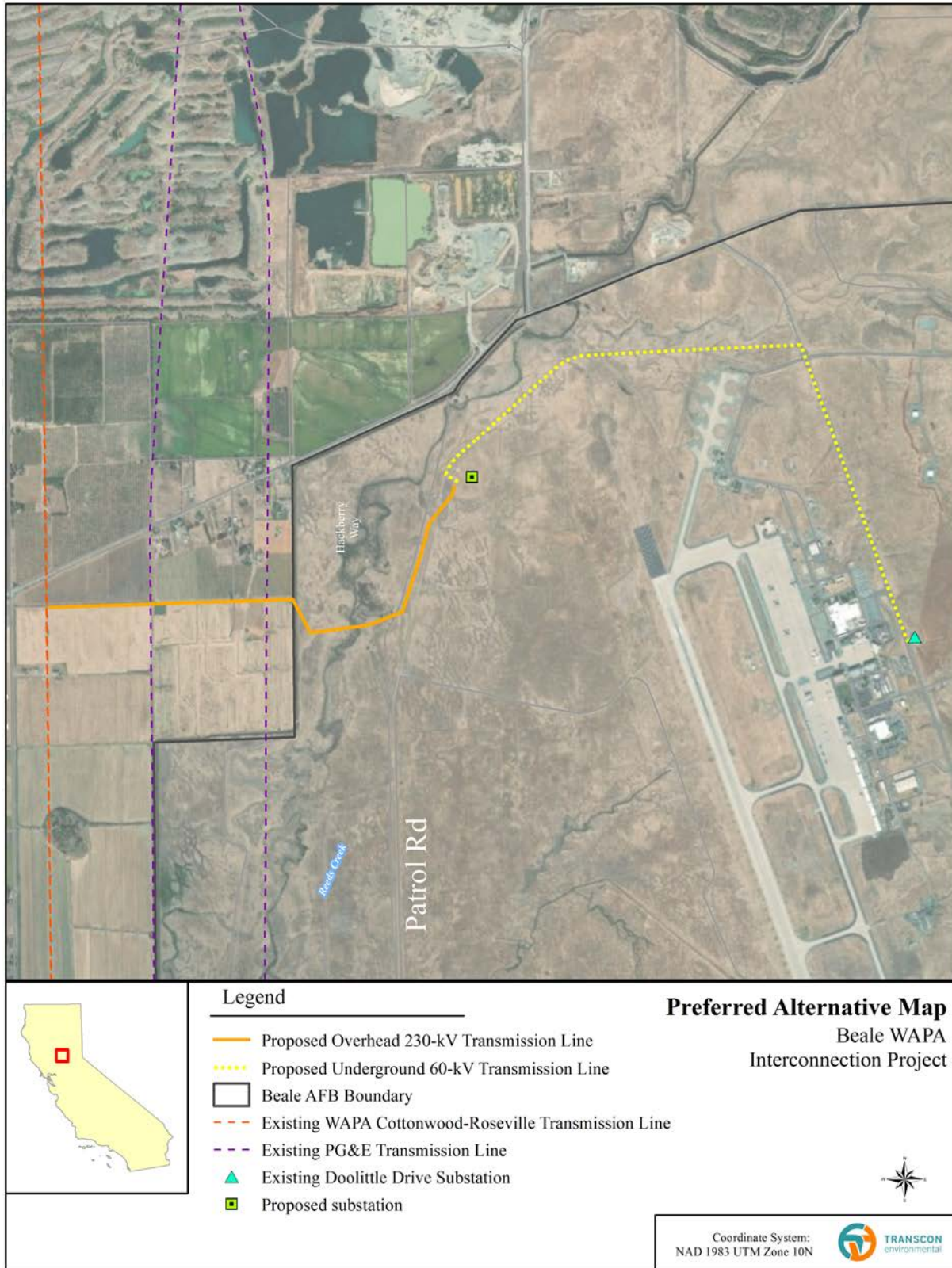
199 Project facilities would be similar for all action alternatives, including overhead aerial lines, the  
200 crossing of two existing PG&E transmission lines, a new substation on Beale AFB, underground  
201 60-kV lines on Beale AFB, and a terminus at an existing substation on Beale AFB. Action  
202 alternatives would be comprised of similar structures built using the same construction methods;  
203 the only differences between the action alternatives is their location and configuration of  
204 overhead and underground facilities, as described below.

205 **2.3.1 Preferred Alternative (Northern B Alternative)**

206 The Preferred Alternative, also referred to as the Northern B Alternative, totals approximately  
207 4.3 miles of transmission line; approximately 0.9 mile located off Beale AFB and 3.4 miles on  
208 Beale AFB. It would consist of approximately 1.8 miles of overhead installation (0.9 mile off  
209 Beale AFB and 0.9 mile on Beale AFB) and 2.5 miles of underground installation (all within  
210 Beale AFB boundaries).

211 The Preferred Alternative alignment would begin at its interconnection point perpendicular to the  
212 existing Cottonwood-Roseville line; overhead double-circuit 230-kV lines would continue in a  
213 nearly straight east-to-west line following existing agricultural dirt roads up to the westernmost  
214 edge of Beale AFB. Portions of the line located off Beale AFB boundaries are bordered by  
215 agricultural fields to the north and south. Once on Beale AFB, the alignment would traverse flat,  
216 open grasslands interspersed with seasonal wetlands (i.e., vernal pools), curving to avoid  
217 aquatic resources (see Section 2.2, Project Design Features), existing infrastructure, and  
218 runway clearances. The transmission line continues as 230-kV overhead until its connection  
219 with a proposed new substation located along Patrol Road. The proposed new substation  
220 would step down the voltage to 60-kV, then the line would be routed underground in accordance  
221 with Beale's design and construction. The underground portion of the alignment curves  
222 northeast before turning southeast under Doolittle Drive and terminating at the existing Doolittle  
223 Drive Substation. These components are displayed on **Figure 2-2**. Specific Project facilities  
224 and construction methods are described below.

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Figure 2-2. Preferred Alternative Overview Map

228 2.3.1.1 Overhead Facilities and Construction

## 229 230-kV and 60-kV Overhead Facilities

230 The 230-kV overhead portions of the Preferred Alternative would be built on double-circuit  
231 monopoles or single-circuit H-frame steel poles or equivalent, depending on final engineering.  
232 Disturbance calculations in this EA (**Appendix C**) assume the largest possible disturbance (i.e.,  
233 H-frames), but specifics for other typical structures that may be used on this Project are  
234 described below.

235 The double-circuit delta configuration monopoles would range between 72 and 85 feet tall on  
236 Beale AFB (**Figure 2-3**), 80 and 190 feet tall off Beale AFB (**Figure 2-4**), and have up to a 40-  
237 foot embedment depth. Structure foundations would be direct embed or formed concrete  
238 measuring up to 7 feet diameter at each pole base, which would be permanently disturbed per  
239 monopole structure, and up to a 0.7-acre area would be temporarily disturbed for construction  
240 activities per structure. All temporarily disturbed areas would be restored to original grade and  
241 contour as much as possible.

242 Single-circuit H-frames require two structures per location, each ranging between 50 and 60 feet  
243 tall, each with two poles per structure that are 24 inches diameter at the base with 7- to 8-foot  
244 direct embedment depth, and 12 inches diameter at the top. The H-frames would range up to  
245 105 feet wide, inclusive of both structures and required distance between the structures (**Figure**  
246 **2-5**). Each structure would require 2 foundations, each up to a 7-foot-diameter area, which  
247 would be permanently disturbed, and up to a 0.7-acre temporary disturbance area per pair of  
248 structures for construction activities. For the purposes of this Project, one set of H-frames are  
249 referred to as a single location. All temporarily disturbed areas would be restored to original  
250 condition as much as possible.

251 Spans between structures would range between 300 and 1,250 feet, with approximately 5 to 10  
252 structures per mile. Spans crossing PG&E lines, whether crossing under or above the existing  
253 lines, would be around 300 feet in length. The conductor would be aluminum steel reinforced  
254 (ACSR), and the static wire would be optical ground wire or equivalent.

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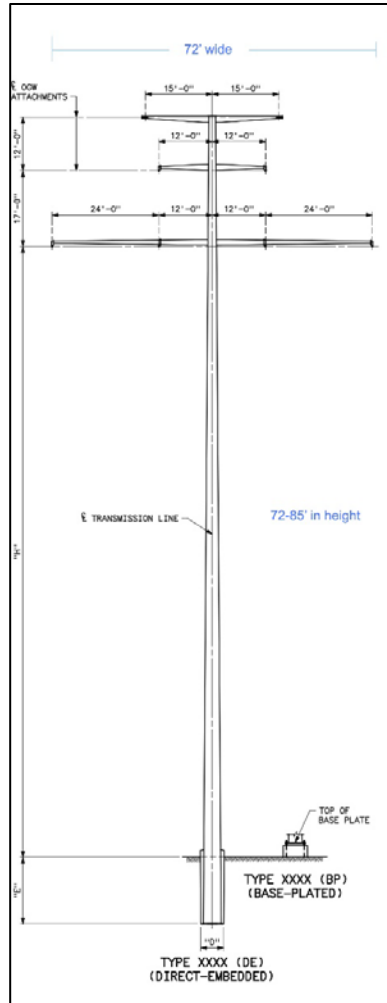
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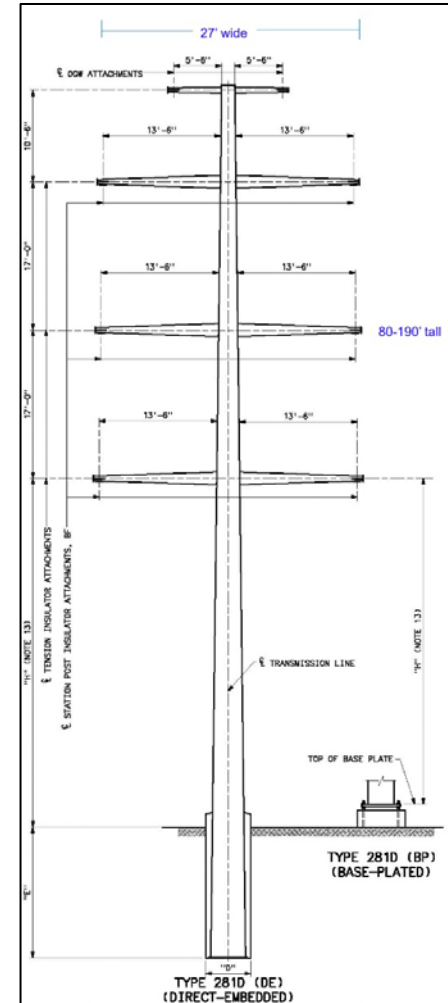
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**Figure 2-3.** WAPA Delta 230-kV Double-Circuit Tubular Steel Pole (TSP).



**Figure 2-4.** WAPA Standard 230-kV Double-Circuit TSP.

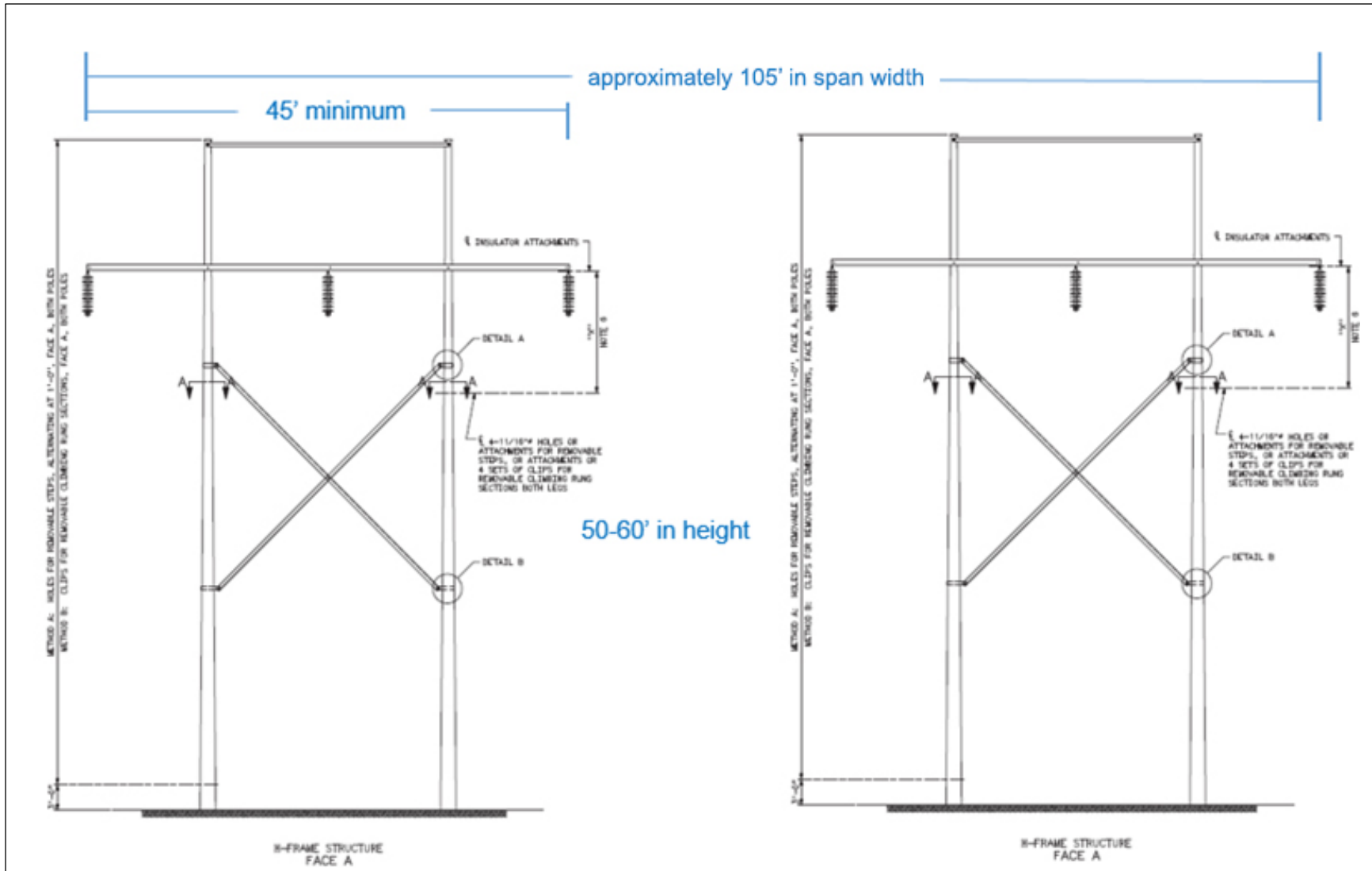


Figure 2-5. Typical Single-Circuit H-Frame.



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258 *Overhead Transmission Line Construction*

259 The following general construction descriptions apply to all overhead electric structures.

260 Preconstruction. Soil sampling and potholing would be conducted before construction. Soil  
261 information would be provided to construction crews to inform them about soil conditions and  
262 existing utility locations. If hazardous materials are encountered in soil samples, work would be  
263 stopped until the material is properly characterized and appropriate measures are taken to  
264 protect human health and the environment. Hazardous materials would be handled,  
265 transported, and disposed of in accordance with federal, state, and local environmental  
266 regulations, including Chapter 6.95 of the California Health and Safety Code and Title 22 of the  
267 CCR.

268 Bore holes would need to be dug along the roadway and into some fields to inform geotechnical  
269 engineering; all holes would be within the study area and would likely be within the 0.7-acre  
270 temporary disturbance required per structure. The typical boring would be up to 2 feet in  
271 diameter to a depth of up to 40 feet. Additionally, the bore hole would be drilled to  
272 accommodate any specification for transmission pole capability.

273 Excavation and Foundation Installation. Installation of structure foundations may require  
274 grading and vegetation removal. Where grading is needed, topsoil would be removed and  
275 stockpiled for use in site restoration. Temporary topsoil stockpiles would be protected from  
276 erosion during construction. Excavating transmission structure foundations is typically done  
277 with a backhoe, front-end loader, or pressure auger.

278 Reinforced concrete foundations would be used for most structures. After the foundation  
279 concrete is placed, a mechanical tamp would be used to re-compact soil around the foundation.  
280 The disturbed area would be re-graded so that surfaces drain naturally, blend with the natural  
281 terrain, are left in a condition that would facilitate revegetation or reseeding, provide for proper  
282 drainage, and prevent erosion.

283 Structure Assembly and Erection. Structure components would typically be transported to  
284 installation sites by truck or helicopter. Structures would be erected with cranes. Structure  
285 assembly equipment may include cranes (ground or helicopter); augers; bulldozers; bucket  
286 trucks; backhoes; air compressors; electric generators; pickup trucks; and other vehicles,  
287 machinery, and equipment. Structures would be assembled, erected, and attached to the  
288 foundations.

289 Conductor Stringing. Conductor stringing would occur at designated pulling and tensioning sites  
290 (pull sites). Generally, the pull sites would be located within the easement, and temporary  
291 disturbance from pull sites are considered in the disturbance calculations (**Appendix C**). Angle-  
292 structure pull sites would require temporary easement rights if located outside the easement to  
293 pull the conductor in a straight line. The locations of pull sites depend on environmental  
294 constraints, conductor length, and equipment access. Pull sites would be located within the  
295 study area of this EA.

296 Large reels of conductor would be transported to the staging areas or pull sites on flatbed  
297 trucks. Other equipment would include stringing trailers, tensioning machines, pullers,  
298 bulldozers, and several trucks, including a bucket truck.

299 Temporary stringing sheaves or travelers (pulleys) would be attached on the crossarms of each  
300 structure at the bottom of the insulator strings. A sock line (rope or lightweight wire) would then  
301 be strung from structure to structure through the stringing sheaves. This may be completed  
302 using a helicopter. A pull line would then be attached to the end of the sock line and pulled  
303 back through the sheaves between pull site locations. Conductor would then be strung using  
304 the pull line.

305 Powered pulling equipment would be used at one end and tensioning equipment would be used  
306 at the other end to establish the proper tension and sag for crews to permanently "clip"  
307 conductors onto structure hardware and maintain the proper ground clearance for the  
308 conductors. After conductors are clipped in, the stringing sheaves would be removed and the  
309 new conductor connected to the insulators hanging from the crossarms. Ground wire would be  
310 installed last and would be attached to the top of the structures using a pulling technique similar  
311 to that used for the conductors.

### 312 *PG&E Crossing and Construction*

313 PG&E has two existing lines in the Project area: Colgate-Rio-Oso and Cresta-Rio-Oso 230-kV  
314 transmission lines. All alternative alignments would cross these lines along the 230-kV  
315 overhead portions of the Project off Beale AFB. The interconnection line may cross above or  
316 below the existing PG&E lines, depending on final engineering. PG&E will be coordinated with  
317 accordingly.

### 318 *Fiber Optic Line*

319 The Project would include new fiber optic cable. The fiber cable would be strung along the  
320 overhead structures on crossarms placed above the power cable. There is an existing fiber  
321 optic line on WAPA's Cottonwood-Roseville pole line that would be the interconnection source  
322 for the fiber.

### 323 2.3.1.2 Substation Facilities and Construction

#### 324 *New Substation*

325 To accommodate the new proposed 230-kV transmission line, a new substation would be built  
326 on Beale AFB to step 230-kV down to 60-kV. At this time, it is anticipated that WAPA would  
327 construct, own, operate, and maintain the new substation facility. Permanent disturbance for  
328 the new substation would be a footprint of 7 acres, an additional 4.8 acres would be temporarily  
329 disturbed to facilitate construction (see **Appendix C**).

330 Generally, substation construction would include site grading, property and substation fencing,  
331 and installation of electrical facilities. The site would be excavated and graded to accommodate  
332 the required construction and permanent facility buildings, equipment, and electrical structures.  
333 A fence would be erected around the substation perimeter and the substation would be  
334 graveled. Including the area needed for drainage, permanent impacts for substation  
335 construction total 7 acres. Up to an additional 4.8 acres may be temporarily impacted by  
336 construction activities. Area lighting would be provided by multiple 300-watt tungsten-quartz  
337 lamps mounted near major electrical equipment. Additionally, downward-oriented 100-watt  
338 yellow flood lamps would be placed near entrances and the substation gate for night entry and  
339 would remain on at night.

340 *Existing Substation*

341 The Preferred Alternative alignment would terminate at the existing Doolittle Drive Substation.  
342 A future project related to the existing Doolittle Drive Substation is described in Chapter 5,  
343 Cumulative Impacts. For the purposes of this Project, no modifications or updates are required  
344 to the existing substation. At the eastern extent of the underground 60-kV line, two poles would  
345 be installed to transfer power aboveground into the existing Doolittle Drive Substation and  
346 switching yard.

347 *2.3.1.3 Underground Facilities and Construction*

348 The Project's underground facilities would be installed within and under existing roadways; new  
349 permanent aboveground disturbance is not expected for these portions of the Project.  
350 Temporary disturbance (see **Appendix C**) includes the digging of a 3-foot-wide, 8-foot-deep  
351 trench and associated vaults under the existing paved road, which would be compacted and  
352 improved, and the use of a temporary road adjacent to the existing Patrol Road.

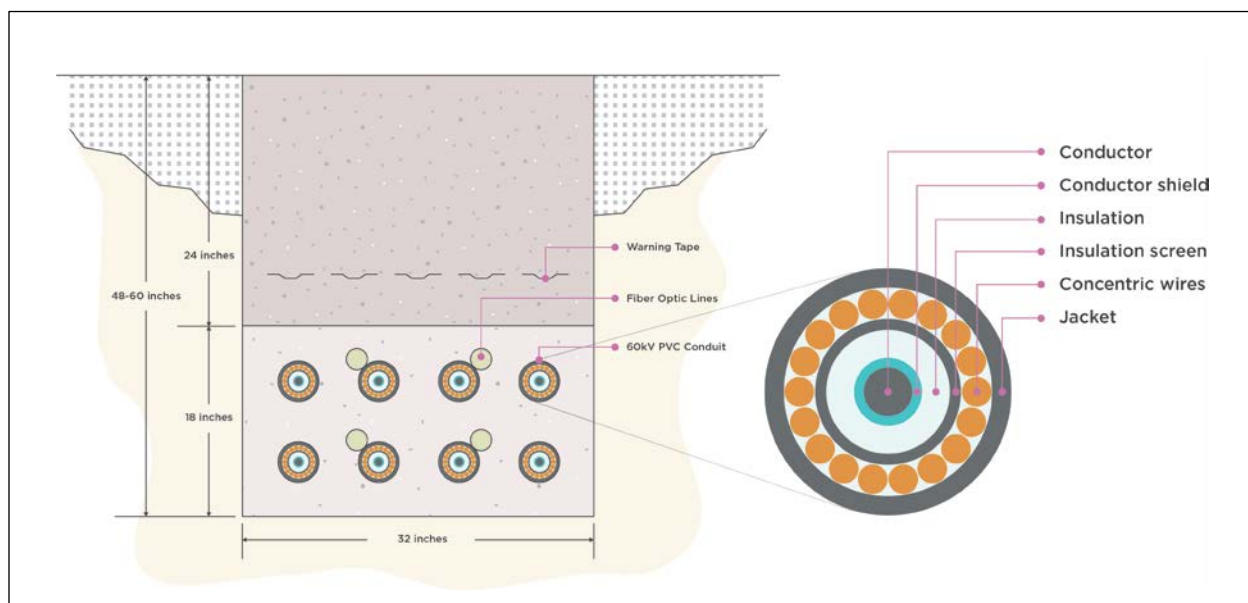
353 *Buried Conduit and Vaults*

354 The underground portion of the Project would consist of 12 polyvinyl chloride (PVC) conduit/duct  
355 encased in a concrete duct and up to 13 buried vaults. The concrete bank would measure 32  
356 inches wide by 18 inches tall, buried to a depth of 48 to 60 inches, including 24 inches of native  
357 soil cover. The duct is thermally designed to contain heat generated by the conductors so the  
358 temperature of the surrounding soil is not affected. Warning tape would be installed above the  
359 bank to warn of buried energized electrical circuits.

360 Of the 12 conduits inside the duct, 8 would be 6-inch conduits for the power conductors and 4  
361 would be 2-inch conduits for the fiber line. Of the 8 conduits for electric conductors, 6 would be  
362 used and 2 would remain open for future maintenance or repair activities; of the 4 conduits for  
363 fiber, 2 would be used and 2 would remain open for future growth or maintenance activities.

364 The transmission cables would be cross-linked polyethylene insulated cable types utilizing  
365 aluminum for the conductor material (**Figure 2-6**). The overall cable diameter would be 2.28  
366 inches (including cable diameter, conductor shield, insulation, etc.) (750 circular mills [kcmil]).  
367 Fiber optic cable(s) installed underground would be the same as are strung on the overhead  
368 structures.

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370 **Figure 2-6.** Typical underground concrete bank and enclosed cables.

371 Approximately 13 pairs of buried vaults would be needed along the underground portion of the  
 372 alignment to allow for pulling and splicing the lines and to allow access to underground facilities  
 373 for future maintenance work. Vaults would be constructed of steel-reinforced concrete (either  
 374 prefabricated or cast-in-place). The vault pairs would be sized approximately 36 feet in length,  
 375 10 feet in width, and 8 feet in depth, and designed to withstand the maximum credible  
 376 earthquake in the area as well as heavy truck traffic loads.

377 Vaults would be buried under the roadways within the trenches created for the concrete bank  
 378 installation, with the trenches expanding to 15 feet wide at each vault site to allow installation.  
 379 The vaults would be placed so the top is flush with the ground/road. Associated disturbance  
 380 calculations are included in **Appendix C**.

### 381 *Underground Construction*

382 The concrete bank that encloses the conduit and transmission line measures 32 inches wide by  
 383 18 inches tall. The construction sequence for installing the underground bank is described  
 384 below.

385 Preconstruction. Soil sampling and potholing would be conducted before construction.  
 386 Potholes would be placed within the study area of this EA, likely within already disturbed areas.  
 387 Soil information would be provided to construction crews to inform them about soil conditions  
 388 and existing utility locations.

389 Trenching. After the trench route is marked, work would begin with a concrete saw cutting the  
 390 trench line. The trench pavement would be broken into manageable pieces for removal and the  
 391 trench dug to a depth of 8 feet. Spoils resulting from excavation would be either piled on the  
 392 disturbed roadbed or placed directly into a truck to be hauled to a legal or commercial disposal  
 393 site off-Beale AFB. Approximately 11,000 cubic yards of asphalt and spoil would be removed,  
 394 resulting in approximately 1,100 truck trips during excavation. Spoils would not be stored  
 395 outside the roadbed or staging areas.

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396 Vault Placement. The Project would require placement of up to 13 pairs of vaults; at each vault  
397 location, the trench size would be increased to be 15 feet wide for a length of 40 feet.  
398 Installation of each vault would take place over a 3-day period with excavation and shoring of  
399 the vault pit being followed by delivery and installation of both vaults, filling and compacting  
400 backfill, and repaving of the excavation area.

401 Duct Placement. The pre-fabricated concrete duct would be placed in the trench using cranes.

402 Backfilling. Once the duct bank is installed, thermal-select or controlled backfill would be  
403 imported, installed, and compacted. A road base backfill or slurry concrete cap would then be  
404 installed, and the road surface would be restored in compliance with the locally issued permits.  
405 While the completed trench line sections are being restored, additional trench line would be  
406 opened farther down the road. This process would continue until the entire conduit system is in  
407 place. After backfilling and prior to cable pulling, road and culvert work would continue as  
408 described in Section 2.3.1.4, Access Roads and Culverts.

409 Cable Pulling. Cable would be pulled through individual ducts at the rate of approximately two  
410 pulls per day. After cable installation is completed, the cables would be spliced between all  
411 vaults and riser structures. A splice trailer would be located directly above the manhole  
412 openings for easy access by workers. A mobile power generator would be located directly  
413 behind the trailer. The dryness of the vault must be maintained 24 hours per day to ensure that  
414 unfinished splices are not contaminated with water or impurities. Normal splicing hours would  
415 be 8 to 10 hours per day, with some workers remaining after hours to maintain splicing  
416 conditions and guard against vandalism and theft. These conditions are essential to  
417 maintaining quality control through completion of splicing. As splicing is completed at a vault,  
418 the splicing apparatus setup is moved to the next vault location and the splicing is resumed.

419 Duration. Trenching, installation of the concrete duct bank, and vault installation would be  
420 completed within 5 months, while cable installation, splicing, and terminating would require  
421 approximately 6 months, totaling 13 months to construct the underground portion of the Project.  
422 Underground construction would require approximately 10 to 20 crew members.

423 Best Management Practices. Standard erosion and dust control measures will be used during  
424 construction. These methods include installation of sediment and erosion control structures  
425 according to best management practices (BMPs) to protect biological resources, roadways, and  
426 adjacent properties. Watering for dust control will also be employed. Temporary lane closures  
427 along Beale AFB roads as required for underground construction would be coordinated with  
428 Beale AFB.

### 429 2.3.1.4 Access Roads and Culverts

430 Road access to the Project area would be via existing private and county roads, including  
431 county-maintained Hackberry Road off Beale AFB and Patrol Road and Doolittle Road on Beale  
432 AFB. These roads provide personnel and equipment access. Some roads on Beale AFB would  
433 require improvements to provide sufficient access for transmission line construction.  
434 Approximately 0.65 mile of new roads would be constructed, and approximately 1.41 miles of  
435 existing roads would be improved to allow Project construction on Beale AFB. WAPA would  
436 obtain necessary temporary or permanent encroachment permits from Yuba County Public  
437 Works for construction usage on county roads.

438 Access roads that are improved or constructed new would be dirt or gravel roadways with the  
439 exception of Patrol Road. Patrol Road, where the underground portion of the Project would be  
440 installed, would be improved as part of this Project after installation of the underground line.  
441 Improvements to Patrol Road include restoring the current road substrate and adding 3 inches  
442 of asphalt.

#### 443 *Road Construction and Improvement*

444 Access to each site would be on an existing road that would be improved or new roads that  
445 would be constructed where necessary. The construction of new access roads is generally the  
446 same as the construction to improve existing access roads and is described below. Whether  
447 new or improved, access roads would be constructed to a width of 12 feet, increasing to 16 to  
448 20 feet around corners. An area up to 30 feet wide would be temporarily disturbed to facilitate  
449 road construction, which would involve brush clearing, grading, and erosion control. Temporary  
450 areas needed during construction would be restored to pre-existing conditions and/or grades as  
451 much as possible.

452 A bulldozer or grader would prepare the roadway by flattening, filling low areas, and regrading  
453 the road to the desired height. New materials (gravel and construction grade fill) are then  
454 brought in to increase the road strength. After the new materials are laid on the surface, water  
455 trucks and rolling compactors are brought in to compact and reinforce the surface of the road.  
456 This process is done in layers until the road is graded properly and the foundation is to  
457 specification. The paving equipment is then brought in to lay the initial asphalt surface; large  
458 rollers are run over the entire surface until it is flattened to specification. A final asphalt  
459 (finishing surface) is then laid on the entire surface to seal the final road for use. Throughout  
460 construction, old and unused asphalt, concrete, and spoils would be hauled off by truck to a  
461 legal or commercial disposal site off-Beale AFB. Watering may be required to control dust and  
462 retain fine surface rock.

463 In determining the final location of new roads, impacts to large trees, wetlands, vernal pools or  
464 other natural features would be minimized. All new and improved roads would be constructed  
465 to withstand weights up to 40 tons.

#### 466 *Temporary Access and Weight Dispersion Mats*

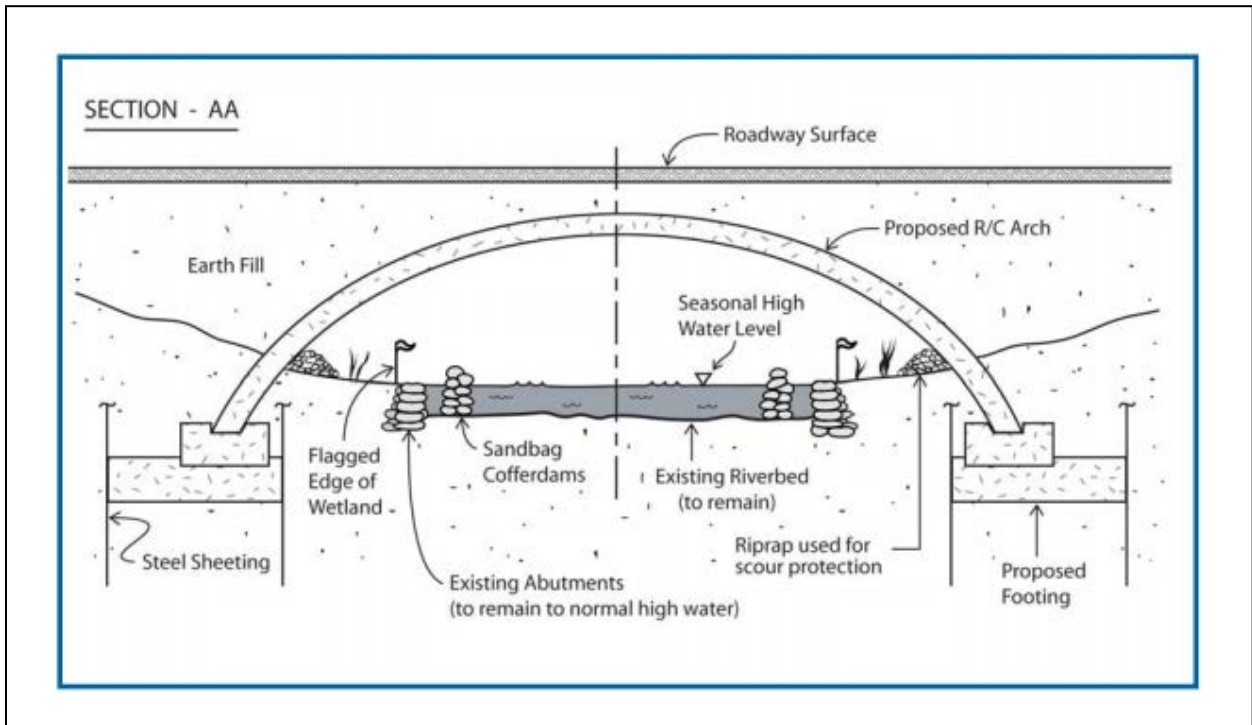
467 During the trenching on Patrol Road for the underground portion of the Project, temporary  
468 access may be necessary on either side of Patrol Road for vehicle and equipment passing.  
469 This temporary access would not be more than 12 feet wide and would be designed to avoid  
470 vernal pool and wetland features to the extent feasible. For those areas where avoidance of  
471 vernal pool or wetland features is not possible, weight dispersion mats would be placed over the  
472 feature and removed upon completion of work in that area. Dispersion mats would only be used  
473 during the dry season and access over vernal pool or wetland features would not be permitted  
474 during the wet season. Temporary impacts associated with the use of weight dispersion mats  
475 are considered in project disturbance calculations (**Appendix C**).

#### 476 *Culvert Replacement and Construction*

477 Culverts would be installed or replaced where drainages or waterways cross the new or  
478 improved access roads. For the Preferred Alternative, 6 new culverts would be installed and up  
479 to 8 existing culverts would be replaced. For each culvert, an area measuring up to 36 to 60  
480 square feet would be disturbed. Three-sided culverts (aka horseshoe culverts) would be used to

481 preserve the natural soil substrates and minimize impacts to existing waters and wetlands  
482 (Figure 2-7 and 2-8).

483 To install culverts, the pavement would be saw cut, excavation and demolition would be  
484 conducted by backhoe or small excavator, and the bottom of the trench would be adequately  
485 prepared and compacted. The culvert would be placed in the trench by small crane or boom.  
486 Cast-in-place headwalls would be framed and poured. Trenching and backfilling would be  
487 completed using native materials or materials specified in design documents. Twelve inches of  
488 crushed rock road base would be placed below 4 to 6 inches of asphalt pavement to match  
489 existing grade. If a culvert is being replaced within an unpaved surface, native materials would  
490 be used for backfill to the surface and the area would be revegetated to match existing  
491 conditions. Culvert construction would be performed during the dry season.



492 **Figure 2-7.** Typical culvert cross-section.

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494 2.3.1.5 Other Project Activities495 *Ground Disturbance*

496 Ground disturbance from the Project would occur from grading construction staging and  
497 laydown areas, grading and drilling holes for new structure foundations, constructing and  
498 improving roads for vehicle and equipment access, installing underground duct and vaults, and  
499 establishing pull sites for conductor installation, as well as construction of the new substation.

500 Permanent disturbance for this Project is defined as those areas where Project facilities would  
501 be built and remain (i.e., pole foundations, new access roads, the new substation). Temporary  
502 disturbance for this Project is defined as those areas needed to construct Project facilities (e.g.,  
503 equipment staging and laydown areas, pull and tensioning sites, etc.); areas of temporary  
504 disturbance are expected to be disturbed in the short-term and would be restored in accordance  
505 with WAPA's standard BMPs. Permanent and temporary ground disturbance areas are  
506 provided and calculated for each facility for each action alternative in **Appendix C**. Specific to  
507 the Preferred Alternative, a total of 10.07 acres of permanent disturbance and 44.27 acres of  
508 temporary disturbance are expected.

509 *General Construction Activities*

510 Construction would commence after securing required permits and land rights. Multiple crews  
511 may work simultaneously on different Project components. Construction generally would take  
512 place between 7:00 a.m. and 7:00 p.m., 6 days per week, except for those areas where local  
513 ordinances and traffic considerations dictate otherwise, in which case working hours would be  
514 consistent with local requirements. Project construction is likely to take 16 months, including  
515 overhead and underground components, and the line would be energized within approximately  
516 2 months of completing construction.

517 Construction Staging and Laydown Areas

518 Temporary construction staging and laydown areas would be needed to store and stage  
519 materials, construction equipment, and vehicles, and would also be used for helicopter landing  
520 zones. These areas are planned as follows:

- 521 • Within Beale AFB, 4 locations totaling approximately 3.6 acres have been identified for  
522 staging and laydown. Other pre-disturbed (paved or gravel) areas on Beale AFB may  
523 also be used.
- 524 • One 5-acre location off Beale AFB would be located within the study area on previously  
525 disturbed soil. This staging area would avoid impacts to sensitive resources and would  
526 be dependent upon landowner negotiations.
- 527 • The 0.7-acre areas needed per structure location would be used for construction staging  
528 and laydown.
- 529 • Project construction may be planned to allow the new substation pad to be installed  
530 early during construction, which would also be used for staging and laydown.

531 Construction Equipment

532 Typical equipment needed to complete construction activities are listed below. Construction  
533 would be conducted in stages; therefore, equipment would not be working on all tasks



534 simultaneously at a given location, but there would be some overlap in tasks and equipment in  
535 use.

- 2-ton flatbed truck
- Air compressors
- Air tampers
- Augers
- Backhoes
- Blader
- Bulldozers
- Cable puller truck
- Cable reel trailers
- Cement trucks
- Compressors
- Concrete saw
- Cranes
- Crawler backhoe
- Dump trucks
- Excavators
- Flatbed boom truck
- Flatbed trucks
- Front-end loader
- Fuel truck
- Grader
- Helicopter Hughes 500
- Hydro-cranes
- Hydro-lifts
- Jackhammer(s)
- Large backhoe
- Large mobile crane
- Light truck
- Manlifts
- Materials trucks
- Mechanic truck
- Mixer trucks
- Pavement breaker
- Pickup trucks
- Portable generators
- Pullers
- Reel trailers
- Rigging truck
- Rollers
- Shop vans
- Small mobile cranes (< 12 tons)
- Splice trailer (40 feet)
- Tensioners
- Tractor
- Welders
- Winch truck

536 *Operations and Maintenance*

537 WAPA O&M Activities

538 WAPA would build and perform O&M activities on the 230-kV off-Beale AFB portion of the  
539 Project, up to and including the new substation located on Beale AFB. WAPA must comply with  
540 North American Electric Reliability Corporation and Western Electricity Coordinating Council  
541 standards and requirements for transmission system reliability, including maintenance and  
542 vegetation management. In order to comply with these requirements, WAPA has a  
543 comprehensive O&M program for all of its property and facilities, including transmission lines,  
544 substations, communication facilities, and legal access roads. This O&M program ensures  
545 reliability of the transmission systems and safe access to WAPA facilities. The O&M activities  
546 proposed for this Project would be consistent with WAPA's O&M program (WAPA 2010).

547 For this Project, WAPA would conduct Category A, B, and C O&M activities, as described in  
548 their Final EA for the North Area ROW Maintenance Program (WAPA 2010). These activities  
549 are generally described below, and example activities per category are listed in **Table 2-1**.

550 Category A activities are primarily inspection-type actions, with some minor repairs that would  
551 cause minimal, if any, soil disturbance. Category B activities include typical repair tasks that  
552 would occur along WAPA's existing ROW. Category B actions have the potential to cause  
553 minimal effects to sensitive resources. Category B maintenance equipment may include but  
554 would not be limited to rubber-tired vehicles such as bucket trucks, backhoes, front-end loaders,  
555 cranes, auger trucks, bobcats, and pole trucks. Category C tasks are generally those  
556 maintenance activities that would disturb large areas and would utilize heavy equipment.  
557 Category C maintenance equipment may include but would not be limited to the use of steel-  
558 tracked and/or rubber-tired bulldozers, graders, backhoes, and front-end loaders.

**TABLE 2-1  
WAPA O&M ACTIVITIES PER CATEGORY**

<b>Category A—Inspection and Minor Maintenance Activities</b>	
<p><u>Substation Maintenance</u></p> <ul style="list-style-type: none"> <li>• Maintenance and replacement of transformers and breakers</li> <li>• Servicing and testing of equipment at existing substations, including oil change-outs</li> <li>• Installation or replacement of bushings</li> <li>• Cleaning or replacement of capacitor banks</li> <li>• Maintenance or installation of propane tanks within a substation yard</li> <li>• Maintenance of switches, voltage regulators, reactors, tap changes, reclosers, and valves</li> <li>• Replacement of wiring in substations and switchyards</li> <li>• Replacement of existing substation equipment, including regulators, capacitors, switches, wave traps, radiators, and lightning arresters</li> <li>• Installation of cut-out fuses</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustment and cleaning of disconnect switches</li> <li>• Placement of temporary transformers</li> <li>• Maintenance, installation, and removal of solar power arrays and controllers</li> <li>• Installation of foundation for storage buildings above ground mat within existing substation yard</li> <li>• New footings</li> <li>• Ground mat repairs</li> <li>• Remediation of small oil and hazardous materials spills (less than 1 gallon)</li> <li>• Clearing vegetation by hand within the property boundary of a fenced substation</li> <li>• Application of soil sterilants and herbicides within the property boundary of a fenced substation</li> </ul>
<p><u>Transmission Line Maintenance</u></p> <ul style="list-style-type: none"> <li>• Ground and aerial patrols</li> <li>• Ground wire maintenance</li> <li>• Aircraft warning device maintenance</li> <li>• Insulator maintenance</li> <li>• Bird guard maintenance</li> <li>• Crossarm maintenance on wood pole structures</li> <li>• Emergency manual removal and/or pruning of danger trees or vegetation</li> <li>• Steel members of steel transmission line structures</li> <li>• Hardware on wood and steel transmission line structures</li> </ul>	<ul style="list-style-type: none"> <li>• X-brace and knee-brace maintenance</li> <li>• Dampener maintenance</li> <li>• Ground rod maintenance</li> <li>• Armor rod maintenance and clipping-in structures</li> <li>• Conductor upgrade/maintenance</li> <li>• Emergency placement of rocks at bases of poles or structures to stabilize small eroded areas</li> <li>• Remediation of small oil and hazardous materials spills (less than 1 gallon)</li> <li>• Antennae maintenance</li> <li>• Structure mile marker maintenance</li> </ul>
<p><u>Communication System</u></p> <ul style="list-style-type: none"> <li>• Microwave radio tower maintenance</li> <li>• Communication tower and antennae maintenance</li> <li>• Light beacon maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Microwave dish maintenance</li> <li>• Parabolic dish maintenance</li> <li>• Periodic antenna tower climbing inspections</li> </ul>
<p><u>Facilities Maintenance</u></p> <ul style="list-style-type: none"> <li>• Building maintenance including interior and exterior painting and roof, ceiling, floor, window, and door maintenance</li> </ul>	<ul style="list-style-type: none"> <li>• Application of soil sterilants and herbicides within the property boundary of fenced maintenance facility</li> </ul>

<b>TABLE 2-1 WAPA O&amp;M ACTIVITIES PER CATEGORY</b>	
<ul style="list-style-type: none"> <li>Clearing vegetation by hand within the property boundary of fenced maintenance facilities</li> </ul>	
<b>Category B—Routine Maintenance Activities</b>	
<u>Transmission Line Maintenance</u>	
<ul style="list-style-type: none"> <li>Maintenance and repair of existing culverts</li> <li>Removal of soil deposition around tower legs</li> <li>Ground anchors maintenance</li> <li>Filling of erosional features on access roads</li> <li>Vehicle and equipment staging</li> <li>Placement of fill or rock(s) around existing culverts</li> <li>Remediation of small oil and hazardous materials spills (between 1 and 10 gallons)</li> <li>Grading existing access roads</li> <li>Application of herbicides</li> </ul>	<ul style="list-style-type: none"> <li>Installation and repair of fences and gates</li> <li>Installation or replacement of underground and overhead power, communication, or ground electrical line (less than 100 feet)</li> <li>Manual removal and/or pruning of danger trees or vegetation</li> <li>Mechanical vegetation management by means of masticators or other similar mechanical equipment</li> </ul>
<u>Communication System Maintenance</u>	
<ul style="list-style-type: none"> <li>Foundations or footings maintenance</li> <li>Installation of underground and overhead power, communication, or ground electrical line (less than 100 feet)</li> <li>Installation of cellular equipment onto existing infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance and repair of existing culverts</li> <li>Remediation of small oil and hazardous materials spills (between 1 and 10 gallons)</li> <li>Application of soil sterilants and herbicides</li> </ul>
<b>Category C – New Infrastructure</b>	
<u>Transmission Line and Communication System Maintenance</u>	
<ul style="list-style-type: none"> <li>Adding new access roads</li> <li>Installation of new culverts</li> <li>Installation of new foundation for storage building at existing facilities</li> <li>Erosion-control projects at existing facilities</li> <li>Reconductoring</li> <li>Mechanical vegetation management by means of bulldozers or other similar mechanical equipment</li> </ul>	<ul style="list-style-type: none"> <li>Tower/pole relocation/realignment within existing ROW</li> <li>Installation or replacement of underground and overhead power, communication, or ground electrical line (greater than 100 feet)</li> <li>Remediation of a small spill of oil and hazardous materials (greater than 10 gallons)</li> </ul>
Source: WAPA 2010	

559 WAPA Project construction and O&M activities would comply with Standard 13, Environmental  
 560 Quality Protection, of WAPA’s 2013 Construction Standards, as well as the ESA, consultations  
 561 and permits, and Project- and Beale AFB-specific BMPs. WAPA and Beale AFB would enter  
 562 into an O&M agreement for any Project activities occurring on Beale AFB. These may include  
 563 agreements governing helicopter use, flight plans, and access. Other aspects of the O&M  
 564 agreement between Beale AFB and the WAPA may be developed as various O&M needs are  
 565 identified.

566 Beale AFB O&M Activities

567 Beale AFB would build and perform O&M activities on the underground 60-kV portion of the  
568 Project, up to and including the connection to the existing Doolittle Drive Substation. Beale AFB  
569 would monitor and control functions using the telecommunications circuit connected to the new  
570 WAPA substation. Protective relay communication would be through a power line carrier  
571 system. Beale AFB would annually inspect all aboveground Project facilities for corrosion,  
572 misalignment, and excavations.

573 Beale AFB would implement both a comprehensive sustainability and outage/disaster plan that  
574 would meet and exceed the current Beale AFB standards. This would include annual  
575 maintenance as well as a functional outage and disaster recovery plan for any issue that could  
576 occur on Beale AFB or the surrounding area around Beale AFB. Maintenance would be on a  
577 semiannual basis to ensure the incoming line and monitoring equipment in the transmission  
578 system are functioning properly. Beale AFB would use its current outage and disaster recovery  
579 plan to fix any issue that could come up over time.

580 Helicopters may be used for annual line patrol and for transmission tower and line maintenance  
581 and repair. USAF Regulation AFI 32-7063, Air Installation Compatible Use Zones (AICUZ)  
582 Program, restricts crane activities and certain types of overhead construction activities, including  
583 helicopter use. To ensure compliance with AICUZ, coordination with Airfield Operations would  
584 occur prior to work involving cranes or helicopters on Beale AFB. Helicopter staging and  
585 landing zones would be within areas designated for the Project (see Section 2.3.1.5,  
586 Construction Staging and Laydown).

587 Beale AFB Project construction and O&M activities would comply with USAF Policy Directive  
588 (AFPD) 32-70, Environmental Quality; AFPD 90-8, Environmental, Safety, and Occupational  
589 Health Management and Risk Management requirements, as well as ESA, consultations and  
590 permits, and project- and Beale AFB-specific BMPs. WAPA and Beale AFB would enter into an  
591 O&M agreement for any Project activities occurring on Beale AFB.

592 *Geotechnical Boring*

593 Once the final Project route is chosen, geotechnical boring would be performed along the  
594 selected alignment to inform Project engineering, including where specific structure locations  
595 would be placed within the Project corridor. The boring activities are considered part of this  
596 Project and would be located within the study area considered in this EA, and likely within the  
597 0.7 acre of temporary disturbance needed per structure. Bore holes are further described,  
598 including hole size, in Section 2.3.1.1, Overhead Transmission Line Construction.

599 *Environmental Clearances*

600 Environmental clearances would be obtained prior to construction activities, as required. All  
601 activities requiring field access would be performed on-foot or from existing roads or pre-  
602 disturbed areas. Beale AFB would be required to comply with regulations listed in **Table 2-2**,  
603 organized by the title of clearance and associated regulations.

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**TABLE 2-2  
USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS**

<b>Title of Clearance</b>	<b>Specific Regulation</b>	<b>Description</b>
AF Form 103 Base Civil Engineer (BCE) Work Clearance Request	<ul style="list-style-type: none"> <li>• AFI 32-1001 Civil Engineer Operations</li> </ul>	BCE Work Clearance Request is required for any work that may disrupt aircraft or vehicular traffic flow, base utility services, fire protection, intrusion alarm systems, air quality, water quality, stormwater flow, biovents/monitoring wells, recreation trails/activities, wetlands, vegetation or routing activities of the installation. The AF103 is request must be processed prior to start of work. If work is not started within 30 days of the approval date or it is suspected that job site conditions have changed, this request must be reprocessed by all shops and validated by the approving officer.
Authority to Construct / Permit to Operate / Portable Equipment Registration (PERP)	<ul style="list-style-type: none"> <li>• 40 CFR Part 63 National Emission Standards for Hazardous Air Pollutants for Source Categories</li> <li>• AFI 32-7040 Air Quality Compliance and Resource Management</li> <li>• Title 13 CCR, Section 2485 (State of California)</li> </ul>	The "Authority to Construct" is a permit issued by the Feather River Air Quality Management District (FRQMD) granting permission to install, modify, and/or construct equipment or processes that will meet local air quality standards. The "Permit to Operate" is a permit granting permission to operate the equipment or processes within enforceable limits designed to meet local air quality standards. Use of portable equipment having engines greater than 50 brake horse power (bhp) shall have a valid Portable Equipment Registration Program (PERP) permit issued by California Air Resources Control Board (CARB). Copy of PERP registration and photo of PERP registration plate shall be provided to 9 CES/CEIE in order to verify current registration while the equipment is being operated on Beale property.
Air Conformity Applicability Model (ACAM) Report Record of Conformity Analysis (ROCA)	<ul style="list-style-type: none"> <li>• AFI 32-7040 Air Quality Compliance and Resource Management</li> <li>• AFCEC Air Quality EIAP Guide, Volume I and II</li> <li>• 32 CFR 989 Environmental Impact Analysis Process</li> <li>• 40 CFR 93 Subpart B General Conformity Rule</li> </ul>	The Record of Conformity Analysis (ROCA) report provides a summary Air Conformity Applicability Model (ACAM) analysis. The Air Force's Air Conformity Applicability Model (ACAM) is used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance and Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989), and the General Conformity Rule (GCR, 40 CFR 93 Subpart B).
C&D Debris Diversion and Disposal Report	<ul style="list-style-type: none"> <li>• AFI 32-7042 Waste Management</li> </ul>	Beale AFB has a requirement to recycle and reuse equipment and materials and to divert as much solid waste from disposal as possible. The AF813 will specify the requirements for materials to be recycled and disposed.

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**TABLE 2-2  
USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS**

<b>Title of Clearance</b>	<b>Specific Regulation</b>	<b>Description</b>
Clean Water Act (CWA) Section 401 Certification	<ul style="list-style-type: none"> <li>• 40 CFR 121 State Certification of Activities Requiring a Federal License or Permit</li> <li>• AFI 32-7064 Integrated Natural Resources Management</li> </ul>	Under Section 401 of the Clean Water Act (CWA), a federal agency may not issue a permit or license to conduct any activity that may result in any discharge into waters of the United States unless a state or authorized tribe where the discharge would originate issues a Section 401 water quality certification verifying compliance with existing water quality requirements or waives the certification requirement.
Environmental Design Criteria (EDC)	<ul style="list-style-type: none"> <li>• AFI 32-7061 The Environmental Impact Analysis Process</li> </ul>	Specific requirements for all environmental issue areas that must be included in the awarded contract. Project-specific EDCs will be provided in the final Tier B AF813.
Finding of no Practicable Alternatives (FONPA) (if applicable)	<ul style="list-style-type: none"> <li>• AFI 32-7064 Integrated Natural Resources Management</li> <li>• UFC 3-201-01 Civil Engineering</li> <li>• DoDI 4715.03</li> <li>• Natural Resources Conservation Program</li> <li>• Clean Water Act Sections 401, 404 and 404(b)(1) Guidelines</li> <li>• Provisions of E.O. 11990 and E.O. 11988</li> </ul>	If applicable, the finding contained in a FONSI or Record of decision that explains why there are no practicable alternatives to an action affecting a wetland or floodplain, based on appropriate EIAP analysis or other documentation. FONPAs must be submitted to HQ USAF/ILEVP when the alternatives selected is located in wetlands or floodplains and must discuss why not other alternatives exists to avoid impacts.
Finding of no Significant Impact (FONSI) (if applicable)	<ul style="list-style-type: none"> <li>• 32 CFR Part 989.15</li> <li>• 40 CFR 1508.13</li> </ul>	If applicable, the FONSI describes why and action would not have a significant effect on the environment and will not be the subject of an EIS. The unsigned FONSI must be available must be available for public review at least 30 days before approval and implementation of project.
Floodplains	<ul style="list-style-type: none"> <li>• AFI 32-7061 The Environmental Impact Analysis Process</li> <li>• E.O. 11988 Floodplain Management</li> <li>• 40 CFR §1508.20</li> <li>• 32 CFR Part 989.22(a)</li> </ul>	Proposed actions that will occur in, or could adversely affect floodplains, require compliance with the EIAP and E.O. 11988 "Floodplain Management" prior to implementing an action. Proponents shall, during initial planning and design, reduce the risk of flood loss; minimize the impact of floods on human safety, health and welfare and the Air Force mission; and restore or preserve the natural and beneficial values served by floodplains.
General Conformity Applicability Analysis	<ul style="list-style-type: none"> <li>• AFI 32-7040 Air Quality Compliance and Resource Management</li> </ul>	Conformity apply only to federal actions in nonattainment and maintenance areas. Beale Air Force Base is located in area designed maintenance area for certain NAAQS criteria pollutants and non-

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**TABLE 2-2  
USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS**

Title of Clearance	Specific Regulation	Description
	<ul style="list-style-type: none"> <li>• AFCEC Air Quality EIAP Guide, Volume I and II</li> <li>• Clean Air Act, Section 176(c)(1)</li> <li>• 32 CFR 989 Environmental Impact Analysis Process</li> <li>• 40 CFR 93 Subpart B General Conformity Rule</li> </ul>	<p>attainment designation for certain CAAQS air pollutants. Before implementing any federal action in an air quality nonattainment or maintenance area, the proponent shall complete a General Conformity applicability analysis per 40 CFR § 93.154 to ensure the action does not interfere with a state's plan to attain and maintain the NAAQSs (known as State Implementation Plans or SIPs). IAW CAA, Section 176(c), any action that negatively affects the implementation or goals of the SIP is not allowed to proceed. Proponent shall perform the General Conformity Applicability Analysis using the Air Force approved Air Conformity Applicability Model (ACAM). Proponent shall ensure all EIAP documents address applicable conformity requirements and the status of compliance.</p>
General Conformity Determination	<ul style="list-style-type: none"> <li>• AFI 32-7040 Air Quality Compliance and Resource Management</li> <li>• AFCEC Air Quality EIAP Guide, Volume I and II</li> <li>• Clean Air Act, Section 176(c)(1)</li> <li>• 32 CFR 989 Environmental Impact Analysis Process</li> <li>• 40 CFR 93 Subpart B General Conformity Rule</li> </ul>	<p>Conformity applicability analyses and determinations are developed in parallel with EIAP documents, but are separate and distinct requirements and should be documented separately. If ACAM determines General Conformity is applicable, the proponent will perform and approve a conformity determination before the EIAP process is completed. Proponents shall prepare required conformity documents in coordination with the installation and AFCEC/CZ. AFCEC/CZ will transmit draft conformity determinations for higher HQ coordination and SAF/IEE approval prior to release for public review.</p>
Geotechnical Borings Permit	<ul style="list-style-type: none"> <li>• Yuba County Environmental Health Division/CUPA</li> <li>• UFC 3-220-01 Geotechnical Engineering</li> <li>• UFC 3-250-01 Pavement Design for Roads and Parking Areas</li> </ul>	<p>Geotechnical and exploratory borings for projects require a permit if they are 15 ft deep OR within 10 ft of groundwater.</p>
National Pollution Discharge Elimination System (NPDES) Permit	<ul style="list-style-type: none"> <li>• AFI 32-1067 Water and Fuel Systems</li> <li>• 40 CFR § 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System</li> </ul>	<p>The Clean Water Act prohibits anybody from discharging "pollutants" through a "point source" into a "water of the United States" unless they have an NPDES permit. In essence, the permit translates general requirements of the Clean Water Act into specific provisions tailored to the operations of the project discharging pollutants.</p>

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**TABLE 2-2  
USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS**

<b>Title of Clearance</b>	<b>Specific Regulation</b>	<b>Description</b>
Notice of Intent (NOI) for Wetlands	<ul style="list-style-type: none"> <li>• AFI 32-7064 Integrated Natural Resources Management</li> <li>• 32 CFR Part 989.17</li> </ul>	For such actions that are being initially evaluated in an Environmental Assessments (EA), an NOI will be prepared per 32 C.F.R. Part 989.17. The EPF must furnish, through the MAJCOM, to HQ USAF/A7CI the NOI (40 CFR 1508.22) describing the proposed action for congressional notification and publication in the Federal Register. The EPF, through the host base public affairs office, will also provide the approved NOI to newspapers and other media in the area potentially affected by the proposed action. The EPF must provide copies of the notice to the SPOC and must also distribute it to requesting agencies, organizations, and individuals. Along with the draft NOI, the EPF must also forward the completed DOPAA, through the MAJCOM, to HQ USAF for information.
State Historic Preservation Offices (SHPO) Consultation	<ul style="list-style-type: none"> <li>• 36 CFR PART 800 Protection of Historic Properties</li> <li>• AFI 32-7065 Cultural Resources Management</li> </ul>	Section 106 requires Federal agencies to take into account the effects of their undertakings on historic properties and cultural resources to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. In addition, Federal agencies are required to consult on the Section 106 process with State Historic Preservation Offices (SHPO), Tribal Historic Preservation Offices (THPO), Indian Tribes (to include Alaska Natives) [Tribes], and Native Hawaiian Organizations (NHO).
Storm Water Pollution Prevention Plan (SWPPP)	<ul style="list-style-type: none"> <li>• 40 CFR § 122 EPA Administered Permit Programs: The National Pollutant Discharge Elimination System</li> <li>• AFI 32-1067 Water and Fuel Systems</li> </ul>	Required if project disturbs 1 acre or more.
Tier B AF Form 813 Request for Environmental Impact Analysis	<ul style="list-style-type: none"> <li>• AFI 32-7061 The Environmental Impact Analysis Process</li> <li>• PL 91-190 National Environmental Policy Act of 1969</li> </ul>	Per local Beale AFB policy, an initial AF813 was prepared for the WAPA project to cover the development of the EA and any required studies during project development. During design, a Tier B AF813 will need to be developed that will cover project design and construction.
United States Army Corps of Engineers (USACE) Section 404 Permit	<ul style="list-style-type: none"> <li>• 40 CFR 233 CWA Section 404 State Program Regulations</li> <li>• AFI 32-7064 Integrated Natural Resources Management</li> </ul>	Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States (WOTUS) regulated under this program include fill for



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**TABLE 2-2  
USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS**

Title of Clearance	Specific Regulation	Description
		development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g., certain farming and forestry activities).
United States Fish and Wildlife Service (USFWS) Section 106 Consultation	<ul style="list-style-type: none"> <li>• Section 6 of the National Historic Preservation Act</li> <li>• 36 CFR Part 800 Protection of Historic Properties</li> </ul>	When an activity or project USFWS is performing, managing, licensing, permitting, or providing Federal assistance for meets the NHPA's definition of an undertaking, then the Service must initiate a review under Section 106 of NHPA. Initiating this review process is a Federal responsibility and is designed to consider the project's effects on historic properties. The Federal agency manages the process and determines other parties with whom it will consult under the Section 106 review.
United States Fish and Wildlife Service (USFWS) Section 7 Consultation	<ul style="list-style-type: none"> <li>• 50 CFR 402 Interagency Cooperation- Endangered Species Act of 1973, as Amended</li> <li>• AFI 32-7064 Integrated Natural Resources Management</li> </ul>	Under Section 7, Federal agencies must consult with the U.S. Fish and Wildlife Service (Service) when any action the agency carries out, funds, or authorizes (such as through a permit) may affect a listed endangered or threatened species. This process usually begins as informal consultation. In the early stages of project planning, for example, a Federal agency approaches the Service and requests informal consultation. Discussions between the two agencies may include what types of listed species may occur in the proposed action area, and what effect the proposed action may have on those species.
Well Construction, Destruction, or Repair	<ul style="list-style-type: none"> <li>• Permit to construct, destroy, or repair a well or drill a soil boring on land parcel within Yuba County.</li> </ul>	Under the Construction General Permit, dewatering of uncontaminated non-storm water is an authorized non-storm water discharge. xvi The Construction General Permit regulates dewatering, unless a regional NPDES permit applies. xvii Non-storm water includes, but is not limited to, groundwater, dewatering of piles, water from cofferdams, water diversions, and water used during construction activities that must be removed from a work area. Under the Construction General Permit, discharges must meet specific requirements of the Construction General Permit including meeting the prohibitions of the applicable Basin Plan, compliance with the prohibitions on discharges of toxics, implementing BMPs to prevent contact of dewatering waters with construction materials or equipment, and monitoring for and compliance with

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<b>TABLE 2-2 USAF ENVIRONMENTAL CLEARANCE REQUIREMENTS</b>		
<b>Title of Clearance</b>	<b>Specific Regulation</b>	<b>Description</b>
		applicable numeric action levels (NALs), receiving water triggers, or numeric effluent limitations (NELs)
Dewatering	<ul style="list-style-type: none"> <li>• General Permit R5-2013-0074</li> <li>• Resolution R5-2013-0145</li> <li>• General Permit R5-2013-0073 &amp; R5-2013-0075</li> </ul>	
Source: personal communication Beale AFB 2019		

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#### 605 *Engineering*

606 Engineering work would locate the transmission line centerline, determine accurate  
607 topographical profiles along the centerlines, and determine the exact location of structures.  
608 Final Project engineering is not expected to be complete by the time the Final EA is issued.  
609 Engineering activities would be conducted from existing roads using a pickup and foot travel to  
610 proposed Project component locations as needed. Final engineering would site Project facilities  
611 within the study area corridors analyzed in this EA.

#### 612 *Safety*

613 WAPA, or its construction contractor, would prepare and conduct a safety program in  
614 compliance with all applicable federal, state, and local safety standards and requirements, in  
615 addition to WAPA's general practices and policies. The safety program would include, but not  
616 be limited to, procedures for accident prevention, use of protective equipment, medical care of  
617 injured employees, safety education, fire protection, and general health and safety of employees  
618 and the public during construction. WAPA would also establish provisions for taking appropriate  
619 actions in the event the contractor fails to comply with the approved safety program.

#### 620 *Fueling and Cleanup*

621 Fuels anticipated to be used during construction of the Project are petroleum hydrocarbons and  
622 their derivatives (e.g., oils, lubricants, and solvents) required to operate construction equipment.  
623 Fueling locations would be at approved staging areas. Hazardous material BMPs can be found  
624 in **Appendix D**.

#### 625 *ROW Restoration*

626 WAPA would ensure construction sites, material storage yards, and access roads are kept in an  
627 orderly condition during the construction period. Crews would collect waste construction  
628 materials and debris from all construction areas and dispose of it at approved sites upon  
629 completion of construction at each site. All structure assembly and erection pads not needed  
630 for normal maintenance would be returned to their original contour, and natural drainage  
631 patterns would be restored. Areas temporarily disturbed by construction would be restored to  
632 preconstruction conditions to the extent feasible. WAPA would re-grade disturbed areas to  
633 establish original contours and redistribute topsoil. All disturbed soil, other than surfaces  
634 intended for permanent access roads, would be seeded with native species free of invasive  
635 seeds. Within Beale AFB, installation-specific policies require that areas requiring re-vegetation  
636 for soil stabilization be seeded using the Beale AFB-approved seed mix (Beale AFB 2019).  
637 Agricultural fields would be restored per individual landowner agreements.

#### 638 *Abandonment/Decommissioning*

639 If no longer needed, facilities would be removed or abandoned in accordance with a separate  
640 interconnection agreement made between WAPA and Beale AFB. On Beale AFB, if WAPA  
641 were to abandon the line, it would be recommissioned or removed by USAF. Facilities that  
642 could potentially be removed or abandoned include wires, insulators, hardware, structures,  
643 foundations, and buried conduit. All decommissioning activities would occur within the same  
644 disturbance area identified for construction.

645 Material would be disposed of in accordance with applicable regulations and may be  
646 salvaged/recycled or sold. The equipment required to safely remove the wires and structures

647 would be similar to that required for installation. Following removal, areas disturbed during line  
648 dismantling would be restored and rehabilitated. Disturbed surfaces would be restored to the  
649 original contour. Disturbed soil, other than agricultural fields and surfaces intended for  
650 permanent access roads, would be seeded with native species free of invasive seeds. Within  
651 Beale AFB, installation-specific policies require that areas requiring re-vegetation for soil  
652 stabilization be seeded using the Beale AFB-approved seed mix (Beale AFB 2019).

653 WAPA would reclaim temporary service roads following removal or abandonment in accordance  
654 with land management agency or landowner agreements. Equipment and personnel for  
655 restoration operations would be similar to that required at the end of construction.

#### 656 2.3.1.6 ROW Needs

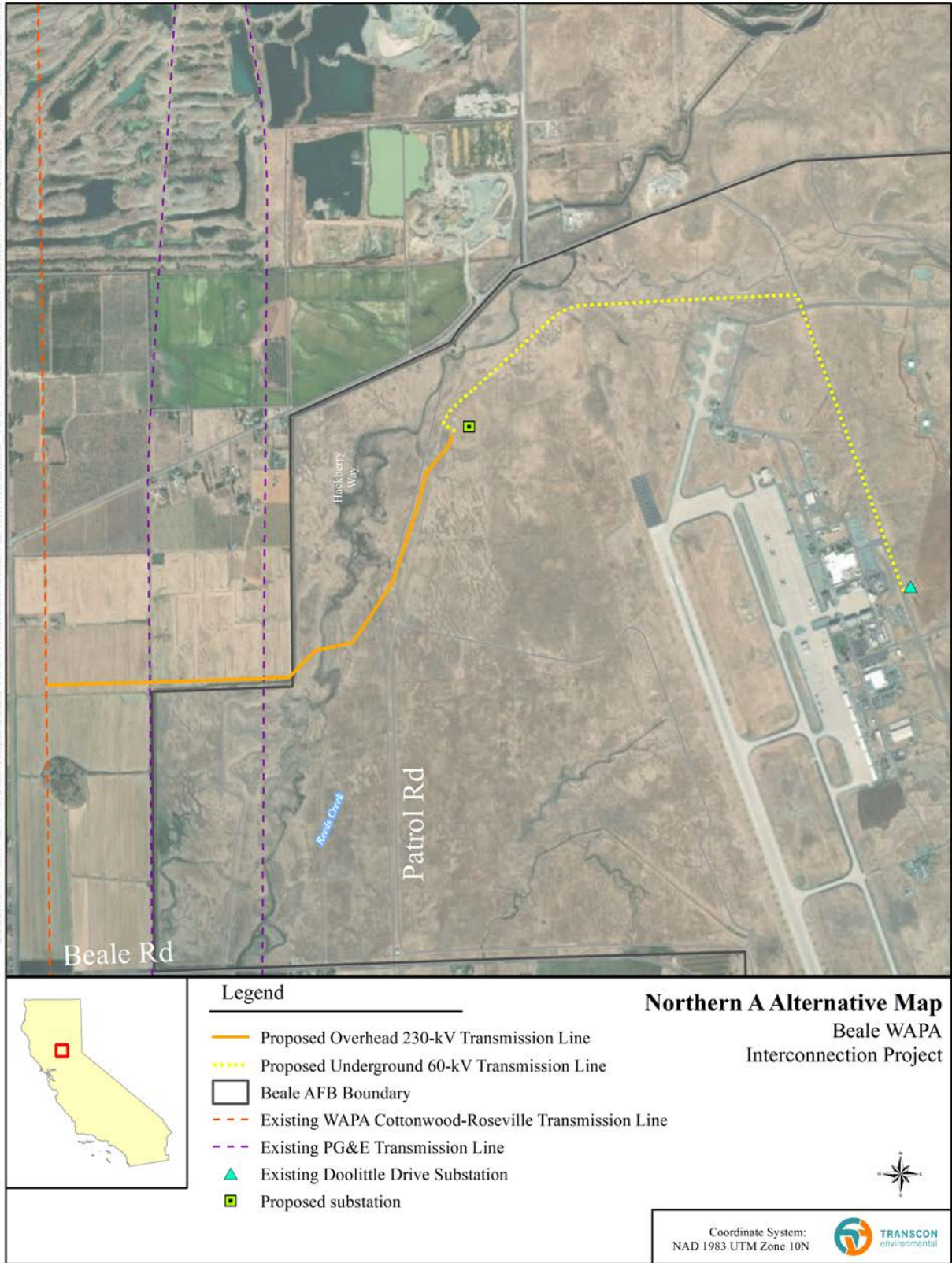
657 Once the final route is determined, WAPA would acquire necessary private land rights  
658 (easements). WAPA would purchase rights through negotiations with private landowners based  
659 on independent appraisals; landowners would retain land title, and landowner ROW use would  
660 be allowed for any purpose unless it creates a safety hazard or interferes with WAPA's rights.  
661 All private land rights would be acquired in accordance with applicable laws and regulations.  
662 Generally, easements would be up to 200 feet wide.

663 WAPA would obtain necessary temporary or permanent encroachment permits from Yuba  
664 County for work or Project facilities on county lands. WAPA would enter into an agreement with  
665 Beale AFB for joint use of line easements on Beale AFB.

#### 666 2.3.2 Northern A Alternative

667 The Northern A Alternative alignment is very similar to the Preferred Alternative alignment, sited  
668 about 0.5 mile south of the Preferred Alternative and crossing Reed's Creek at a different  
669 location (see **Figure 2-1**). It totals approximately 4.5 miles of transmission line, approximately  
670 0.8 mile located off Beale AFB and 3.7 on Beale AFB. It would consist of approximately 2 miles  
671 of overhead installation (0.8 mile off Beale AFB and 1.2 miles on Beale AFB), and 2.5 miles of  
672 underground installation (all within Beale AFB boundaries).

673 Beginning at its interconnection point perpendicular to the existing Cottonwood-Roseville line,  
674 overhead 230-kV lines would continue in a near-straight east-to-west line, bisecting agricultural  
675 fields up to the westernmost edge of Beale AFB. Portions of the line located off Beale AFB  
676 boundaries are bordered by agricultural fields to the north and south. Once on Beale AFB, the  
677 alignment traverses flat, open grasslands interspersed with seasonal wetlands (i.e., vernal  
678 pools), curving to avoid aquatic resources (see Section 2.2, Project Design Features), existing  
679 infrastructure, and runway clearances. The transmission line continues as 230-kV overhead  
680 until its connection with the proposed new substation located along Patrol Road (same  
681 substation configuration and location as the Preferred Alternative). The alignment then follows  
682 the exact same path as the Preferred Alternative, the underground portions following under  
683 Doolittle Drive and terminating at the existing Doolittle Drive Substation (**Figure 2-9**).



684  
685

Figure 2-8. Northern A Alternative Overview Map

686 2.3.2.1 Overhead Facilities and Construction

687 The overhead portion of the Northern A Alternative would be comprised of the same typical  
688 WAPA structures that are described under the Preferred Alternative (see **Figures 2-3 to 2-5**).  
689 This part of the alignment is parallel and about 0.5 mile south of the Preferred Alternative  
690 alignment. It would require about the same number of structures, be built using the same  
691 construction methods, and cross Reed's Creek about 0.25 mile south of the Preferred  
692 Alternative.

693 2.3.2.2 Substation Facilities and Construction

694 The Northern A Alternative would connect to the same proposed new substation as described  
695 under the Preferred Alternative and would terminate at the existing Doolittle Drive Substation, as  
696 described under the Preferred Alternative.

697 2.3.2.3 Underground Facilities and Construction

698 The underground portion of the Northern A Alternative would follow the same alignment as the  
699 Preferred Alternative and would be comprised of the same amount of underground duct built  
700 using the same construction methods as described under the Preferred Alternative.

701 2.3.2.4 Access Road and Culverts

702 Road access to the Northern A Alternative area would be via existing private and county-  
703 maintained Brophy Road as well as Patrol Road on Beale AFB. Approximately 1.51 miles of  
704 existing roads would require improvements to provide sufficient access for transmission line  
705 construction. Also, approximately 0.91 mile of new permanent access roads would need be  
706 constructed on Beale AFB to access structures around the Reed's Creek area. During the  
707 trenching on Patrol Road, weight disturbance mats may be temporarily placed on either side of  
708 Patrol Road to allow vehicle and equipment passing (see Section 2.3.1.4, Temporary Access  
709 and Weight Dispersion Mats).

710 Culverts required under the Northern A Alternative would be the same quantity and design as  
711 described under the Preferred Alternative.

712 2.3.2.5 Other Project Activities

713 Ground disturbance would occur as described for the Preferred Alternative; specifically, a total  
714 of 10.59 acres of permanent disturbance and 49.65 acres of temporary disturbance are  
715 expected from the Northern A Alternative. Specific calculations are shown in **Appendix C**.

716 Construction activities and O&M would occur as described under the Preferred Alternative, as  
717 well as geotechnical boring, obtaining environmental clearances, final engineering, safety,  
718 fueling and cleanup, ROW restoration, and line abandonment/decommissioning.

719 2.3.2.6 ROW Needs

720 ROW needs would be similar, with WAPA entering an agreement with Beale AFB for Project  
721 operation on-Beale AFB, and WAPA obtaining necessary land rights for the private land portion,  
722 as described for the Preferred Alternative (see Section 2.3.1.6, ROW Needs).

723 **2.3.3 Southern Alternative**

724 The Southern Alternative is located about 3.25 miles south of the Preferred Alternative and  
725 Northern A Alternative alignments (see **Figure 2-1**). It totals approximately 5 miles of  
726 transmission line, approximately 2.5 miles located off Beale AFB and 2.5 on Beale AFB. It  
727 would consist of approximately 4.4 miles of overhead installation (2.5 miles of 230-kV off Beale  
728 AFB, 0.4 mile of 230-kV on Beale AFB, and 1.5 miles of 60-kV on Beale AFB); and 1 mile of  
729 underground installation (all within Beale AFB boundaries). The overhead 60-kV component is  
730 unique to the Southern Alternative (neither the Preferred Alternative nor the Northern A  
731 Alternative include 60-kV overhead structures); specifications for those structures are described  
732 below.

733 Beginning at its junction with WAPA's Cottonwood-Roseville line, the Southern Alternative  
734 follows Erle Road, which is bordered by privately owned agricultural rice fields to the north and  
735 south. Once on Beale AFB, the alignment continues aurally along Gavin Mandry Drive for  
736 approximately 0.4 mile to the proposed new substation, after which the line would route  
737 underground beneath existing road substrates along Gavin Mandry Drive for 1 mile to prevent  
738 the need for flight clearance requirements, emerge back to overhead, and continue 1 mile east  
739 before turning north and following C Street for 0.5 mile to terminate at the existing C Street  
740 Substation (**Figure 2-10**).

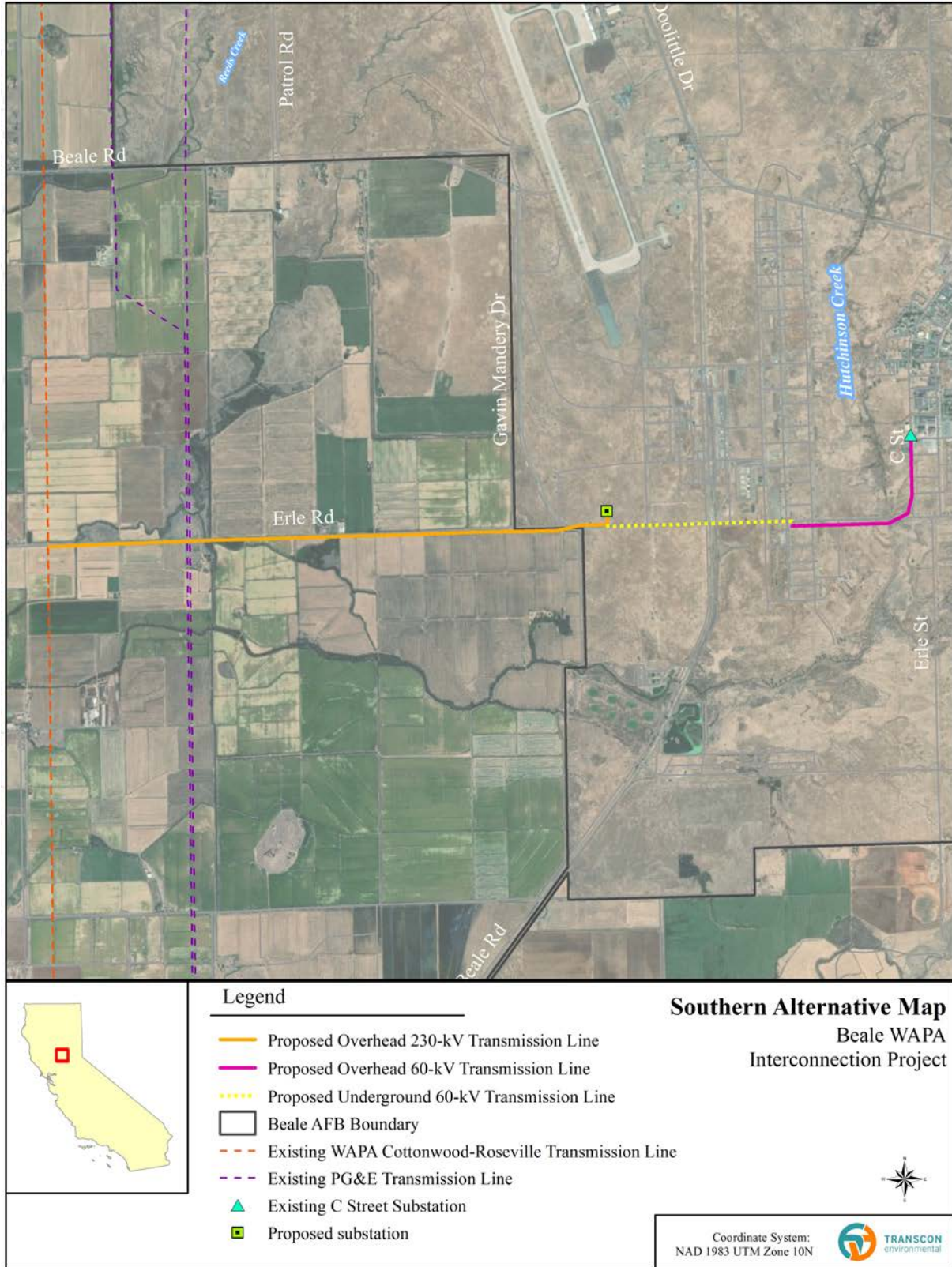
741 **2.3.3.1 Overhead Facilities and Construction**

742 The overhead 230-kV portion of the Southern Alternative would be comprised of the same  
743 typical WAPA structures as described under the Preferred Alternative. This part of the  
744 alignment is parallel and about 3.5 miles south of the Preferred Alternative alignment. It would  
745 require about the same number of structures and be built using the same construction methods.

746 Once the underground portion returns back to overhead, the 60-kV line would be attached to  
747 new distribution poles and follow C Street north where it terminates at the C Street Substation.  
748 This 60-kV portion of the Southern Alternative would be constructed of tube steel monopoles or  
749 equivalent (**Figure 2-11**). The pole heights for 60-kV installations are typically 65 feet to 100  
750 feet tall, and pole circumference is typically 4 feet. Structure foundations would be cement 5  
751 feet in diameter and 15 feet direct embed depth. Up to a 5-foot-diameter area would be  
752 permanently disturbed per monopole structure, and up to a 0.7-acre area would be temporarily  
753 disturbed during construction activities per pole location. All temporarily disturbed areas would  
754 be restored to their original grade and contour as much as possible.

755 Spans between these structures would be 300 to 400 feet, with 7 to 14 structures per mile, with  
756 an estimated 13 total structures. The conductor would be "Hawk" ACSR (477 kcmil, 26/7) or  
757 equivalent, and the static wire would be fiber optic ground wire (0.375 inch) or equivalent.

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Figure 2-9. Southern Alternative Overview Map



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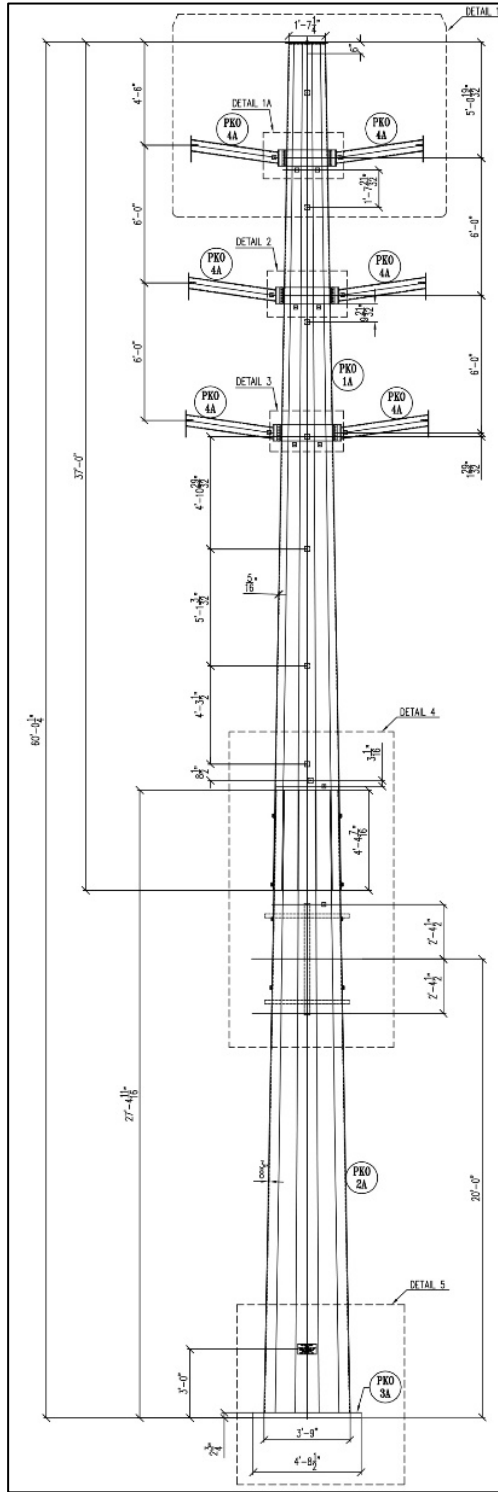


Figure 2-10. Typical 60-kV Monopole.

762 2.3.3.2 Substation Facilities and Construction

763 The Southern Alternative overhead portion would connect to a proposed new substation just  
764 after it crosses into Beale AFB. This substation would be built using the same materials and  
765 methods described under the Preferred Alternative. The Southern Alternative would terminate  
766 at the existing C Street Substation. No modifications or updates are required to the existing  
767 substation. At the eastern extent of the underground 60-kV line, two poles would be installed to  
768 transfer power aboveground into the existing C Street Substation.

769 2.3.3.3 Underground Facilities and Construction

770 The underground portion of the Southern Alternative would continue from the new substation  
771 east in a straight line along Gavin Mandry Drive for 1.5 miles. At this point the underground line  
772 would come back aboveground and connect to newly proposed 60-kV overhead distribution  
773 poles, as described above. The underground portion would be built using the same materials  
774 and methods described under the Preferred Alternative, including the conduit being built under  
775 an existing roadway.

776 2.3.3.4 Access Road and Culverts

777 Road access to the Southern Alternative area would be via Erle Road off Beale AFB and Gavin  
778 Mandry Drive on Beale AFB. Approximately 0.4 mile of new roads would need to be  
779 constructed for this alternative, and no existing roads would need to be improved. There would  
780 be 8 new culverts installed for the Southern Alternative.

781 Additionally, the Southern Alternative includes 2 waterways on Beale AFB that would be  
782 crossed using a dry horizontal direction bore method. The dry boring operation under the creek  
783 would begin at the north end of the bridge in an underground easement area. An area  
784 approximately 25 feet by 100 feet would be used at this location for laydown and boring,  
785 assumed to be within the existing disturbed roadway. Dry boring would begin by digging a bore  
786 pit at the sending end and a trench at the receiving end of the bore. The bore pit would be  
787 approximately 24 feet by 8 feet wide and would be approximately 20 feet deep. The elevation at  
788 the bottom of the bore pit and the receiving trench would be about the same. The horizontal  
789 bore equipment would then be installed in the bore pit. The steel casing would be welded in 10-  
790 to 15-foot sections and jacked into the bore as the boring operation proceeded. The volume of  
791 soil removed from the bore operation is estimated to be approximately 100 cubic yards. All  
792 spoils and asphalt would be loaded straight from the bore area onto trucks for removal. At no  
793 time would spoils be stored on-site. In addition to the boring machinery, a loader, backhoe, and  
794 dump truck would be used at both ends of the bore. The racked PVC conduit bundles would be  
795 arranged in a circular pattern. The conduit bundles would be assembled completely before  
796 being pulled through the steel casing. Once boring is complete, the trench would be extended  
797 to meet the exposed cable where the conduits would be joined together.

798 2.3.3.5 Other Project Activities

799 Ground disturbance would occur as described for the Preferred Alternative; specifically, a total  
800 of 7.64 acres of permanent disturbance and 38.47 acres of temporary disturbance are expected  
801 from the Southern Alternative. Specific calculations are shown in **Appendix C**.

802 Construction activities and O&M would occur as described under the Preferred Alternative, as  
803 well as geotechnical boring, obtaining environmental clearances, final engineering, safety,

804 fueling and cleanup, ROW restoration, and line abandonment/decommissioning. The only  
805 difference would be Beale AFB O&M activities for the 60-kV overhead lines, which would be  
806 performed to WAPA specifications, as described in Section 2.3.1.5, Operations and  
807 Maintenance.

#### 808 2.3.3.6 ROW Needs

809 ROW needs would be similar, with WAPA entering an agreement with Beale AFB for Project  
810 operation on-Beale AFB, and WAPA obtaining necessary land rights for the private land portion,  
811 as described for the Preferred Alternative (see Section 2.3.1.6, ROW Needs).

## 812 2.4 NO ACTION ALTERNATIVE

813 Under the No Action Alternative, WAPA would not construct the proposed interconnection line.  
814 Through this alternative, Beale AFB would not be delivered reliable, resilient, and redundant  
815 electrical power in adhering to the DoD directive for the ERP, leaving the USAF and Beale AFB  
816 vulnerable to increased electrical failures and unplanned power outages which could interrupt  
817 execution of USAF missions.

## 818 2.5 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

819 NEPA regulations mandate the consideration of reasonable alternatives for proposed projects.  
820 “Reasonable alternatives” are those that also could be utilized to meet the purpose of and need  
821 for the proposed project. Per the requirements of 32 CFR §989, the USAF Environmental  
822 Impact Analysis Process regulations, selection standards are used to identify alternatives for  
823 meeting the purpose and need for the USAF action. This section describes the selection  
824 standards and goals of alternatives considered to satisfy the purposes and needs of the Project  
825 and summarizes the initial set of options that Beale AFB and/or WAPA considered but decided  
826 to drop from further analysis.

827 The Project’s purpose and need is driven by DoD’s ERP December 2013 memorandum  
828 regarding installation power resiliency goals. Specifically, alternatives must provide Beale AFB  
829 an alternate and redundant power supply to keep Beale AFB in operation during PG&E outages  
830 or other emergencies; the alternatives must also deliver enough energy to meet future Beale  
831 AFB energy needs, anticipated to be 33 MW by 2022.

832 In order to meet the DoD’s energy resiliency policies, Beale AFB is need of an increased and  
833 alternative source of energy. Considering limited space on Beale AFB available for  
834 development and the abundance of wetlands across Beale AFB, it was determined that the  
835 least impactful solution is to find an off-Beale AFB source for power and evaluate methods to  
836 interconnect and route existing power on Beale AFB. Since Beale AFB already contracts with  
837 WAPA to obtain WAPA power over PG&E infrastructure and considering the proximity of  
838 WAPA’s existing 230-kV Cottonwood-Roseville transmission line, Beale AFB decided to  
839 proceed to plan and request an interconnection with the existing Cottonwood-Roseville  
840 transmission line and to evaluate alternative routes for the new interconnection line.

841 Beale AFB’s selection standards during screening of alternatives considered interference with  
842 existing Beale AFB infrastructure (e.g., runways, explosion arcs, etc.); potential for  
843 environmental impacts (e.g., known wetlands, flood zones, etc.); security and the line and  
844 substation’s vulnerability to vandalism or damage; existing access to Project facilities and



865 **3.0 AFFECTED ENVIRONMENT**

866 In this EA, the term "Project vicinity" refers to the general area surrounding the "Project area,"  
867 which collectively describes the area defined on and off Beale AFB where Project components  
868 could be located, depending on the final route. The Project area includes the "study area,"  
869 which are those areas evaluated in this EA for sensitive resources.

870 **3.1 SCOPE OF THE ANALYSIS**

871 This chapter describes the current conditions of the environmental resources, either man-made  
872 or natural, that may be affected by implementing the Project. Resources considered in this EA  
873 include those required under NEPA and CEQA. **Table 3-1** describes all resources considered  
874 for the Project, including where a detailed analysis can be found for those carried forward for  
875 evaluation and rationale for why resources were dropped from further evaluation. The table also  
876 includes the recommended impacts findings resulting from analysis in **Chapter 4** of this EA.

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**DRAFT ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Affected Environment**

***Beale WAPA Interconnection Project  
Yuba County, California***

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**DRAFT ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Affected Environment**

**Beale WAPA Interconnection Project  
Yuba County, California**

<b>TABLE 3-1 RESOURCES CONSIDERED</b>				
<b>Resource</b>	<b>Present and Potentially Affected</b>	<b>Present, Not Affected</b>	<b>Not Present</b>	<b>Rationale/Notes</b>
Aesthetics/Visual Resources	✓			Evaluated in Sections 3.2 and 4.2
Agriculture and Forestry Resources	✓			Evaluated in Sections 3.3 and 4.3
Air Quality	✓			Evaluated in Sections 3.4 and 4.4
Greenhouse Gas (GHG) Emissions	✓			Evaluated in Sections 3.4 and 4.4 (Air Quality)
Climate Change	✓			Evaluated in Sections 3.4 and 4.4 (Air Quality)
Biological Resources	✓			Evaluated in Sections 3.5 and 4.5, including vegetation and wildlife, threatened and endangered species, and state-listed species
Cultural and Tribal Resources	✓			Evaluated in Sections 3.6 and 4.6
Geology/Soils	✓			Evaluated in Sections 3.7 and 4.7
Hydrology/Water Quality	✓			Evaluated in Sections 3.8 and 4.8, including floodplains, wetlands, surface water, groundwater
Land Use/Planning	✓			Evaluated in Sections 3.9 and 4.9
Growth-inducing Impacts	✓			Evaluated in Sections 3.9 and 4.9 (Land Use)
Recreation		✓		Evaluated in Sections 3.9 and 4.9 (Land Use)
AICUZ Compatibility	✓			Evaluated in Sections 3.9 and 4.9 (Land Use)
Mineral Resources			✓	The Project does not intersect any area identified by Yuba County as containing mineral resources or active mines (Yuba County 2011). Mineral resources are not further evaluated in this EA.
Noise	✓			Evaluated in Sections 3.10 and 4.10
Population/Housing		✓		The closest residences to the proposed Project include one 80 feet from the Preferred Alternative, one 1,740 feet from the Northern A Alternative, and one 250 feet from the Southern

DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Affected Environment

Beale WAPA Interconnection Project  
Yuba County, California

TABLE 3-1 RESOURCES CONSIDERED				
Resource	Present and Potentially Affected	Present, Not Affected	Not Present	Rationale/Notes
				Alternative. No displacement of any people or houses would occur as a result of the Project. Population and housing are not evaluated further in this EA.
Public Health and Safety	✓			Evaluated in Sections 3.11 and 4.11
Hazards and Hazardous Materials	✓			Evaluated in Sections 3.11 and 4.11 (Public Health and Safety)
Public Services		✓		The Project would not result in population growth or associated changes in demand for public services. Public services are not evaluated further in this EA.
Socioeconomics and Environmental Justice		✓		Residents are in the area, but the Project is not expected to impact socioeconomics of the region or discriminate against minority or low-income populations. Any impacts to agriculture harvest would be compensated to the landowners. Socioeconomics and Environmental Justice are not evaluated further in this EA. Economic impact to farming operations are described in Section 4.3.
Transportation/Traffic	✓			Evaluated in Sections 3.12 and 4.12
Utilities/Service System	✓			Evaluated in Sections 3.13 and 4.13
Wild and Scenic Rivers			✓	The closest river listed under the Wild and Scenic Rivers Act is the Feather River, 25 miles north of the Project area (National Wild and Scenic Rivers Act of 1968 [Public Law 90-542; 16 U.S.C. 1271 et seq.]). Wild and Scenic Rivers are not evaluated further in this EA.



880 **3.2 AESTHETICS/VISUAL RESOURCES**

881 Visual resources are the opportunities to perceive the degree of harmony, contrast, and variety  
882 within a landscape. Landscapes of high visual quality may contain distinctive landforms,  
883 vegetation patterns, and/or water forms. The opportunities to perceive and appreciate the  
884 aesthetic quality of these visual features is generally higher in natural or unmodified landscapes.  
885 This section identifies and describes existing visual resources, including the features that  
886 contribute to the visual quality of the study area that could be affected by the Project, as well as  
887 whether or not designated scenic viewpoints or state scenic highways exist in the proximity of  
888 the Project.

889 The study area for visual resource related to this Project consists of lands located on the  
890 western portion of Beale AFB and extending west into neighboring private parcels including  
891 viewsheds where Project activities and facilities could potentially be seen from locations such as  
892 residences and recreation areas.

893 **3.2.1 Private Lands Viewshed**

894 The visual characteristics of the private lands within the western portion of the proposed Project  
895 area and the surrounding visual resources study area can be described as open, flat,  
896 agricultural, and lightly developed with a rural residential character. The private parcels within  
897 the proposed Project area and in the immediate surrounding area consist mostly of agricultural  
898 lands (irrigated cropland for rice, alfalfa, safflower, and corn) and lightly developed residential  
899 areas with an established rural road network.

900 There are existing electrical transmission and distribution lines in the visual environment,  
901 notably the existing pair of PG&E transmission lines running north to south through the  
902 proposed Project area and the existing WAPA Cottonwood-Roseville transmission line running  
903 north to south on the western boundary of the proposed Project area.

904 Designated scenic viewpoints are not located within a 10-mile radius on the private lands within  
905 the Project area. Sensitive viewing locations within this network of private lands would generally  
906 be residences in close proximity to the proposed development. The closest residences include  
907 one 80 feet from the Preferred Alternative, one 1,740 feet from the Northern A Alternative, and  
908 one 250 feet from the Southern Alternative.

909 **3.2.2 Beale AFB Viewshed**

910 The visual characteristics of the proposed Project area on Beale AFB and the surrounding  
911 visual resources study area can be described as open, flat grassland with adjacent military  
912 operational and residential development. The area consists of sparsely developed, open  
913 grasslands interspersed with vernal pools and adjacent to pre-existing roads and infrastructure.

914 **3.2.3 Adjacent Recreation Area Viewshed**

915 The Project vicinity contains several commonly used recreation areas, the nearest being the  
916 Yuba River, which at its closest point to the Project Area, is about 2.7 miles away. Boating,  
917 fishing, and waterfowl hunting are common usages of the river. Additionally, the Spenceville  
918 Wildlife Area borders Beale AFB on the east and is located between 8 and 10 miles from the

919 proposed Project area (Google Earth 2019). There are a variety of hiking trails and equestrian  
920 routes within the Spenceville Wildlife Area, with attractions such as ponds, creeks, waterfalls,  
921 woodlands, open meadows, and riparian zones among the features highlighted by these trails.  
922 Designated scenic overlooks or viewpoints are not present on the existing network of trails,  
923 roads, and routes within Spenceville Wildlife Area (CDFW 2019).

#### 924 **3.2.4 State Scenic Highway Viewshed**

925 Highway 49, a designated scenic highway, traverses northeastern Yuba County. However, it is  
926 located about 25 miles from the Project area. The closest National Scenic Byway is the Yuba-  
927 Donner Scenic Byway, a 175-mile loop through sections of Highways 20, 49, and 89 and  
928 Interstate 80. At its closest point, a section of Highway 49, the byway is located about 20 miles  
929 from the Project area (Google Earth 2019).

### 930 **3.3 AGRICULTURE AND FORESTRY RESOURCES**

931 This section describes existing agriculture and forestry resources located in the Project area.  
932 The study area for agriculture and forestry resources related to this Project consists of the  
933 transmission line corridor where Project facilities or construction may potentially impact these  
934 resources.

#### 935 **3.3.1 Forestry Resources**

936 Forestry resources are defined as forest land, including timberlands. Forest land is further  
937 defined as native tree cover greater than 10 percent that allows for management of timber,  
938 aesthetics, fish and wildlife, recreation, and other public benefits (California PRC Section  
939 12220(g)). Timberland, a subset of forest land, is defined by state law as land that is available  
940 for, and capable of, growing a crop of trees of any commercial species used to produce lumber  
941 and other forest products (PRC Section 4526) and can produce an average annual volume of  
942 wood fiber of at least 20 cubic feet per acre per year at its maximum production (PRC Section  
943 51104(g)).

944 None of the private lands in the Project area are zoned for forest or timber resources (Yuba  
945 County 2017). Beale AFB has not defined any of their land in the Project area as forest lands or  
946 forest resources (Beale AFB 2019), and GIS analysis and field assessment confirm that there  
947 are no forest resources in the Project area (Google Earth 2019; Transcon 2019b).

#### 948 **3.3.2 Agricultural Resources**

949 Agricultural lands provide public benefits, including open space; wildlife habitat; the production  
950 of food and fiber; and contributions to local, regional, state, and national economies. For the  
951 purposes of this analysis, agriculture resources are lands defined as Important Farmland by the  
952 Farmland Mapping and Monitoring Program (FMMP) of the California Department of  
953 Conservation (DOC), land planned or zoned for agricultural use by Yuba County or Beale AFB,  
954 as well as any California Land Conservation Act of 1965 (Williamson Act) lands under contract  
955 for agricultural use.

956 3.3.2.1 State and Beale AFB Designations

957 Important Farmland is classified by DOC as Prime Farmland, Farmland of Statewide  
958 Importance, Unique Farmland, and Farmland of Local Importance. These classifications  
959 recognize the land's suitability for agricultural production by considering physical and chemical  
960 characteristics of the soil, such as soil temperature range, depth of the groundwater table,  
961 flooding potential, rock fragment content, and rooting depth. The classifications also consider  
962 location, growing season, and moisture available to sustain high-yield crops (DOC 2019b).

963 According to the DOC's FMMP (DOC 2019b):

- 964 • *Prime Farmland* is "farmland with the best combination of physical and chemical features  
965 able to sustain long-term agricultural production. This land has the soil quality, growing  
966 season, and moisture supply needed to produce sustained high yields. Land must have  
967 been used for irrigated agricultural production at some time during the 4 years prior to  
968 the mapping date."
- 969 • *Unique Farmland* is "farmland of lesser quality soils used for the production of the state's  
970 leading agricultural crops. This land is usually irrigated, but may include non-irrigated  
971 orchards or vineyards as found in some climatic zones in California. Land must have  
972 been cropped at some time during the four years prior to the mapping date."
- 973 • *Farmland of Statewide Importance* is "farmland similar to Prime Farmland but with minor  
974 shortcomings, such as greater slopes or less ability to store soil moisture. Land must  
975 have been used for irrigated agricultural production at some time during the four years  
976 prior to the mapping date."
- 977 • *Farmland of Local Importance* is "land of importance to the local economy, as defined by  
978 each county's local advisory committee and adopted by its Board of Supervisors.  
979 Farmland of Local Importance is either currently producing, or has the capability of  
980 production; but does not meet the criteria of Prime, Statewide or Unique Farmland."

981 DOC estimates that California has approximately 31.6 million acres of agricultural land, of which  
982 approximately 12.2 million acres are classified as Important Farmland falling into the four  
983 categories defined above (DOC 2019b). Of California's total acreage of Important Farmland,  
984 DOC estimates that there are approximately 84,950 acres of Important Farmland in Yuba  
985 County (DOC 2019a).

986 Within the study area, all private land that is not within the developed footprint of existing roads,  
987 houses, or agricultural buildings is classified as either Unique Farmland or Farmland of  
988 Statewide Importance and is thus recognized as Important Farmland. There is no land  
989 designated as Prime Farmland within the study area (DOC 2019a).

990 Beale AFB does not classify any of its land within the study area as Important Farmland (DOC  
991 2019a). Beale AFB has a Grazing Management Program, with 12,789 acres that Beale AFB  
992 currently manages for seasonal grazing, principally for cattle (Beale AFB 2019). The study area  
993 for the proposed Project overlaps with one of the grazing units in the Beale AFB Grazing  
994 Management Program (Beale AFB 2019).

995 No Williamson Act contracts exist within the study area, as Yuba County does not offer  
996 Williamson Act contracts (DOC 2016).

997 3.3.2.2 Local designations

998 Yuba County has not defined any of their lands as Farmland of Local Importance. However, all  
999 private parcels within the study area have been planned by Yuba County within its most recent  
1000 General Plan as Natural Resources (NR), a land use designation that includes agricultural  
1001 production as a principal activity while allowing for other uses, including conservation, public  
1002 facilities, and infrastructure (Yuba County 2011). All private parcels within the study area have  
1003 been zoned Agricultural Exclusive (AE-80), a zoning designation that defines agricultural  
1004 production as a principal use (Yuba County 2015).

1005 **3.4 AIR QUALITY, GHG EMISSIONS, AND CLIMATE CHANGE**

1006 This section characterizes the existing conditions of the air quality environment in the Project  
1007 area, specifically the current concentrations of criteria pollutants in the air basin. The relevant  
1008 federal and state regulations are identified.

1009 The study area for air quality related to this Project consists of the Feather River Air Quality  
1010 Management District (FRAQMD) within the great Sacramento Valley Air Basin. Beale AFB and  
1011 the Project area is entirely within this air basin and air quality management district.

1012 **3.4.1 Summary of Relevant Air Quality Regulations**

1013 In accordance with Federal Clean Air Act (CAA) requirements, the air quality in a region or area  
1014 is measured by the concentration of criteria pollutants in the atmosphere. Air quality depends  
1015 on both the types and quantities of atmospheric pollutants and pollutant sources in an area, as  
1016 well as surface topography, the size of the topological "air basin," and the prevailing  
1017 meteorological conditions.

1018 The EPA developed standards under the CAA for a number of pollutants known to affect both  
1019 the environment and human health. These numerical concentration-based standards are the  
1020 National Ambient Air Quality Standard (NAAQS). The NAAQS set thresholds for the maximum  
1021 allowable concentrations for six primary pollutants: particulate matter less than 10 microns in  
1022 diameter (PM<sub>10</sub>) and less than 2.5 microns in diameter (PM<sub>2.5</sub>), sulfur oxides (SO<sub>x</sub>), ozone (O<sub>3</sub>),  
1023 carbon monoxide (CO), nitrogen oxides (NO<sub>x</sub>), and lead (Pb).

1024 The EPA has delegated its authority for enforcing air quality compliance to the California Air  
1025 Resources Board (CARB). CARB has delegated its authority to the local air pollution agencies  
1026 that manage various air basins, which are further subdivided into air quality management  
1027 districts (AQMDs).

1028 The CAA also gives states authority to establish their own air quality standards, and California  
1029 has developed their own California Ambient Air Quality Standards that are more rigorous than  
1030 the NAAQS. In addition to the six primary pollutants regulated by the NAAQS, California has  
1031 standards for a handful of other pollutants as well. **Table 3-2** presents the federal and state  
1032 ambient air quality standards.

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**Environmental Assessment  
Affected Environment**

**Beale WAPA Interconnection Project  
Yuba County, California**

<b>TABLE 3-2 FEDERAL AND STATE AMBIENT AIR QUALITY STANDARDS</b>				
<b>Pollutant</b>	<b>Averaging Time</b>	<b>Federal Primary Standard</b>	<b>State Primary Standard</b>	<b>Secondary Federal Standard</b>
CO	8 hours <sup>1</sup>	9 ppm	9 ppm	None
	1 hour <sup>1</sup>	35 ppm	20 ppm	None
Pb	3 month rolling <sup>2</sup>	0.15 µg/m <sup>3</sup>	None	Same as primary
	30-day average	None	1.5 µg/m <sup>3</sup>	None
Nitrogen dioxide (NO <sub>2</sub> )	1 hour <sup>3</sup>	100 ppb	180 ppb	None
	1 year <sup>4</sup>	53 ppb	30 ppb	Same as primary
O <sub>3</sub>	8 hours <sup>5</sup>	0.070 ppm	Same as federal	Same as primary
	1 hour	None	0.09 ppm	None
PM <sub>2.5</sub>	24 hours <sup>7</sup>	35 µg/m <sup>3</sup>	None	Same as primary
	1 year <sup>6</sup>	12 µg/m <sup>3</sup>	Same as federal	15 µg/m <sup>3</sup>
PM <sub>10</sub>	24 hours <sup>8</sup>	150 µg/m <sup>3</sup>	50 µg/m <sup>3</sup>	Same as primary
	1 year <sup>6</sup>	None	20 µg/m <sup>3</sup>	None
SO <sub>2</sub> (sulfur dioxide)	1 hour <sup>9</sup>	75 ppb	250 ppb	None
	3 hours <sup>1</sup>	None	None	0.5 ppm
	24 hours	140 ppb	40 ppb	None
Visibility Reducing Particles	8 hours	None	Extinction of 0.23/kilometers	None
Sulfates	24 hours	None	25 µg/m <sup>3</sup>	None
Hydrogen Sulfide	1 hour	None	30 ppb	None
Vinyl Chloride	24 hours	None	10 ppm	None
<sup>1</sup> Not to be exceeded more than once per year <sup>2</sup> Not to be exceeded <sup>3</sup> 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years <sup>4</sup> Annual mean <sup>5</sup> Annual 4th-highest daily maximum 8-hour concentration, averaged over 3 years <sup>6</sup> Annual mean, averaged over 3 years <sup>7</sup> 98th percentile, averaged over 3 years <sup>8</sup> Not to be exceeded more than once per year on average over 3 years <sup>9</sup> 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years				

1033 California has been divided into 15 distinct air basins. These are subdivided into AQMDs,  
 1034 typically along county lines. Air quality standards are used to determine if a given AQMD is in  
 1035 “attainment” or “nonattainment”. If the criteria pollutant concentrations are below the ambient air  
 1036 quality standards, the AQMD is classified as being in attainment. If pollutant concentrations are  
 1037 above ambient air quality standards, the AQMD is considered to be in nonattainment for these  
 1038 pollutants. AQMDs may also be classified as either “maintenance” or “unclassified.”  
 1039 “Maintenance” indicates that the district was previously in nonattainment, but pollutant  
 1040 concentrations have been reduced and the district is now in attainment. “Unclassified” indicates  
 1041 that there isn’t enough information to assign an appropriate classification. The air basins and

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1042 AQMDs relevant to this Project, including their attainment levels, are described under  
1043 Environment Consequences for Air Quality (Section 4.4, Air Quality Environmental  
1044 Consequences).

1045 Beale AFB is in Yuba County within the Sacramento Valley Air Basin. This basin is divided into  
1046 several AQMDs. Both Beale AFB and the proposed Project area are located within the  
1047 FRAQMD. The FRAQMD has published its indirect source review (ISR) guidelines for  
1048 assessing air quality impacts of land use Projects under CEQA. These guidelines apply for  
1049 determining significance of Project air quality impacts for both stationary and ongoing emissions  
1050 (FRAQMD 2010).

1051 In 2010, the CARB adopted the Regulation for Reducing Sulfur Hexafluoride (SF<sub>6</sub>) Emissions  
1052 from Gas-Insulated Switchgear. Electrical substations typically use SF<sub>6</sub> as the insulator in their  
1053 switchgear. If SF<sub>6</sub> switchgear is used, the Project would be subject to the maximum annual SF<sub>6</sub>  
1054 emission rates in § 95352 of the regulation (CARB 2010). WAPA and Beale AFB would both  
1055 also be required to adhere to the SF<sub>6</sub> inventory, recordkeeping, and annual reporting  
1056 requirements contained in the regulation. WAPA has already been performing mandatory GHG  
1057 reporting under this regulation and 40 CFR 08 since 2011 for their other facilities in the Sierra  
1058 Nevada Region. Proposed regulations would phase out the manufacture and sale of SF<sub>6</sub> gas-  
1059 insulated equipment starting in 2025 (CARB 2019).

1060 **3.4.2 General Conformity**

1061 The General Conformity Rule ensures that federal agency actions do not hinder air quality state  
1062 implementation plans. Under the rule, federal agencies must work with state, tribal, and local  
1063 governments in nonattainment or maintenance areas to ensure that their actions conform to the  
1064 applicable air quality implementation plan. General conformity does not apply for actions taken  
1065 in attainment areas or where the emissions associated with the action are below specified de  
1066 minimis levels. CAA conformity is ensured when a federal action does not result in a new  
1067 violation of the NAAQS, result in an increase to any current violations of the NAAQS, or delay  
1068 the attainment timeline or any progress milestones toward achieving compliance.

1069 The minimum thresholds for General Conformity consideration are given in **Table 3-3**.

<b>TABLE 3-3 MINIMUM GENERAL CONFORMITY AIR QUALITY THRESHOLDS</b>			
<b>Criteria Pollutant</b>	<b>Status</b>	<b>Classification</b>	<b>De minimis limit (tpy)</b>
O <sub>3</sub> (as VOCs or NO <sub>x</sub> )	Nonattainment	Serious	50
		Severe	25
		Extreme	10
		Other (inside transport region)	50
		Other (outside transport region)	100
	Maintenance	Inside transport region	50
		All other	100
CO	Nonattainment or maintenance	All	100
Sulfur dioxide (SO <sub>2</sub> )	Nonattainment or maintenance	All	100

TABLE 3-3 MINIMUM GENERAL CONFORMITY AIR QUALITY THRESHOLDS			
Criteria Pollutant	Status	Classification	De minimis limit (tpy)
NO <sub>2</sub>	Nonattainment or maintenance	All	100
PM <sub>10</sub>	Nonattainment	Moderate	100
		Serious	70
		Other classification	100
	Maintenance	All	100
PM <sub>2.5</sub>	Nonattainment or maintenance	Moderate	100
		Serious	70
		Other	100
Pb	Nonattainment or maintenance	All	25
40 CFR 93.153 as of 2016			

1070 **3.4.3 Stationary Source Permitting**

1071 Federal Prevention of Significant Deterioration (PSD) applies to any new stationary source of  
 1072 criteria pollutants or a significant modification to a stationary source that will result in greater  
 1073 emissions within attainment areas. PSD can also apply if it results in net emissions increases to  
 1074 an existing PSD major source, is within 10 kilometers of a national park or wilderness area  
 1075 (Class I area), and the stationary source emissions would result in an increase in the 24-hour  
 1076 average concentration of any regulated pollutant in the Class I area of at least 1 milligram per  
 1077 cubic meter. PSD also limits the allowable increase of criteria pollutants above ambient  
 1078 baseline conditions.

1079 Title V of the CAA is a second regulation that applies to stationary sources of air pollution. Title  
 1080 V requires state and local agencies to permit major stationary sources that have the potential to  
 1081 emit criteria pollutants and other hazardous air pollutants at levels greater than set thresholds.  
 1082 These major source thresholds are a function of the attainment status of an AQMD. Title V was  
 1083 enacted to provide regulatory control over major sources of air pollution and to be able to  
 1084 monitor their impact on air quality through reporting requirements. Neither WAPA nor Beale  
 1085 AFB are currently Title V permit holders.

1086 **3.4.4 GHG Emissions**

1087 GHGs are a specific type of emission that trap heat in the atmosphere. Both natural and  
 1088 anthropogenic sources of GHGs contribute to the overall concentration in the atmosphere. The  
 1089 most common GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane, NO<sub>x</sub>, and O<sub>3</sub>. The  
 1090 reporting threshold for GHG emissions from a project is 25,000 metric tons per year (tpy) of CO<sub>2</sub>  
 1091 equivalent (CO<sub>2e</sub>), excluding mobile source emissions. GHG emissions from stationary sources  
 1092 subject to PSD and Title V permitting have thresholds of significance of 75,000 tons and  
 1093 100,000 CO<sub>2e</sub> tpy, respectively (75 Federal Register 31514).

1094 In 2010, the DoD released its Strategic Sustainability Performance Plan, which prioritizes  
 1095 agency actions based on the return on investment for each action’s lifecycle under EO 13514,  
 1096 requiring agencies to set GHG reduction goals. The DoD reduction goals include reducing

1097 Scope 1 and 2 emissions (direct emissions and indirect emissions from purchased utility  
1098 services) by 34 percent by 2020, and Scope 3 emissions (other indirect emissions from agency  
1099 activities) by 13.5 percent by 2020.

1100 **3.4.5 Existing Ambient Air Quality**

1101 The FRAQMD is responsible for implementing and enforcing state and federal air quality  
1102 regulations in Yuba and Sutter counties. The existing ambient air quality in both counties is  
1103 shown in **Table 3-4**. The FRAQMD has designated sections of Sutter and Yuba counties as a  
1104 nonattainment area for 8-hour O<sub>3</sub>, 1-hour O<sub>3</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> (FRAQMD 2019; SVAQEEP  
1105 2018). The County is designated as unclassified/attainment for all other state and federal  
1106 criteria pollutants (FRAQMD 2010). Beale AFB is not within 10 kilometers (6.2 miles) of a Class  
1107 I area, defined as national parks larger than 6,000 acres or all national wilderness areas.

TABLE 3-4 EXISTING PROJECT AREA AMBIENT AIR QUALITY			
Pollutant	Standard	Yuba County Designation	Sutter County Designation
CO	All	Attainment	Attainment
Pb	All	Attainment	Attainment
NO <sub>2</sub>	All	Attainment	Attainment
O <sub>3</sub>	8-hour	Attainment	Nonattainment
	1-hour	Nonattainment	Nonattainment
PM <sub>2.5</sub>	State	Attainment	Attainment
	Federal	Maintenance	Attainment
PM <sub>10</sub>	State	Nonattainment	Nonattainment
	Federal	Attainment	Attainment
SO <sub>2</sub> (sulfur dioxide)	1-hour	Attainment	Attainment
Visibility-reducing particles	8-hour	Unclassified	Unclassified
Sulfates	24-hour	Attainment	Attainment
Hydrogen sulfide	1-hour	Unclassified	Unclassified
FRAQMD 2010, 2019; SVAQEEP 2018			

1108 **3.5 BIOLOGICAL RESOURCES**

1109 Biological resources include the fish, wildlife, plants, and their respective habitats that occur  
1110 within or adjacent to the Project area. The following sections summarize those biological  
1111 resources that may be affected by the Project, including vegetation communities (including  
1112 waters and wetlands), special-status plants, general wildlife, and special-status wildlife. A  
1113 detailed Biological Resources Report for the Project can be found in **Appendix E**.



1114 **3.5.1 Study Area**

1115 The study area for biological resources extends between 325 and 400 feet from each alternative  
1116 corridor (inclusive of poles/pole foundations, underground facilities, substations, and access  
1117 roads) to capture any biological resources that may be directly or indirectly impacted by Project  
1118 activities. The study area was fully surveyed as part of the Biological Resources Report and  
1119 Aquatic Resources Report; in addition, the on-Beale AFB area between where the Preferred  
1120 Alternative and Northern A Alternative diverge was also surveyed to account for any potential  
1121 adjustments to either alternative.

1122 **3.5.2 Vegetation Communities**

1123 A variety of vegetation communities occur within the Project area. These communities were  
1124 categorized during biological resource surveys using WAPA's data dictionary and are based on  
1125 habitat types described in *Preliminary Descriptions of the Terrestrial Natural Communities of*  
1126 *California* (Holland 1986) and *A Manual of California Vegetation* (Sawyer et al. 2009). Other  
1127 non-vegetation community types (i.e., lakes, rivers, and urban areas) are categorized based on  
1128 *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer 1988).

1129 **3.5.2.1 Upland Habitats**

1130 The following upland habitats occur in the study area:

- 1131 • Agricultural Land—Agricultural cropland and pasture. Within the Project area,  
1132 agricultural cropland typically consists of a monoculture of rice fields, row crops, or  
1133 orchards. Most agricultural cropland in the Project area is rice fields, which are  
1134 seasonally flooded and provide habitat for wildlife such as waterfowl and giant garter  
1135 snakes (*Thamnophis gigas*). Cropland in the Project area is often bisected by man-  
1136 made agricultural roadside ditches and irrigation canals, some of which contain wetland  
1137 vegetation and provide habitat for wildlife.
- 1138 Pasture vegetation is a mix of annual and perennial grasses, forbs, and legumes that  
1139 normally provide 100-percent ground cover. The mix of grasses and legumes varies  
1140 according to management practices such as seed mixture, fertilization, soil type,  
1141 irrigation methods, weed control, and livestock type.
- 1142 • Barren—Bare ground lacking vegetative cover. This habitat type includes roads and  
1143 other disturbed or developed areas devoid of vegetation and occur intermittently  
1144 throughout the Project area.
- 1145 • Annual Grasslands—Non-native annual/naturalized. This is the most commonly  
1146 occurring vegetation community within the Project area and is primarily located in the  
1147 portions of the Project area within Beale AFB and on a small off-Beale AFB portion of  
1148 the Southern Alternative along Erle Road. Within the Project area, this community is  
1149 dominated by non-native grasses and forbs, including wild oat (*Avena* spp.), ripgut  
1150 brome (*Bromus diandrus*), Italian ryegrass (*Lolium perenne*), soft chess (*Bromus*  
1151 *hordaceus*), medusahead (*Elymus caput-medusae*), yellow star-thistle (*Centaurea*  
1152 *solstitialis*), foxtail barley (*Hordeum jubatum*), filaree (*Erodium* spp.), black mustard  
1153 (*Brassica nigra*), and common vetch (*Vicia sativa*). Interspersed with these non-native  
1154 species are native grasses and forbs that include purple needlegrass (*Nassella pulchra*),  
1155 California melic (*Melica californica*), fiddleneck (*Amsinckia* spp.), doveweed

- 1156 (*Eremocarpus setigerus*), various lupine (*Lupinus* spp.), mariposa lily (*Calochortus* spp.),  
1157 and brodiaea species (*Brodiaea* spp.).
- 1158 • Urban—Lawns, ornamental trees, backyards, and ruderal areas near urban  
1159 environments. Urban habitat includes areas such as parking lots; city parks; schools;  
1160 landscaped areas; and residential developments, lawns, and backyards. Vegetation is  
1161 highly variable in these areas, including a broad array of trees and shrubs planted and  
1162 maintained as landscaping.
  - 1163 • Elderberry—A single elderberry tree (*Sambucus nigra* ssp. *caerulea*) was identified within  
1164 the floodplain of Reeds Creek on Beale AFB, occurring within the study area but not  
1165 within the Project corridor on Beale AFB.
  - 1166 • Eucalyptus—A small stand of non-native eucalyptus trees is present along the Southern  
1167 Alternative on Beale AFB.

### 1168 3.5.2.2 Wetland Habitats

1169 The following wetland habitats occur in the study area:

- 1170 • Wetlands, freshwater marsh—These wetlands are characterized by perennial, emergent  
1171 hydrophytic vegetation occurring in sites that lack significant current and are  
1172 permanently or nearly permanently flooded with fresh water. Within the Project area,  
1173 these wetlands occur primarily adjacent to the intermittent waterways (i.e., Reeds Creek,  
1174 Hutchinson Creek). Freshwater marshes near the Project area are usually dominated by  
1175 cattails (*Typha latifolia* or *T. angustifolia*), bulrushes (*Schoenoplectus* spp.), nutsedges  
1176 (*Cyperus* spp.), and rushes (*Juncus* spp.).
- 1177 • Wetlands, seasonal—Seasonal wetlands are isolated depressions or swales  
1178 characterized by seasonal ponding that provide habitat for wetland plant species such as  
1179 Pacific rush (*J. effusus*), curly dock (*Rumex crispus*), rushes, and spikerushes  
1180 (*Eleocharis* spp.). Seasonal wetlands may also include non-natives such as Himalayan  
1181 blackberry (*Rubus armeniacus*), wild radish (*Raphanus sativus*), poison hemlock  
1182 (*Conium maculatum*), and fennel (*Foeniculum vulgare*).
- 1183 • Wetlands, vernal pool, and vernal swales—Numerous vernal pools are interspersed  
1184 throughout the grassland communities of all Project alternatives on Beale AFB. These  
1185 small, shallow depressions are temporary seasonal wetlands that fill with water during  
1186 the rainy season and dry during the spring and summer months. Vernal pools within the  
1187 study areas are characterized as Northern Hardpan vernal pools, which have formed on  
1188 alluvial terraces above impermeable soil surfaces created by an accumulation of clay  
1189 particles.
  - 1190 ○ Many of the vernal pools within the Project area are hydrologically connected via  
1191 swales that have similar characteristics as vernal pools, though they typically  
1192 experience less extensive inundation. The majority of vernal pools and swales  
1193 within the Project area were mapped previously using Lidar (USACE 2006), while  
1194 several were also identified during the biological resource surveys (Transcon  
1195 2019b).
  - 1196 ○ Within the Project area, dominant plants within vernal pools (and swales to a  
1197 lesser extent) include coyote thistle (*Eryngium vaseyi*), white head navarretia  
1198 (*Navarretia leucocephala*), Fremont's goldfields (*Lasthenia fremontii*), smooth  
1199 goldfields (*L. glaberrima*), Carter's buttercup (*Ranunculus bonariensis*), field

1200 owl's-clover (*Castilleja campestris*), pale spike rush (*Eleocharis macrostachya*),  
1201 and dwarf wooly marbles (*Psilocarphus brevissimus*).

1202 ○ A number of sensitive plant and animal species rely on vernal pool habitats,  
1203 resulting in special management consideration. Characteristic special-status  
1204 plant species that may occur within the Project area include dwarf downingia  
1205 (*Downingia pusilla*) and legenere (*Legenere limosa*). Federally threatened or  
1206 endangered vernal pool invertebrate species with habitat in the Project area  
1207 include vernal pool fairy shrimp (*Branchinecta lynchi*) and vernal pool tadpole  
1208 shrimp (*Lepidurus packardii*).

1209 • Waters, man-made—Man-made water features such as stock ponds, roadside ditches,  
1210 agricultural drainages, and irrigation (or water supply) canals often support wetland  
1211 vegetation and flowing water that provide habitat for wildlife. Roadside ditches,  
1212 drainages, and irrigation canals associated with agricultural irrigation operations occur  
1213 on those portions of the Project area not located on Beale AFB.

1214 • Waters, creeks/streams—Riverine habitats such as rivers and streams that have  
1215 intermittent or continually running water. Within the Project area, riverine habitats  
1216 include perennial creeks, which hold water most of the year, and intermittent streams  
1217 and ephemeral drainages, which hold water seasonally. Reeds Creek, a perennial  
1218 stream that runs along the northern and western boundaries of Beale AFB, would be  
1219 crossed by the Preferred Alternative and the Northern A Alternative just west of Patrol  
1220 Road.

### 1221 3.5.3 Special-status Plants

1222 Special-status plant species that have the potential to occur within the Project area were  
1223 identified from several resources. Prior to Project field surveys, a California Natural Diversity  
1224 Database (CNDDDB) search was performed within 3 miles of each alternative to identify any  
1225 known occurrences of special-status species within the region. Additional species occurrence  
1226 data and lists were obtained from the USFWS iPac database (USFWS 2017a), California Native  
1227 Plant Society (CNPS) (CNPS 2017), and Beale AFB Integrated Natural Resources Management  
1228 Plan (Beale AFB 2019).

1229 No federally listed plant species are known to occur within the Project area. Plants considered in  
1230 this document are collectively referred to as special-status species, defined in this EA by the  
1231 following criteria:

- 1232 • Species listed as threatened or endangered or those proposed for listing under the  
1233 federal ESA and/or California Endangered Species Act (CESA).
- 1234 • Species that are listed as California Rare Plant Ranks (CRPR) 1 or 2 on the CNPS's  
1235 Inventory of Rare and Endangered Plants.

#### 1236 3.5.3.1 Special-status Plants Eliminated from Consideration

1237 Two special-status plants that had the potential to occur within the Project area have been  
1238 dropped from further consideration for this Project, including Hartweg's golden sunburst  
1239 (*Pseudobahia bahiifolia*: FE) and veiny monardella (*Monardella venosa*; CRPR 1B.1).

1240 **Appendix F** lists these species and the reasons for their elimination from consideration.

1241 3.5.3.2 Special-status Plants Retained for Consideration

1242 Dwarf downingia (CRPR 2B.2) and legenera (CRPR 1B.1) are two special-status plants that  
1243 may occur within the Project area. **Appendix F** includes habitat information for each species  
1244 and potential for occurrence by Project alternative.

1245 **3.5.4 Wildlife**

1246 This section presents a description of general wildlife resources within the Project area. Within  
1247 this section, general wildlife refers to all mammal, bird, invertebrate, reptile, and amphibian  
1248 species that are not protected under applicable state or federal laws.

1249 In order to gather information on potential effects of the Project to general wildlife, an extensive  
1250 biological survey of the entire Project area, including habitat mapping and an incidental wildlife  
1251 survey of the study area, was conducted. Additionally, data was gathered through literature  
1252 review and Beale AFB natural resources personnel who are familiar with the Project area. The  
1253 following section describes the environmental baseline conditions throughout the Project area,  
1254 including identification of general wildlife species known to occur.

1255 The following wildlife species are typical for the grassland habitats within the Project area:

- 1256 • Bird species, including the rough-legged hawk (*Buteo lagopus*), western king bird  
1257 (*Tyrannus verticalis*), western meadowlark (*Sturnella neglecta*), lark sparrow  
1258 (*Chondestes grammacus*), savannah sparrow (*Passerculus sandwichensis*), horned lark  
1259 (*Eremophila alpestris*), and Brewer's blackbird (*Euphagus cyanocephalus*) (Beale AFB  
1260 2019).
- 1261 • A variety of mammals that include mule deer (*Odocoileus hemionus*), California ground  
1262 squirrels (*Spermophilus beecheyi*), gray fox (*Urocyon cinereoargenteus*) and coyote  
1263 (*Canis latrans*) (Beale AFB 2019).
- 1264 • Reptiles such as gopher snake (*Pituophis catenifer*), western rattlesnake (*Crotalus*  
1265 *oreganus*), terrestrial and common garter snakes (*Thamnophis* spp.), western yellow-  
1266 bellied racer (*Coluber constrictor*), common king snake (*Lampropeltis getula*), alligator  
1267 lizard (*Elgaria coerulea*), and western fence lizard (*Sceloporus occidentalis*) (Beale AFB  
1268 2019).

1269 The following wildlife species are typical for the wetland and vernal pool habitats within the  
1270 Project area:

- 1271 • Ducks and other wading birds can be abundant in these habitats during the wet season  
1272 and migratory bird season.
- 1273 • In the vernal pool habitats on Beale AFB, Pacific treefrogs (*Hyla regilla*), western toads  
1274 (*Anaxyrus boreas*), and other amphibians can become particularly active during the wet  
1275 season.
- 1276 • Many predators, including common garter snakes and raccoons (*Procyon lotor*), are also  
1277 drawn to these wetland areas during the wet season due to increased prey abundance.

1278 **3.5.5 Special-status Wildlife**

1279 Special-status wildlife species that have potential to occur within the Project area were identified  
1280 from several resources. Prior to Project field surveys, a CNDDDB search was performed within 3

1281 miles of the Project area to identify any known occurrences of special-status wildlife species  
1282 within the region. Additional species occurrence data and lists were obtained from the USFWS  
1283 (USFWS 2017a), eBird online database (eBird 2017), and Beale AFB (Beale AFB 2019).

1284 This section presents a description of special-status wildlife species that could occur within the  
1285 Project area. Information presented in this section is based on the previously described study  
1286 area for biological resources and an assessment of habitat suitability for special-status species  
1287 and identification of any special-status species occurrences (if any) using a GPS unit with sub-  
1288 meter accuracy. Additionally, data was gathered through literature review and consultation with  
1289 local species experts.

1290 For purposes of this document, special-status wildlife species are defined as those animals  
1291 (invertebrates, amphibians, reptiles, birds, and mammals) whose geographic range and native  
1292 habitats overlap with the Project area and that are:

- 1293 • Species listed as threatened or endangered or those proposed for listing under the  
1294 Federal ESA and CESA.
- 1295 • Species that are fully protected by the State of California or are considered state species  
1296 of special concern.

1297 As a result of their own biological requirements as well as the effects of reduced and degraded  
1298 habitats, isolation of metapopulations, and low population numbers, special-status species are  
1299 characteristically less tolerant of environmental changes, such as those stemming from the all  
1300 three Project Alternatives. Special-status species are especially vulnerable to habitat loss,  
1301 modification, and fragmentation; human presence, disturbance, and noise; changes to the prey  
1302 base; and introduction of environmental pollutants. Adverse impacts to special-status species  
1303 are of greater concern because these species are imperiled.

#### 1304 3.5.5.1 Critical Habitat

1305 Critical habitat is a formal term under the Federal ESA. When a species is listed as threatened  
1306 or endangered, the USFWS may officially designate specific geographic areas for habitat  
1307 protection. Critical habitat is defined as specific areas that are essential to the conservation of a  
1308 federally-listed species and that may require special management consideration or protection.  
1309 Critical habitat is determined using the best available scientific information about the physical  
1310 and biological needs of the species. These needs, or “physical or biological features,” include  
1311 space for individual and population growth and for normal behavior; food, water, light, air,  
1312 minerals, or other nutritional or physiological needs; cover or shelter; sites for breeding,  
1313 reproduction, and rearing of offspring; and habitat that is protected from disturbance or is  
1314 representative of the historical geographic and ecological distribution of a species. Designated  
1315 critical habitat areas have all the essential elements required for survival of specific listed  
1316 species (primary constituent elements).

1317 Critical habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp exists in the study  
1318 area along the Southern Alternative, as described below.

#### 1319 3.5.5.2 Special-status Species Considered

1320 A total of 10 special-status wildlife species that were originally considered to have the potential  
1321 to occur in the Project area have been dropped from further consideration for this Project, either

1322 because their range did not include the Project area or their habitat types were not found within  
1323 the Project area. **Appendix F** lists these species and the reasons for their elimination from  
1324 consideration.

#### 1325 3.5.5.3 Special-status Wildlife Retained for Consideration

1326 Nineteen special-status wildlife species may occur within the Project area. **Appendix F**  
1327 includes habitat information for each species and potential for occurrence by Project alternative.  
1328 These species are further discussed below.

#### 1329 *Amphibians*

1330 One special-status amphibian, western spadefoot toad (*Spea hammondi*), has potential to  
1331 occur in the Project area. Western spadefoot toads are dependent on vernal pools and other  
1332 seasonal ponds for breeding, laying their eggs in water in winter or early spring. However, they  
1333 spend most of their lives in the nonbreeding season in underground burrows, dispersing as far  
1334 as 1,200 feet from breeding pools. Suitable breeding and dispersal habitat for this species is  
1335 present in all Project alternative areas.

#### 1336 *Birds*

1337 Thirteen special-status birds have the potential to occur in all Project alternative areas, including  
1338 American peregrine falcon (*Falco peregrinus*), bald eagle (*Haliaeetus leucocephalus*), California  
1339 black rail (*Laterallus jamaicensis coturniculus*), golden eagle (*Aquila chrysaetos*), grasshopper  
1340 sparrow (*Ammodramus savannarum*), loggerhead shrike (*Lanius ludovicianus*), northern harrier  
1341 (*Circus hudsonius*), prairie falcon (*F. mexicanus*), short-eared owl (*Asio flammeus*), Swainson's  
1342 hawk (*Buteo swainsoni*), tricolored blackbird (*Agelaius tricolor*), white-tailed kite (*Elanus*  
1343 *leucurus*), and western burrowing owl (*Athene cunicularia*). In addition, numerous migratory  
1344 birds have the potential to occur in and adjacent to all Project alternative areas.

1345 Grasshopper sparrows, loggerhead shrikes, northern harriers, short-eared owls, Swainson's  
1346 hawks, and western burrowing owls are open-country hunters that could nest in the grasslands  
1347 and agricultural habitats in each of the Project alternative areas. Loggerhead shrikes and  
1348 Swainson's hawks nest in trees or shrubs (several trees and shrubs are scattered throughout  
1349 the Project area); northern harriers and short-eared owls on the ground in meadows,  
1350 grasslands, wetlands, shrublands and fields; and burrowing owls in underground burrows in  
1351 grasslands.

1352 There is no preferred nesting habitat for bald eagles in the Project area, but bald eagles could  
1353 transit the Project area in the early winter, and golden eagles could nest in large trees or on the  
1354 ground. California black rails and tricolored blackbirds require wetlands for breeding. There is  
1355 marginal suitable nesting habitat for these species in the Project area, and both could occur.

#### 1356 *Invertebrates*

1357 Three special-status invertebrates have potential to occur in the Project area, including valley  
1358 elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp, and  
1359 vernal pool tadpole shrimp (collectively, vernal pool crustaceans). The valley elderberry  
1360 longhorn beetle is completely dependent on its host plant, the elderberry shrub. This beetle lays  
1361 its eggs in the crevices of elderberry shrubs, and after hatching, the larvae tunnel through and  
1362 feed on the stems, trunks, and roots of the plant, emerging in one to two years. Elderberry  
1363 shrubs are found in the remaining riparian forests and adjacent uplands of the Central Valley

1364 (USFWS 2017b). During field surveys, only one elderberry shrub was located within the study  
1365 area in the Reeds Creek floodplain (northern survey area) and no valley elderberry longhorn  
1366 beetle exit holes were visible on the plant. No elderberry shrubs were identified in the off-Beale  
1367 AFB portions of the Project. As such, it is very unlikely that valley elderberry longhorn beetle  
1368 would occur in the Project area.

1369 Vernal pool crustaceans are well documented within several vernal pools on Beale AFB (Beale  
1370 AFB 2019). Vernal pools are usually shallow, natural depressions in level ground—with no  
1371 permanent aboveground outlet—that hold water for variable periods of time during the winter  
1372 and are typically dry all summer and fall. Vernal pool crustaceans live their entire lives in vernal  
1373 pools, over-summering as cysts (USFWS 2007a, 2007b). Both species are expected to occur  
1374 within vernal pools and swales within the Project area on Beale AFB, though they are not  
1375 expected to occur off Beale AFB as no vernal pools were identified in those areas during field  
1376 surveys. Critical habitat for both of these species occurs within the Project area along the  
1377 Southern Alternative just north of Erle Road on the off-Beale AFB portion of the alignment.

### 1378 *Mammals*

1379 Three special-status mammals (all bats) have potential to occur in the Project area. Pallid bat  
1380 (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat  
1381 (*Lasiurus blossevillii*) may forage in the area but are not expected to roost in the Project area  
1382 due to the lack of suitable roosting habitat (e.g., caves, rock outcrops, buildings).

### 1383 *Reptiles*

1384 Two special-status reptiles, giant garter snake and western pond turtle (*Actinemys marmorata*),  
1385 have potential to occur in all Project alternative areas. The giant garter snake, a highly aquatic  
1386 snake found exclusively in the Central Valley, is primarily found in marshes and sloughs but also  
1387 in rice fields, roadside drainage and irrigation ditches, and occasionally in slow-moving creeks.  
1388 It prefers open, marshy areas where it can bask. Potential suitable habitat for giant garter  
1389 snake possessing the minimum habitat requirements necessary exists on Beale AFB adjacent  
1390 to Reeds Creek. However, multiple protocol-level surveys from 2005 to 2018 have not detected  
1391 any individuals, and it is assumed the species is not present within Beale AFB (Beale AFB  
1392 2019; Hansen 2019). Portions of the Project area on private lands include agricultural parcels  
1393 where rice is being cultivated. Although there are no known occurrences of giant garter snake  
1394 within 10 miles of the Project area, the rice fields and associated canals may provide suitable  
1395 habitat for the species (Halstead et al. 2015). It is assumed that giant garter snake may be  
1396 present in low numbers within these areas.

1397 Western pond turtles are found in many different aquatic habitats, from ponds to sloughs and  
1398 roadside ditches, creeks and rivers, lakes, and reservoirs. They are active year-round and can  
1399 travel overland at least 1,000 feet away from water to lay their eggs in open areas on dry slopes  
1400 (Nafis 2018). There are several intermittent streams, associated emergent wetlands, a drainage  
1401 pond, and drainage canals and roadside ditches present in the Project area that may provide  
1402 suitable habitat for western pond turtle.

## 1403 **3.6 CULTURAL, TRIBAL, AND PALEONTOLOGICAL RESOURCES**

1404 The consultant prepared two cultural resource reports for the Project, a Cultural Resources  
1405 Background Research and Field Strategy Report (Loftus 2019) and a Cultural Resources  
1406 Inventory Report (Bassett 2019). WAPA consulted with 13 local Native American tribes to

1407 determine if any sacred sites or traditional cultural properties (TCPs) are present within the  
1408 project area. The 13 tribes consulted with were selected from lists provided by the Native  
1409 America Heritage Commission and Beale AFB. Following tribal consultation and their review of  
1410 the Cultural Resources Background Research and Field Strategy Report (Loftus 2019), WAPA  
1411 initiated consultation with the California SHPO on March 20, 2019. The SHPO responded to  
1412 this initial consultation on April 19, 2019, concurring with WAPA's initial consultations and  
1413 proposed inventory methodology.

1414 Cultural resources include archaeological sites, historic structures, sacred sites, and TCPs,  
1415 which are important to a community's practices and beliefs and are necessary to maintain a  
1416 community's cultural identity. The NHPA (54 USC 300101) requires that all federal agencies  
1417 take into account the effects of their actions on historic properties and provide the Advisory  
1418 Council on Historic Preservation with an opportunity to comment on those actions. The term  
1419 "historic properties" refers to cultural resources that contribute significantly to history and meet  
1420 the specific criteria outlined in 35 CFR Part 60.4 for listing on the NRHP.

1421 For purposes of NHPA analysis, the term "historical resources" shall include cultural resources:

- 1422 a. That are associated with events that have made a significant contribution to the broad  
1423 patterns of our history; or
- 1424 b. That are associated with the lives of significant persons in or past; or
- 1425 c. That embody the distinctive characteristics of a type, period, or method of construction,  
1426 or that represent the work of a master, or that possess high artistic values, or that  
1427 represent a significant and distinguishable entity whose components may lack individual  
1428 distinction; or
- 1429 d. That have yielded or may be likely to yield, information important in history or prehistory.

1430 To be listed in the NRHP, a property must not only be shown to be significant under the NRHP  
1431 criteria, but it also must possess several, and usually most, of seven aspects of integrity:  
1432 location, design, setting, materials, workmanship, feeling, and association.

1433 For the purpose of CEQA analysis, a historic property includes:

- 1434 (1) A resource listed in, or determined to be eligible by the State Historical Resources  
1435 Commission, for listing in the California Register of Historical Resources.
- 1436 (2) A resource included in a local register of historical resources or identified as historically  
1437 or culturally significant.
- 1438 (3) Any object, building, structure, site, area, or place which a lead agency determines to be  
1439 historically significant and which meets the criteria for listing on the California Register of  
1440 Historical Resources, including the following:
  - 1441 a. Is associated with events that have made a significant contribution to the broad  
1442 patterns of California's history and cultural heritage;
  - 1443 b. Is associated with the lives of persons important in our past;
  - 1444 c. Embodies the distinctive characteristics of a type, period, region, or method of  
1445 construction, or represents the work of an important creative individual, or  
1446 possesses high artistic values; or
  - 1447 d. Has yielded, or may be likely to yield, information important in prehistory or  
1448 history.



## DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Affected Environment

Beale WAPA Interconnection Project  
Yuba County, California

- 1449 The cultural setting of the Project area is discussed in detail in Thomas and West (1879), Bal  
1450 (1993), Nilsson et al. (1995), Beale AFB (2016b), and Loftus (2019).
- 1451 The prehistoric cultural sequence for the Project area can be divided into one cultural complex  
1452 and three cultural patterns spanning the Late Pleistocene/Early Holocene period to the Late  
1453 Prehistoric period (Moratto 1984). The complex and cultural patterns overlap with five temporal  
1454 periods referred to as the Paleoindian period (ca 11,500 to 8550 B.C.), the Lower Archaic period  
1455 (ca 8550 to 550 B.C.), Middle Archaic period (ca 5550 to 550 B.C.), Upper Archaic period (ca  
1456 550 B.C. to A.D. 1100), and the Emergent/Late-Prehistoric period (A.D. 1100 to Historic  
1457 Contact) (Frederickson 1973; Rosenthal et al. 2007). Although some prehistoric sites have  
1458 been identified as associated with oak groves and bedrock mortars on the eastern side of Beale  
1459 AFB, few have been found in the vicinity of the Project (Beale AFB 2016b). This paucity of sites  
1460 is typical of the Central Valley where identifiable prehistoric remains are rare.
- 1461 The Project area is within the tribal territory of the Valley Nisenan, speakers of the Maiduan sub-  
1462 group of the Penutian language family (Beals 1933; Golla 2011; Kroeber 1925, 1929). Nisenan  
1463 villages were established on low rises above the streams and rivers of the Central Valley and on  
1464 the south-facing slopes near water sources (Beale AFB 2016b). No villages or settlements  
1465 have been identified near to the Project area or within Beale AFB boundaries, with the nearest  
1466 village being *Chiemwie*, situated approximately 1.2 miles northwest (Wilson and Town 1978).
- 1467 The post-contact period of California is divided into three periods: the Spanish period (1769 to  
1468 1822), the Mexican period (1822 to 1848), and the American period (1848 to present day). Very  
1469 little European activity occurred in the Project vicinity during the Spanish and Mexican periods.  
1470 However, the discovery of gold in 1848 triggered an influx of tens of thousands of fortune  
1471 seekers (Bibby 1994; Wilson and Towne 1978). The first development included early roads  
1472 connecting Marysville to Sacramento and the mining districts in the foothills. Farms in the  
1473 region provided food to the mining camps, and hay for stock feed was a prime commodity  
1474 (Neyens 1976). These farms raised livestock and grew wheat, barley, potatoes, hay, grapes,  
1475 figs, oats, and olives (Bal 1993; Nilsson et al. 1995; Thompson and West 1879). Historic maps  
1476 dating to between 1855 and 1947 indicate the location of major roads, secondary wagon roads,  
1477 a railroad, small settlements, and isolated farmsteads (Beale AFB 2016b). When the U.S.  
1478 Army's Camp Beale was established in 1942, historic developments on Beale AFB were all  
1479 demolished. By the 1970s, much of the agricultural land off Beale AFB was flooded for rice  
1480 cultivation.
- 1481 The 1942 to 1944 buildup of Camp Beale resulted in the construction of a large number of  
1482 buildings, mostly near to the east end of the Project's Southern Alternative. Most of these  
1483 structures, including many that had been converted into a prison camp for German prisoners of  
1484 war (POWs), were demolished by 1952. Beginning in the mid-1950s, the former Camp Beale  
1485 was converted into an USAF base with airfield. Most of this later military development is along  
1486 the east end of the Northern Alternatives (Beale AFB 2016b).
- 1487 For the purposes of this Project, the consultant studied an area of potential effects (APE)  
1488 inclusive of an area of direct impacts and a much wider area of indirect impacts. The APE of  
1489 direct impacts is all areas where physical construction has the potential to occur and includes  
1490 approximately 1 mile of 300-foot-wide study corridor for the 230-kV line alternatives outside of  
1491 Beale AFB (on private land), approximately 3.4 miles of 200-foot-wide study corridor for the 230-  
1492 kV line within Beale AFB, approximately 1 mile of 80-foot-wide study corridor for the 60-kV  
1493 overhead line (Southern Alternative only), approximately 2.5 miles of 40-foot-wide study corridor



DRAFT ENVIRONMENTAL ASSESSMENT

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Beale WAPA Interconnection Project  
Yuba County, California

TABLE 3-5 CULTURAL RESOURCES RESULTS SUMMARY				
Resource Designation	Description	NRHP Eligibility	Alternative	Recommended Action
<i>APE for Direct Impacts</i>				
CA-YUB-1390H (P-58-001541)	Camp Beale POW camp	Determined Not Eligible (cellblock managed as Eligible)	Southern (on Beale AFB)	None
CA-YUB-1420H (P-58-001587)	Historic farmstead	Determined Not Eligible	Preferred Alternative (on Beale AFB)	None
PL-15H	Camp Beale cantonment area	Recommended Not Eligible	Southern (on Beale AFB)	None
BWIP-1	Erle Road	Unevaluated	Southern (mostly off Beale AFB)	None
BWIP-2	Historic roadbed	Recommended Ineligible	Northern A; shared Northern alignments (on Beale AFB)	None
BWIP-IO-1	Cadastral benchmark	Recommended Ineligible	Shared Northern alignments western laydown area (on Beale AFB)	None
<i>APE for Indirect Impacts</i>				
VR-1	Boardman Ranch	Unevaluated	Southern (off Beale AFB)	None
VR-2	Farm complex	Unevaluated	Southern (off Beale AFB)	None
VR-3	POW cellblock	Recommended Eligible	Southern (on Beale AFB)	None
VR-4	1958-era Beale AFB communication facility	Recommended Ineligible	Shared Northern alignments (on Beale AFB)	None

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1508 **3.6.1 Paleontological Resources**

1509 Paleontological resources are non-renewable natural resources of vertebrate, non-vertebrate,  
1510 marine, and plant type and are afforded protection under federal, state, and county regulations.  
1511 The Project is located within the Laguna Formation of Pliocene-Pleistocene age and consists of  
1512 a dissected alluvial fan. Evidence of historic river channels across the Project area is based on  
1513 field observations and boring samples taken during a geotechnical report prepared for the Beale  
1514 AFB 60-kV Underground Transmission Line in September of 2018 (URS 2018).

1515 A review of online geologic maps of the United States at the Mineral Resources Database  
1516 displaying geologic units for the Project vicinity show the bulk of the landform age is associated  
1517 with Quaternary alluvium and marine deposits (MRDATA 2019a and 2019b). Inland,  
1518 fossiliferous soils primarily contain non-marine localities (MRDATA 2019c). Non-marine fossils  
1519 expected within Quaternary alluvium of the Pleistocene epoch and continuing into the Holocene  
1520 include large land mammals or mega-fauna like mammoth, mastodon, bison, giant ground sloth,  
1521 saber-tooth cat, horses, and smaller fossils representative of birds, insects, and vegetation, for  
1522 example (UCMP 2019a). A review of fossil localities via in-house database and interactive  
1523 Berkeley Mapper identified no known fossil localities within the Project vicinity or Yuba County.  
1524 However, several recorded fossils are present in nearby Sutter County and include those from  
1525 the Eocene and Miocene epochs and only two from the Pleistocene epochs (UCMP 2019b and  
1526 2019c). Massive faunal extinctions, common at the close of the Holocene, combined with the  
1527 Quaternary alluvial setting and historic river channels, elevate the possibility for paleontological  
1528 resources within the Project vicinity.

1529 **3.7 GEOLOGY/SOILS**

1530 Geological resources consist of the Earth's surface and subsurface materials. Within a given  
1531 physiographic province, these resources typically are described in terms of geology,  
1532 topography, soils, and geologic hazards. A geotechnical report for the underground portion of  
1533 the Preferred Alternative alignment has been completed and helped inform this analysis (URS  
1534 2018).

1535 The study area for geology and soils related to this Project is defined as the footprint of  
1536 construction and operations activity.

1537 **3.7.1 Geology**

1538 The study area is located along the northeastern margins of the Central Valley of California,  
1539 which is a sediment-filled structural depression classified as a forearc basin. The Central Valley  
1540 is bounded by the Cascade Range to the north, the Sierra Nevada to the east, the Tehachapi  
1541 Mountains to the south, and the Coast Ranges and San Francisco Bay to the west. More  
1542 specifically, the study area is located between the foothills of the Sierra Nevada and the Feather  
1543 River in the eastern part of the Sacramento Valley and west of the Sierra Nevada. The area is  
1544 underlain with surficial alluvial fan and stream deposits of the Pliocene-Pleistocene and  
1545 Holocene age and the Laguna Formation of Pliocene-Pleistocene age. Laguna Formation is a  
1546 Sierran-derived dissected alluvial fan. To the east these broad alluvial fans merge with the  
1547 gently rolling foothills of the Sierra Nevada and to the west with the low alluvial plains of the  
1548 eastern Sacramento Valley.

1549 Due to proximity of the site to the alluvial sediment source, local outcrops of the Laguna  
1550 Formation generally consist of interbedded and heterogeneous mixture of alluvial gravel, fine  
1551 sand, silt, and clay of granitic and metamorphic origin (URS 2018).

### 1552 **3.7.2 Topography**

1553 Topography pertains to the general shape and arrangement of a land surface, including its  
1554 height and the position of its natural and man-made features. The western portion of Beale AFB  
1555 as well as the adjacent farmland that includes the study area consists of relatively flat (less than  
1556 5 percent grade) grasslands comprised mostly of Riverbank Formation, as well as Modesto and  
1557 Laguna Formation, low alluvial plains, and fans. This unit is generally flat to gently rolling, with  
1558 elevations ranging from 90 feet to approximately 200 feet. Little or no deposition in this area is  
1559 now occurring (Beale AFB 2019).

1560 Private lands within the study area are similarly located on generally flat to gently rolling  
1561 topography indicative of historic river floodplains; these lands have been converted to  
1562 agricultural use (irrigated cropland for rice, alfalfa, safflower, and corn) and lightly developed  
1563 with some physiographic alteration for both agricultural and sparse residential uses (Transcon  
1564 2019b).

### 1565 **3.7.3 Soils**

1566 Soils are the unconsolidated materials overlying bedrock or other parent material. Soils are  
1567 typically described in terms of their complex type, slope, and physical characteristics.  
1568 Differences among soil types in terms of their structure, elasticity, strength, shrink-swell  
1569 potential, and erosion potential affect their abilities to support certain applications or uses as  
1570 well as what impacts to soils might occur from proposed uses. In appropriate cases, soil  
1571 properties must be examined for their compatibility with particular construction activities or types  
1572 of land use.

#### 1573 **3.7.3.1 Soil Types**

1574 Soil types on Beale AFB can be grouped into two main categories: Central Valley Terraces and  
1575 Sierra Nevada Foothill. The study area for the proposed Project is located on the valley soils.  
1576 The valley ground surface soils are generally high in clay content, underlain by a hardpan, have  
1577 a slow permeability and a shallow rooting depth, and generally have a slope of 0 to 3 percent.  
1578 These soils favor annual grasses and forbs. During the winter, soils at Beale AFB become  
1579 extremely soft and limit any off-road activities (URS 2018). Construction on Beale AFB is limited  
1580 to the dry season (typically May to November).

1581 There are 145 soil map units of soil series, as defined by the Natural Resource Conservation  
1582 Service on Beale AFB. These soil map units within the study area are predominantly San  
1583 Joaquin loam with 0 to 1 percent slopes, Perkins loam with 0 to 2 percent slopes, Redding-  
1584 Corning Complex with 0 to 3 percent slopes, and Redding-Corning Complex with 3 to 8 percent  
1585 slopes (URS 2018). Soils off Beale AFB consist primarily of San Joaquin loam with 0 to 1  
1586 percent slopes and Redding-Corning Complex with 0 to 8 percent slopes (NRCS 2019).

1587 The study area is underlain with surficial alluvial fan and stream deposits of the Pliocene-  
1588 Pleistocene and Holocene age, including the Laguna Formation dissected alluvial fan. Local

1589 outcrops of the Laguna Formation generally consist of interbedded and heterogeneous mixture  
1590 of alluvial gravel, fine sand, silt, and clay of granitic and metamorphic origin (URS 2018).

1591 **3.7.3.2 Geotechnical Study**

1592 The geotechnical study conducted for a portion of the Project area explored subsurface soil  
1593 conditions along Doolittle Drive within Laguna Formation soils. The subsurface soils  
1594 encountered in the top 15 feet generally varied from stiff to very stiff clay and silt to medium-  
1595 dense clayey or silty sand. Between 15 to 20 feet below ground surface (bgs), subsurface soils  
1596 were generally composed of silty to poorly graded gravel, with some poorly graded sand and  
1597 silty sand. Below 20 feet bgs, silty sand was encountered (URS 2018).

1598 Along Patrol Road and within the proposed substation of the Preferred Alternative and Northern  
1599 A Alternative, the study explored subsurface conditions within Riverbank Formation. The  
1600 subsurface soils encountered in the top 8 feet were generally very stiff lean clay to sandy lean  
1601 clay. Below 8 feet bgs, medium-dense to very dense silty and clayey gravel, medium-dense silt,  
1602 sandy silt, and some lean clay was encountered. Groundwater was observed within the silt  
1603 layers (URS 2018).

1604 A complete geotechnical study for the final route would be completed prior to initiating the  
1605 proposed Project.

1606 **3.7.4 Geologic Hazards**

1607 Geologic hazards are defined as natural geologic events that can endanger human lives and  
1608 threaten property. Examples of geologic hazards include earthquakes and seismic-related  
1609 ground failure, including liquefaction, landslides, rock falls, ground subsidence, and avalanches.

1610 The site is not within existing Alquist-Priolo earthquake fault zone maps as covered under the  
1611 Alquist-Priolo Earthquake Fault Zoning Act. No active (Holocene time [rupture in about the last  
1612 11,000 years]) faults are mapped as crossing or running adjacent to the site. Two potentially  
1613 active (Quaternary and Late Quaternary time) faults are mapped east of the site (California  
1614 Geological Survey 2007). The Spenceville fault (Foothills Fault system) and Swain Ravine fault  
1615 (Foothills Fault system) are mapped north-south, located approximately 5.5 miles east of Project  
1616 site. The design peak ground acceleration (PGA) in the vicinity of the site, in accordance with  
1617 Section 1803.5.11 of the 2016 California Building Code (CBC), is 0.186 g (California Geological  
1618 Survey 2007). Additionally, seismic hazard zone maps indicating liquefaction potential have not  
1619 been published by the California Geological Survey in the study area of the proposed Project.

1620 Review of the data obtained during the geotechnical investigation indicates that the subsurface  
1621 materials in which groundwater was encountered varied from stiff to very stiff silt with gravel and  
1622 sand to dense to very dense silty gravel with sand. Groundwater was observed as shallow as  
1623 13 feet bgs in 3 borings. These characteristics indicate that the on-site soils are likely not  
1624 susceptible to liquefaction (URS 2018).

1625 Potentially expansive, high-plasticity clays were not encountered near the surface at the site.  
1626 Based on the plasticity index test results, the upper 5 feet of soil underlying the site generally  
1627 has a low to moderate potential for shrink-swell behavior (URS 2018).

1628 **3.8 HYDROLOGY/WATER QUALITY**

1629 Hydrology, in general, is the study of the water cycle and, more specifically for this document,  
1630 the movement of water through the landscape including both surface water and groundwater.

1631 The study area for hydrology and water quality resources includes the proposed area of  
1632 disturbance and areas into which the disturbed area drains.

1633 **3.8.1 Regulatory Framework**

1634 Section 404 of the CWA gives the EPA and USACE regulatory and permitting authority  
1635 regarding discharge of dredged or filled material into “navigable Waters of the United States”  
1636 (WOTUS). Section 502(7) of the CWA defines navigable waters as “Waters of the United  
1637 States, including territorial seas.” Section 328 of Chapter 33 in the CFR defines WOTUS as  
1638 they apply to the jurisdictional limits of USACE authority under the CWA. A summary of this  
1639 definition in 33 CFR 328.3 includes: 1) waters used for commerce; 2) interstate waters and  
1640 wetlands; 3) “Other Waters of the United States” (other waters) such as intrastate lakes, rivers,  
1641 streams, and wetlands; 4) impoundments of waters; 5) tributaries to the above waters; 6)  
1642 territorial seas; and 7) wetlands adjacent to waters. For the purposes of determining USACE  
1643 jurisdiction under the CWA, “navigable waters,” as defined in the CWA, are the same as  
1644 “Waters of the United States” as defined in the CFR above.

1645 The limits of USACE jurisdiction under Section 404, as given in 33 CFR Section 328.4, are as  
1646 follows: (a) territorial seas—3 nautical miles in a seaward direction from the baseline; (b) tidal  
1647 WOTUS—high tide line or to the limit of adjacent non-tidal waters; (c) non-tidal WOTUS—  
1648 ordinary high water mark or to the limit of adjacent wetlands; and (d) wetlands—to the limit of  
1649 the wetland.

1650 The RWQCB regulates activities pursuant to Section 401(a)(1) of the CWA. Section 401 of the  
1651 CWA (33 U.S.C. Section 1341) requires any applicant for a federal license or permit to conduct  
1652 any activity that may result in a discharge of a pollutant into WOTUS to obtain certification from  
1653 the state in which the discharge originates. As a result, fill proposed to be deposited in waters  
1654 and wetlands requires coordination with the appropriate RWQCB that administers Section 401  
1655 and provides certification. The RWQCB also reviews water quality and wetland issues,  
1656 including avoidance and minimization of impacts. Section 401 certification is required prior to  
1657 issuance of a Section 404 permit.

1658 EO 11988, Floodplain Management, requires federal agencies to avoid to the extent possible  
1659 the long- and short-term adverse impacts associated with the modification of floodplains and to  
1660 avoid direct and indirect support of floodplain development wherever there is a practicable  
1661 alternative. In accomplishing this objective, “each agency shall provide leadership and shall  
1662 take action to reduce the risk of flood loss, to minimize the impact of floods on human safety,  
1663 health, and welfare, and to restore and preserve the natural and beneficial values served by  
1664 floodplains in carrying out its responsibilities” for federal actions.

1665 EO 11990, Protection of Wetlands, requires federal agencies to minimize the destruction, loss,  
1666 or degradation of wetlands and to preserve and enhance the natural and beneficial values of  
1667 wetlands. Federal agencies must avoid undertaking or providing assistance for new  
1668 construction located in wetlands unless there is no practicable alternative to such construction



1669 and the Preferred Alternative includes all feasible measures to minimize harm to wetlands that  
1670 may result from such use.

### 1671 **3.8.2 Floodplains, Wetlands, Surface Water, and Groundwater**

1672 The Project area experiences a Mediterranean climate, which consists of cool, wet winters and  
1673 hot, dry summers. The mean annual precipitation on Beale AFB is 21.9 inches, with about 95  
1674 percent coming between November through April. Precipitation can be highly variable from year  
1675 to year; the record high at Beale AFB is 38.5 inches and the record low is 4.3 (Beale AFB 2019).  
1676 May through October is typically dry and warm.

1677 The hydrology of Beale AFB is complex due to both natural and man-made influences. Beale  
1678 AFB is located northeast of confluence of the Bear River and Feather River. Hydrology on  
1679 Beale AFB has been significantly altered by the creation of impoundments, channel re-direction,  
1680 and groundwater pumping. Impoundments have been created historically for flood control,  
1681 stock watering, and recreation areas. Drinking water is drawn from the aquifer underlying Beale  
1682 AFB west of the flight line (Beale AFB 2018b).

#### 1683 *3.8.2.1 Floodplains*

1684 Floodplains at Beale AFB occur adjacent to creeks and drainages; however, the Project Area is  
1685 outside the 0.2% annual chance floodplain (FEMA 2011).

#### 1686 *3.8.2.2 Surface Water and Wetlands*

1687 An Aquatic Resources Report (**Appendix G**) was prepared to determine the extent of potential  
1688 jurisdictional waters that currently exist within and adjacent to the Project area. Based on the  
1689 desktop review and field surveys, multiple potentially jurisdictional waters and freshwater  
1690 emergent wetlands were identified within the study area (Transcon 2019a). Descriptions of  
1691 these features can be found in Section 3.5.2.2, Wetland Habitats. The extent and periodicity of  
1692 the surface waters within the Project are determined primarily by the local climate and rainfall,  
1693 but interactions with groundwater may also affect these.

1694 Streams, canals, wetlands, vernal pools, swales, and roadside ditches that potentially meet the  
1695 criteria for jurisdictional WOTUS can be found within the Project area. Along the Preferred  
1696 Alternative and Northern A Alternative, Reeds Creek is the only stream channel the alternatives  
1697 cross, one location at each alternative. Along the Southern Alternative, there are four streams  
1698 (Hutchinson Creek and three unnamed tributaries) that intersect the proposed Project area at  
1699 one location each. Two agricultural canals, the Yuba County Water Agency South Canal and  
1700 the Yuba-Wheatland Canal also intersect the study area. The Brophy Canal intersects both the  
1701 northern and southern study areas, while the Yuba-Wheatland Canal parallels the Southern  
1702 Alternative for approximately 2,000 feet. Waters identified in the survey that do not fall under  
1703 the CWA are agricultural roadside ditches, stock ponds, settling basins, and rice fields  
1704 (Transcon 2019a).

#### 1705 *3.8.2.3 Groundwater*

1706 Groundwater extraction has altered the direction and depth of groundwater movement near  
1707 Beale AFB. Before the widespread use of irrigation in the Sacramento Basin, groundwater  
1708 moved westward from the Sierra Nevada foothills to discharge in the Feather and Sacramento  
1709 rivers. Due to extensive groundwater extraction for agriculture, the main groundwater discharge

1710 is now through well withdrawals. Water from the Yuba River is primarily responsible for  
 1711 recharging the groundwater system. Groundwater at Beale AFB is generally encountered within  
 1712 4 to 260 feet bgs at monitoring wells throughout the base (Beale AFB 2014a, 2019). In general,  
 1713 the groundwater table on Beale AFB is shallowest in the western portion of the base (42 to 53  
 1714 feet in 2016) and deepest in the eastern portion (260 feet in 2016) (Beale AFB 2019). However,  
 1715 the actual level of the groundwater at any specific location can vary greatly depending on  
 1716 several factors including time of year, rainfall amount, water year type, and the timing and  
 1717 intensity of nearby agricultural groundwater withdrawals.

1718 In August 2018, 11 exploratory borings were performed along the alignment of the proposed 60-  
 1719 kV underground transmission line. At 3 of those borings along Patrol Road, groundwater was  
 1720 measured at 13 feet, 17 feet, and 20.5 feet bgs, which is consistent across Beale AFB,  
 1721 generally. Groundwater levels can be highly variable between years and seasons, and depend  
 1722 on many different factors such as precipitation, irrigation, and land use (URS 2018).

### 1723 **3.9 LAND USE AND PLANNING, AICUZ COMPATIBILITY, POPULATION** 1724 **GROWTH, AND RECREATION**

1725 Land use broadly means the use of land for various activities, including military, recreational,  
 1726 agricultural, and residential. Local land use policies and development regulations control the  
 1727 type of land use and the intensity of development or activities permitted. Changes in land use  
 1728 patterns that result from development can affect the character of an area and result in physical  
 1729 impacts to the environment. Proposed developments should therefore be analyzed for  
 1730 compatibility with planned land uses. This section focuses on three areas in particular: land use  
 1731 designations in established plans including Beale AFB's AICUZ, potential for growth-inducing  
 1732 impacts, and recreation.

#### 1733 **3.9.1 Land Use Designations in Established Plans**

1734 The term "land use" refers to real property classifications that indicate either natural conditions  
 1735 or the types of human activity occurring on a parcel. In many cases, land use descriptions are  
 1736 codified in local zoning laws. However, there is no nationally recognized convention or uniform  
 1737 terminology for describing land use categories. As a result, the meanings of various land use  
 1738 descriptions, labels, and definitions vary among jurisdictions. There are two jurisdictions in the  
 1739 study area for this Project: Yuba County has land use planning jurisdiction for the private lands,  
 1740 and the USAF has land use planning jurisdiction for the lands on Beale AFB. Each jurisdiction  
 1741 is discussed separately.

##### 1742 **3.9.1.1 Private Land**

1743 Private parcels within the study area have been mapped by Yuba County within its most recent  
 1744 General Plan as NR, a land use designation that includes agricultural production as a principal  
 1745 activity, while allowing for other uses including conservation and public facilities and  
 1746 infrastructure. The intent of the NR designation is to "conserve and provide natural habitat,  
 1747 watersheds, scenic resources, cultural resources, recreational amenities, agricultural and forest  
 1748 resources, wetlands, woodlands, minerals, and other resources for sustainable use, enjoyment,  
 1749 extraction, and processing" (Yuba County 2011).

1750 All private parcels within the study area have been zoned by Yuba County through the County's  
1751 zoning ordinance as AE-80, a zoning designation that defines agricultural production as a  
1752 principal use (Yuba County 2015).

### 1753 3.9.1.2 Beale AFB Lands

1754 USAF installation land use planning commonly uses 12 general land use classifications: Airfield,  
1755 Aircraft O&M, Industrial, Administrative, Community (Commercial), Community (Service),  
1756 Medical, Housing (Accompanied), Housing (Unaccompanied), Outdoor Recreation, Open  
1757 Space, and Water (USAF 1998). Beale AFB currently utilizes the Installation Development Plan  
1758 (IDP) as its primary document upon which to base future development and programming  
1759 decisions (Beale AFB 2014b). It presents a summary and compilation of various resource  
1760 plans, special plans, and studies and integrates these into a single planning document for Beale  
1761 AFB. The IDP classifies the Project area as Airfield, Planning District 1 in the IDP. The IDP  
1762 describes the parameters for future development in this planning district as follows: "Future  
1763 development of this district must provide a secure and functionally effective environment for  
1764 airfield operations, while remaining accessible to pilots, as well as O&M personnel. Future  
1765 facilities within this district should support the airfield and mission and not constrain air  
1766 operations and the imaginary surfaces."

1767 Because the study area for the proposed Project is within the Airfield Planning District, it must  
1768 be compatible with the Beale AFB AICUZ. As described in Section 3.11, Public Health and  
1769 Safety/Hazards and Hazardous Materials, the AICUZ is a land use planning tool that integrates  
1770 an extensive analysis of the effects of noise, aircraft accident potential, land use, and proposed  
1771 development upon the residents and workers of Beale AFB, as well as present and future  
1772 neighbors of Beale AFB. The AICUZ is designed to aid in the development of local planning  
1773 mechanisms that would protect public safety and health, as well as preserve the operational  
1774 capabilities of Beale AFB. The AICUZ is based on an extensive study that incorporates  
1775 regularly updated data about aircraft types and numbers of operations at Beale AFB, and it uses  
1776 this data and an accompanying analysis to determine the compatibility of different types of  
1777 development, including utilities.

### 1778 **3.9.2 Population Growth/Potential for Growth-Inducing Impacts**

1779 Growth-inducing impacts are generally caused by projects that have a direct or indirect effect on  
1780 economic growth or population growth or when the project taxes community service facilities  
1781 that require upgrades beyond the existing remaining capacity. The 2010 U.S. Census reported  
1782 that Beale AFB had a resident population of 1,319 (U.S. Census Bureau 2010). As of the 2010  
1783 U.S. Census, the population of Yuba County was 72,155.

### 1784 **3.9.3 Recreation**

1785 This section evaluates recreation areas and uses separately on private land and Beale AFB  
1786 within the Project Area.

#### 1787 3.9.3.1 Private Land

1788 Designated recreational facilities do not exist in the private lands of the study area. The nearest  
1789 commonly used recreation area to the proposed Project is the Yuba River, located about 2.8  
1790 miles north of the Northern Alternatives' shared alignment. Boating, fishing, and waterfowl

1791 hunting are common usages of the river. Additionally, the Spenceville Wildlife Area borders  
1792 Beale AFB on the east and is located between 8 and 10 miles from the proposed Project area.  
1793 Some private land areas may be used and leased for duck hunting, although specific duck blind  
1794 locations are not known or identified.

### 1795 3.9.3.2 Beale AFB Land

1796 Outdoor recreation on Beale AFB is guided by AFI 32-7064. There are three parks on Beale  
1797 AFB and multiple picnic areas and play structures, a 1.5-mile nature trail near the housing area  
1798 along Dry Creek (Beale AFB 2019), a 1-acre recreational vehicle campground, a golf course, a  
1799 privately owned stable, and recreational fishing lakes (Beale AFB 2019), none of which are  
1800 located in the study area for the Project.

1801 The primary recreational activity on Beale AFB that overlaps with the study area is permitted  
1802 hunting. Portions of the study area west of the airstrip are currently open to hunting with Beale  
1803 AFB-specific restrictions. All individuals must obtain applicable licenses, permits, stamps, and  
1804 Beale AFB training in order to hunt or fish on Beale AFB in addition to any permits required by  
1805 the State of California. In years since 2010, between 80 and 165 hunting permits were sold  
1806 annually for the entirety of Beale AFB (Beale AFB 2019).

## 1807 **3.10 NOISE**

1808 This section characterizes the existing conditions of the noise environment in the proposed  
1809 Project area, specifically the ambient noise levels expected prior to the construction and  
1810 operation of the proposed Project. The study area for noise impacts related to this Project  
1811 consists of a quarter-mile buffer from Project facilities along all alternatives.

### 1812 **3.10.1 Noise Characteristics and Descriptors**

1813 Noise is generally defined as unwanted, disruptive, or potentially hazardous sound. Sound is  
1814 defined as pressure variations in air which are interpreted by the human ear. The loudness of  
1815 sound is measured using a logarithmic scale of the relative sound pressure, expressed in units  
1816 of decibels (dB). Zero dB is the lowest sound pressure that a healthy human ear can detect.  
1817 Each increase in 10 dB on the scale represents a 10-fold increase in the acoustic energy. A  
1818 frequency weighting scale known as A-weighting (dBA) that best reflects the human ear's  
1819 reduced sensitivity to low frequencies is often applied to noise measurements.

1820 Human perception and response to noise does not directly correlate to the dB scale, but it has  
1821 some general rules that are broadly accepted. A change in noise level of 3 dBA is considered  
1822 to be barely noticeable, while a change of 5 dBA is more readily perceptible. A change of 10  
1823 dBA is perceived as being twice as loud. Human perception therefore differs from the absolute  
1824 change in sound pressure, as a 10-dBA difference is actually a 10-fold increase in acoustic  
1825 energy. Additionally, tonal noise is generally perceived by humans as more annoying.

1826 Noise produced from most activities tends to vary widely over time. Noise levels are usually  
1827 best represented by an equivalent level over a given time period (Leq) or by an average level (in  
1828 dBA) occurring over a 24-hour day-night period (Ldn), which applies a 10-dBA penalty applied  
1829 to nighttime noise occurring between 10:00 p.m. and 7:00 a.m., taking into the account that  
1830 humans are generally more bothered by unwanted noise during nighttime hours. An alternative  
1831 noise descriptor is the Community Noise Equivalent Level (CNEL), which is similar to the Ldn

1832 but applies a 4.77-dB penalty to evening noise (7:00 p.m. to 10:00 p.m.) and a 10-dB penalty to  
1833 nighttime noise (10:00 p.m. to 7:00 a.m.). Noise standards for assessing impacts may use  
1834 either of these descriptors.

### 1835 **3.10.2 Regulatory Framework**

1836 There are a number of applicable regulations from various organizations that are applicable to  
1837 environmental noise impacts. The U.S. Department of Housing and Urban Development (HUD)  
1838 published a guidebook of environmental noise standards that provides guidelines for various  
1839 land use types. For residential uses, environmental noise between 65 and 75 dBA Ldn is  
1840 considered “normally unacceptable” while noise less than 65 dBA Ldn is considered “normally  
1841 acceptable”. For agricultural uses, noise levels greater than 75 dBA may be considered  
1842 “normally acceptable” (HUD 2009).

1843 The Yuba County General Plan contains a noise element that contains noise goals based on  
1844 land use type which are applicable to the Project. For residential areas, noise levels of less than  
1845 70 dBA Ldn are considered acceptable or conditionally acceptable. For agricultural areas, noise  
1846 levels of up to 80 dBA Ldn are considered acceptable or conditionally acceptable (Yuba County  
1847 2011).

1848 The Yuba County noise element also contains maximum levels for non-transportation noise  
1849 based on the hours during which noise is generated. For noise-sensitive uses, which include  
1850 school, hospitals, and residences, the maximum allowable hourly Leq is 60 dBA during daytime  
1851 hours (7:00 a.m. to 10:00 p.m.). During the nighttime hours, the maximum allowable hourly Leq  
1852 is reduced to 45 dBA. If the ambient noise level exceeds these standards, the standard applied  
1853 shall be the current ambient noise level plus 5 dBA (Yuba County 2011).

### 1854 **3.10.3 Existing Ambient Noise Conditions**

1855 Ambient noise sources in the Project vicinity are primarily vehicle traffic, agricultural operations,  
1856 and military operations at Beale AFB. Noise from Beale AFB operations has been measured  
1857 and mapped through AICUZ planning studies. The most recent Beale AFB AICUZ study was  
1858 conducted in 2005. Most areas within 0.85 mile of the Beale AFB airstrip have a CNEL of 60  
1859 dBA or greater (Beale AFB 2005; SACOG 2019). Considering that airport operations create a  
1860 noise environment more consistent with an urban area rather than a rural agricultural area, the  
1861 airfield and airspace noise environment are eliminated from consideration in the analysis.

1862 Vehicle traffic in the Project vicinity is primarily within Beale AFB and along Hammonton-  
1863 Smartville Road and North Beale Road. These roads have been the subject of past noise  
1864 studies, and baseline traffic noise contours available from which Project impacts can be  
1865 determined. Traffic noise along Hammonton-Smartville Road between Brophy Road and  
1866 Doolittle Drive is estimated to be 60 dBA Ldn at a distance of 53 feet from the centerline of the  
1867 roadway. Traffic noise along North Beale Road between Griffith Avenue and Beale AFB is  
1868 estimated to be 60 dBA at a distance of 92 feet from the centerline of the roadway (Yuba  
1869 County 1994).

1870 Vibration is an additional concern that is associated with noise. Sources of ground-borne  
1871 vibration include trains, heavy construction, road construction, large vehicles passing over a  
1872 rough road, or subsurface excavation or drilling operations. No known sources of major  
1873 vibration exist in the Project vicinity.

1874 **3.10.4 Sensitive Noise Receptors**

1875 The Yuba County General Plan defines sensitive noise receptors as people or things most  
 1876 susceptible to adverse effects, for instance schools, health care facilities, and day care centers.  
 1877 Private residences are considered “noise sensitive uses” (Yuba County 2011) and therefore  
 1878 discussed in this EA. There are a number of residences in the Project vicinity; the closest  
 1879 residence to the Preferred Alternative alignment is approximately 80 feet away. The closest  
 1880 residence to the Northern A Alternative alignment is approximately 1,740 feet away, while the  
 1881 closest residence to the Southern Alternative is approximately 250 feet away. Exact distances  
 1882 will be unknown until a final route is chosen and Project engineering is complete.

1883 **3.11 PUBLIC HEALTH AND SAFETY AND HAZARDOUS MATERIALS**

1884 This section outlines the existing environment and regulatory context of public health and safety  
 1885 associated with the Project. There are no schools or hospitals within 1/2 mile of the study area  
 1886 (Beale AFB 2014b; Yuba County 2011; Google Earth 2019). Therefore, general baseline  
 1887 conditions for assessing potential impacts to public health and safety are related to hazardous  
 1888 materials, fire hazards, location within Beale AFB’s AICUZ, and electric and magnetic fields  
 1889 (EMF). The study area for analysis of public health and safety includes the Project corridor  
 1890 where facilities would be built (i.e., where hazardous materials could be introduced, where risks  
 1891 for fire exist during construction, where conflicts could exist with AICUZ planning, or where EMF  
 1892 risks are heightened). These potential impacts are discussed below per topic.

1893 **3.11.1 Hazardous Materials**

1894 Hazardous materials are defined by federal and state regulations to protect public health and  
 1895 the environment. Hazardous materials generally have certain chemical, physical, or infectious  
 1896 properties that cause them to be classified as hazardous. Hazardous materials are more  
 1897 specifically defined in the Comprehensive Environmental Response, Compensation, and  
 1898 Liability Act Section 101(14) and also in the CCR, Title 22, Chapter 11, Article 2, Section 66261,  
 1899 which provides the following definition:

1900 *A hazardous material is a substance or combination of substances which, because of its*  
 1901 *quantity, concentration, or physical, chemical or infectious characteristics, may either (1)*  
 1902 *cause, or significantly contribute to, an increase in mortality or an increase in serious*  
 1903 *irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or*  
 1904 *potential hazard to human health or environment when improperly treated, stored,*  
 1905 *transported or disposed of or otherwise managed.*

1906 The Beale AFB Integrated Contingency Plan (ICP) includes prevention measures that govern  
 1907 management of hazardous materials throughout the USAF, including at Beale AFB. It applies to  
 1908 all USAF personnel who authorize, procure, issue, use, or dispose of hazardous materials and  
 1909 to those who manage, monitor, or track any of those activities. Under the ICP, the USAF has  
 1910 established roles, responsibilities, and requirements for a hazardous materials management  
 1911 program. The purpose of the ICP is to control the procurement and use of hazardous materials  
 1912 to support USAF missions, ensure the safety and health of personnel and surrounding  
 1913 communities, minimize USAF dependence on hazardous materials, and maintain compliance  
 1914 with laws and regulations for hazardous material usage. The ICP includes the activities and  
 1915 infrastructure required for ongoing identification, management, tracking, and minimization of  
 1916 hazardous materials.

1917 The hazardous materials that have been identified as potentially present in connection with the  
1918 proposed Project include engine oil, gasoline, brake and transmission fluid, jet fuel, aviation-  
1919 grade gasoline, diesel fuel, antifreeze, and chain lubricant; mineral oil, dielectric oil, sulfuric acid  
1920 electrolyte, and SF<sub>6</sub> are also common materials used in substations. These hazardous  
1921 materials would be routinely transported and used in conjunction with the operation of  
1922 machinery associated with the all alternatives. Spill prevention control measures would be  
1923 consistent with the Beale AFB ICP.

1924 The California Occupational Safety and Health Administration (Cal/OSHA) is the primary state  
1925 agency responsible for worker safety in the handling and use of chemicals in the workplace.  
1926 Cal/OSHA standards are generally more stringent than federal regulations. All Cal/OSHA  
1927 standards would be implemented through the contractor for the Project.

1928 The Project is not located on a site that is included on a list of hazardous materials sites  
1929 compiled pursuant to California State Government Code Section 65962.5 (CDTSC 2019).

### 1930 **3.11.2 Fire Hazards**

1931 Yuba County describes fire as one of the most significant natural hazards affecting Yuba County  
1932 residents. The Project area outside of Beale AFB has been identified by the California  
1933 Department of Forestry and Fire as having a moderate fire risk (Yuba County 2011).

1934 Wildfires are a regular occurrence on Beale AFB, with most occurring between May and  
1935 September. Records show that there were 131 wildfires on Beale AFB between 1998 and  
1936 2017. Nearly half (59) of the wildfires had an unknown cause. Of those with known causes,  
1937 wildfires started by power lines (34) were most common (Beale AFB 2019). Wildfires started by  
1938 Beale AFB power lines were commonly attributed to avian electrocution on distribution lines. In  
1939 response to this, Beale AFB developed a new Avian Protection Plan that was adopted in 2017,  
1940 with base-wide power pole retrofit starting the same year (Beale AFB 2019). Adherence to the  
1941 Avian Protection Plan is anticipated to reduce the occurrence of fires due to electrocuted birds.  
1942 The California Department of Forestry and Fire Protection identifies that there have been  
1943 several instances of fires spreading out from Beale AFB to the Yuba County area. The cause of  
1944 these fires is listed as birds flying into power lines, hazard reduction burns, and munitions work  
1945 (Calfire 2018).

### 1946 **3.11.3 Air Installation Compatible Use Zone**

1947 AICUZ is a land use planning tool that integrates an extensive analysis of the effects of noise,  
1948 aircraft accident potential, land use, and proposed development upon the residents and workers  
1949 of Beale AFB, as well as present and future neighbors of Beale AFB. The AICUZ is designed to  
1950 aid in the development of local planning mechanisms that would protect public safety and  
1951 health, as well as preserve the operational capabilities of Beale AFB. The AICUZ is based on  
1952 an extensive study that incorporates regularly updated data about aircraft types and numbers of  
1953 operations at Beale AFB, and it uses this data and an accompanying analysis to determine the  
1954 compatibility of different types of development, including utilities.

### 1955 **3.11.4 Electric and Magnetic Fields**

1956 Electric power consists of two components: voltage and current. Current, which is a flow of  
1957 electrical charge measured in amperes, creates a magnetic field. Voltage, which is the force or

**DRAFT ENVIRONMENTAL ASSESSMENT**

**Environmental Assessment  
Affected Environment**

**Beale WAPA Interconnection Project  
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1958 pressure that causes the current to flow and is measured in units of volts or kV, creates an  
 1959 electric field. Electric fields and magnetic fields considered together are referred to as “EMF.”  
 1960 Both fields occur together whenever electricity flows, hence the general practice of considering  
 1961 both as EMF exposure.

1962 Transmission lines, like all electrical devices and equipment, produce EMFs. Electric field  
 1963 strength is usually constant with a given voltage, while magnetic field strength can vary  
 1964 depending on the electrical load, design of the transmission line, and configuration and height of  
 1965 conductors. Both the magnetic field and the electric field decrease rapidly, or attenuate, with  
 1966 distance from the source.

1967 Over the past 30 years, research has not proven that power frequency EMF exposure causes  
 1968 adverse health effects. However, some non-governmental organizations have set advisory  
 1969 limits as a precautionary measure, based on the knowledge that high field levels (more than  
 1970 1,000 times the EMF found in typical environments) may induce currents in cells or nerve  
 1971 stimulation. The International Commission on Non-Ionizing Radiation Protection has  
 1972 established a continuous, magnetic field exposure limit of 0.833 Gauss (or 833 milliGauss [mG])  
 1973 and a continuous electric field exposure limit of 4.2 kilovolts per meter (kV/m) for members of  
 1974 the general public. The American Council of Governmental Industrial Hygienists publishes  
 1975 Threshold Limit Values (TLV) for various physical agents. The TLV for occupational exposure  
 1976 to 60 Hertz (Hz) magnetic fields has been set as 10 Gauss (10,000 mG) and 25 kV/m for  
 1977 electric fields. Transmission and distribution lines in the U.S. operate at a frequency of 60 Hz, as  
 1978 do household wiring and appliances.

1979 In the home, EMF exposure comes from circuit breaker and meter boxes, electrical appliances,  
 1980 electric blankets, and any cord or wire that carries electricity. The fields are greatest closest to  
 1981 the surface of the cord or appliance and drop rapidly in just a short distance. **Table 3-6** shows  
 1982 typical magnetic fields from common household electrical devices.

<b>TABLE 3-6 TYPICAL 60 HERTZ MAGNETIC FIELD VALUES FROM COMMON ELECTRICAL DEVICES</b>		
<b>Appliance</b>	<b>Magnetic Field 6 Inches from Device (mG)</b>	<b>Magnetic Field 2 Feet from Device (mG)</b>
Washing machine	20	1
Vacuum cleaner	300	10
Electric oven	9	-
Dishwasher	20	4
Microwave oven	200	10
Hair dryer	300	-
Computer desktop	14	2
Fluorescent light	40	2
Source: NIEHS 2002 mG: milliGauss		

1983 Sources of existing EMF in the vicinity of the study area include existing transmission lines,  
 1984 commercial and agricultural wiring and equipment, and common household wiring and  
 1985 appliances for residences and communities in the area. EMF levels in homes and businesses



1986 vary widely with wiring configurations, the types of equipment and appliances in use, and  
1987 proximity to these sources.

1988 3.11.4.1 EMF Standards

1989 No federal regulations have established environmental limits on the strengths of fields from  
1990 power lines. However, the federal government continues to conduct and encourage research  
1991 on the issue of EMF.

1992 The State of California Department of Education enacted regulations that require minimum  
1993 distances between a new school and the edge of a transmission line ROW. The setback  
1994 distances are 100 feet from the edge of the transmission line ROW for 50-kV to 133-kV lines,  
1995 150 feet from the edge of the transmission line ROW for 220-kV to 230-kV lines, and 350 feet  
1996 from the edge of the transmission line ROW for 500-kV to 550-kV lines. These distances were  
1997 not based on specific biological evidence, but on the known fact that fields from power lines  
1998 drop to near background levels at those distances. WAPA follows field-reducing guidelines for  
1999 designing new and upgraded transmission lines. California has no other rules governing EMF  
2000 (WAPA 2017).

2001 3.11.4.2 Corona Effects

2002 The electrical effects of a transmission line can be characterized as “corona effects.” Corona is  
2003 the electrical breakdown of air into charged particles. Corona can occur on the conductors,  
2004 insulators, and hardware of an energized high-voltage transmission line. Corona on conductors  
2005 occurs at locations where the field has been enhanced by protrusions, such as nicks, insects,  
2006 dust, or drops of water. During fair weather, the number of these sources is small, and the  
2007 corona effect is insignificant. However, during wet weather, the number of these sources  
2008 increases, and corona effects are much greater. Effects of corona are audible noise, radio, and  
2009 television interference, visible light, and photochemical reactions:

2010 • Audible Noise. Corona-generated audible noise from transmission lines is generally  
2011 characterized as a crackling/hissing noise. The noise is most noticeable during wet  
2012 weather conditions. Audible noise from transmission lines is often lost in the background  
2013 noise locations beyond the edge of the ROW;

2014 • Radio and Television Interference. Corona-generated radio interference is most likely to  
2015 affect the amplitude modulation (AM) receivers located very near to transmission lines  
2016 have the potential to be affected by radio interference. Television interference from  
2017 corona effects occurs during bad weather, and is generally only of concern for receivers  
2018 within about 600 ft of the line;

2019 • Visible Light. Corona is visible as a bluish glow or as bluish plumes. On transmission  
2020 lines in the area, the corona levels are so low that the corona on the conductors would  
2021 be observable only under the darkest conditions with the aid of binoculars; and

2022 • Photochemical Reactions. When corona is present, the air surrounding the conductors  
2023 is ionized and many chemical reactions take place producing small amounts of ozone  
2024 (O<sub>3</sub>), while the remaining 10 percent is composed principally of nitrogen oxides (NO<sub>x</sub>).  
2025 The maximum incremental ozone levels at ground level produced by corona activity on

2026 the transmission lines during bad weather would be less than 1 part per billion (ppb).  
2027 This level is insignificant when compared to natural levels and their fluctuations.

### 2028 **3.12 TRANSPORTATION/TRAFFIC**

2029 Transportation is defined as the system of roadways, highways, and all other transportation  
2030 networks in the Project vicinity that may be affected by Project activities; this network comprises  
2031 the study area for transportation and traffic related to the Project and are described below  
2032 separately for Beale AFB roads and county or private roads.

2033 Traffic relates to changes in the number of vehicles on roadways and highways. The most  
2034 common way to describe roadway traffic volumes is through the “Level of Service” concept.  
2035 Level of Service is a general measure of traffic conditions whereby a letter grade, from A (the  
2036 best) to F (the worst), is assigned. The grades represent the perceptions of drivers and are an  
2037 indication of the comfort and convenience associated with driving, as well as speed, travel time,  
2038 traffic interruptions, and freedom to maneuver. Although qualitative, this method of analysis  
2039 provides a relative measure of traffic volumes in relation to roadway capacity.

#### 2040 **3.12.1 Transportation Systems on/to Beale AFB**

2041 Regional access to Beale AFB is provided by State Routes (SR) 65, 70, and 20. Five roads  
2042 provide access to Beale AFB via five gates (Main Gate, Doolittle Gate, Grass Valley Gate,  
2043 Wheatland Gate, and Vassar Lake Gate). Roads providing access to Beale AFB include North  
2044 Beale Road, Hammonton-Smartville Road, Smartville Road, South Beale Road, and  
2045 Hammonton-Spenceville Road.

2046 The road network on Beale AFB consists of arterials, collectors, and local streets. The arterials  
2047 that carry the majority of the traffic include Gavin Mandry Drive, Doolittle Drive, Grass Valley  
2048 Road/Warren Shingle Road, Camp Beale Highway, and J Street. Collector streets connect local  
2049 streets to arterials and include Arnold and Grumman avenues in the flight line area, A and C  
2050 streets in the Main Base area, and East and West Garryana streets and Delta Drive in the  
2051 housing area. The most recent traffic study for Beale AFB showed that all intersections were  
2052 operating at either an “A” or “B” Level of Service (i.e., free-flow or reasonable free-flow  
2053 operations) during peak traffic hours.

2054 Other modes of transportation on Beale AFB include pedestrian routes (walkways), bicycle  
2055 paths, Beale AFB shuttle buses, military passenger-cargo terminals, and Beale AFB railheads.  
2056 Beale AFB's shuttle bus generally operates regularly during business days with stops in the  
2057 flight line, Main Base, and housing areas. Beale AFB railheads are used for Beale AFB's  
2058 locomotive, which is primarily used to move arriving fuel tank cars. There are railhead stations  
2059 in the southern portion of the flight line area east of J Street and south of Warren Shingle Road.  
2060 Public mass transportation service in Yuba County was provided by the Yuba/Sutter Transit  
2061 Authority, which discontinued service to Beale AFB due to a lack of patronage and demand  
2062 (Beale AFB 2014b).

#### 2063 **3.12.2 Yuba County Transportation Systems**

2064 SRs 70, 65, and 20 comprise the backbone of Yuba County's regional roadway network and  
2065 serve the majority of the County's population in Marysville, Wheatland, and unincorporated  
2066 southern Yuba County. Arterials, collectors, and local roads form the remainder of the County's

2067 roadway system. The Yuba County Transportation and Circulation General Plan Update  
2068 Background Report evaluated main routes, arterials, collectors, and local roads and assigned  
2069 Level of Service grades for areas of high traffic flow (Yuba County 2007).

2070 Depending on the final route, Hammonton-Smartville Road, North Beale Road, and Erle Roads  
2071 are the main arterial roads that could be part of a construction vehicle route for the private  
2072 parcel portions of the study area. All three of these roads have Level of Service grades ranging  
2073 from "A" to "C" in the vicinity of Beale AFB and extending west from Beale AFB (Yuba County  
2074 2007).

2075 The goals, plans, and policies establishing measures of effectiveness for Yuba County's  
2076 circulation system are contained in the Yuba County General Plan (Yuba County 2011). The  
2077 most applicable goal related to this Project's potential impact on transportation systems include  
2078 CD.16, as follows:

2079 *Maintain a roadway system that provides adequate level of service, as funding allows, and*  
2080 *that is consistent with the County's planning, environmental, and economic policies.*

2081 The General Plan further establishes that the adequate Level of Service for County roadways is  
2082 "D" (Yuba County 2011).

### 2083 **3.13 UTILITIES/SERVICE SYSTEMS**

2084 The infrastructure and utility information contained in this section provides an overview of each  
2085 infrastructure component and a summary of its existing general condition on Beale AFB. This  
2086 section describes existing utilities for water, sewer and wastewater, storm drainage, electrical,  
2087 communications, and solid waste on Beale AFB. The study area of analysis for impacts to  
2088 utilities includes the management processes and utility systems overall that construction or  
2089 implementation of the Project may affect.

#### 2090 **3.13.1 Water Supply**

2091 Beale AFB is completely independent from any outside water source. Water is supplied from  
2092 seven on-Beale AFB wells and is pumped to a new treatment plant. All of the well pumps have  
2093 been replaced with new submersible pumps. Beale AFB has a total water storage capacity of  
2094 5.2 million gallons, with an average demand of 1.28 million gallons per day (mgd) during the  
2095 winter months and 3.5 mgd during summer months. Water mains consist of PVC, asbestos  
2096 cement, cast iron, and steel. Beale AFB has funded more than 15 million dollars in upgrades to  
2097 replace most of the original steel pipe that was causing deterioration in water quality from  
2098 tuberculation (i.e., formation of small mounds of corrosion products) and iron and manganese  
2099 deposits. Wells have been renovated and casings grouted to prevent water intrusion from a  
2100 perched aquifer (Beale AFB 2014b). As of 2014, Beale AFB was using nearly all of the capacity  
2101 of its water infrastructure.

#### 2102 **3.13.2 Sanitary Sewer and Wastewater System**

2103 The Beale AFB sanitary sewer system consists of a gravity and force main collection system  
2104 and a wastewater treatment plant. The collection system consists of approximately 47 miles of  
2105 sewer main from 6 to 24 inches in diameter. Elevations at Beale AFB are 400 to 500 feet higher  
2106 on the eastern region of Beale AFB than on the western region. Thus, the majority of the

2107 sanitary sewer system is gravity fed. A number of ejector stations serve various facilities on  
2108 Beale AFB. A wastewater treatment plant was constructed in 1940 and has a rated capacity of  
2109 5 mgd (Beale AFB 2018c). The plant treats 0.26 mgd on average, with a peak flow of 2.06 mgd  
2110 in winter, leaving a residual capacity of 60 percent (Beale AFB 2018c). Effluent from the plant is  
2111 pumped to the golf course pond or discharged to the 40-acre irrigation fields and is regulated by  
2112 NPDES Permit Number CA01 10299 (Beale AFB 2018c).

### 2113 **3.13.3 Storm Drainage System**

2114 The surface drainage systems for Beale AFB within the Project area are Hutchinson and Reeds  
2115 creeks. The Northern Alternatives are drained primarily by Reeds Creek, while the Southern  
2116 Alternative is drained by both Reeds and Hutchinson creeks. The western parameters of these  
2117 creeks are surrounded by a wide floodplain area. Stormwater runoff is discharged through a  
2118 system of open roadside ditches, storm sewers, culverts, and pipes. The system includes  
2119 approximately 49 miles of curbs and gutters, most of which are located in the flight line and  
2120 military family housing. Stormwater flow is directed to roadside drainage ditches and is  
2121 discharged into the creeks (Beale AFB 2018b).

2122 Beale AFB stormwater discharges are regulated by a current California Statewide General  
2123 Industrial Activities Stormwater Discharge Permit (General Permit); the most recently revised  
2124 General Permit was adopted on April 1, 2014 and is effective as of July 1, 2015 (Beale AFB  
2125 2018b). Beale AFB has developed a regularly updated Stormwater Pollution Prevention Plan  
2126 (SWPPP) to meet the requirements of the General Permit; ensure compliance with federal,  
2127 state, and local regulations; and reduce the actual and potential releases of pollutants to the  
2128 stormwater runoff from the Beale AFB installation (Beale AFB 2018b).

### 2129 **3.13.4 Electrical System**

2130 PG&E is currently the primary supplier of electrical power to Beale AFB. Power is delivered by  
2131 three transmission lines to two metering points. These lines enter Beale AFB at the Grass  
2132 Valley Substation. All substations, with the exception of the Doolittle Drive Substation, have two  
2133 transformers each which are individually capable of supporting the full load of the substation.  
2134 The purpose of this Project for Beale AFB is to create a redundant source of electrical power in  
2135 order to increase reliability of Beale AFB's electrical system and its capability to meet its  
2136 missions.

2137 In the private lands of the study area, there are two existing PG&E transmission lines running  
2138 north to south between the existing WAPA transmission line and Beale AFB, meaning that the  
2139 PG&E transmission lines would need to be crossed by the proposed interconnection line.

### 2140 **3.13.5 Communications Systems**

2141 The Beale AFB communications system consists of aerial and underground copper and fiber  
2142 optic cables. A government-owned, contractor-maintained, buried copper cable plant services  
2143 the entirety of Beale AFB, except for military family housing units, where the cable plant is  
2144 exclusively owned and maintained by AT&T. The government-owned copper cable plant was  
2145 installed in 1989 as part of the Installation Information Digital Distribution System upgrade,  
2146 which included the acquisition in 1994 of the Pacific Bell plant. Government cabling runs  
2147 parallel to the previously used Pacific Bell plant, which has not been removed or torn down.

2148 The Beale AFB fiber optic backbone cable system joins local area networks together across  
2149 Beale AFB and carries the heaviest information transfer traffic. This system is installed in  
2150 conduits with three spare innerducts (Beale AFB 2014b). The proposed Project includes the  
2151 installation of additional fiber cables to increase capacity and reliability of the communication  
2152 system on Beale AFB.

2153 **3.13.6 Solid Waste**

2154 Beale AFB manages its solid waste in compliance with all federal, state, and local statutes  
2155 relating to solid waste; the USAF has developed an installation-specific Integrated Solid Waste  
2156 Management Plan (ISWMP) for Beale AFB that addresses compliance with all applicable  
2157 statutes (Beale AFB 2018c). For construction activities, the ISWMP states that construction  
2158 debris and other waste shall be sorted into recyclable and non-recyclable waste streams and  
2159 that contractors shall transport all solid waste off Beale AFB to an approved landfill or recycling  
2160 facility (Beale AFB 2018c).

2161 Currently, the USAF has contracted with Recology Yuba Sutter, Inc. for the storage, collection,  
2162 handling, and disposal of solid waste. The contractor collects and disposes of refuse, yard  
2163 waste, and wood waste and handles office paper and cardboard recycling for Beale AFB. Once  
2164 collected, solid waste is transported to the Ostrom Road Landfill, an off-Beale AFB landfill in  
2165 Wheatland, California (Beale AFB 2018c).

2166 The Ostrom Road Landfill is the anticipated site for the disposal of all solid waste generated  
2167 during construction activities of the action alternatives. The Ostrom Road Landfill's current  
2168 plans indicate that the landfill is not at capacity and would not reach capacity until the year 2102  
2169 (California RWQCB 2016)<sup>1</sup>. Ostrom Road Landfill's site life calculations are based on a  
2170 remaining refuse capacity as of 2016 of approximately 24,395,000 tons, which assumes a  
2171 compacted effective refuse density of 1,395 pounds per cubic yard and accounts for settlement  
2172 (RWQCB 2016).

2173

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<sup>1</sup> <sup>1</sup> The Ostrom Road Landfill is the primary landfill being used for debris from the Camp Fire. The website was checked in December 2019; no updates or capacity change have been posted.

2175 **4.0 ENVIRONMENTAL CONSEQUENCES**2176 **4.1 INTRODUCTION**

2177 This chapter describes potential environmental consequences that may occur as a result of  
2178 Project implementation. For the purposes of this EA, the term “impacts” and “effects” are  
2179 synonymous. Environmental effects described in this chapter are evaluated in terms of duration  
2180 and intensity:

- 2181 • *Negligible Effect*—A localized degradation to a resource condition, use, or value that is  
2182 not measurable or perceptible.
- 2183 • *Minor Effect*—A measurable or perceptible and localized degradation of a resource’s  
2184 condition, use, or value that is of little consequence or significance.
- 2185 • *Moderate Effect*—A localized degradation of a resource condition, use, or value that is  
2186 measurable and has consequences.
- 2187 • *High Effect*—A measurable degradation of a resource condition, use, or value that is large  
2188 and/or widespread and could have permanent consequences for the resource.
- 2189 • *Short-term or Temporary Effect*—An effect that would result in the change of a resource  
2190 condition, use, or value lasting less than one year.
- 2191 • *Long-term Effect*—An effect that would result in the change of a resource condition, use,  
2192 or value lasting more than one year and probably much longer.
- 2193 • *Direct Effect*—An effect that is caused by the action and occurs at the same time and  
2194 place as the action.
- 2195 • *Indirect Effect*—An effect that is caused by the action but occurs later in time or at a  
2196 different location, but is still reasonably foreseeable.
- 2197 • *Beneficial Effect*—A change that would improve the resource condition, use, or value  
2198 compared to its current condition, use, or value.

2199 Resource protection measures have been developed to lessen or minimize potential effects to  
2200 resources. These are inclusive of Applicant Proposed Measure, Project Conservation  
2201 Measures (PCMs), Standard Operating Procedures (SOPs), Best Management Practices  
2202 (BMPs), and Avoidance and Minimization Measures (AMMs), collectively referred to as resource  
2203 protection measures. These measures intend to achieve a common goal of minimizing effects  
2204 from the Project and the terms are generally used synonymously (PCMs and SOPs are WAPA-  
2205 specific terms commonly referenced in the biological analysis and when referring to WAPA  
2206 programs). Resource protection measures are listed at the end of every Chapter 4 section and  
2207 are collected in **Appendix D**.

2208 **4.1.1 Impact Finding Summary**

2209 The intent of this EA and subsequent Chapter 4 sections is to provide WAPA and Beale AFB  
2210 sufficient data and analysis to decide if the Project will have significant impacts. The result of  
2211 each section describes recommended impact findings using the terms described above; WAPA  
2212 and Beale AFB will make formal determinations of findings and significance level upon  
2213 completion of the Final EA.

2214 **4.2 AESTHETICS/VISUAL RESOURCES**

2215 Impacts to aesthetics and visual resources could be considered significant if any of the following  
2216 occur as a result of the proposed Project:

- 2217 • The project has a substantial adverse effect on a scenic vista.
- 2218 • The project substantially damages scenic resources, including but not limited to trees,  
2219 rock outcroppings, and historic buildings within a state scenic highway.
- 2220 • The project substantially degrades the existing visual character or quality of the site and  
2221 its surroundings.
- 2222 • There is the creation of a new source of substantial light or glare which would adversely  
2223 affect day or nighttime views in the area.

2224 **4.2.1 Preferred Alternative (Northern B Alternative)**

2225 Since there are no designated scenic viewpoints or vistas within 10 miles of the Project area,  
2226 nor are there scenic highways or byways within 20 miles of the Project area, or recreation areas  
2227 within line of sight of the Project area (see Section 3.2, Aesthetics/Visual Resources Affected  
2228 Environment), the Preferred Alternative would have no impact on the aesthetic resources  
2229 associated with scenic viewpoints, vistas, highways, or byways, including trees, rock  
2230 outcroppings, and historic buildings.

2231 Because several power lines are already present in the Project area, the construction activities  
2232 and facilities of the proposed Project are not expected to substantially degrade the visual  
2233 character or quality of the Project area. Visual resources impacts would primarily affect those  
2234 residents closest to the alignment (see Section 3.2, Aesthetics/Visual Resources Affected  
2235 Environment) and would be long-term and minor.

2236 Within Beale AFB, the transmission lines are generally consistent with the developed context of  
2237 Beale AFB, and therefore, impacts of the Preferred Alternative to visual resources on Beale  
2238 AFB would be negligible. Additionally, the Preferred Alternative would not produce any new  
2239 source of substantial light or glare which could adversely affect day or nighttime views in the  
2240 area.

2241 There would be no impacts to aesthetics and visual resources from O&M activities, as the  
2242 facilities would already be in place and visible to observers and protection measures require  
2243 facility replacement to be in kind.

2244 These impact findings do not exceed the significance thresholds listed above for aesthetics and  
2245 visual resources.

2246 **4.2.2 Northern A Alternative**

2247 The Northern A Alternative is comprised of the same facility types as the Preferred Alternative  
2248 and is sited only one-half mile from the Preferred Alternative; therefore, impacts from the  
2249 Northern A Alternative would be nearly identical to the Preferred Alternative. That is, no impacts  
2250 to scenic viewpoints, vistas, highways, and byways; long-term minor impacts to nearby  
2251 residents off Beale AFB; negligible impacts to visual resources on-Beale AFB; and no impacts  
2252 from O&M activities.

2253 **4.2.3 Southern Alternative**

2254 The Southern Alternative is comprised of the same facility types as the Preferred Alternative  
2255 and is sited only 3.25 miles from the Preferred Alternative; therefore, impacts from the Southern  
2256 Alternative would be nearly identical to the Preferred Alternative. The only exception is that,  
2257 since a larger portion of the Southern Alternative follows private land than the other action  
2258 alternatives, there would be slightly more sensitive viewing locations. The Southern Alternative  
2259 would have no impacts to scenic viewpoints, vistas, highways, and byways; long-term minor  
2260 impacts to nearby residents off Beale AFB; negligible impacts to visual resources on-Beale  
2261 AFB; and no impacts from O&M activities.

2262 **4.2.4 Aesthetics/Visual Resources Protection Measures**

2263 The following resource protection measures will be implemented to avoid or lessen impacts to  
2264 aesthetics/visual resources:

VR-1	Material storage and staging areas will be selected to minimize views from public roads, trails, and nearby residences to the extent feasible. During O&M, the work site will be kept clean of debris and construction waste. For areas where excavated materials will be visible from sensitive viewing locations, excavated materials will be disposed of in a manner that is not visually evident in coordination with the landowner (as appropriate) and in compliance with applicable regulations.
VR-2	Replacement structures and hardware (e.g., conductors and insulators) will be replaced in kind, to the extent feasible, while ensuring that structures and hardware that are visible from sensitive viewing locations will have appropriate colors, finishes, and textures to most effectively blend into the visible landscape. If structures are visible from more than one sensitive viewing location and backdrops are substantially different from different vantage points, the darker color, which tends to blend better into landscape backdrops, will be selected.
VR-3	Maintenance operations will be conducted in a manner that limits unnecessary scarring or defacing of the natural surroundings to preserve the natural landscape to the extent possible.

2265 **4.2.5 No Action Alternative**

2266 The No Action Alternative would not result in any changes to the existing setting, and no  
2267 impacts would occur to aesthetic or visual resources.

2268 **4.3 AGRICULTURE AND FORESTRY RESOURCES**

2269 Impacts to agriculture and forestry resources could be considered significant if any of the  
2270 following occur as a result of the proposed Project:

- 2271 • The project converts Prime Farmland, Unique Farmland, or Farmland of Statewide  
2272 Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the  
2273 California Resources Agency, to nonagricultural use.
- 2274 • There is conflict between the project and existing zoning for agricultural use or a  
2275 Williamson Act contract.
- 2276 • The project conflicts with existing zoning for, or causes rezoning of, forest land (as  
2277 defined in PRC section 12220(g)), timberland (as defined by PRC section 4526), or



- 2278 timberland zoned Timberland Production (as defined by Government Code section  
2279 51104(g)).
- 2280 • The project results in the loss of forest land or conversion of forest land to non-forest  
2281 use.
  - 2282 • There are other changes in the existing environment which, due to their location or  
2283 nature, could result in conversion of Farmland to non-agricultural use or conversion of  
2284 forest land to non-forest use.
- 2285 **4.3.1 Preferred Alternative (Northern B Alternative)**
- 2286 *4.3.1.1 Forestry Resources*
- 2287 Since forest land, timberland, or timberland zoned Timber Production areas are not located in or  
2288 adjacent to the Preferred Alternative (see Section 3.3, Agriculture and Forestry Resources  
2289 Affected Environment), no impacts to forestland are anticipated.
- 2290 *4.3.1.2 Agriculture*
- 2291 All private land along the Project area that is not within the developed footprint of existing roads,  
2292 houses, or agricultural buildings is classified as either Unique Farmland or Farmland of  
2293 Statewide Importance and thus, is recognized as Important Farmland by the California DOC  
2294 (see Section 3.3, Agriculture and Forestry Resources Affected Environment).
- 2295 *Zoning and Non-use of Agricultural Land*
- 2296 All private parcels within the study area have been zoned by Yuba County as NRA, which is  
2297 consistent with the allowed use of “public facilities and infrastructure.” Consistent with the NR  
2298 designation, the surrounding land would continue to be used primarily for agriculture. All private  
2299 parcels within the study area have also been zoned AE-80; contingent on the issuance of a  
2300 Yuba County Conditional Use Permit, the Project would not conflict with existing plan  
2301 designations or zoning for agriculture.
- 2302 The Preferred Alternative’s long-term impacts to Important Farmland would result from the  
2303 permanent conversion of 0.061 acre of Important Farmland that would be dedicated to the  
2304 footings for either the monopoles or the H-frame structures. There are 84,950 acres of  
2305 Important Farmland in Yuba County (DOC 2019a); the permanent conversion of Important  
2306 Farmland that would occur under the Preferred Alternative amounts to a long-term disturbance  
2307 of 0.000071 percent of the Important Farmland that remains in Yuba County.
- 2308 For the construction period, WAPA would negotiate compensated non-planting agreements with  
2309 affected farmers for their lands so that construction could proceed without creating safety risks.  
2310 Per the negotiated non-planting agreements, agricultural fields adjacent to the alignment would  
2311 need to be drained for the duration of construction; therefore, the Preferred Alternative would  
2312 include the temporary non-use of approximately 260 acres of Important Farmland for a period of  
2313 16 months, assuming the 5-acre staging and laydown area would be temporarily located on  
2314 Important Farmland.
- 2315 With the exception of permanent infrastructure locations, all areas affected by construction  
2316 activities would be rehabilitated and returned to agricultural production subsequent to  
2317 construction by agreements with private landowners. Therefore, impacts to agriculture are

2318 expected to be long-term and negligible (conversion of 0.061 acre of Important Farmland) and  
 2319 short-term and moderate non-use of approximately 260 acres of Important Farmland during  
 2320 construction). Construction impacts to Important Farmland would be considered short-term and  
 2321 moderate. Project O&M activities would be performed from existing access roads and  
 2322 disturbance is not expected to agricultural lands; any impacts would be discussed and  
 2323 conditioned during WAPA's easement negotiations with landowners; no impacts from O&M  
 2324 activities are expected.

#### 2325 *Farming Operations*

2326 In agricultural areas, the aerial application of seeds and pesticides via aircraft is conducted  
 2327 regularly. The Preferred Alternative would be located an area where aerial application is  
 2328 conducted over rice and alfalfa fields. Crop dusters would need to make additional passes  
 2329 around transmission lines and structures to achieve the same coverage as fields without  
 2330 structures and transmission lines. Rice fields often require 5 aerial applications during planting.

2331 Impacts on the ground would include additional passes for tilling, planting, and harvesting to  
 2332 maneuver around structures. Many landowners have described the nuisance to farming  
 2333 practices due to increased weed control around towers, inefficient aerial spraying, difficulty  
 2334 setting up and tearing down irrigation lines to go around towers, additional pruning under  
 2335 transmission lines, and lack of opportunity for planning future orchards under ROWs.

2336 Leasing duck blinds during the hunting season is another source of revenue for farmers;  
 2337 compensation varies based on a location. Desirable locations for duck blinds may be impacted  
 2338 by the presence of new transmission lines and towers, which may impact the viability of this  
 2339 revenue source for the landowner.

2340 All these concerns, aerial seeding, harvesting practicing, and duck hunting, would be  
 2341 considered and compensated by WAPA during negotiations landowners for the purchase of  
 2342 easements. Impacts to farming operations are expected to be long-term and minor.

#### 2343 *Grazing*

2344 The Preferred Alternative area overlaps with one grazing unit in the Beale AFB Grazing  
 2345 Management Program (Beale AFB 2019); a portion of this area would be closed to grazing  
 2346 during the construction period, reopening to grazing again after construction is complete. The  
 2347 Preferred Alternative would have a short-term negligible impact to agricultural grazing on Beale  
 2348 AFB.

2349 These impact findings do not exceed the significance thresholds listed above for forestry and  
 2350 agricultural resources.

#### 2351 **4.3.2 Northern A Alternative**

2352 The Northern A Alternative is comprised of the same facility types as the Preferred Alternative  
 2353 and is sited only one-half mile from the Preferred Alternative; therefore, impacts to forestry and  
 2354 agriculture from the Northern A Alternative would be nearly identical to the Preferred Alternative.  
 2355 That is, no impacts to forestry resources; long-term minor to negligible impacts (conversion of  
 2356 0.065 acre of Important Farmland [the Northern A Alternative may require one addition structure  
 2357 than the Preferred Alternative]) and short-term and moderate (temporary non-use of 260 acres

2358 during construction) to agricultural land; long-term minor impacts to farming operations; and  
2359 short-term negligible impacts to grazing.

2360 **4.3.3 Southern Alternative**

2361 The Southern Alternative is comprised of the same facility types as the Preferred Alternative  
2362 and is sited only 3.25 miles from the Preferred Alternative; therefore, impacts from the Southern  
2363 Alternative would be nearly identical to the Preferred Alternative. The only exception is that,  
2364 since a larger portion of the Southern Alternative follows private land than the other action  
2365 alternatives, there would be slightly more temporary disturbance related to draining fields during  
2366 construction. That is, no impacts to forestry resources; long-term minor to negligible impacts  
2367 (conversion of 0.061 acre of Important Farmland) and short-term and moderate (temporary non-  
2368 use of 284 acres during construction) to agricultural land; long-term minor impacts to farming  
2369 operations; and short-term negligible impacts to grazing.

2370 **4.3.4 Agricultural and Forestry Resources Protection Measures**

2371 The following resource protection measures will be implemented to avoid or lessen impacts to  
2372 forestry and agricultural resources:

AG-1	WAPA will negotiate compensated non-planting agreements with farmers for parcels affected by Project construction.
AG-2	With the exception of permanent infrastructure locations, all areas affected by construction activities will be rehabilitated and returned to agricultural production subsequent to construction.
AG-3	WAPA will consider and compensate farmers for impacts to farming operations (e.g., aerial seeding) during negotiations with the landowners for the purpose for the ROW easement.

2373 **4.3.5 No Action Alternative**

2374 The No Action Alternative would not result in any changes to the existing setting, and no  
2375 impacts would occur to forestry or agriculture.

2376 **4.4 AIR QUALITY, GHG EMISSIONS, AND CLIMATE CHANGE**

2377 Impacts to air quality, GHG emissions, and climate change could be considered significant if  
2378 any of the following occur as a result of the proposed Project:

- 2379 • Implementation of the preferred alternative or any of the alternatives conflicts with or  
2380 obstructs an applicable air quality plan.
- 2381 • There is a cumulatively considerable net increase of any criteria pollutant for which the  
2382 project region is at non-attainment under an applicable federal or state ambient air  
2383 quality standard (including releasing emissions which exceed quantitative thresholds for  
2384 O<sub>3</sub> precursors).
- 2385 • Sensitive receptors are exposed to substantial pollutant concentrations.
- 2386 • Objectionable odors affecting a substantial number of people are created.
- 2387 • GHG emissions, either directly or indirectly, are generated that may have a significant  
2388 impact on the environment.

- 2389           • There is a conflict with an applicable plan, policy, or regulation for the purpose of  
2390           reducing GHG emissions.

2391           Impacts from the implementation of the Preferred Alternative were modeled using the Air  
2392           Conformity Applicability Model (ACAM), which is the standard model used for assessing air  
2393           quality impacts from actions taken at USAF bases. Based on discussions with WAPA and  
2394           Beale AFB, it was decided that the Project should use the model preferred by the USAF rather  
2395           than the California Emissions Estimator Model, the current model adopted by FRAQMD policy  
2396           for emissions estimation (personal communication Saare 2019).

2397           The model was used to run a single scenario for construction that assumed the “worst case,”  
2398           i.e., the longest length of transmission line to be installed and longest construction time among  
2399           the alternatives, including all phases of Project construction. This approach was used to  
2400           simplify the modeling efforts and because the approach used for all three alternatives is similar  
2401           enough to warrant a single analysis for the purpose of assessing air quality impacts. The full  
2402           ACAM report is included as **Appendix H**.

2403           Impacts from ongoing O&M activities are not assessed by the ACAM model, as there is not an  
2404           easy way to incorporate these impacts directly into the model. However, these emissions are  
2405           relatively inconsequential. Air quality impacts from ongoing O&M of the transmission line are  
2406           assessed separately for all alternatives.

#### 2407           **4.4.1 Preferred Alternative (Northern B Alternative)**

2408           Yuba County is in a federal maintenance area for PM<sub>2.5</sub>. The County is in a state nonattainment  
2409           area for PM<sub>10</sub> and O<sub>3</sub> (see Section 3.4, Air Quality Affected Environment). Effects could be  
2410           considered significant if the Project results in a cumulatively considerable net increase to any of  
2411           these three criteria pollutants. The subsequent sections separately assess impacts from the  
2412           construction phase, operational phase of the Project, and to overall GHG emissions and climate  
2413           change.

2414           Neither WAPA nor Beale AFB are current Title V permit holders. If impacts to air quality, as  
2415           described below, exceed Title V thresholds, a Title V permit would be obtained.

##### 2416           4.4.1.1 Construction Air Quality Impacts

2417           Fugitive dust emissions may be generated by the activities under the Preferred Alternative;  
2418           however; any dust emissions would be controlled and mitigated by the BMPs outlined in the  
2419           FRAQMD Standard Minimization Measure Fugitive Dust Control Plan. Project activities would  
2420           also create air pollutant emissions from grading, excavation, and trenching activities and from  
2421           the use of construction equipment and generators. Additional emissions would result from  
2422           vehicle trips for laborers, local vendors, and hauling of materials to the Project site. Labor and  
2423           local vendors are assumed to come from the local area, while other materials for the  
2424           construction of the Project are assumed to be transported in by semi-truck. The construction  
2425           duration for each Project phase, daily work schedule, and equipment usage from the Project  
2426           description were used as the inputs for the ACAM model.

2427           ACAM modeling results, based on the “worst case” scenario for construction of the Project,  
2428           show that none of the General Conformity thresholds are exceeded for any of the criteria  
2429           pollutants (see **Appendix H**). The results on an annual basis are given in **Table 4-1**.

**TABLE 4-1  
ACAM AIR QUALITY RESULTS—ANNUAL**

Criteria Pollutant	2020 Emissions (tons)	2021 Emissions (tons)	2022 Emissions (tons)	Exceedance
VOC	0.210	1.949	1.970	No
NO <sub>x</sub>	1.088	13.751	13.146	No
CO	1.168	10.592	9.992	No
SO <sub>x</sub>	0.002	0.040	0.039	No
PM <sub>10</sub>	7.439	55.736	65.418	No
PM <sub>2.5</sub>	0.064	0.501	0.480	No
Pb	0.000	0.000	0.000	No
Ammonia	0.001	0.020	0.016	No
CO <sub>2e</sub>	228.0	4017.7	3867.8	No

2430 The FRAQMD ISR guidelines recommends standard mitigation measures to apply to projects  
2431 that do not exceed the operational thresholds. While the operational emissions do not exceed  
2432 the FRAQMD annual thresholds, the emissions from construction activities do exceed the  
2433 annual limits of 4.5 tpy for NO<sub>x</sub> and 14.6 tpy (annual equivalent of the daily limit of 80 pounds  
2434 per day) for PM<sub>10</sub> for model years 2021 and 2022. However, based on the IRS guidelines,  
2435 construction impacts for NO<sub>x</sub> can be averaged out over the life of the Project when determining  
2436 the average annual emissions. Assuming a Project lifespan of 30 years, the Preferred  
2437 Alternative would generate 0.94 ton of NO<sub>x</sub> annually. This is below annual significance  
2438 thresholds in the FRAQMD guidelines.

2439 However, the daily threshold of 80 pounds of PM<sub>10</sub> is exceeded during the construction phase of  
2440 the Project. The FRAQMD ISR guidelines state that if the operational emissions of a project do  
2441 not exceed the operational thresholds but the construction phase emissions exceed the  
2442 construction thresholds of 25 pounds per day of NO<sub>x</sub> or ROG (averaged over the length of the  
2443 Project) or 80 pounds per day of PM<sub>10</sub>, the FRAQMD recommends additional Best Available  
2444 Mitigation Measures. These are listed in Section 4.4.5, Air Quality Protection Measures.

2445 Based on the results of the ACAM, the comparison to the General Conformity requirements, and  
2446 the requirements of the FRAQMD, the Preferred Alternative does not conflict with either of these  
2447 applicable air plans and is not anticipated to result in a cumulatively considerable net increase in  
2448 criteria pollutants or contribute substantially to any current air quality violation.

2449 The local effects of construction air pollutant emissions, whether these would result in sensitive  
2450 receptors being exposed to substantial pollutant concentrations or objectionable odors, must  
2451 also be considered. Given the location of the Project in an agricultural area, at least 0.25 mile  
2452 from any concentrated residential housing, schools, hospitals, or other sensitive receptors, the  
2453 emissions generated are not in close enough vicinity to cause these impacts.

2454 Based on the air quality modeling, the General Conformity analysis, and the implementation of  
2455 the standard minimization measures recommended by the FRAQMD, impacts to air quality are  
2456 considered short-term and negligible to none.

2457 4.4.1.2 Operational Air Quality Impacts

2458 While O&M activities were not incorporated into the ACAM model, it is not anticipated that O&M  
2459 of the transmission line would have any appreciable impacts on air quality. To assess the  
2460 maintenance impacts, data from 2017 maintenance efforts across all WAPA SNR transmission  
2461 lines was analyzed to determine the average maintenance the Project may require. The  
2462 average usage in hours per mile for each piece of equipment was used to estimate the total  
2463 number of hours for off-road equipment maintenance usage. On-road vehicle mileage was  
2464 used to estimate the number of miles per year that would be driven by on-road vehicles as a  
2465 part of maintenance activities. These were used to estimate O&M emissions using available  
2466 reference data for g/mile and g/hour of each pollutant for on-road and off-road equipment,  
2467 respectively.

2468 The result of this effort concluded that on an average year, the Project would require  
2469 approximately 88 miles of on-road vehicle usage and less than an hour of off-road vehicle  
2470 usage. The emissions generated over the course of 1 year from this minimal usage is less than  
2471 1/10th of a ton of CO<sub>2</sub> and an insignificant amount of other pollutants. Operational air quality  
2472 impacts from the Project are considered long-term and negligible to none.

2473 4.4.1.3 GHG and Climate Change Impacts

2474 The only appreciable amount of CO<sub>2</sub> generated by the Preferred Alternative occurs during the  
2475 construction phase of the Project. From model years 2020 to 2022, a total of approximately  
2476 8,114 tons (7,361 metric tons) of CO<sub>2e</sub> are anticipated to be released into the environment. This  
2477 is the largest estimate among the Project alternatives, as the analysis estimates emissions for  
2478 the longest transmission line under consideration, but CO<sub>2e</sub> emissions for all Project alternatives  
2479 are similar.

2480 GHG emissions are a known contributor to climate change. Climate change is an inherent  
2481 cumulative global effect that cannot be attributed to a single, discrete project. All projects that  
2482 produce GHGs result in incremental effects. Each Project alternative has roughly the same  
2483 level of GHG emissions, the bulk of which are construction emissions, estimated to be 7,361  
2484 metric tons CO<sub>2e</sub>. This is the equivalent to the annual emissions of 1,600 average passenger  
2485 vehicles.

2486 If operated under the required CARB reporting requirements (see Section 3.4, Air Quality  
2487 Affected Environment), the Preferred Alternative would have short-term negligible to no impacts  
2488 on GHG emissions and climate change.

2489 These impact findings do not exceed the significance thresholds listed above for air quality,  
2490 GHG emissions, and climate change.

2491 **4.4.2 Northern A Alternative**

2492 Given the similar length of transmission line, similar construction techniques and timeline, the  
2493 construction and operational air quality impacts of the Northern A Alternative are estimated to  
2494 not differ from the Preferred Alternative. That is, short-term and negligible to no impacts from  
2495 the construction phase, long-term negligible to no impacts from the O&M phase, and short-term  
2496 negligible to no impacts overall to GHG emissions and climate change.

2497 **4.4.3 Southern Alternative**

2498 Given the similar length of transmission line, similar construction techniques, and timeline, the  
2499 construction and operational air quality impacts of the Southern Alternative are estimated to not  
2500 differ from the Preferred Alternative. That is, short-term and negligible to no impacts from the  
2501 construction phase, long-term negligible to no impacts from the O&M phase, and short-term  
2502 negligible to no impacts overall to GHG emissions and climate change.

2503 **4.4.4 Air Quality, GHG Emissions, and Climate Change Protection Measures**

2504 The following resource protection measures will be implemented to avoid or lessen impacts to  
2505 air quality, GHG emissions, and climate change:

AQ-1	Implement the Fugitive Dust Control Plan from the FRAQMD ISR Guidelines.
AQ-2	Construction equipment exhaust emissions shall not exceed FRAQMD Regulation III, Rule 3.0, Visible Emissions limitations (40 percent opacity or Ringelmann 2.0). On-road and off-road equipment shall meet the mobile source strategy requirements of the California State Implementation Plan.
AQ-3	The contractor shall be responsible to ensure that all construction equipment is properly tuned and maintained prior to and for the duration of on-site operation.
AQ-4	Limit idling time to 5 minutes—saves fuel and reduces emissions (state idling rule: commercial diesel vehicles—13 CCR Chapter 10, Section 2485, effective 02/01/2005; off-road diesel vehicles—13 CCR Chapter 9, Article 4.8, Section 2449, effective 05/01/2008).
AQ-5	Utilize existing power sources (e.g., power poles) or clean fuel generators rather than temporary power generators.
AQ-6	Develop a traffic plan to minimize traffic flow interference from construction activities. The plan may include advance public notice of routing, use of public transportation, and satellite parking areas with a shuttle service. Schedule operations affecting traffic for off-peak hours. Minimize obstruction of through-traffic lanes. Provide a flag person to guide traffic properly and ensure safety at construction sites.
AQ-7	Portable engines and portable engine-driven equipment units used at the Project work site, with the exception of on-road and off-road motor vehicles, may require CARB Portable Equipment Registration with the state or a local district permit. The owner/operator shall be responsible for arranging appropriate consultations with the CARB or the district to determine registrations and permitting requirements prior to equipment operation at the site.
AQ-8	WAPA will adhere to all requirements of those agencies having jurisdiction over air quality matters, and any necessary permits for O&M will be obtained.
AQ-9	Machinery and vehicles will be kept in good operating condition, and older equipment will be replaced with equipment meeting more stringent California emission standards; appropriate emissions-control equipment will be maintained for vehicles and equipment, per California, EPA, and WAPA air-emission requirements.
AQ-10	Idle equipment will be shut down when not in active use; visible emissions from stationary generators will be controlled.
AQ-11	Dust-control measures will be implemented in road construction and maintenance as needed. Loose material will be covered when being transported in trucks, or the trucks will maintain at least 2 feet of freeboard and will not create any visible dust emissions.
AQ-12	There will be no open burning of construction trash.
AQ-13	Grading activities will cease during periods of high winds (as determined by local AQMDs).

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AQ-14	Major operations will be avoided on days when the local Air Quality Index is expected to exceed 150.
AQ-15	<p>The mitigation measures that apply to PM<sub>10</sub>, as the threshold of 80 pounds per day is exceeded, shall be implemented:</p> <ul style="list-style-type: none"> <li>• All grading operations on a Project should be suspended when winds exceed 20 miles per hour or when winds carry dust beyond the property line despite implementation of all feasible dust control measures</li> <li>• Construction sites shall be watered as directed by the Department of Public Works or AQMD and as necessary to prevent fugitive dust violations</li> <li>• An operational water truck should be available at all times. Apply water to control dust as needed to prevent visible emissions violations and off-site dust impacts</li> <li>• On-site dirt piles or other stockpiled particulate matter should be covered, wind breaks installed, and water and/or soil stabilizers employed to reduce windblown dust emissions. Incorporate the use of approved non-toxic soil stabilizers according to manufacturer's specifications to all inactive construction areas</li> <li>• All transfer processes involving a free fall of soil or other particulate matter shall be operated in such a manner as to minimize the free fall distance and fugitive dust emissions</li> <li>• Apply approved chemical soil stabilizers according to the manufacturers' specifications to all-inactive construction areas (previously graded areas that remain inactive for 96 hours), including unpaved roads and employee/equipment parking areas</li> <li>• To prevent track-out, wheel washers should be installed where Project vehicles and/or equipment exit onto paved streets from unpaved roads. Vehicles and/or equipment shall be washed prior to each trip. Alternatively, a gravel bed may be installed as appropriate at vehicle/equipment site exit points to effectively remove soil buildup on tires and tracks to prevent/diminish track-out</li> <li>• Paved streets shall be swept frequently (water sweeper with reclaimed water recommended; wet broom) if soil material has been carried onto adjacent paved public thoroughfares from the Project site</li> <li>• Reduce traffic speeds on all unpaved surfaces to 15 miles per hour or less and reduce unnecessary vehicle traffic by restricting access. Provide appropriate training, on-site enforcement, and signage</li> <li>• Reestablish ground cover on the construction site as soon as possible and prior to final occupancy through seeding and watering</li> <li>• Disposal by burning: Open burning is yet another source of fugitive gas and particulate emissions and shall be prohibited at the Project site. No open burning of vegetative waste (natural plant growth wastes) or other legal or illegal burn materials (trash, demolition debris, etc.) may be conducted at the Project site. Vegetative wastes should be chipped or delivered to energy facilities (permitted biomass facilities), mulched, composted, or used for firewood. It is unlawful to haul waste materials off-site for disposal by open burning</li> </ul>

**2506 4.4.1 No Action Alternative**

2507 The No Action Alternative would not result in any changes to the existing setting, and no  
 2508 impacts would occur to air quality. However, without the construction of the WAPA  
 2509 interconnection line to Beale AFB, in the event of a power outage or emergency, electrical



2510 service at Beale AFB would only be achievable by the use of on-site generators. Use of these  
2511 generators within the permitted time allotment would result in an increase in localized, short-  
2512 term emissions.

2513 **4.5 BIOLOGICAL RESOURCES**

2514 This section evaluates potential effects from the proposed Project to biological resources in the  
2515 Project area, as described in Section 3.5, Biological Resources Affected Environment. The  
2516 study area for biological resources extends between 325 and 400 feet from each alternative  
2517 corridor (inclusive of poles/pole foundations, underground facilities, substations, and access  
2518 roads) to capture any biological resources that may be directly or indirectly impacted by Project  
2519 activities. Biological resources within these corridors are analyzed below.

2520 **4.5.1 Vegetation Communities (Including Wetlands)**

2521 Several vegetation and wetland community types occur within the Project area (see Section  
2522 3.5.2, Vegetation Communities Affected Environment). The following sections evaluate  
2523 potential impacts to vegetation communities and wetlands resulting from the Project and lists  
2524 established AMMs and BMPs intended to prevent adverse impacts to these resources.

2525 Impacts to vegetation or wetlands could be considered significant if any of the following occur as  
2526 a result of the proposed Project:

2527 Vegetation

- 2528 • The project would have a substantial adverse effect, either directly or through habitat  
2529 modifications, on any species identified as a candidate, sensitive, or special status  
2530 species in local or regional plans, policies, or regulations, or by the California  
2531 Department of Fish and Wildlife or USFWS.
- 2532 • The project would have a substantial adverse effect on any riparian habitat or other  
2533 sensitive natural community identified in local or regional plans, policies, regulations or  
2534 by the California Department of Fish and Wildlife or USFWS.
- 2535 • The project would have a substantial adverse effect on state or federally protected  
2536 wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct  
2537 removal, filling, hydrological interruption, or other means.
- 2538 • The project would interfere substantially with the movement of any native resident or  
2539 migratory fish or wildlife species or with established native resident or migratory wildlife  
2540 corridors, or impede the use of native wildlife nursery sites.
- 2541 • The project would conflict with any local policies or ordinances protecting biological  
2542 resources, such as a tree preservation policy or ordinance.
- 2543 • The project would conflict with the provisions of an adopted Habitat Conservation Plan,  
2544 Natural Community Conservation Plan, or other approved local, regional, or state habitat  
2545 conservation plan.
- 2546 • Loss of rare plants, native plant communities, and other sensitive features identified by a  
2547 federal resource agency.
- 2548 • Loss of any population of plants that would result in a species being listed or proposed  
2549 for listing as threatened or endangered under federal or applicable state law (impacts to

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2550 threatened and endangered species are analyzed in Section 4.5.4, Special-Status  
2551 Wildlife).

- 2552 • Introduction or increase in the spread of noxious weeds.
- 2553 • Noxious weed infestations replacing native plant communities that harbor sensitive  
2554 plants and/or plants protected under applicable state law.

2555 Wetlands

- 2556 • Degradation or loss of any federal or state protected wetland(s), as defined by Section  
2557 404 of the CWA or other applicable regulations.
- 2558 • Indirect loss of wetlands or riparian areas caused by degradation of water quality,  
2559 diversion of water sources, or erosion and sedimentation resulting from altered drainage  
2560 patterns.

2561 4.5.1.1 Preferred Alternative (Northern B Alternative)

2562 Impacts to vegetation would include permanent removal due to structure foundations and  
2563 temporary disturbance during Project construction. The Preferred Alternative would include the  
2564 permanent removal of 10.07 acres of upland vegetation habitats (annual grasslands, agriculture,  
2565 barren, and urban) for proposed structures and new access roads, and temporary disturbance  
2566 of 44.27 acres of upland habitats from Project construction activities.

2567 Impacts to seasonal wetland habitats (potentially jurisdictional roadside ditches) would result  
2568 from the installation of 6 new culverts for new access roads and the replacement of 8 culverts  
2569 on existing roads. Disturbance to wetland habitat as a result from culvert work would include  
2570 0.02 acre of permanent impacts and 0.05 acre of temporary impacts.

2571 Temporary impacts may also occur during subsequent O&M activities. Introduction of noxious  
2572 weed species is not anticipated since weed-free construction and erosion materials and seeds  
2573 would be utilized. Non-native plant species already on-site may recolonize newly disturbed  
2574 areas.

2575 Impacts to vegetation and wetlands from the Preferred Alternative would be both long-term  
2576 (permanent removal) and short-term (temporary disturbance) and minor. These impact findings  
2577 do not exceed the significance thresholds listed above for vegetation communities.

2578 4.5.1.2 Northern A Alternative

2579 Impacts to vegetation and wetlands from the Northern A Alternative would be very similar to the  
2580 Preferred Alternative, with the only difference the acreages of permanent and temporary  
2581 disturbance. That is, impacts would be both long-term (permanent removal) and short-term  
2582 (temporary disturbance) and minor.

2583 The Northern A Alternative would include the permanent removal of 10.59 acres of upland  
2584 vegetation habitats and temporary disturbance of 49.65 acres of upland habitats. Impacts to  
2585 seasonal wetland habitats would also occur due to culvert work and would include 0.02 acre of  
2586 permanent impacts and 0.05 acre of temporary impacts. Noxious weeds would be managed as  
2587 described under the Preferred Alternative.

2588 4.5.1.3 Southern Alternative

2589 Impacts to vegetation from the Southern Alternative would be very similar to the Preferred  
2590 Alternative, with the only difference the acreages of permanent and temporary disturbance. The  
2591 Southern Alternative would include the permanent removal of 7.64 acres of upland vegetation  
2592 habitats and the temporary disturbance of 38.47 acres of upland habitats. Impacts to seasonal  
2593 wetland habitats would also occur with 0.03 acre of permanent impacts to vernal pools, 0.01  
2594 acres of permanent impacts to ditches from new culverts, and 0.03 acre of temporary impacts to  
2595 ditches from new culvert installation. Noxious weeds would be managed as described under the  
2596 Preferred Alternative.

2597 Impacts to vegetation and wetlands from the Southern Alternative would be both long-term  
2598 (permanent removal) and short-term (temporary disturbance) and minor. These impact findings  
2599 do not exceed the significance thresholds listed above for vegetation communities.

2600 4.5.1.4 Habitat and Vegetation Protection Measures

2601 The following resource protection measures, which are comprised of BMPs, SOPs, AMMs, and  
2602 PCMs that have been renumbered specific to this EA, will be implemented to avoid or lessen  
2603 impacts to vegetation:

BIO-1	<p><b><u>Vernal Pools, Vernal Pool Grasslands, and Seasonal Wetlands</u></b></p> <p>Vehicle access will be permitted only on well-established roads unless soils are dry. Soils will be considered sufficiently dry for vehicle access when they resist compaction and after annual plants have set seed (generally May 1 to October 31, or as determined by qualified personnel based on personal observation of the soils).</p> <p>For patrolling the ROW off of established roads in a pickup truck or for inspecting hardware on structures with a bucket truck, vernal pools, vernal pool grasslands, and seasonal wetlands will be avoided by 50 feet during the wet season. No avoidance will be necessary if soils are completely dry (generally May 1 to October 31).</p> <p>All equipment will be stored, fueled, and maintained in a designated vehicle staging area with appropriate spill containment. These designated areas will be established on previously developed areas whenever possible. Undeveloped staging areas, if any, will be the maximum distance possible from any vernal pool, vernal pool grassland, or seasonal wetland. Prior to the onset of work, workers will ensure a plan to allow a prompt and effective response to any accidental spills is in place. All workers will be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.</p> <p>When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas.</p> <p>A 50-foot buffer zone from the edge of the vernal pool or wetland will be maintained and the vernal pool or wetland will be protected from siltation and contaminant runoff by use of erosion control. Erosion control measures (straw wattles, silt fencing) will be installed where hydrological continuity exists between the construction activities and the wetland or when work is within 25 feet of a wetland/drainage/vernal pool. A USFWS-approved biologist or natural resources monitor will determine whether erosion control measures should be utilized, weighing the potential for impacts to other species. Construction</p>
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	<p>boundaries within the buffer will be designated with fencing or other suitable means to ensure no equipment and/or construction workers access protected wetland resources.</p> <p>If vegetation-management activities are proposed within 250 feet of a vernal pool, vernal pool grassland, or seasonal wetland, a qualified biologist will be present at all times to ensure the protection of the work-area limits in the below bullets OR qualified personnel will clearly fence the limits of the work area according to the following work-area limits prior to the maintenance activity (the herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different.):</p> <ul style="list-style-type: none"> <li>• Mixing or application of pesticides, herbicides, or other potentially toxic chemicals will be prohibited</li> <li>• Herbicide application to target vegetation by direct application methods (e.g., injection or cut-stump treatment) will be prohibited within 50 feet in the wet season (generally October 1 to May 31) and allowed up to the edge of the pool or seasonal wetland in the dry season (generally June 1 to September 30)</li> <li>• Herbicide application by basal spray and foliage spray methods will be prohibited within 100 feet in any season</li> <li>• Herbicide use will conform to Beale AFB's Weed Management Plan and allowed weed treatment methods</li> <li>• Manual clearing of vegetation (chainsaw, axe, clippers) will be allowed up to the edge of the pool or seasonal wetland in the wet season (generally October 1 to May 31); a buffer will not be necessary in the dry season (generally June 1 to September 30)</li> <li>• Mechanical clearing of vegetation (heavy-duty mowers, crawler tractors, or chippers) will be prohibited within 100 feet in the wet season (generally October 1 to May 31); a buffer will not necessary in the dry season (generally June 1 to September 30)</li> </ul>
<p align="center">BIO-2</p>	<p><b><u>Seep, Spring, Pond, Lake, River, Stream, and Marsh</u></b></p> <p>The following activities will be prohibited at all times within 100 feet of a seep, spring, pond, lake, river, stream, marsh, or their associated habitats:</p> <ul style="list-style-type: none"> <li>• Vehicle access, except on existing access and maintenance roads</li> <li>• Dumping, stockpiling, or burying of any material</li> <li>• Mixing of pesticides, herbicides, or other potentially toxic chemicals</li> <li>• Open petroleum products</li> </ul> <p>All equipment will be stored, fueled, and maintained in a designated vehicle staging area with appropriate spill containment. These designated areas will be previously developed areas whenever possible. Undeveloped staging areas, if any, will be the maximum distance possible from any seep, spring, pond, lake, river, stream, marsh, or their associated habitats.</p> <p>When feasible, all maintenance activities will be routed around wet areas while ensuring that the route does not cross sensitive resource areas.</p> <p>For vegetation management or maintenance within 100 feet of any seep, spring, pond, lake, river, stream, marsh, or any of their associated habitats, the following work-area limits will be provided (the herbicide restriction measures generated by the PRESCRIBE database supersede those below where they are different):</p> <ul style="list-style-type: none"> <li>• Only manual clearing of vegetation will be permitted</li> </ul>

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	<ul style="list-style-type: none"> <li>• Basal and foliar application of herbicides will be prohibited. Only direct application treatments (e.g., injection and cut-stump) of target vegetation will be allowed using herbicide approved for aquatic use by the EPA and in coordination with the appropriate federal land manager</li> </ul> <p>All instream work, such as culvert replacement or installation, bank recontouring, or placement of bank protection below the high-water line, will be conducted during no-flow or low-flow conditions and in a manner to avoid impacts to water flow and will be restricted to the minimum area necessary for completion of the work.</p> <p>All equipment used below the ordinary high water mark will be free of exterior contamination.</p> <p>Erosion control measures (straw wattles, silt fencing) will be installed where work is within 25 feet of a drainage. A USFWS-approved biologist or natural resources monitor will determine whether erosion control measures should be utilized, weighing the potential for impacts to other species. Construction boundaries within the buffer will be designated with fencing or other suitable means to ensure no equipment and/or construction workers access protected wetland resources. Seed mixtures applied for erosion control and restoration will be certified as free of noxious weed seed and will be composed of native species or sterile non-native species. Seed mixtures used on Beale AFB will be approved by Beale AFB 9 CES/CEIEC and in accord with the Integrated Natural Resources Management Plan.</p> <p>WAPA will obtain appropriate 404 discharge and 401 water-quality permits prior to any maintenance activities that must take place within jurisdictional wetlands or other WOTUS. These will be coordinated with USACE and RWQCB as needed.</p> <p>Dewatering work for maintenance operations adjacent to or encroaching on seeps, springs, ponds, lakes, rivers, streams, or marshes will be conducted to prevent muddy water and eroded materials from entering the water or marsh.</p> <p>All stream crossings will be constructed such that they permit fish to pass and reduce the potential for stream flows to result in increased scour, washout, or disruption of water flow. Wherever possible, stream crossings will be located in stream segments without riparian vegetation, and structure footings will be installed outside of stream banks. Should WAPA need to modify existing access roads or install new access roads, they will be built at right angles to streams and washes to the extent practicable.</p> <p>Trees providing shade to water bodies will be trimmed only to the extent necessary and will not be removed unless they present a specific safety concern. Trees that must be removed will be felled out of and away from the stream maintenance zone and riparian habitat, including springs, seeps, bogs, and any other wet or saturated areas, to avoid damaging riparian habitat. Trees will not be felled into streams in a way that will obstruct or impair the flow of water, unless instructed otherwise. Tree removal that could cause stream-bank erosion or result in increased water temperatures will not be conducted in and around streams. Tree removal in riparian or wetland areas will be done only by manual methods.</p>
<p align="center">BIO-3</p>	<p>All contract crews will complete biological pre-maintenance awareness training to ensure they are familiar with sensitive biological resources and associated BMPs and AMMs. All supervisors and field personnel will have on-file a signed agreement that they have completed the training and understood and agreed to the terms. BMPs and applicable AMMs will be written into the contract for O&amp;M work, and contractors will be held responsible for compliance.</p>

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BIO-4	WAPA crews will complete annual awareness training to ensure they are familiar with sensitive biological resources and associated AMMs and BMPs. All supervisors and field personnel will have on-file a signed agreement that they have completed the training and understood and agreed to the terms. Further, WAPA crews will have access to the O&M GIS database in the field to be able to identify sensitive resources and associated AMMs.
BIO-5	O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day or have escape ramps provided to prevent the entrapment of wildlife. Trenches and holes will be inspected for entrapped wildlife before being filled. Any entrapped animals will be allowed to escape voluntarily before O&M activities resume, or they may be removed by qualified personnel with an appropriate handling permit if necessary.
BIO-6	Vehicle traffic will be restricted to designated access routes and the immediate vicinity of construction/O&M sites. Vehicle speeds will not exceed 15 miles per hour on access and maintenance roads and 10 miles per hour on unimproved access routes. Vehicles and equipment will be parked on pavement, existing roads, and previously disturbed areas to the maximum extent feasible. Off-road travel outside of the demarcated construction boundaries will be prohibited. Per the Fugitive Dust Emissions Rule, a person shall take every reasonable precaution to not cause or allow the emissions of fugitive dust from being airborne past the action area, especially near threatened or endangered species or their habitats.
BIO-7	No pets or firearms will be permitted at Project sites.
BIO-8	During construction activities, all trash that may attract animals will be properly contained, removed from the work site daily, and disposed of properly. Following construction, all refuse and construction debris will be removed from work areas. All garbage and Project construction-related materials in construction areas will be removed immediately following Project completion. At the end of each work day, O&M workers will leave work areas and adjacent habitats to minimize disturbance to actively foraging animals and remove food-related trash from the work site in closed containers for disposal. Workers will not deliberately or inadvertently feed wildlife.
BIO-9	Nighttime O&M activities will be minimized to emergency situations. If nighttime O&M work is required, lights will be directed to the minimum area needed to illuminate Project work areas.
BIO-10	Where feasible and appropriate, tall dead trees will be topped and left in place as snags or as downed logs to support wildlife dependent on these important features. This BMP will be performed in coordination with the landowner.
BIO-11	Mortalities or injuries to any wildlife that occur as a result of Project- or maintenance-related actions will be reported immediately to the WAPA Natural Resources Department or other designated point of contact, who will instruct O&M personnel on the appropriate action and who will contact the appropriate agency if the species is listed. The phone number for the Western Natural Resources Department or designated point of contact will be provided to maintenance supervisors and the appropriate agencies.
BIO-12	Caves, mine tunnels, and rock outcrops will never be entered, climbed upon, or otherwise disturbed.
BIO-13	If a pesticide label stipulates a buffer zone width for protection of natural resources that differs from that specified in an AMM, the buffer zone width that offers the greatest protection will be applied.
BIO-14	To protect nesting birds (birds not specifically protected by AMMs but protected by the Migratory Bird Treaty Act) whose nests could occur within the ROW, WAPA and its subcontractors will perform construction activities outside the nesting season, which runs from March 1 through August 15. Alternatively, a qualified biologist will conduct nesting bird surveys prior to Project activities. For special-status birds, see specific AMMs: <ul style="list-style-type: none"> <li>• An additional survey may be required if gaps between the survey and the Project activity exceed three weeks</li> </ul>

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	<ul style="list-style-type: none"> <li>• Should an active nest be discovered, the qualified biologist will establish an appropriate buffer zone (in which O&amp;M activity is not allowed) to avoid disturbance in the vicinity of the nest. Maintenance activities will not take place until the biologist has determined that the nestlings have fledged or that maintenance activities will not adversely affect adults or newly fledged young</li> <li>• Alternatively, the qualified biologist will develop a monitoring/mitigation plan that permits the maintenance activity to continue in the vicinity of the nest while monitoring nesting activities to ensure that the nesting birds are not disturbed</li> </ul> <p>The Project will adhere to the guidance in the Avian Protection Plan for Beale Air Force Base (2017) and WAPA’s Avian Protection Plan (2016).</p>
BIO-15	Measures described in the <i>Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006</i> and <i>Mitigation Bird Collisions with Power Lines: The State the Art in 1994</i> will be implemented during O&M activities to minimize bird mortality and injury. The Project will adhere to the guidance in the Avian Protection Plan for Beale Air Force Base (2017) and WAPA’s Avian Protection Plan (2016).
BIO-16	At completion of work or according to erosion control plans and at the request of the landowner/manager, all work areas except permanent access roads will be scarified or left in a condition that will facilitate natural or appropriate vegetation, provide for proper drainage, and prevent erosion. All areas of upland ground disturbance or exposed soil from construction will be reseeded with a native “weed-free” seed mix. Seed mixtures used on Beale AFB will be approved by Beale AFB 9 CES/CEIEC and in accordance with the Integrated Natural Resources Management Plan.
BIO-17	<p>Prior to any application of herbicide, WAPA will query the California Department of Pesticide Regulation PRESCRIBE database, entering location information by county, township, range, and section and entering both the commercial name and the formulation of the desired pesticide, and WAPA will follow all use limitations provided to ensure compliance with applicable pesticide standards. This database is currently located at <a href="http://www.cdpr.ca.gov/docs/endspec/prescint.htm">http://www.cdpr.ca.gov/docs/endspec/prescint.htm</a>. The measures generated by the PRESCRIBE database will supersede those in the AMMs where they are different.</p> <p>On Beale AFB, the application of any pesticide, including herbicides, will be conducted in accordance with approved Integrated Pest Management Plan, Invasive Plant Species Management Guidelines, and Integrated Natural Resources Management Plan.</p>
BIO-18	The number of access routes, number and size of staging areas, and the total area of the activity will be limited to the minimum necessary to achieve the Project goal. Routes and boundaries will be clearly demarcated, and these areas will avoid wetlands/drainage areas whenever feasible.
BIO-19	A USFWS-approved biologist will conduct preconstruction surveys of all ground disturbance areas within sensitive habitats to determine if any federally-listed species may be present during the start of construction. These surveys will be conducted prior to the start of construction activities in and around any sensitive habitat.
BIO-20	A natural resources monitor will monitor construction activities in or adjacent to sensitive habitats. The natural resources monitor will ensure compliance with all applicable AMMs required to protect federally-listed species and their habitats.
BIO-21	If federally-listed species are found that are likely to be affected by work activities, the USFWS-approved biologist will have the authority to stop any aspect of the Project that could result in take of a federally-listed species in coordination from Beale AFB and/or the contracting officer. If the USFWS-approved biologist exercises this authority, they must coordinate with the Environmental Office of Beale AFB and/or WAPA.
BIO-22	Any worker that inadvertently kills or injures a federally-listed species or finds one injured or trapped will immediately report the incident to the on-site biologist. The biologist will inform the appropriate Natural Resources Office (WAPA off Beale AFB or Beale AFB

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	natural resources manager [NRM] on Beale AFB) immediately. The Natural Resources Office will verbally notify the Sacramento USFWS Office within one day and will provide written notification of the incident within five days.
BIO-23	Unless otherwise designated as part of a habitat restoration plan, all excess soil excavated during construction in the vicinity of vernal pools and other wetlands will be removed and disposed of outside the Project area. Coordination with the Beale AFB Environmental Office and appropriate regulatory agencies is required prior to disposal of the excavated soil.
BIO-24	A USFWS-approved biologist or natural resources monitor will inspect equipment for cleanliness to minimize spread of invasive and noxious weeds onto and around Beale AFB. The designated biologist or monitor may reject equipment that has visible clumps of mud when arriving on-site. The biologist or monitor will also identify any listed noxious weed found on the Project site and will hand-pull noxious weeds where practical.
BIO-25	Prior to initiation of construction activities, sensitive areas such as vernal pools, wetlands, riparian areas, and potential habitat for federally-listed species (i.e., vernal pool fairy shrimp/vernal pool tadpole shrimp or giant garter snake) will be staked and flagged as exclusion zones where construction activities cannot take place. Orange construction barrier fencing (or an appropriate alternative method) will designate exclusion zones where construction activities cannot occur. The flagging and fencing will be clearly marked as an environmentally sensitive area. The contractor will remove all fencing, stakes, and flagging within 60 days of construction completion.
BIO-26	For areas on Beale AFB, ground disturbance within vernal pools will require a restoration plan and two years of follow-up monitoring by a USFWS-approved biologist. Direct impacts to wetlands (in all areas) may require a CWA Section 404 permit issued by the USACE and a Section 401 Water Quality Certification from the State RWQCB.

2604 **4.5.1.5 No Action Alternative**

2605 The No Action Alternative would not result in any changes to the existing setting, and no  
2606 impacts would occur to vegetation.

2607 **4.5.2 Special-status Plants**

2608 The Project area supports suitable habitat for two special-status plant species: dwarf downingia  
2609 and legenera. The following sections evaluate potential impacts to special-status plants  
2610 resulting from the Project and lists established AMMs and BMPs intended to prevent adverse  
2611 impacts to these resources.

2612 Impacts to special-status plant species could be considered significant if any of the following  
2613 occur as a result of the proposed Project:

- 2614 • The project would have a substantial adverse effect, either directly or through habitat  
2615 modifications, on any species identified as a candidate, sensitive, or special status  
2616 species in local or regional plans, policies, or regulations, or by the California  
2617 Department of Fish and Wildlife or USFWS.
- 2618 • The project would have a substantial adverse effect on any riparian habitat or other  
2619 sensitive natural community identified in local or regional plans, policies, regulations or  
2620 by the California Department of Fish and Wildlife or USFWS.
- 2621 • The project would have a substantial adverse effect on state or federally protected  
2622 wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct  
2623 removal, filling, hydrological interruption, or other means.



- 2624 • The project would interfere substantially with the movement of any native resident or  
2625 migratory fish or wildlife species or with established native resident or migratory wildlife  
2626 corridors, or impede the use of native wildlife nursery sites.
- 2627 • The project would conflict with any local policies or ordinances protecting biological  
2628 resources, such as a tree preservation policy or ordinance.
- 2629 • The project would conflict with the provisions of an adopted Habitat Conservation Plan,  
2630 Natural Community Conservation Plan, or other approved local, regional, or state habitat  
2631 conservation plan.
- 2632 • The continued existence of a federally- or state-listed species was jeopardized.
- 2633 • Temporary or long-term disturbance of individuals or a population of species would  
2634 result in a change in species status.
- 2635 • Violation of any federal or other applicable statutes and regulations pertaining to special-  
2636 status species.

2637 4.5.2.1 Preferred Alternative (Northern B Alternative)

2638 Legenere and dwarf downingia may occur within vernal pool habitats on Beale AFB within the  
2639 Preferred Alternative area; any effects to these habitats in the Project area could affect these  
2640 species. The Preferred Alternative would not result in direct impacts to vernal pool habitats,  
2641 thus direct impacts to these species are not expected. While culvert work on Beale AFB would  
2642 temporarily impact seasonal wetland habitats across roadside ditches (see Section 4.5.1.1,  
2643 Preferred Alternative Impacts to Vegetation Communities), the ditches are not suitable habitat  
2644 for legenere and dwarf downingia, and direct impacts due to these activities are not expected.

2645 While potential is low, indirect impacts to legenere and dwarf downingia and their habitat due to  
2646 Project construction and subsequent O&M activities may occur, including:

- 2647 • Changes to surficial and subsurface hydrology of adjacent uplands that may cause  
2648 changes in the rate, extent, and duration of inundation of nearby vernal pools.
- 2649 • Contamination of vernal pool habitats due to unintended sediment, fuel, or lubricant  
2650 spills during construction.

2651 Impacts to special-status plants from the Preferred Alternative would be considered short-term  
2652 and negligible. These impact findings do not exceed the significance thresholds listed above for  
2653 special-status plants. These impact findings do not exceed the significance thresholds listed  
2654 above for special-status plants.

2655 4.5.2.2 Northern A Alternative

2656 Legenere and dwarf downingia may occur within vernal pool habitats on Beale AFB within the  
2657 Northern A Alternative area. Direct and indirect impacts would be equivalent to those  
2658 addressed for the Preferred Alternative area. That is, impacts to special-status plants from the  
2659 Northern A Alternative would be considered short-term and negligible.

2660 4.5.2.3 Southern Alternative

2661 Legenere and dwarf downingia may occur within vernal pool habitats on Beale AFB within the  
2662 Southern Alternative area. There are two vernal pools where the new substation is proposed to  
2663 be located. The permanent removal of these two vernal pools would result in direct impacts to

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2664 these species. Although legenera and dwarf downingia have not been identified within these two  
2665 pools during frequent Beale AFB-wide surveys, both pools are suitable habitat for the species.  
2666 The direct impacts to the two vernal pools would result in permanent impacts to 0.03 acre  
2667 (1,306 square feet) of suitable legenera and dwarf downingia habitat. However, the removal of  
2668 the two small pools would not impact the viability of the local population and species as a whole.

2669 Impacts to special-status plants from the Southern Alternative would be considered long-term  
2670 and negligible.

2671 **4.5.2.4 Special-status Plants and Plant Communities Protection Measures**

2672 The following resource protection measures, which are comprised of BMPs, SOPs, AMMs, and  
2673 PCMs that have been renumbered specific to this EA, will be implemented to avoid or lessen  
2674 impacts to special-status plants and plant communities:

BIO-27	<p><b><u>Vernal Pool Species</u></b></p> <p>On Beale AFB, the following measures will apply within 250 feet of potential vernal pool habitat to avoid or minimize disturbances and adverse effects to the species:</p> <ul style="list-style-type: none"> <li>• No work will be conducted in the vicinity of vernal pool species' habitat between November 1st and May 1st unless specifically approved by the Beale AFB NRM, who will field-verify soil saturation, visual ponding, and expected surface disturbance. The USFWS will be notified of any off-pavement work within 250 feet approved between November 1st and May 1st in the Project Effects Analysis Report</li> <li>• Mowing in and around vernal pool habitat after seed set during the dry season (May 1st to October 15th) may help reduce thatch in the vernal pool. Mowing conducted earlier in the season may be desirable to maintain appropriate conditions for vernal pool species. If mowing occurs in or near vernal pools, it will occur only when the soil is no longer saturated to ensure tracks are not left in or near wetlands. The mower height must be set to avoid the flowering heads of sensitive vernal pool plant species</li> <li>• Projects that occur on road surfaces and along road shoulders will avoid direct impacts to wetland habitats, including roadside ditches that act as seasonal wetlands</li> <li>• If access routes crossing vernal pool habitats cannot be avoided, ground protection mats will be used to disperse the weight of vehicles and equipment so as to not harm any existing cysts. These will be utilized in the dry season only</li> <li>• A USFWS-approved biologist will flag vernal pool species' habitat and a reasonable buffer to be avoided. The area will be protected by placing construction fencing or other appropriate protective fencing, including a buffer, around the pools. Fencing will be used in locations where Project equipment and/or personnel will be situated adjacent to or in the near vicinity of suitable vernal pool species' habitat</li> <li>• Dust control measures will be utilized during Project construction to prevent excessive dust from silting nearby vernal pools. Types of dust control measure will take into account the potential to impact the proximal vernal pool landscape and thus, will not impact nearby pools</li> <li>• If herbicide spraying is required within and near vernal pool species' habitat, only herbicide without toxic surfactants that is approved for use in aquatic environments will be used</li> <li>• All equipment used in Projects requiring access to sites within vernal pool species' habitat will be staged outside of vernal pool habitat and will be on paved or gravel</li> </ul>
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	<p>surfaces wherever possible. If paved or gravel surfaces are not available, construction mats and/or drip pans will be placed under vehicles to minimize impacts. To further minimize adverse effects, the following measures will be implemented at these Project sites near vernal pools:</p> <ul style="list-style-type: none"> <li>a. No work shall occur within vernal pool habitat when water is present</li> <li>b. Ground disturbances, such as trenching, and permanent disturbances, such as pole installation, will avoid hydrologically connected areas</li> <li>c. A USFWS-approved biologist will be present as necessary during access and Project work within vernal pool habitat to monitor activities</li> <li>d. For Projects adjacent to (within 10 meters) vernal pool species' habitat or hydrologically connected to the habitat, silt fencing or other appropriate BMPs to prevent siltation shall be implemented prior to work within that area. A USFWS-approved biologist will flag areas where silt fencing or BMPs shall be implemented. BMPs may include sand bags and weed-free straw bales or straw wattles</li> <li>e. Spill containment kits will be present at all sites where petroleum-fueled equipment is used</li> </ul> <ul style="list-style-type: none"> <li>• If Project activities encroach within the perimeter of a pool, the following measures will be implemented: <ul style="list-style-type: none"> <li>a. Protective mats should be used as first resort; if not possible, equipment with pneumatic tires should be used rather than tracked equipment</li> <li>b. Non-wetlands present within adjacent habitat will be used as an equipment parking platform. Alternately, ground protection mats, boards, or plates will be used to distribute the weight of construction equipment for access. Drip pans will also be placed under vehicles parked on non-wetland vegetation</li> <li>c. The Project will be implemented during the dry season only, when the pool is dry</li> </ul> </li> <li>• Pre- and post-Project surveys will be conducted to record habitat condition before the start of a Project and after completion of the Project for tracking purposes. This may include photos and/or species surveys and will be used to better manage for the species</li> </ul>
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2675 **4.5.2.5 No Action Alternative**

2676 The No Action Alternative would not result in any changes to the existing setting, and no  
2677 impacts would occur to special-status plants.

2678 **4.5.3 Wildlife**

2679 Several wildlife species occur within the Project area (see Section 3.5.4, Wildlife Affected  
2680 Environment). The following sections evaluate potential impacts to wildlife species resulting  
2681 from the Project and lists established AMMs and BMPs intended to prevent adverse impacts to  
2682 these resources.

2683 Impacts to wildlife could occur when habitats or individuals are disturbed or lost during Project  
2684 activities. The significance of the impact depends, in part, on the sensitivity of the population.  
2685 Impacts to wildlife could be considered significant if any of the following occur as a result of the  
2686 proposed Project:

- 2687 • The project would have a substantial adverse effect, either directly or through habitat  
2688 modifications, on any species identified as a candidate, sensitive, or special status

- 2689 species in local or regional plans, policies, or regulations, or by the California  
2690 Department of Fish and Wildlife or USFWS.
- 2691 • The project would have a substantial adverse effect on any riparian habitat or other  
2692 sensitive natural community identified in local or regional plans, policies, regulations or  
2693 by the California Department of Fish and Wildlife or USFWS.
  - 2694 • The project would have a substantial adverse effect on state or federally protected  
2695 wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct  
2696 removal, filling, hydrological interruption, or other means.
  - 2697 • The project would interfere substantially with the movement of any native resident or  
2698 migratory fish or wildlife species or with established native resident or migratory wildlife  
2699 corridors, or impede the use of native wildlife nursery sites.
  - 2700 • The project would conflict with any local policies or ordinances protecting biological  
2701 resources, such as a tree preservation policy or ordinance.
  - 2702 • The project would conflict with the provisions of an adopted Habitat Conservation Plan,  
2703 Natural Community Conservation Plan, or other approved local, regional, or state habitat  
2704 conservation plan.
  - 2705 • Temporary or long-term impacts to individuals of a population of wildlife that would result  
2706 in the species being listed or proposed for listing as threatened or endangered.
  - 2707 • Violation of any federal statutes and regulations pertaining to wildlife.
  - 2708 • Introduction of constituents in any water body in concentrations that cause adverse  
2709 effects on wildlife.
  - 2710 • Substantial interference with the movement of any native, resident, or migratory wildlife  
2711 species.
  - 2712 • Substantial local impacts to wildlife habitat (as compared to total available resources  
2713 within the area) or habitat productivity.
  - 2714 • Nest or reproductive failure (e.g., nest destruction or abandonment or death of chicks or  
2715 adults) in any migratory bird species.
  - 2716 • Range reduction for any wildlife species.

2717 Additionally, direct effects may be permanent (loss of habitat) or temporary (construction noise),  
2718 and indirect effects may be permanent (wildlife mortality along a new road) or temporary.

2719 4.5.3.1 Preferred Alternative (Northern B Alternative)

2720 General wildlife may be adversely affected by the implementation of the Preferred Alternative  
2721 and subsequent O&M activities in a variety of ways. Adverse impacts may occur indirectly  
2722 through habitat fragmentation or degradation (e.g., new structures and access roads); or directly  
2723 through disruption of breeding and consequent loss of eggs, chicks, or fledglings; through  
2724 collision mortality on roads; or through collision with power lines (i.e., birds).

2725 Most of the Project area is low-vegetation grasslands or highly modified agricultural lands, with  
2726 only a few scattered, isolated trees (see Section 3.5, Biological Resources Affected  
2727 Environment). Relative to the size of the Project area, a large amount of habitat has already  
2728 been lost or altered over the years through agricultural conversion, development, and various  
2729 land use practices. Wildlife in the immediate vicinity of the Project area has already adapted to  
2730 modified habitat conditions and associated human activities. Animals that are highly sensitive to  
2731 human disturbance have moved farther away from the vicinity of the development existing in  
2732 Project area. In addition, relative to the amount and type of habitats available, future habitat

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2733 disturbance is unlikely to be significant, given the current commitment of WAPA and Beale AFB  
2734 to regulatory compliance.

2735 Impacts to wildlife from the Preferred Alternative would be considered short-term and minor.  
2736 BMPs are listed below to further limit impacts. These impact findings do not exceed the  
2737 significance thresholds listed above for wildlife.

2738 4.5.3.2 Northern A Alternative

2739 Direct and indirect impacts to wildlife under the Northern A Alternative would be equivalent to  
2740 those addressed for the Preferred Alternative area. That is, impacts to wildlife from the  
2741 Northern A Alternative would be considered short-term and minor.

2742 4.5.3.3 Southern Alternative

2743 Direct and indirect impacts to wildlife under the Southern Alternative would be equivalent to  
2744 those addressed for the Preferred Alternative area. That is, impacts to wildlife from the  
2745 Southern Alternative would be considered short-term and minor.

2746 4.5.3.4 Wildlife Protection Measures

2747 The following resource protection measures, which are comprised of BMPs, SOPs, AMMs, and  
2748 PCMs that have been renumbered specific to this EA, will be implemented to avoid or lessen  
2749 impacts to wildlife:

BIO-28	O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day or have escape ramps provided to prevent the entrapment of wildlife. Trenches and holes will be inspected for entrapped wildlife before being filled. Any entrapped animals will be allowed to escape voluntarily before O&M activities resume, or they may be removed by qualified personnel, with an appropriate handling permit if necessary.
BIO-29	During construction activities, all trash that may attract animals will be properly contained, removed from the work site daily, and disposed of properly. Following construction, all refuse and construction debris will be removed from work areas. All garbage and Project construction-related materials in construction areas will be removed immediately following Project completion. At the end of each work day, O&M workers will leave work areas and adjacent habitats to minimize disturbance to actively foraging animals and remove food-related trash from the work site in closed containers for disposal. Workers will not deliberately or inadvertently feed wildlife.
BIO-30	Where feasible and appropriate, tall dead trees will be topped and left in place as snags or as downed logs to support wildlife dependent on these important features, in coordination with the landowner.
BIO-31	Mortalities or injuries to any wildlife that occur as a result of Project- or maintenance-related actions will be reported immediately to the WAPA Environmental Department or other designated point of contact, who will instruct O&M personnel on the appropriate action and who will contact the appropriate agency if the species is listed. The phone number for the WAPA Environmental Department or designated point of contact will be provided to maintenance supervisors and to the appropriate agencies.

2750 4.5.3.5 No Action Alternative

2751 The No Action Alternative would not result in any changes to the existing setting, and no  
2752 impacts would occur to wildlife species.

2753 **4.5.4 Special-Status Wildlife**

2754 Special-status wildlife species occur within the Project area are described in Section 3.5.5,  
2755 Special-Status Wildlife Affected Environment. The following sections evaluate potential impacts  
2756 to special-status wildlife species resulting from the Project and lists established AMMs and  
2757 BMPs intended to prevent adverse impacts to these species.

2758 Possible adverse impacts to special-status wildlife have been considered within the context of  
2759 the federal ESA (16 U.S.C. §§ 1531-1544) as well as the CESA (Fish and Game Code §§  
2760 2050, et seq.). Adverse impacts may be direct or indirect as well as temporary or permanent.  
2761 These are defined as follows:

- 2762 • *Direct*: Alteration, disturbance, or removal of biological resources that would result  
2763 directly from Project-related activities on the landscape is considered a direct impact.  
2764 Examples of direct impacts include the removal of habitat for a new road or building, loss  
2765 of shading along a river through removal of riparian vegetation, lowered water quality in  
2766 a creek from erosion, and noise or vibration that affect wildlife behavior at the time of  
2767 construction.
- 2768 • *Indirect*: Unintentional consequences of Project-related activities are called indirect  
2769 effects. Indirect effects are the result of a Project but generally occur later in time.  
2770 Examples of indirect effects include wildlife mortality along a new road, bird collisions  
2771 with power lines, increased nest parasitism through habitat fragmentation, or the  
2772 introduction of non-native plants from seed found in the hay bales used for erosion  
2773 control.
- 2774 • *Permanent*: Impacts that result in the irreversible removal of or change in biological  
2775 resources are considered permanent. Examples include the loss of vegetation and  
2776 wildlife habitat due to development. Permanent impacts would be limited to the  
2777 footprints of the developed area. Building construction would be a permanent effect.
- 2778 • *Temporary*: Impacts considered to have reversible effects on biological resources can be  
2779 viewed as temporary. A temporary impact would be the use of an equipment storage  
2780 area that would recover to natural habitat after completion of the Project.

2781 Additionally, direct effects may be permanent (loss of habitat) or temporary (construction noise),  
2782 and indirect effects may be permanent (wildlife mortality along a new road) or temporary.

2783 Impacts to special-status wildlife could be considered significant if Project-related activities  
2784 directly or indirectly resulted in:

- 2785 • The take of species (the term “take,” as defined in the federal ESA, means to harass,  
2786 harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage  
2787 in any such conduct).
- 2788 • The temporary or long-term impact to substantial habitat for species that are listed,  
2789 proposed for listing, or candidates for listing under the Federal ESA or CESA.
- 2790 • The permanent or temporary impact to critical habitat identified by the USFWS for  
2791 species listed under the Federal ESA.
- 2792 • The reduction or change in natural vegetation communities or wildlife habitat such that  
2793 populations of state and locally recognized sensitive species would be reduced to such  
2794 an extent that they would become listed or candidates for listing under the Federal ESA.

2795 4.5.4.1 Preferred Alternative (Northern B Alternative)

2796 Subsequent sections describe potential impacts to special-status wildlife species, grouped by  
2797 amphibians, birds, invertebrates, mammals, and reptiles.

2798 *Amphibians*

2799 Implementation of the Preferred Alternative and subsequent O&M activities may impact western  
2800 spadefoot toad. Impacts may include direct impacts in the form of harm or harassment to  
2801 individuals during construction activities or long-term impacts to upland habitat (i.e., non-  
2802 breeding habitat) from the installation of permanent infrastructure and temporary impacts during  
2803 construction and subsequent O&M activities. Indirect impacts to the western spadefoot toad  
2804 habitat (i.e., vernal pools) may include:

- 2805 • Changes to surficial and subsurface hydrology of adjacent uplands that may cause  
2806 changes in the rate, extent, and duration of inundation of nearby vernal pools.
- 2807 • Contamination of vernal pool habitats due to unintended sediment, fuel, or lubricant  
2808 spills during construction.
- 2809 • Introduction of noxious weed species, which is not anticipated since weed-free  
2810 construction and erosion materials and seeds would be utilized.

2811 Implementation of the Preferred Alternative would result in short-term, negligible impacts to  
2812 special-status amphibians.

2813 *Birds*

2814 Impacts to special-status birds may occur with the implementation of the Preferred Alternative  
2815 and subsequent O&M activities. Direct, short-term impacts to individuals may occur if they are  
2816 displaced during construction activities, while permanent and temporary impacts to their  
2817 foraging habitats may occur from the installation of infrastructure and access roads. Temporary  
2818 impacts may also occur during construction and subsequent O&M activities.

2819 Direct impacts due to the disturbance of potential nesting habitat for grasshopper sparrows,  
2820 loggerhead shrikes, northern harriers, short-eared owls, Swainson's hawks, and western  
2821 burrowing owls may occur as a result of the installation of permanent infrastructure (i.e., pole  
2822 foundations, substation, and access roads) and temporary construction impacts (i.e., laydown  
2823 areas, temporary construction areas). Direct impacts to nesting habitat (wetlands and marshes)  
2824 for California black-rail and tricolored blackbirds are not expected. Indirect impacts may also  
2825 occur as a result of avian collisions with power lines. Implementation of the Preferred Alternative  
2826 would result in short-term and long-term minor impacts to special-status birds.

2827 *Invertebrates*

2828 Impacts to special-status invertebrates may occur with the implementation of the Preferred  
2829 Alternative and subsequent O&M activities on Beale AFB. Direct impacts (incidental take of  
2830 individuals/cysts) to vernal pool fairy shrimp and vernal pool tadpole shrimp may occur from the  
2831 construction of Project access routes through habitats (swales and roadside ditches) that  
2832 support these species. Specifically, construction of new access roads and improvements to  
2833 existing access roads would require the installation of new horseshoe culverts or the  
2834 replacement of old culverts with horseshoe culverts (see Section 2.3.1.4, Culvert Replacement  
2835 and Construction) where the roads would intersect roadside drainage ditches or swales where

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2836 individuals or cysts may be present. The installation of these culverts may result in the take of  
2837 individuals or cysts but would not permanently alter the function of the swales or ditches. The  
2838 replacement of old culverts with new horseshoe culverts may improve passage for these  
2839 species.

2840 Additionally, temporary Project access roads may intersect these habitats and result in the take  
2841 of individuals or cysts. However, these impacts would be partially offset by routing access  
2842 roads around wetland features to the greatest extent practicable and through the use of weight  
2843 dispersion mats. These ditches provide sub-optimal habitat for the species and impacts to the  
2844 viability of the local population and species as a whole would be negligible.

2845 Indirect impacts to any vernal pool habitats on which these species rely are comparable to those  
2846 addressed for western spadefoot toad. Temporary impacts may also occur as a result of  
2847 subsequent O&M activities. Implementation of the Preferred Alternative would result in short-  
2848 term, moderate impacts to vernal pool fairy shrimp and vernal pool tadpole shrimp (WAPA  
2849 2019).

2850 Impacts to valley elderberry longhorn beetle are not expected. The sole elderberry shrub  
2851 identified during field surveys would not be impacted by Project-related activities.  
2852 Implementation of the Preferred Alternative would result in no impacts to valley elderberry  
2853 longhorn beetle (WAPA 2019).

#### 2854 *Mammals*

2855 Impacts to pallid bat, Townsend's big-eared bat, and western red bat may occur due to  
2856 implementation of the Preferred Alternative and subsequent O&M activities. Direct, short-term  
2857 impacts to individuals may occur if they are displaced during construction activities, and  
2858 permanent and temporary impacts to their foraging habitat would occur from the installation of  
2859 infrastructure, and access roads. Temporary impacts may also occur during construction and  
2860 subsequent O&M activities. Direct impacts to bat roosting habitat are not expected.  
2861 Implementation of the Preferred Alternative would result in short-term, negligible impacts to  
2862 special-status bats.

#### 2863 *Reptiles*

2864 Impacts to special-status reptiles may occur due to the implementation of the Preferred  
2865 Alternative and subsequent O&M activities. The giant garter snake is not known to be present  
2866 or expected to occur on Beale AFB (Hansen 2019), and any Project-related effects to the  
2867 species would be limited to the off-Beale AFB portions of the Preferred Alternative area. These  
2868 impacts may include direct impacts to individuals during construction activities or direct  
2869 disturbance of habitat due to the installation of towers. Indirect impacts may occur in the form of  
2870 temporary habitat disturbance due to the dewatering of rice fields during construction activities  
2871 (Shuford 2017). WAPA expects that the implementation of Project would result in a *may affect,*  
2872 *not likely to adversely affect* USFWS determination for giant garter snake (WAPA 2019).

2873 Impacts to western pond turtles would be limited to those activities occurring within 650 feet of  
2874 suitable turtle habitat, as western pond turtles are known to occur up to 650 feet from aquatic  
2875 habitats (Nafis 2018). Direct impacts to individuals may occur if western pond turtles are  
2876 present on the ground surface during construction activities, specifically in any of the areas  
2877 where pole foundations and substations are being installed and at temporary staging and  
2878 laydown areas. Permanent impacts to potential upland aestivation/overwintering habitat may



2879 occur from the installation of permanent infrastructure (i.e., pole foundations, substation, and  
2880 access roads), and temporary impacts may also occur during construction and subsequent  
2881 O&M activities. Direct impacts to western pond turtle aquatic habitat are not expected.

2882 Implementation of the Preferred Alternative would result in short-term, negligible impacts to  
2883 special-status reptiles.

2884 4.5.4.2 Northern A Alternative

2885 Direct and indirect impacts to special-status wildlife under the Northern A Alternative would be  
2886 equivalent to those addressed for the Preferred Alternative area. That is, short-term negligible  
2887 impacts to special-status amphibians; short-term minor impacts to special-status birds; no  
2888 impact to valley elderberry longhorn beetle; short-term negligible impacts to special-status bats;  
2889 and short-term negligible impacts to special-status reptiles.

2890 4.5.4.3 Southern Alternative

2891 Direct and indirect impacts to special-status wildlife under the Southern Alternative would be  
2892 comparable to those addressed under the Preferred Alternative. However, additional direct  
2893 impacts to special-status species dependent on vernal pools (vernal pool fairy shrimp, vernal  
2894 pool tadpole shrimp, and western spadefoot toad) would occur with the implementation of the  
2895 Southern Alternative due to the anticipated removal of two vernal pools at the new substation  
2896 location. Although these species have not been positively identified within these two pools  
2897 during frequent Beale AFB-wide surveys, both pools are suitable habitat for these species. The  
2898 direct impacts to the two vernal pools would result in permanent impacts to 0.03 acre (1,306  
2899 square feet) of suitable habitat for these vernal pool-dependent species. However, the removal  
2900 of the two small pools would not significantly impact the viability of the local populations and  
2901 species as a whole.

2902 Additionally, vernal pool fairy shrimp and vernal pool tadpole shrimp critical habitat is located on  
2903 the western end of the Southern Alternative, north of Erle Road off-Beale AFB (units VERFS 11  
2904 and VERTS 7). However, permanent infrastructure (i.e., towers and access roads) and  
2905 temporary impacts from construction would occur on the southern side of Erle Road, and any  
2906 direct impacts to the primary constituent elements of vernal pool fairy shrimp and vernal pool  
2907 tadpole shrimp critical habitat is not expected.

2908 Impacts from the Southern Alternative would be the same as the Preferred Alternative. That is,  
2909 short-term negligible impacts to special-status amphibians; short-term minor impacts to special-  
2910 status birds; no impact to valley elderberry longhorn beetle; short-term negligible impacts to  
2911 special-status bats; and short-term negligible impacts to special-status reptiles. The  
2912 implementation of protection measures listed below would further minimize adverse impacts to  
2913 special-status wildlife species.

2914 4.5.4.4 Special-status Wildlife Protection Measures

2915 The following resource protection measures, which are comprised of BMPs, SOPs, AMMs, and  
2916 PCMs that have been renumbered specific to this EA, will be implemented to avoid or lessen  
2917 impacts to special-status wildlife:

BIO-32	<p><b><u>Vernal Pool Species</u></b> See Section 4.5.1.4, Vegetation Communities Protection Measures for full text</p>
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BIO-33	<p><b><u>Bald Eagle (Nesting and Wintering)</u></b></p> <p>From February 1 to August 15 herbicide application or noisy or disturbing O&amp;M activities (e.g., power saws, mechanical chippers) will be prohibited anywhere that bald eagles are known to nest OR a qualified biologist will conduct nesting surveys using methods described in Jackman and Jenkins (2004). If a nest is detected, all herbicide application and O&amp;M activities will be prohibited at a distance determined by the qualified biologist based on topography and/or other environmental considerations.</p>
BIO-34	<p><b><u>Western Burrowing Owl (Burrow Sites Winter and Summer)</u></b></p> <p>From February 1 to August 31 herbicide application (with the exception of direct application) and other O&amp;M activity will be prohibited within 250 feet of potential burrowing owl nesting dens (ground squirrel burrows, culverts, concrete slabs, debris piles that could support nesting burrowing owls).</p> <p>From September 1 through January 31, disturbance will be prohibited within 160 feet of potential burrowing owl dens.</p> <p>OR</p> <p>A qualified biologist will conduct nesting and wintering surveys using methods described in California Burrowing Owl Consortium 1993. If nesting or wintering activity is detected, a qualified biologist will mark and monitor an appropriate non-disturbance buffer in the vicinity of burrows that have been active within the last three years. Within the buffer zone, all O&amp;M activities and herbicide applications will be prohibited from February 1 to August 31.</p>
BIO-35	<p><b><u>California Black Rail</u></b></p> <p>From February 15 to July 31 surface disturbances, including noise or changes to the hydrological regime, will be prohibited in potential black rail habitat (shallowly flooded wetlands or irrigated pasture) OR a qualified biologist will conduct nesting surveys to verify absence. If nesting activity is detected or likely, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&amp;M activities will be prohibited from February 15 to July 31.</p>
BIO-36	<p><b><u>Swainson's Hawk (Nesting)</u></b></p> <p>From April 1 to July 31 herbicide application and tree removal will be prohibited within 0.25 mile of Swainson's hawk nest trees.</p> <p>A 0.25-mile buffer zone will be established and maintained around potential Swainson's hawk nest trees, within which there will be no intensive disturbance (e.g., use of heavy equipment, power saws, chippers, cranes, or draglines). This buffer may be adjusted as assessed by a qualified biologist based on changes in sensitivity exhibited by birds over the course of the nesting season and the type of O&amp;M activity performed (e.g., high noise or human activity such as mechanical vegetation maintenance versus low noise or human activity such as semi-annual patrols). Within 0.25 mile of an active nest (as confirmed by a qualified biologist), routine O&amp;M activities will be deferred until after the young have fledged or until it was determined by a qualified biologist that the activities will not adversely affect adults or young.</p> <p>OR</p> <p>A qualified biologist will conduct nest surveys using methods described in SHTAC 2000 (or the most recent survey protocol) to determine absence.</p>
BIO-37	<p><b><u>Tricolored Blackbird (Nesting Colony)</u></b></p> <p>From March 15 to August 15 herbicide application (with the exception of direct application) and vegetation clearing/disturbance will be prohibited in marshes, willows, and blackberry</p>

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	<p>thickets OR a qualified biologist will conduct a nesting survey prior to O&amp;M activities. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nesting colony within which all O&amp;M activities and herbicide applications will be prohibited from March 15 to August 15.</p>
BIO-38	<p><b><u>Valley Elderberry Longhorn Beetle</u></b> Prior to initiating Project-related construction activities, qualified personnel will clearly flag or fence each elderberry plant that has a stem measuring 1 inch or greater in diameter at ground level. If an elderberry plant meeting this criterion is present, a minimum buffer zone of 20 feet outside of the dripline of each elderberry plant will be provided during all Project-related construction activities.</p>
BIO-39	<p><b><u>Pallid Bat</u></b> Noisy or disturbing O&amp;M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of tunnels and rock outcrops.  Snags and live trees will be left standing to the maximum extent possible.</p>
BIO-40	<p><b><u>Townsend's Big-Eared Bat</u></b> Noisy or disturbing O&amp;M activities (e.g., power saws, mechanical chippers) will be minimized in the vicinity of tunnels.</p>
BIO-41	<p><b><u>Western Red Bat</u></b> Live broadleaf trees will be left standing to the maximum extent possible.</p>
BIO-42	<p><b><u>Giant Garter Snake</u></b> Follow BMPs and PCM-W002 in aquatic giant garter snake habitat. PCM-W002 will supersede those below where they are different.  Movement of heavy equipment will be confined to existing roadways to minimize habitat disturbance. Vegetation management will be confined to the minimum area necessary to facilitate O&amp;M activities.  Giant garter snake aquatic and upland habitats will be flagged as environmentally sensitive areas by a USFWS-approved biologist within or adjacent to the disturbance footprint. Only manual vegetation removal will be allowed within the flagged area.  A USFWS-approved monitor will be present for construction and O&amp;M activities within the flagged area.  All potentially affected aquatic habitats will be dewatered prior to any ground disturbance. Dewatered areas will remain dry with no puddled water remaining for at least 15 consecutive days prior to excavation or filling of that habitat. If a site cannot be completely dewatered, prey items will be netted or otherwise salvaged if present.  To the extent possible, disturbance to hibernacula and aestivation areas (i.e., rocks, burrows, logs, brush piles, etc.), will be avoided during cold and cool-weather periods when the giant garter snake would be using these areas. Ground disturbance will be confined to the minimum area necessary to facilitate construction and O&amp;M activities.  All construction-related holes will be covered to prevent entrapment of individual giant garter snakes.  Within the construction area, silt fencing can be used to keep snakes from entering the Project site and being harmed.  All construction equipment shall be checked daily for the presence of snakes prior to starting work.  Pre- and post-Project surveys will be conducted to record habitat condition before the start of a Project and after completion of the Project for tracking purposes. This may include photos and/or species surveys.</p>

	<p>Any temporary fill and debris will be removed. Restoration work could include such activities as replanting species removed from banks or replanting emergent vegetation in the active channel.</p> <p>If herbicide spraying is required within and near giant garter snake habitat, only herbicide without toxic surfactants that is approved for use in aquatic environments will be used.</p>
<p>BIO-43</p>	<p><b><u>Western Pond Turtle</u></b> <i>Follow BMPs and PCM-W002.</i></p> <p>From April 15 to July 15 any ground disturbing activity within 400 feet of a permanent pond, lake, creek, river, or slough that could affect the bed, bank, or water quality of any of these features will be prohibited OR a qualified biologist will inspect the Project area.</p> <p>If adult or juvenile pond turtles are present, a qualified biologist will monitor Project activities to ensure that no turtles are harmed. If a qualified biologist determined that nests could be adversely affected, potential nesting areas will be avoided between June 1 and October 31.</p>

2918 **4.5.4.5 No Action Alternative**

2919 The No Action Alternative would not result in any changes to the existing setting, and no  
2920 impacts would occur to special-status wildlife species.

2921 **4.6 CULTURAL AND TRIBAL RESOURCES AND PALEONTOLOGICAL**  
2922 **RESOURCES**

2923 **4.6.1 Impact Thresholds**

2924 **4.6.1.1 Federal Thresholds**

2925 Project implementation affects a historic property if it alters any characteristic that qualifies it for  
2926 NRHP inclusion. As outlined in 36 CFR 800.5, factors considered in determining whether the  
2927 Project would have adverse cultural resource impacts include the extent or degree to which its  
2928 implementation would result in:

- 2929 1) Damage to, or loss of, a site of archaeological, tribal, or historical value that is listed, or  
2930 eligible for listing, on the NRHP.
- 2931 2) Loss or degradation of a TCP or sacred site, or if the property or site is made inaccessible  
2932 for future use.
- 2933 3) Disturbance to any human remains, including those interred outside formal cemeteries.
- 2934 4) Isolation of cultural resources from the context considered significant.
- 2935 5) An effect to Project elements that would be out of character with the property or site and  
2936 its setting.

2937 **4.6.1.2 State Thresholds**

2938 For CEQA analysis, (§ 15064.5), determining the significance of impacts to archaeological and  
2939 historical resources occurs:

- 2940 1) When a Project will impact an archaeological site that a lead agency has determined is an  
2941 historical resource, as defined in subdivision (a).

- 2942 2) If a lead agency determines that the archaeological site is an historical resource, it shall  
2943 refer to the provisions of Section 21084.1 of the PRC, and this section, Section 15126.4  
2944 of the Guidelines, and the limits contained in Section 21083.2 of the PRC do not apply.
- 2945 3) If an archaeological site does not meet the criteria defined in subdivision (a) but does meet  
2946 the definition of a unique archeological resource in Section 21083.2 of the PRC, the site  
2947 shall be treated in accordance with the provisions of Section 21083.2. The time and cost  
2948 limitations described in PRC Section 21083.2 (c-f) do not apply to surveys and site  
2949 evaluation activities intended to determine whether the Project location contains unique  
2950 archaeological resources.
- 2951 4) If an archaeological resource is neither a unique archaeological nor an historical resource,  
2952 the effects of the Project on those resources shall not be considered a significant effect  
2953 on the environment. It shall be sufficient that both the resource and the effect on it are  
2954 noted in the Initial Study or Environmental Impact Report (EIR) if one is prepared to  
2955 address impacts on other resources, but they need not be considered further in the CEQA  
2956 process.

2957 **4.6.1.3 Paleontological Thresholds**

2958 The Project would have adverse paleontological impacts if its implementation would result in  
2959 directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

2960 **4.6.2 Preferred Alternative (Northern B Alternative)**

2961 If the Preferred Alternative is selected, the Cultural Resources Inventory Report (Bassett 2019)  
2962 indicates there would be no historic properties or TCPs present under either the NHPA or CEQA  
2963 within either the APE of direct impacts or of indirect impacts. In addition, no paleontological  
2964 resources have been identified.

2965 If any previously undetected or unreported cultural features, deposits, or human remains, or if  
2966 any paleontological resources are encountered during Project-related activities, these activities  
2967 must be discontinued in the immediate area of the feature(s), and the WAPA or Beale AFB  
2968 archaeologist, as appropriate, must be consulted to evaluate their nature and significance.  
2969 These recommendations are summarized in **Table 4-2**, and BMPs that will be implemented  
2970 during construction and O&M activities are listed in Section 4.6.5, Cultural Resources Protection  
2971 Measures.

2972 **4.6.3 Northern A Alternative**

2973 If the Northern A Alternative is selected, the Cultural Resources Inventory Report (Bassett 2019)  
2974 indicates there would be no historic properties or TCPs present under either the NHPA or CEQA  
2975 within either the APE of direct impacts or of indirect impacts. In addition, no paleontological  
2976 resources have been identified. Recommendations for Northern A Alternative are shown in  
2977 **Table 4-2**, and the same BMPs would implemented as under the Preferred Alternative.

2978 **4.6.4 Southern Alternative**

2979 If the Southern Alternative is selected, the Cultural Resources Inventory Report (Bassett 2019)  
2980 indicates there would be no historic properties or TCPs present under either the NHPA or CEQA  
2981 within the APE of direct impacts. The Project would result in No Adverse Effects to cultural  
2982 resources within the APE of indirect impacts. In addition, no paleontological resources have

2983 been identified. Recommendations for Southern Alternative are shown in **Table 4-2**, and the  
2984 same BMPs would implemented as under the Preferred Alternative.

<b>TABLE 4-2 CULTURAL RESOURCES EFFECT ASSESSMENT RECOMMENDATIONS</b>				
<b>Proposed Alternative</b>	<b>Resources within APE (direct)</b>	<b>Resources within APE (indirect)</b>	<b>Effect Recommendation (direct)</b>	<b>Effect Recommendation (indirect)</b>
Northern A Alternative	BWIP-2; BWIP-3; BWIP-IO-1	VR-4	No Historic Properties Present	No Historic Properties Present
Northern B Alternative	CA-YUB-1420H (P-58-001587); BWIP-2; BWIP-3; BWIP-IO-1	VR-4	No Historic Properties Present	No Historic Properties Present
Southern Alternative	PL-15H; BWIP-1	VR-1; VR-2; VR-3	No Historic Properties Present or No Adverse Effect <sup>1</sup>	No Adverse Effect

<sup>1</sup> No historic properties present if BWIP-1 is Ineligible; No Adverse Effect if BWIP-1 is Eligible.

2985 **4.6.5 Cultural and Tribal Resources Protection Measures**

2986 The following resource protection measures will be implemented to avoid or lessen impacts to  
2987 cultural, tribal, and paleontological resources:

CR-1	All contract crews will complete cultural resources pre-maintenance awareness training to ensure they are aware of the locations of cultural resource sites and paleontological resources; maintenance methods to be used in areas with sensitive cultural resources; and restrictions required in cultural resources areas (i.e., SOPs and PCMs). Crews will be educated on the Archaeological Resources Protection Act, which makes it a federal offense to willfully damage or remove any artifacts or materials from an archaeological site. All supervisors and field personnel will have on-file a signed agreement that they have completed the training and understood and agreed to the terms. SOPs and applicable PCMs will be written into the contract for O&M work, and contractors will be held responsible for compliance.
CR-2	WAPA crews will complete annual awareness training to ensure they are familiar with sensitive cultural and paleontological resources and associated SOPs and PCMs. All supervisors and field personnel will have on-file a signed agreement that they have completed the training and understood and agreed to the terms. Further, WAPA crews will have access to the O&M GIS database in the field to be able to identify sensitive resources and associated PCMs.
CR-3	A cultural resource monitor will be present during all initial ground disturbance activities (grading, trenching, excavation) that occur on Beale AFB.
CR-4	Operation of vehicles or heavy construction equipment will be avoided in areas that are not designated transmission line and legal access road ROWs or other established transportation routes. This measure will minimize the possibility of disturbing unmapped cultural resources.
CR-5	Upon discovery of potential buried cultural or paleontological resources, work within 50 feet of the find will be halted and the discovery will be reported immediately to the WAPA Natural Resources Department or other designated point of contact or else to Beale AFB,

	depending on land jurisdiction. WAPA and/or Beale AFB will comply with provisions in the NHPA and consult with the California SHPO and appropriate tribes to determine measures to avoid the resource or mitigate during maintenance activities.
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2988 **4.6.6 No Action Alternative**

2989 The No Action Alternative would not result in any changes to the existing setting, and no  
2990 impacts would occur to cultural, tribal, or paleontological resources.

2991 **4.7 GEOLOGY/SOILS**

2992 Impacts to geology and soils could be considered significant if any of the following occur as a  
2993 result of the proposed Project:

- 2994 • People or structures are exposed to substantial adverse effects, including the risk of  
2995 loss, injury, or death involving:
  - 2996 ○ Rupture of a known earthquake fault, as delineated on the most recent Alquist-  
2997 Priolo Earthquake Fault Zoning Map issued by the state geologist for the area or  
2998 based on other substantial evidence of a known fault
  - 2999 ○ Strong seismic ground shaking
  - 3000 ○ Seismic-related ground failure, including liquefaction
  - 3001 ○ Landslides
- 3002 • There is substantial soil erosion or loss of topsoil.
- 3003 • The project would be located on a geologic unit or soil that is unstable or that would  
3004 become unstable as a result of the project and potentially result in on- or off-site  
3005 landslide, lateral spreading, subsidence, liquefaction, or collapse.
- 3006 • The project would be located on expansive soil, as defined in Table 18-1-B of the  
3007 Uniform Building Code (1994), creating substantial direct or indirect risks to life or  
3008 property.
- 3009 • Soils in the project area are incapable of adequately supporting the use of septic tanks  
3010 or alternative waste water disposal systems where sewers are not available for the  
3011 disposal of waste water.

3012  
3013 An exploratory geotechnical study was performed along the underground 60-kV portion of the  
3014 Preferred Alternative (see Section 3.7, Geology/Soils Affected Environment) (URS 2018). Data  
3015 from this study was used to inform the subsequent analysis. Once WAPA and Beale AFB  
3016 choose a final route, a complete geotechnical assessment will be performed to aid in siting  
3017 structures.

3018 **4.7.1 Preferred Alternative (Northern B Alternative)**

3019 **4.7.1.1 Soil Disturbance**

3020 The Preferred Alternative presents a number of sources of short-term and long-term direct  
3021 impacts on soils resulting from the use of heavy equipment, excavation, and grading on targeted  
3022 sites in the Project area. These disturbances are described below per facility:

- 3023 • *New Substation.* The proposed substation would be the largest area of impact, with 7  
3024 acres permanently disturbed for the substation footprint, and an additional 4.8 acres of

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- 3025 temporary construction equipment-related disturbance as a result of surface soils being  
3026 graded, leveled, cleared of vegetation, and compacted to accommodate the footprint of  
3027 the substation structure as well as to achieve proper drainage around the facility.
- 3028 • *Road Improvement and Construction.* For new road construction, approximately 0.95  
3029 acre of soils would be graded, permanently cleared of vegetation, compacted, and  
3030 covered with road base, gravel, or other non-native material in order to build new  
3031 roadway. Temporary areas needed to construct new roads total 2.36 acres.
- 3032 For improving existing roads, approximately 2.05 acres of soils would be permanently  
3033 disturbed. Improving existing access roads would involve brush clearing, grading,  
3034 erosion control, and the installation of three-sided culverts to maintain stormwater flows  
3035 within ephemeral wash areas. Temporary areas needed for road improvement  
3036 construction total 0.52 acre.
- 3037 A temporary access road may be required parallel to the underground portion of the  
3038 Project. These would not entail any permanent disturbance, and up to 1.85 acres would  
3039 be temporarily disturbed.
- 3040 • *Structure Sites.* There would be a total of 12.35 acres of temporary, construction-related  
3041 disturbance from the use of heavy equipment and staging areas around transmission  
3042 structure insertion sites and a total of 0.062 acre permanently disturbed by the footings  
3043 for the transmission structures (including H-frames and monopoles). For monopoles,  
3044 one foundation is required; for H-frames, two foundations are needed. Regardless of  
3045 structure type, each foundation would require up to a 7-foot-diameter area, which would  
3046 be permanently disturbed to a maximum depth of 40 feet.
- 3047 Up to 17 H-frame structure locations would be utilized in the Preferred Alternative,  
3048 meaning that up to 3,923 cubic yards of surface and subsurface soils could be  
3049 excavated and replaced with concrete foundation to support overhead structures.
- 3050 • *Pull Sites and Staging/Laydown.* Construction pull and tensioning sites would  
3051 temporarily disturb up to 16.3 acres of surface soils through compaction by heavy  
3052 equipment. There would be up to 5 acres of temporary disturbance from an off-Beale  
3053 AFB helicopter landing zone and construction equipment laydown area. WAPA would  
3054 attempt to identify areas that are already disturbed and compensate private landowners  
3055 for their use during construction.
- 3056 • *Underground Facilities.* Underground facilities would be installed within and under  
3057 existing roadways. There would be no new permanent aboveground disturbance for  
3058 these portions of the Project area; temporary aboveground areas needed for  
3059 construction and vault placement total 0.96 acre. Underground, the buried portion of the  
3060 Preferred Alternative would include the installation of a 32-inch wide by 18-inch tall duct  
3061 bank buried 48 to 60 inches below the roadway for a distance of 2.5 miles, and 13 buried  
3062 vaults measuring 15 feet wide by 8 feet deep and 40 feet long. Soils in this area are  
3063 Redding-Corning Complex with 3- to 8-percent slopes (Beale AFB 2019).
- 3064 • *Existing Substation.* Disturbance is not expected at the existing substation beyond the  
3065 exiting disturbed footprint.



3066 In total, 10.07 acres of permanent disturbance and 44.27 acres of temporary disturbance would  
3067 occur by implementing the Preferred Alternative. Some temporary disturbance to soil may also  
3068 occur during O&M activities. This represents a short-term minor impact on soils. Impacts to soils  
3069 will be further minimized by implementing the BMPs listed in Section 4.7.4, Geology/Soils  
3070 Resource Protection Measures.

3071 *Erosion and Spoil Management*

3072 Site grading and vegetation clearing associated with the Preferred Alternative would temporarily  
3073 expose underlying soils and generally increase erosion and sedimentation potential. Exposed  
3074 soils along with any fill materials being stockpiled on the site (i.e., on the existing roadway) may  
3075 be subject to erosion during rainfall or high winds. Beale AFB has developed a Soils  
3076 Management Plan to address management and disposal of soil from construction projects  
3077 (Beale AFB 2018d), and standard BMPs for managing these soils (e.g., covering to prevent  
3078 potential runoff, appropriate slopes of storage piles, schedule and appropriate location for  
3079 disposal) would be enforced for this Project.

3080 Implementation of BMPs such as stabilizing fill slopes from erosion and the use of erosion-  
3081 control measures to filter sediment from stormwater runoff would be followed during  
3082 construction and O&M activities to reduce the potential for soil erosion. Standard erosion-  
3083 control measures (e.g., silt fencing, sediment traps, application of water sprays, revegetation)  
3084 would reduce adverse soil-related impacts associated with those activities.

3085 In areas on Beale AFB, installation-specific policies require that areas that need re-vegetation  
3086 for soil stabilization be seeded using the Beale AFB-approved seed mix (Beale AFB 2019).  
3087 Private agricultural lands would be restored subsequent to construction per conditions of  
3088 agreements developed with private landowners.

3089 All temporarily disturbed areas would be re-graded so that surfaces drain naturally, blend with  
3090 the natural terrain, and are left in a condition that would facilitate revegetation or reseeded,  
3091 provide for proper drainage, and prevent erosion. Potential impacts to soils would be long-term  
3092 (permanent placement of facilities) and short-term (temporary disturbance during construction)  
3093 and minor. With the implementation of BMPs, no impacts are expected due to erosion.

3094 *4.7.1.2 Geologic Hazards*

3095 Review of the data obtained from the study indicates that the subsurface materials in which  
3096 groundwater was encountered varied from stiff to very stiff silt with gravel and sand to dense to  
3097 very dense silty gravel with sand. Groundwater was observed as shallow as 13 feet bgs in  
3098 three borings. These characteristics indicate that the on-site soils are likely not susceptible to  
3099 liquefaction (Beale AFB 2018b).

3100 Based on the plasticity index test results, the upper 5 feet of soil underlying the site generally  
3101 has a low to moderate potential for shrink-swell behavior (URS 2018). The topography of the  
3102 study area and surrounding region is flat (0- to 3-percent slopes), and thus, the study area  
3103 would not be subject to landslides.

3104 Based on the findings of the geotechnical study (URS 2018), it is anticipated that there would be  
3105 no impact as a result of geologic hazards. As a result of implementing the Preferred Alternative  
3106 and O&M activities, neither people nor structures would be exposed to any adverse effects,  
3107 including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong

3108 seismic ground shaking, seismic-related ground failure, liquefaction, landslides, expansive soils,  
3109 lateral spreading, subsidence, or collapse.

3110 Based on current data, no impacts to geologic hazards are expected as a result of the Preferred  
3111 Alternative.

3112 These impact findings, including to soils, from erosion, and to geologic hazards, do not exceed  
3113 the significance thresholds listed above for geology and soils.

#### 3114 **4.7.2 Northern A Alternative**

3115 Impacts to geology and soils under the Northern A Alternative would be very similar to those  
3116 addressed for the Preferred Alternative area. Disturbance associated with the new substation,  
3117 structure foundations, pull sites, underground facilities, and existing substation would be nearly  
3118 identical to the Preferred Alternative. Only the amount of road construction or improvement  
3119 would change. For new road construction, approximately 1.32 acres of soils would be  
3120 permanently impacted, and 3.31 acres would be temporarily impacted. For improving existing  
3121 roads, approximately 2.2 acres of soils would be permanently impacted, and 2.73 acres would  
3122 be temporarily impacted. Also, one additional structure may be required for the Northern A  
3123 Alternative; the increase from that structure contributes negligibly to the acreage totals.

3124 Erosion would be managed under the Northern A Alternative the same as under the Preferred  
3125 Alternative. Potential impacts to soils would be long-term (permanent placement of facilities)  
3126 and short-term (temporary disturbance during construction) and minor. With the implementation  
3127 of BMPs, no impacts are expected due to erosion.

3128 Impacts to geologic hazards would be the same as the Preferred Alternative: based on current  
3129 data no impacts to geologic hazards are expected.

#### 3130 **4.7.3 Southern Alternative**

3131 The Southern Alternative is very similar to the other action alternatives in terms of its sources of  
3132 short- and long-term impacts on soils; however, the Southern Alternative has more proposed  
3133 poles (including overhead 60-kV monopoles) and less road construction or improvement. Thus,  
3134 the Southern Alternative presents slightly differing levels of impacts to soils than the other two  
3135 action alternatives. These impacts would still result primarily from the use of heavy equipment,  
3136 excavation, and grading on targeted sites in its Project area. Disturbances are described below  
3137 per facility:

- 3138 • *New Substation.* The proposed substation would include 7 acres of permanent  
3139 disturbance for the substation footprint, and an additional 4.8 acres of temporary  
3140 construction equipment-related impacts.
- 3141 • *Road Improvement and Construction.* For new road construction, approximately 0.57  
3142 acre of soils would be permanently impacted, and 1.41 acres would be temporarily  
3143 disturbed. No road improvements or temporary access roads would be needed for the  
3144 Southern Alternative.
- 3145 • *Structure Sites.* Disturbance related to all overhead structure, including H-frame, TSP,  
3146 and 60-kV monopoles equate to 0.067 acre of permanent disturbance and 11.48 acres  
3147 of temporary disturbance. Two foundations are needed for H-frame structures, each up  
3148 to a 7-foot-diameter area, which would be permanently disturbed to a maximum depth of

3149 24 feet. Up to 17 H-frame structure locations would be utilized in the Southern  
3150 Alternative, meaning that up to 3,877 cubic yards of surface and subsurface soils could  
3151 be excavated and replaced with concrete foundation to support the H-frames.

3152 Up to a 5-foot-diameter area would be permanently disturbed per 60-kV monopole  
3153 structure, with a direct imbed or reinforced concrete foundations to a depth of up to 20  
3154 feet. An estimated 13 monopoles would be needed for the 60-kV overhead transmission  
3155 line, meaning that up to 189 cubic yards of surface and subsurface soils could be  
3156 excavated and replaced with concrete foundations to support the monopoles.

- 3157 • *Pull Sites.* Construction pull and tensioning sites for the Southern Alternative would  
3158 include impacts as described under the Preferred Alternative.
- 3159 • *Underground Facilities.* Similar to the Preferred Alternative, underground facilities would  
3160 be installed within and under existing roadways; no new aboveground disturbance is  
3161 expected for these portions of the Project area. The underground portion of the  
3162 Southern Alternative extends for 1.5 miles.
- 3163 • *Existing Substation.* Disturbance is not expected at the existing substation beyond the  
3164 exiting disturbed footprint.

3165 Erosion would be managed under the Southern Alternative the same as under the Preferred  
3166 Alternative. Potential impacts to soils would be long-term (permanent placement of facilities)  
3167 and short-term (temporary disturbance during construction) and minor. With the implementation  
3168 of BMPs, no impacts are expected due to erosion.

3169 Impacts to geologic hazards would be the same as the Preferred Alternative: based on current  
3170 data no impacts to geologic hazards are expected.

3171 **4.7.4 Geology/Soils Protection Measures**

3172 The following resource protection measures will be implemented to avoid or lessen impacts to  
3173 geology/soils:

GEO-1	Should WAPA need to modify or relocate a structure, WAPA will have a certified professional geotechnical engineer evaluate the potential for geotechnical hazards and unstable slopes.
GEO-2	Upon completing ground disturbing work, all work areas will be left in a condition that facilitates natural and appropriate vegetation regrowth, provides for proper drainage, and prevents erosion.
GEO-3	Wet areas will be avoided to the extent practicable and all activity will be minimized during winter and other wet periods to prevent damage (e.g., rutting, erosion, soil compaction). If wet areas cannot be avoided, WAPA will use wide-track or balloon tire vehicles and equipment or timber mats.
GEO-4	All excavated soil will be backfilled and tamped at the location of excavation and used to provide positive drainage, or it will be hauled off-site to an area appropriate for disposal of excavated material in accordance with federal, state, and local regulations and in cooperation with the land owner.
GEO-5	Use of ground disturbing mechanical equipment to remove vegetation will be avoided on continuous slopes over 35 percent, unless the threat of erosion is minimal because of bedrock or reseeding will be performed.
GEO-6	Where soil has been severely disturbed and the establishment of vegetation will be needed to minimize erosion, appropriate measures, as approved by the federal land manager, will be implemented to establish an adequate cover of native grass or other

	native vegetation as needed. Perennial vegetation is preferred to annual vegetation. All mulch and seed will be of high purity to prevent the spread of noxious weeds. Soil preparation, seeding, mulching, and fertilizing will be repeated as necessary to insure soil stabilization and revegetation acceptable to the federal land manager.
GEO-7	Disturbance and removal of soils and vegetation will be limited to the minimum area necessary for access and O&M activities. Grading will be minimized to the extent possible. When required, grading will be conducted such that runoff waters flow predominantly away from watercourses/washes to reduce the potential for material to enter the watercourse/wash
GEO-8	Within Beale AFB, all vegetated areas disturbed by construction shall be revegetated with a Beale AFB Environmental Office-approved seed and “certified weed-free” straw mulch upon completion. Exposed soil must be hydroseeded or covered with a geotextile to prevent sediments from entering waterways.

3174 **4.7.5 No Action Alternative**

3175 The No Action Alternative would not result in any changes to the existing setting, and no  
3176 impacts would occur to geology or soils, and would not introduce any geological hazards.

3177 **4.8 HYDROLOGY/WATER QUALITY**

3178 Impacts to water resources could be considered significant if any of the following occur as a  
3179 result of the proposed Project:

- 3180 • Water quality standards or waste discharge requirements are violated or otherwise  
3181 substantially degrade the surface or ground water quality substantially decreases.
- 3182 • Groundwater supplies are substantially decreased groundwater recharge is substantially  
3183 interfered with such that the project may impede sustainable groundwater management  
3184 of the basin.
- 3185 • The existing drainage pattern of the site or area is substantially altered, including  
3186 through the alteration of the course of a stream or river or through the addition of  
3187 impervious surfaces, in a manner which would:
  - 3188 ○ result in a substantial erosion or siltation on- or off-site;
  - 3189 ○ substantially increase the rate or amount of surface runoff in a manner which  
3190 would result in flooding on- or off-site;
  - 3191 ○ create or contribute runoff water which would exceed the capacity of existing or  
3192 planned stormwater drainage systems or provide substantial additional sources  
3193 of polluted runoff; or
  - 3194 ○ impede or redirect flood flows
- 3195 • A flood hazard, tsunami, or seiche zones would risk release of pollutants due to project  
3196 inundation.
- 3197 • Implementation of a water quality control plan or sustainable groundwater management  
3198 plan is conflicted or obstructed.

3199 **4.8.1 Preferred Alternative (Northern B Alternative)**

3200 **4.8.1.1 Floodplains**

3201 Implementation of the Preferred Alternative would have no impact to floodplains or flood zones,  
3202 since the Project area is outside the 0.2% annual chance floodplain (FEMA 2011).

3203 **4.8.1.2 Surface Water and Wetlands**

3204 The Project has been designed and its alignment situated to avoid surface waters and minimize  
3205 impacts to aquatic resources (see Section 2.2, Project Design Features). Short-term impacts on  
3206 wetlands and vernal pools within the Project area would be expected from culvert construction.  
3207 See Section 4.5.1, Vegetation Communities Environmental Consequences, for more information  
3208 on vernal pool impacts from culverts. Channel topography and underlying substrates would not  
3209 be modified with the installation of horseshoe culverts and no net loss in drainage would occur.  
3210 Replacement of the eight existing culverts may improve the drainage at those locations.

3211 During construction and O&M activities, runoff from site improvements could result in a slight  
3212 increase in turbidity in surface waters within the Project area. Potential impacts from an  
3213 increase in turbidity would be minimized with implementation of BMPs (e.g., wetting of soils, silt  
3214 fencing, and detention basins) and adherence to erosion and stormwater management practices  
3215 to contain soil and runoff on the Project area. In addition, erosion-control BMPs in accordance  
3216 with the Beale AFB SWPPP (Beale AFB 2018b) would be implemented as needed, including  
3217 installation of silt fencing and straw wattles, grading during the dry season, compaction of  
3218 upland spoils (for soil stability), and seeding and mulching areas of exposed soil as determined  
3219 necessary by the Beale AFB stormwater manager.

3220 Impacts to surface water and wetlands in the Preferred Alternative area would be short-term  
3221 and negligible.

3222 **4.8.1.3 Groundwater**

3223 The Preferred Alternative would not remove groundwater or affect groundwater recharge. No  
3224 impacts on groundwater or water quality would be expected from the Preferred Alternative  
3225 construction or O&M activities.

3226 These impact findings, including to floodplains, surface water and wetlands, and groundwater,  
3227 do not exceed the significance thresholds listed above for hydrology and water quality.

3228 **4.8.2 Northern A Alternative**

3229 Potential impacts to hydrology and water quality under the Northern A Alternative would be  
3230 equivalent to those addressed for the Preferred Alternative, including to floodplains, surface  
3231 water, wetlands, and groundwater. The same number of culverts and temporary impacts to  
3232 wetlands would occur.

3233 The Northern A Alternative would have no impact to floodplains, short-term negligible impacts to  
3234 surface water and wetlands, and no impacts to groundwater.

3235 **4.8.3 Southern Alternative**

3236 Potential impacts to hydrology and water quality under the Southern Alternative would be similar  
3237 to those addressed for the Preferred Alternative, including to floodplains, surface water,  
3238 wetlands, and groundwater. Differences include that two vernal pools would be permanently  
3239 removed with the placement of the proposed new substation at the Southern Alternative. See  
3240 Section 4.5.1, Vegetation Communities Environmental Consequences, for more information on  
3241 vernal pool impacts. Of the four waterways crossed by the Southern Alternative, two would be

3242 spanned by overhead structures on the western side, and two on Beale AFB would be bored  
3243 under; both construction methods would avoid impacts to the waterways.

3244 The Southern Alternative would have no impact to floodplains, short-term minor impacts to  
3245 surface waters and wetlands, and no impacts to groundwater.

3246 **4.8.4 Hydrology/Water Quality Protection Measures**

3247 The following resource protection measures will be implemented to avoid or lessen impacts to  
3248 hydrology/water quality:

WR-1	Non-biodegradable debris will not be deposited in the ROW.
WR-2	Runoff from the maintenance site will be controlled and will meet the State Water Resources Control Board stormwater requirements in the SWPPP.
WR-3	Runoff control structures, roadside diversion ditches, erosion-control structures, and energy dissipaters will be cleaned, maintained, repaired, and replaced to meet the standards set by applicable permits and the SWPPP or, where such a plan is inapplicable, similar standards set by WAPA or Beale AFB.
WR-4	All contaminated discharge water created by O&M activities (e.g., concrete washout, pumping for work-area isolation, vehicle wash water, drilling fluids) will be contained and disposed of in accordance with applicable federal, state, and local regulations.
WR-5	Vehicles will be inspected daily for fluid leaks before leaving the staging area.
WR-6	Impacts to areas under the jurisdiction of the USACE and RWQCB will be avoided to the extent feasible. Where avoidance of jurisdictional areas is not feasible and the action is not covered under nationwide or other permits, WAPA will obtain 404/401 permits applicable to the action, as necessary. WAPA will perform an impact assessment for each O&M activity, which will identify and quantify the acreage of each jurisdictional area (wetland, riparian, etc.) that may be affected.

3249 **4.8.5 No Action Alternative**

3250 The No Action Alternative would not result in any changes to the existing setting, and no  
3251 impacts would occur to hydrology or water quality.

3252 **4.9 LAND USE AND PLANNING, AICUZ COMPATIBILITY, POPULATION**  
3253 **GROWTH, AND RECREATION**

3254 Impacts to land use and planning could be considered significant if any of the following occur as  
3255 a result of the proposed Project:

- 3256 • Physically division of an established community.
- 3257 • A significant environmental impact results due to a conflict with any land use plan, policy,  
3258 or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
- 3259 • Substantial unplanned population growth is induced in an area either directly (for  
3260 example, by proposing new homes and businesses) or indirectly (for example, through  
3261 extension of roads or other infrastructure).
- 3262 • Displacement of substantial numbers of existing people or housing, necessitating the  
3263 construction of replacement housing elsewhere.

- 3264 • The project increases the use of existing neighborhood and regional parks or other  
3265 recreational facilities such that substantial physical deterioration of the facility would  
3266 occur or be accelerated.
- 3267 • The project includes recreational facilities or requires the construction or expansion of  
3268 recreational facilities which might have an adverse physical effect on the environment.
- 3269 • There is an irreconcilable conflict between the project and applicable land use plans,  
3270 policies, or regulations of an agency with jurisdiction over the project.
- 3271 • Project activities or infrastructure physically divide an established community.
- 3272 • There is a project-related conflict with an applicable habitat conservation plan or natural  
3273 community conservation plan.
- 3274 • Project infrastructure or activities induce substantial population growth, either directly or  
3275 indirectly.
- 3276 • Recreational opportunities are substantially diminished as a result of the project, existing  
3277 recreational facilities are substantially damaged by the project, or new recreational  
3278 facilities that would create substantial damage to the environment need to be built as a  
3279 result of the project.
- 3280 • The project would conflict with any applicable land use plan, policy, or regulation of an  
3281 agency with jurisdiction over the project (including, but not limited to the general plan,  
3282 specific plan, local coastal program, or zoning ordinance) adopted for the purpose of  
3283 avoiding or mitigating an environmental effect.

3284 **4.9.1 Preferred Alternative (Northern B Alternative)**

3285 *4.9.1.1 Land Use and AICUZ Compatibility*

3286 Private parcels within the study area have been mapped by Yuba County as NR and AE-80  
3287 (see Section 3.9, Land Use, AICUZ Compatibility, Population Growth, and Recreation Affected  
3288 Environment). The proposed Project would comply with the Yuba County General Plan, as the  
3289 list of allowable uses in the NR designation includes public facilities and infrastructure (Yuba  
3290 County 2011), and major utility infrastructure is allowable in AE-80 zoned areas with the  
3291 issuance of a Conditional Use Permit (Yuba County 2015).

3292 The Preferred Alternative area within Beale AFB is within the Airfield Planning District. Beale  
3293 AFB currently utilizes an IDP as its primary document guiding development and programming  
3294 decisions, as described in Section 3.9, Land Use, AICUZ Compatibility, Population Growth, and  
3295 Recreation Affected Environment. The IDP does not state that utility development is  
3296 incompatible with the Airfield Planning District (Beale AFB 2014b).

3297 The Project has been preliminarily screened to determine that the Project is compatible with the  
3298 Beale AFB AICUZ. The Preferred Alternative, if selected, would undergo additional screening  
3299 for compatibility before a contract with the contractor is finalized to ensure that details such as  
3300 noise generation and helicopter trips are consistent with the AICUZ.

3301 Because of the Preferred Alternative’s compatibility with local land use plans and land  
3302 designations on Beale AFB, including the IDP and the AICUZ, the Project is anticipated to have  
3303 no impacts to land use.

3304 4.9.1.2 Population Growth

3305 The Preferred Alternative would not impact population growth on the private land portion of the  
3306 Preferred Alternative, as the area is agricultural and the interconnection line would serve only  
3307 Beale AFB. On Beale AFB, the Preferred Alternative is unlikely to directly affect economic  
3308 growth or population growth because the infrastructure proposed would provide a redundant  
3309 power supply to the existing power supply. In addition, work associated with the proposed  
3310 construction (i.e., any increase in employment) would be contracted with an off-Beale AFB  
3311 source and be temporary in nature.

3312 The Preferred Alternative would have no impact to population growth.

3313 4.9.1.3 Recreation

3314 The closest recreation areas to the Preferred Alternative are the Yuba River and Spenceville  
3315 Wildlife Area, both of which are 2 or more miles away; therefore, the Preferred Alternative would  
3316 have no impact to designated recreation areas.

3317 Hunting is the most common recreation activity along the Preferred Alternative, both on Beale  
3318 AFB and private lands. On private land, construction and O&M of the Preferred Alternative may  
3319 disrupt duck hunting activities. WAPA would negotiate with landowners during easement  
3320 purchase to compensate for the loss of duck blinds. However, impacts to private property used  
3321 for duck hunting and the lease of duck blinds in this area may still be impacted. Impacts on  
3322 private land to duck hunting are expected to be short-term and negligible to none.

3323 Hunting on Beale AFB requires relevant permits (see Section 3.9, Land Use, AICUZ  
3324 Compatibility, Population Growth, and Recreation Affected Environment). The Project area  
3325 would be off-limits to hunting during construction and possibly during O&M activities. Hunters  
3326 would be informed of closures through the existing mandatory permit system for the Beale AFB  
3327 hunting program. Hunting would resume as currently permitted in all areas subsequent to the  
3328 completion of construction. Based on current levels of use and the availability of alternative  
3329 sites for recreational activities, it is anticipated that there would be short-term, negligible to no  
3330 impacts to existing recreational opportunities on Beale AFB.

3331 In addition, the Preferred Alternative would not create direct or indirect damage to any existing  
3332 recreational facilities nor would the provision of a redundant electrical power source create a  
3333 need to build any additional recreational facilities. The Project would not increase demand for  
3334 recreation activities and would not cause an influx of people to a given area. Therefore, no long-  
3335 term impacts to recreation are anticipated.

3336 These impact findings, including land use, population growth, and recreation, do not exceed the  
3337 significance thresholds listed above for land use and planning, AICUZ compatibility, population  
3338 growth, and recreation.

3339 4.9.2 Northern A Alternative

3340 The Northern A Alternative alignment traverse the same land use areas (agriculture on private  
3341 land, developed areas on Beale AFB), would have the same impacts to population growth, and  
3342 would manage recreation resources as described under the Preferred Alternative. Therefore,  
3343 potential impacts under the Northern A Alternative would be identical to those addressed for the



3344 Preferred Alternative. That is, no impact to land use, no impact to population growth, and short-  
3345 term negligible to no impacts to recreation.

3346 **4.9.3 Southern Alternative**

3347 The Southern Alternative alignment traverse the same land use areas (agriculture on private  
3348 land, developed areas on Beale AFB), would have the same impacts to population growth, and  
3349 would manage recreation resources as described under the Preferred Alternative. Therefore,  
3350 potential impacts under the Southern Alternative would be identical to those addressed for the  
3351 Preferred Alternative. That is, no impact to land use, no impact to population growth, and short-  
3352 term negligible to no impacts to recreation.

3353 **4.9.4 Land Use and Planning, Growth-Inducing Impacts, Recreation, and AICUZ**  
3354 **Compatibility Protection Measures**

3355 The following resource protection measures will be implemented to avoid or lessen impacts to  
3356 land use, population growth, and recreation:

LU-1	WAPA will direct members of the public to alternate pedestrian routes if access is blocked by machinery or for safety purposes.
LU-2	WAPA would negotiate with landowners during easement purchase to compensate for the loss of duck blinds.

3357 **4.9.5 No Action Alternative**

3358 The No Action Alternative would not result in any changes to the existing setting, and no  
3359 impacts would occur to land use and planning, population growth, or recreation.

3360 **4.10 NOISE**

3361 Noise impacts are based on an evaluation of the estimated Project-generated noise that would  
3362 result from implementation of the proposed Project in comparison to existing ambient noise  
3363 levels. Noise impacts can be categorized into two types: temporary, short-term impacts and  
3364 permanent, long-term impacts.

3365 Impacts from noise could be considered significant if any of the following occur as a result of the  
3366 proposed Project:

- 3367 • Generation of substantial temporary or permanent increases ambient noise levels in the  
3368 vicinity of the project in excess of standards established in the local general plan or  
3369 noise ordinance, or applicable standards of other agencies.
- 3370 • Generation of excessive ground borne vibration or ground borne noise levels.
- 3371 • For a project located within the vicinity of a private airstrip or an airport land use plan or,  
3372 where such a plan has not been adopted, within two miles of a public airport or public  
3373 use airport, the project exposes people residing or working in the project area to  
3374 excessive noise levels.

3375 Permanent noise impacts could be considered significant if implementation of the proposed  
3376 Project results in long-term, ongoing noise routinely in excess of the 60 dBA Ldn based on the  
3377 Yuba County General Plan. This is equivalent to a 63 dBA Leq, assuming an ambient

3378 background noise level of 50 dBA between 7:00 p.m. and 7:00 a.m. Construction noise impacts  
 3379 would be considered adverse if they result in noise greater than 70 dBA Ldn at any receptors  
 3380 (equivalent to 73 dBA Leq during construction hours) using the “conditionally acceptable” noise  
 3381 range from the Yuba County General Plan, as the standard is intended for permanent noise  
 3382 impacts and construction activities are temporary in nature and restricted to daytime hours.  
 3383 This is in excess of the HUD standard; however, the HUD standard is intended for permanent  
 3384 noise impacts. Temporary construction lasting a matter of weeks at each pole location is not  
 3385 considered a permanent impact.

3386 **4.10.1 Preferred Alternative (Northern B Alternative)**

3387 Implementation of the Preferred Alternative would result in short-term construction noise  
 3388 impacts and long-term noise impacts from operation of the transmission line. Each type of  
 3389 impact is addressed separately and in the context of the current existing environment.

3390 *4.10.1.1 Construction Noise Impacts*

3391 Implementation of the proposed Project would require large equipment for construction. A list of  
 3392 the necessary equipment is provided in Section 2.3.1.5, General Construction Activities. **Table**  
 3393 **4-3** contains estimated construction equipment noise levels for a variety of typical heavy  
 3394 equipment types. Construction is proposed to occur between the hours of 7:00 a.m. and 7:00  
 3395 p.m. six days per week. Tasks would be conducted in stages, and equipment would not be  
 3396 working on all tasks simultaneously at each location.

TABLE 4-3 ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS			
Equipment Description	Typical Acoustical Usage Factor (%)	Specified L <sub>max</sub> at 50 feet (dBA)	Actual Measured L <sub>max</sub> at 50 feet (dBA)
All other equipment greater than 5 horsepower	50	85	Not applicable
Auger drill rig	20	85	84
Backhoe	40	80	78
Compressor (air)	40	80	78
Concrete mixer truck	40	85	79
Concrete pump truck	20	82	81
Crane	16	85	81
Dozer	40	85	82
Dump truck	40	84	76
Excavator	40	85	81
Flat-bed truck	40	84	74
Front-end loader	40	80	79

TABLE 4-3 ESTIMATED CONSTRUCTION EQUIPMENT NOISE LEVELS			
Equipment Description	Typical Acoustical Usage Factor (%)	Specified L <sub>max</sub> at 50 feet (dBA)	Actual Measured L <sub>max</sub> at 50 feet (dBA)
Generator	50	82	81
Grader	40	85	N/A
Paver	50	85	90
Pickup truck	40	55	75
Tractor	40	84	74
Welder/Torch	40	73	74
Source: FHWA 2017 L <sub>max</sub> = maximum dB noise level			

3397 Because construction will be loudest at discrete work sites (i.e., pole locations and substation  
3398 location), noise modeling was performed considering the nearest residence would be at  
3399 approximately mid-span and that the nearest pole would be no closer than 435 feet from the  
3400 residence. The model used typical usage factors for the equipment, which should be reflective  
3401 of both intermittent use and sequential use for portions of construction. **Table 4-4** shows the  
3402 predicted construction noise impacts in Leq.

TABLE 4-4 ESTIMATED CONSTRUCTION NOISE IMPACTS				
Activity Description	Modeled Noise Impact (L <sub>eq</sub> )— Preferred Alternative	Modeled Noise Impact (L <sub>eq</sub> )— Northern A Alternative	Modeled Noise Impact (L <sub>eq</sub> )— Southern Alternative	Adverse Impact (L <sub>eq</sub> )
Vegetation clearing and roads	66.8	57.1	64.9	73
Foundation excavation	65.5	55.1	63.2	73
Foundation installation	66.1	56.4	64.2	73
Structure assembly and erection	65.6	56.0	63.7	73
Conductor stringing	68.5	59.7	67.7	73
Disturbance area restoration	66.5	54.9	62.7	73
Substation construction	54.3	54.3	54.3	73
Source: Roadway Construction Noise Model				

3403 The results of the modeling show that none of the construction activities would result in noise  
3404 levels that exceed the adverse impact threshold.

3405 The closest residence to the alignment is approximately 80 feet away. This residence could  
3406 experience daytime noise up to a maximum  $L_{eq}$  of 83.2 dBA. Since the line would be designed  
3407 so that the residence is not situated near a pole location, this disturbance would be very short-  
3408 term, only occurring when conductors are strung to erected poles, and minimal noise from  
3409 construction equipment traveling to and from work sites. Construction activities within 400 feet  
3410 of a residence will be limited to daytime hours between 7:00 a.m. and 7:00 p.m.

3411 The distance of the remaining residences from the Project is enough for the noise generated  
3412 from construction activities to attenuate substantially, resulting in noise levels near typical  
3413 ambient levels around Beale AFB. Agricultural activities with equipment noise from tractors and  
3414 aerial spraying routinely result in elevated noise levels in the Project area. A tractor at 300 feet  
3415 would typically result in noise levels of 65 dBA, which is comparable to the noise generated by  
3416 Project activities. Airfield activities also result in elevated noise levels in the vicinity of Beale  
3417 AFB. With the exception of the nearby residences, the Project would not result in temporary or  
3418 periodic increase in ambient noise levels in the Project vicinity above current ambient levels  
3419 existing without the Project.

3420 Construction of the proposed Project would also not require any blasting, rock hammering,  
3421 drilling, or pile driving, which would be major sources of vibration. The distance of the Project  
3422 from any sensitive receptors would be sufficient to allow any small amount of vibration  
3423 generated to attenuate. The Project would not expose persons to the generation of excessive  
3424 ground-borne vibration or ground-borne noise levels.

3425 Noise impacts due to implementation of the Preferred Alternative would be short-term and  
3426 negligible. BMPs are provided below (see Section 4.10.4, Noise Protection Measures) to further  
3427 limit impacts from noise.

3428 *4.10.1.2 Long-term Operational Noise Impacts*

3429 Although electrical infrastructure is generally not perceived as noise-generating, there are a few  
3430 aspects that must be considered, including noise from transmission line corona effects,  
3431 substation noise, and noise from personnel maintaining and monitoring the facilities.

3432 The corona effect is a phenomenon that occurs around high-voltage transmission lines. It is a  
3433 partial breakdown of the insulating properties of air in the vicinity of the conductors that ionizes  
3434 the air in the immediate vicinity. This creates an audible noise generally characterized as a  
3435 hissing or crackling sound. Typically, the audible noise generated by transmission lines of less  
3436 than 230-kV is minimal and usually not noticeable (CPUC 1999). During wet weather conditions  
3437 when the corona effect is more noticeable, the noise generated would be less than 35 dbA at  
3438 the edge of a transmission line ROW, much less than the ambient noise of wind and rain.

3439 Electric transformers and other equipment in electrical substations generate a noise perceived  
3440 as a low humming sound. This noise is generally tonal and related to the frequency of the  
3441 alternating electric current. In addition, fans and other cooling equipment add to the overall  
3442 noise. Specifics on the transformer units to be installed are not available. However, using data  
3443 from a similar substation installation rated for 448 Mega Volt Amp load, the overall humming  
3444 noise from the substation can be reasonably assumed to not exceed 45 dBA at 500 feet  
3445 (Central Maine Power 2018). The proposed substation locations are over 3,000 feet from the  
3446 nearest sensitive receptor. A noise level of 45 dBA at 500 feet is already difficult to hear for the

3447 average observer. A distance of 3,000 feet is sufficient for any potential substation noise to  
3448 attenuate and become indistinguishable from background noise.

3449 Patrolling and maintenance of the transmission line is expected to result in negligible noise  
3450 impacts. Routine inspections of the transmission line would occur annually using the agreed  
3451 upon access roads and would be performed by a small crew in a single vehicle during daylight  
3452 hours. Due to the transient nature of these activities and the surrounding setting, they would not  
3453 contribute appreciably to the overall noise environment.

3454 CEQA requires an assessment of excessive noise exposure for Projects within an airport land  
3455 use plan area or within 2 miles of a public or private airstrip. The proposed Project is partially  
3456 within an airport land use plan and is within 2 miles of an airstrip (on Beale AFB); however, the  
3457 proposed Project would not have an adverse effect on operations at Beale AFB and would not  
3458 directly contribute to aircraft- or airfield-related noise impacts.

3459 Implementation of the Preferred Alternative would not result in exposure of persons to the  
3460 generation of noise levels in excess of standards established in the local general plan or noise  
3461 ordinance or other applicable agency standards, nor would it result in a substantial permanent  
3462 increase in ambient noise levels in the Project vicinity above levels existing without the Project.

3463 Impacts from noise due to operation of the Preferred Alternative would be long-term and  
3464 negligible to none. BMPs are provided below (see Section 4.10.4, Noise Protection Measures)  
3465 to further limit impacts from noise.

3466 These impact findings, including during construction and operation of the Project, do not exceed  
3467 the significance thresholds listed above for noise.

#### 3468 **4.10.2 Northern A Alternative**

3469 The existing noise environment and impacts of the Northern A Alternative would be very similar  
3470 to the Preferred Alternative. In general, the Northern A Alternative is farther from surrounding  
3471 residences, with the closest being 1,740 feet away. Construction activities within 400 feet of a  
3472 residence will be limited to daytime hours between 7:00 a.m. and 7:00 p.m.

3473 The noise modeling performed for the Preferred Alternative is applicable to the Northern A  
3474 Alternative, as there is not a residence and potential pole location expected to be closer than  
3475 435 feet (see **Table 4-4**). There would be no substantial sources of vibration, and the  
3476 construction length would also be similar for this alternative. Long-term operational noise  
3477 impacts would be the same for the Northern A Alternative as the Preferred Alternative.

3478 Impacts from noise due to construction and operation of the Northern A Alternative would be  
3479 long-term and negligible to none.

#### 3480 **4.10.3 Southern Alternative**

3481 The existing noise environment and impacts of the Southern Alternative would be very similar to  
3482 the Preferred Alternative. The Southern Alternative passes near one rural residence at a  
3483 distance of 250 feet. Construction activities within 400 feet of a residence will be limited to  
3484 daytime hours between 7:00 a.m. and 7:00 p.m.

3485 The noise modeling performed for the Preferred Alternative is applicable to the Southern  
3486 Alternative, as there is not a residence and potential pole location expected to be closer than  
3487 435 feet (see **Table 4-4**). As with the Preferred Alternative, there would also be no substantial  
3488 sources of vibration. The construction length would also be similar for this alternative. Long-  
3489 term operational noise impacts would be the same for the Southern Alternative as the Preferred  
3490 Alternative.

3491 Impacts from noise due to construction and operation of the Southern Alternative would be long-  
3492 term and negligible to none.

3493 **4.10.4 Noise Protection Measures**

3494 The following resource protection measures will be implemented to avoid or lessen impacts  
3495 from noise:

NS-1	All vehicles and equipment will be equipped with required exhaust-noise-abatement devices.
NS-2	For long-term O&M activities confined to a specific area, WAPA's Environmental Department will be contacted to evaluate local thresholds and all requirements of those agencies having jurisdiction over noise matters.
NS-3	Construction activities within 400 feet of a residence must be limited to the hours between 7:00 AM and 7:00 PM.

3496 **4.10.5 No Action Alternative**

3497 The No Action Alternative would not result in any changes to the existing setting, and no  
3498 impacts would occur from noise.

3499 **4.11 PUBLIC HEALTH AND SAFETY AND HAZARDOUS MATERIALS**

3500 Impacts to public health and safety and hazardous materials could be considered significant if  
3501 any of the following occur as a result of the proposed Project:

- 3502 • A significant hazard to the public/environment is created through routine  
3503 transport/use/disposal of hazardous materials.
- 3504 • A significant hazard to the public or the environment is created through reasonably  
3505 foreseeable upset and accident conditions involving the release of hazardous materials  
3506 into the environment.
- 3507 • The project causes the emission of hazardous emissions or handle hazardous or acutely  
3508 hazardous materials, substances, or waste within 0.25 mile of an existing or proposed  
3509 school.
- 3510 • The project is located on a site which is included on a list of hazardous materials sites  
3511 compiled pursuant to Government Code § 65962.5 and, as a result, would it create a  
3512 significant hazard to the public or the environment.
- 3513 • For a project located within an airport land use plan or, where such a plan has not been  
3514 adopted, within two miles of a public airport or public use airport, the project results in a  
3515 safety hazard or excessive noise for people residing or working in the project area.
- 3516 • Impairment of the implementation of or physical interference with an adopted emergency  
3517 response plan or emergency evacuation plan.

- 3518 • Exposure of people or structures, either directly or indirectly, to a significant risk, loss,  
3519 injury, or death involving wildland fires.
- 3520 • There is a substantial hazard to the public or the environment through the routine  
3521 transport, use, or disposal of hazardous materials.
- 3522 • There is a substantial hazard to the public or the environment through reasonably  
3523 foreseeable upset and accident conditions involving the release of hazardous materials  
3524 into the environment.
- 3525 • The project would emit hazardous emissions or bring hazardous or acutely hazardous  
3526 materials, substances, or waste within 0.25 mile of an existing or proposed school.
- 3527 • The project would be located on a site which is included on a list of hazardous materials  
3528 sites compiled pursuant to Government Code Section 65962.5 and, as a result, would  
3529 create a significant hazard to the public or the environment.
- 3530 • For a project within the vicinity of a private airstrip, the project would result in a safety  
3531 hazard for people residing or working in the project area.
- 3532 • Impaired implementation of or physical interference with an adopted emergency  
3533 hazardous materials spill response plan or emergency evacuation plan.
- 3534 • The project would expose people or structures to a significant risk of loss, injury, or  
3535 death resulting from wildland fires, including where wildlands are adjacent to urbanized  
3536 areas or where residences are intermixed with wildlands.

3537 Baseline conditions for assessing potential impacts to public health and safety are related to  
3538 hazardous materials, fire hazards, location within Beale AFB's AICUZ, and electric and  
3539 magnetic fields (see Section 3.11, Public Health and Safety and Hazardous Material Affected  
3540 Environment). Potential impacts are described below per topic.

3541 **4.11.1 Preferred Alternative (Northern B Alternative)**

3542 4.11.1.1 Hazardous Materials

3543 Hazardous materials that may be present in connection with construction and O&M of the  
3544 Preferred Alternative are identified in Section 3.11, Public Health and Safety and Hazardous  
3545 Material Affected Environment. Any project on Beale AFB, including the proposed Project,  
3546 would be subject to and consistent with those plans and directives in the Beale AFB ICP.  
3547 Additional hazardous materials spill prevention and control measures would be implemented,  
3548 consistent with the plans contained within the ICP. With the hazardous materials spill  
3549 prevention and control measures from the ICP in place, the Preferred Alternative is anticipated  
3550 to have no impact to public health and safety resulting from the routine use or transportation of  
3551 hazardous materials. BMPs are listed in Section 4.11.4, Public Health and Safety and  
3552 Hazardous Material Protection Measures, that dictate management of hazardous materials.

3553 4.11.1.2 Fire Hazards

3554 Both construction workers and the general public could be exposed to risk from fire hazards  
3555 during construction and O&M of the Preferred Alternative. Construction activities could start a  
3556 fire by igniting nearby fuel sources, such as dry grasses, as a result of sparks from a  
3557 maintenance vehicle or tool or a discarded burning cigarette. To prevent the risk of fire during  
3558 construction activities, the contractor for the proposed Project would be required to implement a  
3559 comprehensive fire prevention and safety program for the job site, which would include spark  
3560 arrestors for equipment and proper cigarette disposal for employees among other fire

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3561 suppression tools and equipment. The contractor for the proposed Project would also be  
3562 required to develop an evacuation plan, as part of this fire safety program, in the event of fire  
3563 from other sources. These plans would reduce the risk of fire from construction activities to a  
3564 negligible level.

3565 Trees falling on electrical distribution lines and the electrocution of birds are the most common  
3566 causes of fires generated by power lines. These risks would be very low for the Preferred  
3567 Alternative due to the absence of trees in the project corridor and, since it is a transmission line  
3568 as opposed to a distribution line, the width of the span between conductors would be too far for  
3569 birds to span and cause electrocution (personal communication Saare 2019).

3570 The Project would also reduce potential fire risk and damage through the use of steel utility  
3571 poles. The 60-kV distribution line associated with the Preferred Alternative would be encased in  
3572 concrete and buried underground. Consequently, there would be no risk of fire from the  
3573 ongoing operation of the underground infrastructure.

3574 Overall, construction and operation of the Preferred Alternative would present short-term  
3575 negligible risk to public health from wildfire. BMPs are listed in Section 4.11.4, Public Health and  
3576 Safety and Hazardous Material Protection Measures, that dictate management of fire hazards.

### 3577 4.11.1.3 Air Installation Compatible Use Zones

3578 The Preferred Alternative has been preliminarily screened to determine that it is compatible with  
3579 the Beale AFB AICUZ. It has been determined that the Project in concept would result in a  
3580 safety hazard for people residing or working on Beale AFB or on adjacent private lands as a  
3581 result of aircraft accident potential or noise. The Preferred Alternative, if selected, would  
3582 undergo additional screening for compatibility to ensure that details such as noise generation  
3583 and helicopter trips are consistent with the AICUZ. Because of these measures to ensure  
3584 compatibility of the Project with the AICUZ, the Preferred Alternative would present no impacts  
3585 to public health and safety resulting from the ongoing use of Beale AFB airstrips and airspace  
3586 for USAF missions.

### 3587 4.11.1.4 Electric and Magnetic Fields

3588 No existing schools, hospitals or public facilities are closer than 1,000 feet from the Preferred  
3589 Alternative alignment. One home is within 1,000 feet of the alignment; however, it would not be  
3590 within WAPA's ROW, which is designed to minimize EMF at the edge of the ROW. No  
3591 documented adverse public health and safety effects from EMF exposure has occurred from the  
3592 existing transmission lines in the project area.

3593 EMFs at the edge of easements are anticipated to be well below the recommended guidelines  
3594 of the International Commission on Non-Ionizing Radiation and the American Conference of  
3595 Governmental Industrial Hygienists. The Preferred Alternative would not expose the public or  
3596 workers to unusual or higher than usual levels of EMF. Therefore, the Preferred Alternative is  
3597 anticipated to have long-term negligible to no impacts to public health and safety resulting from  
3598 EMF.

3599 These impact findings, including from hazardous material, fire hazards, air installation  
3600 compatibility, and EMFs, do not exceed the significance thresholds listed above for public health  
3601 and safety and hazardous materials.



3602 **4.11.2 Northern A Alternative**

3603 Potential impacts to public health and safety under the Northern A Alternative would be identical  
3604 to those addressed for the Preferred Alternative. The same hazardous materials would be used  
3605 and managed as described for the Preferred Alternative, the same fire hazards would be  
3606 present and managed, the Northern A Alternative would be in compliance with the AICUZ, and  
3607 no residences would be within WAPA’s ROW, which is designed to minimize EMF at the edge  
3608 of the ROW.

3609 The Northern A Alternative would have no impact to from hazardous material, short-term  
3610 negligible impacts from fire hazards, no impacts related to AICUZ compatibility, and no impacts  
3611 from EMF exposure.

3612 **4.11.3 Southern Alternative**

3613 Potential impacts to public health and safety under the Southern Alternative would be similar to  
3614 those addressed for the Preferred Alternative. The same hazardous materials would be used  
3615 and managed as described for the Preferred Alternative, the same fire hazards would be  
3616 present and managed, the Southern Alternative would be in compliance with the AICUZ, and ,  
3617 and no residences would be within WAPA’s ROW, which is designed to minimize EMF at the  
3618 edge of the ROW.

3619 The Southern Alternative would have no impact to from hazardous material, short-term  
3620 negligible impacts from fire hazards, no impacts related to AICUZ compatibility, and no impacts  
3621 from EMF exposure.

3622 **4.11.4 Public Health and Safety and Hazardous Materials Protection Measures**

3623 The following resource protection measures will be implemented to avoid or lessen impacts to  
3624 public health and safety and hazardous materials:

PH-1	Signs and/or flags will be erected in areas of public access to indicate maintenance activities are taking place; workers will be conspicuous by wearing high-visibility vests and hardhats.
PH-2	O&M excavations greater than 3 feet deep will be fenced, covered, or filled at the end of each working day, or have escape ramps provided to prevent injury of the public and workers.
PH-3	With regard to herbicide use: <ul style="list-style-type: none"> <li>• All herbicide applicators will have received training and be licensed in appropriate application categories</li> <li>• Herbicide-free buffer zones will be maintained per label instructions</li> <li>• All herbicide label and material safety data sheet instructions will be followed regarding mixing and application standards and equipment-cleaning standards to reduce potential exposure to the public through drift and misapplication</li> <li>• WAPA will ensure that areas treated with herbicides will be posted and re-entry intervals specified and enforced in accordance with label instructions. Herbicides and equipment will never be left unattended in areas with unrestricted access</li> </ul>

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	<ul style="list-style-type: none"> <li>• Climate, geology, and soil types will be considered (including rainfall, wind, depth of aquifer, and soil permeability) in selecting the herbicide with lowest relative risk of migrating to water resources</li> <li>• There will be no aerial application of herbicides</li> <li>• All herbicide spill requirements will be followed in the rare case of an herbicide spill, including containment, cleanup, and notification procedures</li> </ul>
PH-4	<p>With regard to hazardous materials:</p> <ul style="list-style-type: none"> <li>• Hazardous materials will not be drained onto the ground, into streams, or into drainage areas</li> <li>• Any release, threat of release, or discharge of hazardous materials within the Project area in connection with Project activities will be cleaned up and/or remediated in accordance with applicable federal, state, and local regulations</li> <li>• All construction waste, including trash and litter, other solid waste, petroleum products, and other potentially hazardous material will be removed in accordance with applicable federal, state, and local regulations</li> <li>• Discovery of, or the accidental discharge of, a significant amount of hazardous materials will be immediately reported to WAPA's dispatch and Environmental Department</li> <li>• There will be no storage of hazardous materials in the Project area without approval from the authorized officer</li> <li>• Upon termination of the permit, a report will be submitted to determine whether there had been site contamination and if so, that the remediation met compliance with applicable laws</li> </ul>
PH-5	<p>All contract crews will complete hazardous materials pre-maintenance awareness training to ensure they are aware of BMPs and AMMs as well as pertinent regulations and the consequences for non-compliance. All supervisors and field personnel will have on-file a signed agreement that they have completed the training and understood and agreed to the terms. BMPs and applicable AMMs will be written into the contract for O&amp;M work, and contractors will be held responsible for compliance.</p>
PH-6	<p>Contractors must submit a spill response plan that is approved by WAPA. Clean-up actions and costs resulting from contractor misconduct will be the responsibility of the contractor and approved by WAPA's Environmental Department.</p>
PH-7	<p>WAPA crews will complete annual awareness training to ensure they are familiar with BMPs and AMMs related to hazardous materials. All supervisors and field personnel will have on-file proof that they have completed the training.</p>
PH-8	<p>All incompatible/non-desirable vegetation will be removed a minimum of 30 feet from tower center and conductors or as required by federal requirements and to ensure access to towers.</p>
PH-9	<p>WAPA and its contractors will comply with all applicable federal and state regulations regarding fire suppression, including but not limited to having all equipment be equipped with a shovel, water pump, and fire extinguisher; the use of spark arrestors on all internal and external combustion engines; verification of daily fire levels during fire season; and a minimum of a 300-gallon water tank with a minimum of 250 feet of hose.</p>
PH-10	<p>Hazardous material BMPs:</p> <ul style="list-style-type: none"> <li>• Ensure all hazardous substances are properly labeled</li> <li>• Store, dispense, and/or use hazardous substances in a way that prevents releases</li> <li>• Provide secondary containment when storing hazardous substances in bulk quantities (greater than 55 gallons)</li> </ul>

	<ul style="list-style-type: none"> <li>• Maintain good housekeeping practices for all chemical materials at the work site</li> <li>• Conduct routine/daily checks in the hazardous substance storage area to check for leaks and spills</li> <li>• Maintain adequate spill response supplies and equipment on trucks and equipment at the jobsite to manage and clean up leaks and spills as required</li> <li>• Clean up small spills according to the Spill Prevention Plan required in the submittals portion of the contract</li> <li>• Report spills exceeding 10 gallons of material or if any has been released to surface water or storm drains to WAPA Environmental and the on-site inspector</li> </ul> <p>Refueling of construction equipment would be allowed on-site during construction in each of the alternatives, for which the following measures would be implemented consistent with the Beale AFB ICP:</p> <ul style="list-style-type: none"> <li>• The contractor must monitor fuel transfer operations closely until they are complete. This means that a trained employee must keep watch over fuel transfers and must be within 10 feet of the fuel hose during refueling operations</li> <li>• The contractor must provide secondary containment when storing hazardous substances in bulk quantities</li> </ul> <p>Disposal of any hazardous waste generated by the proposed Project or its alternatives would be subject to the following conditions:</p> <ul style="list-style-type: none"> <li>• Disposal of hazardous wastes generated as a result of spills or other activities on the jobsite would be the financial responsibility of the contractor. The contractor would provide a licensed hazardous waste hauler and licensed transfer, storage, and disposal facility for the disposal of hazardous wastes</li> <li>• In the event that such hazardous waste is generated, the contractor would coordinate disposals with the WAPA representative and WAPA Environmental staff to acquire appropriate EPA identification numbers and to coordinate signing of the manifest in those cases</li> </ul>
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3625 **4.11.5 No Action Alternative**

3626 The No Action Alternative would not result in any changes to the existing setting, and no  
3627 impacts would occur to public health and safety nor would it introduce hazardous materials.

3628 **4.12 TRANSPORTATION/TRAFFIC**

3629 Impacts to transportation and traffic could be considered significant if any of the following occur  
3630 as a result of the proposed Project:

- 3631 • The project conflicts with a program, plan, ordinance or policy addressing the circulation  
3632 system, including transit, roadway, bicycle and pedestrian facilities.
- 3633 • The project conflicts or is inconsistent with CEQA Guidelines § 15064.3, subdivision (b).
- 3634 • There is a substantially increase in hazards due to a geometric design feature (e.g.,  
3635 sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- 3636 • The project results in inadequate emergency access.

3637 **4.12.1 Preferred Alternative (Northern B Alternative)**

3638 The Preferred Alternative is expected to contribute approximately 13,740 total vehicle trips to  
3639 and from construction sites associated with the Project for the duration of the construction  
3640 period, or approximately 16 months. While the construction route for the Project area has not  
3641 been fully established or confirmed, the most practical and likely path for construction traffic  
3642 associated with the alternatives would generally be from the west, both to access the Wheatland  
3643 Gate and to access the private property portions. O&M of the Project is not expected to  
3644 contribute to transportation and traffic, as those activities are typically performed by a small  
3645 crew in a single vehicle. Due to the transient nature of these activities and the surrounding  
3646 setting, they would not contribute appreciably to traffic in the area.

3647 There are two anticipated construction sites that would generate different construction traffic  
3648 patterns: the construction taking place on private lands and the construction taking place on  
3649 Beale AFB. These impacts are described below separately.

3650 *4.12.1.1 Yuba County Transportation Systems*

3651 The Hammonton-Smartville Road is the likely main arterial road that would be part of a  
3652 construction vehicle route for the private parcel portions of the study area. This road has a  
3653 Level of Service grade ranging from "A" to "C" in the vicinity of Beale AFB and extending west  
3654 from Beale AFB (Yuba County 2007). An average of 41 daily vehicle trips to and from the  
3655 private land's construction site would be made during the 16-month construction period. Based  
3656 on the schedule and the volume of traffic, it is anticipated that Project-related traffic would not  
3657 cause the Level of Service on Hammonton-Smartville Road to decrease by more than one letter  
3658 grade at any time, meaning that the Preferred Alternative is compatible with the goals, plans,  
3659 and policies establishing measures of effectiveness for Yuba County's circulation system for the  
3660 private lands construction traffic route as well.

3661 There would be localized traffic impact on the rural roads directly adjacent to the Preferred  
3662 Alternative area. The current projected schedule of construction, which is 7:00 a.m. to 7:00 p.m.  
3663 daily Monday through Saturday, may impact Yuba County traffic during peak traffic times of 7:00  
3664 a.m. to 9:00 a.m. and 5:00 p.m. to 7:00 p.m. (Yuba County 2007). This extra congestion would  
3665 occur at the very beginning or very end of peak times and would not appreciably impact traffic  
3666 overall.

3667 Overall, the impact to transportation and traffic on private land from the Preferred Alternative  
3668 would be short-term and minor.

3669 *4.12.1.2 Transportation Systems on/to Beale AFB*

3670 For the construction taking place on Beale AFB, all contractor vehicles would be required to  
3671 enter Beale AFB through the Wheatland Gate to undergo vehicle inspections (personal  
3672 communication Kemp 2019). This could lead to an increase in wait times at the Wheatland  
3673 Gate. However, the impact to wait times would be managed by Beale AFB informing those who  
3674 normally access the base in this way to seek alternative gates for travel to and from Beale AFB,  
3675 such as the Main Gate, Doolittle Gate, Grass Valley Gate, or Vassar Lake Gate (personal  
3676 communication Kemp 2019). With this existing network of gates and the Beale AFB  
3677 communication system for managing traffic flow, it is not expected that the Level of Service at  
3678 Wheatland Gate or anywhere else on Beale AFB would drop below a "C" level for the duration

3679 of construction. There would be no impact to emergency access on Beale AFB and no impact  
3680 to other means of circulation on Beale AFB, including pedestrian walkways or bicycle access.

3681 The impact to transportation and traffic on Beale AFB from the Preferred Alternative would be  
3682 short-term and minor.

3683 These impact findings, including to transportation and traffic on private and on Beale AFB, do  
3684 not exceed the significance thresholds listed above for transportation and traffic.

3685 **4.12.2 Northern A Alternative**

3686 Because the Northern A Alternative is only 0.5 mile from the Preferred Alternative, potential  
3687 impacts to transportation and traffic under the Northern A Alternative would be equivalent to  
3688 those addressed for the Preferred Alternative area. That is, impacts to transportation and traffic  
3689 from the Northern A Alternative would be short-term and minor.

3690 **4.12.3 Southern Alternative**

3691 Because the Southern Alternative is only 3.5 miles from the Preferred Alternative, the same  
3692 local road network would be used, plus Erle Road off-Beale AFB, and construction vehicles  
3693 would still access Beale FB via Wheatland Gate. Therefore, potential impacts to transportation  
3694 and traffic under the Southern Alternative would be equivalent to those addressed for the  
3695 Preferred Alternative area. That is, impacts to transportation and traffic from the Southern  
3696 Alternative would be short-term and minor.

3697 **4.12.4 Transportation/Traffic Protection Measures**

3698 The following resource protection measures will be implemented to avoid or lessen impacts to  
3699 transportation/traffic:

TR-1	All lane closures or obstructions on major roadways associated with maintenance activities will be restricted to off-peak periods to minimize traffic congestion and delays and will be coordinated with appropriate authorities.
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3700 **4.12.5 No Action Alternative**

3701 The No Action Alternative would not result in any changes to the existing setting, and no  
3702 impacts would occur to transportation or traffic.

3703 **4.13 UTILITIES/SERVICE SYSTEMS**

3704 Impacts to utilities and service systems could be considered significant if any of the following  
3705 occur as a result of the proposed Project:

- 3706 • The project requires or results in the relocation or construction of new or expanded  
3707 water, wastewater treatment or storm water drainage, electric power, natural gas, or  
3708 telecommunications facilities, the construction or relocation of which could cause  
3709 significant environmental effects.
- 3710 • The project would reduce water supplies available to serve the project and reasonably  
3711 foreseeable future development during normal, dry, and multiple dry years.

- 3712 • The project results in a determination by the wastewater treatment provider, which  
3713 serves or may serve the project that it has adequate capacity to serve the project's  
3714 projected demand in addition to the provider's existing commitments.
- 3715 • The project would result in solid waste in excess of state or local standards, or in excess  
3716 of the capacity of local infrastructure, or otherwise impair the attainment of solid waste  
3717 reduction goals.
- 3718 • The project could not comply with federal, state, and local management and reduction  
3719 statutes and regulations related to solid waste.

3720 **4.13.1 Preferred Alternative (Northern B Alternative)**

3721 This section describes potential impacts from the Preferred Alternative to water supply, sewer  
3722 and wastewater, storm drainage, electrical, communications, and solid waste.

3723 *4.13.1.1 Water Supply*

3724 Water required for the Preferred Alternative would be for dust control associated with  
3725 construction. Water would also be used to wash O&M equipment. The contractor would be  
3726 required to obtain water for dust control and equipment washing from an existing water supply  
3727 with an adequate entitlement to serve these relatively low-volume and short-term water needs.

3728 The proposed new substation would be unmanned and would not require the construction of  
3729 plumbing or sewage facilities. Runoff from any water used at the substation would be contained  
3730 within secondary substation containment. Any water releases at the substation would be  
3731 monitored according to a Spill Prevention Control Countermeasures plan for the substation.

3732 The long-term operation of the Project is not anticipated to have any ongoing need for water,  
3733 and neither the construction nor the operation associated with the Preferred Alternative is  
3734 anticipated to produce an impact on local or regional water supplies or facilities. A pressurized  
3735 water truck attached to a pressure washer or similar system would be used for O&M equipment  
3736 washing needs.

3737 The Preferred Alternative is expected to have no impact to water supply in the area. Water  
3738 supply protection measures are not necessary or proposed.

3739 *4.13.1.2 Sanitary Sewer and Wastewater System*

3740 The Preferred Alternative would not require new or expanded wastewater treatment facilities.  
3741 For the construction period and for the use of construction staff, on-site waste management  
3742 would be accomplished with portable toilets sufficient to meet the Project's construction staffing  
3743 needs for each designated construction site. Portable toilet facilities would be required to be  
3744 supplied by a licensed and permitted vendor. All wastewater treatment requirements of the  
3745 California RWQCB, Central Valley Region would continue to be met on Beale AFB and on  
3746 surrounding private lands.

3747 The Preferred Alternative would have no impact on existing wastewater treatment facilities on or  
3748 off Beale AFB and no impact on Beale AFB's ongoing compliance with wastewater treatment  
3749 requirements of the California RWQCB, Central Valley Region. Sanitary sewer and wastewater  
3750 protection measures are not necessary or proposed.

3751 4.13.1.3 Storm Drainage System

3752 The Preferred Alternative would build new and replace existing culverts on an existing access  
3753 road. These culverts would be sized appropriately for managing stormwater runoff and they  
3754 represent an upgrade of current drainage structures installed in the existing road. The long-  
3755 term impacts of the upgraded culverts to stormwater runoff is anticipated to be long-term and  
3756 beneficial.

3757 Beale AFB has developed a SWPPP to comply with federal, state, and local regulations and  
3758 reduce the actual and potential releases of pollutants to the stormwater runoff from the Beale  
3759 AFB installation (Beale AFB 2018b). The SWPPP includes BMPs to reduce pollution and the  
3760 potential release of pollutants to stormwater runoff. The Preferred Alternative includes  
3761 compliance with all BMPs in the SWPPP, both for on- and off-Beale AFB construction work  
3762 associated with this alternative. Implementation of BMPs would reduce and minimize any  
3763 adverse construction-related impacts to stormwater runoff to short-term and negligible levels.  
3764 Storm drainage system AMMs or BMPs are not necessary or proposed.

3765 4.13.1.4 Electrical System

3766 The main area of impact with regard to utilities and service systems from the Preferred  
3767 Alternative is the existing electrical infrastructure of Beale AFB. PG&E is currently the primary  
3768 supplier of electrical power to Beale AFB. The purpose of this Project for Beale AFB is to create  
3769 a redundant source of electrical power in order to increase reliability of their electrical system  
3770 and ensure its capability to meet its missions. The Preferred Alternative would provide Beale  
3771 AFB a redundant source of power. PG&E accesses their facilities on Beale AFB via the Grass  
3772 Valley Gate; construction of the Preferred Alternative would not interfere with PG&E operations  
3773 or maintenance of their existing lines.

3774 Impacts to the electrical system on Beale AFB would be long-term and beneficial. Electrical  
3775 system protection measures are not necessary or proposed.

3776 4.13.1.5 Communication Systems

3777 The Preferred Alternative includes the installation of aerial and buried fiber cables to increase  
3778 capacity and reliability of the communication system on Beale AFB. Impacts to the  
3779 communications system on Beale AFB would be long-term and beneficial. Communication  
3780 system protection measures are not necessary or proposed.

3781 4.13.1.6 Solid Waste

3782 Beale AFB manages solid waste in compliance with all federal, state, and local statutes relating  
3783 to solid waste; the USAF has developed an installation-specific ISWMP for Beale AFB that  
3784 addresses compliance with all applicable statutes (Beale AFB 2018c). For construction  
3785 activities, the ISWMP states that construction debris and other waste shall be sorted into  
3786 recyclable and non-recyclable waste streams and that contractors shall transport all solid waste  
3787 off Beale AFB to an approved landfill or recycling facility (Beale AFB 2018c).

3788 The Ostrom Road Landfill is the anticipated site for the disposal of all solid waste generated  
3789 during construction activities of the Preferred Alternative. The Ostrom Road Landfill's current  
3790 plans indicate that the landfill is not at capacity and would not reach capacity until the year 2102

3791 (RWQCB 2016<sup>2</sup>). The solid waste generated by the Preferred Alternative is anticipated to  
3792 contribute a negligible amount of waste in the context of the capacity of this landfill and not  
3793 appreciably hasten the Ostrom Road Landfill toward capacity.

3794 Impacts from solid waste management would be short-term and negligible to none. Solid waste  
3795 protection measures are not necessary or proposed.

#### 3796 **4.13.2 Northern A Alternative**

3797 The Northern A Alternative would have the same uses and management of water, wastewater,  
3798 storm drainage, electrical and communication systems, and solid waste. Therefore, impacts  
3799 from the Northern A Alternative would be identical to that of the Preferred Alternative. That is, no  
3800 impact to water supply; no impact on existing wastewater treatment facilities; long-term and  
3801 beneficial impacts to storm drainage systems; short-term and negligible impacts from  
3802 stormwater runoff; long-term and beneficial impacts to electric and communication systems; and  
3803 short-term and negligible to no impacts from solid waste management.

#### 3804 **4.13.3 Southern Alternative**

3805 The Southern Alternative would have the same uses and management of water, wastewater,  
3806 storm drainage, electrical and communication systems, and solid waste. Therefore, impacts  
3807 from the Southern Alternative would be identical to that of the Preferred Alternative. That is, no  
3808 impact to water supply; no impact on existing wastewater treatment facilities; long-term and  
3809 beneficial impacts to storm drainage systems; short-term and negligible impacts from  
3810 stormwater runoff; long-term and beneficial impacts to electric and communication systems; and  
3811 short-term and negligible to no impacts from solid waste management.

#### 3812 **4.13.4 No Action Alternative**

3813 The No Action Alternative would not result in any changes to the existing setting, and no  
3814 impacts would occur to existing utilities or systems. However, adopting the No Action Alternative  
3815 could lead to long-term uncertainty about the electrical capacity and communications capacity of  
3816 Beale AFB. In particular, Beale AFB would be operating without a sustainable redundant power  
3817 supply of power, which could lead to increasing reliance on diesel generators or even an  
3818 inability to meet the mandate of its missions. The impact of adopting the No Action Alternative  
3819 to Beale AFB's electrical and communications systems is anticipated to be long-term and  
3820 moderate.

### 3821 **4.14 OTHER NEPA CONSIDERATIONS**

#### 3822 **4.14.1 Intentional Acts of Destruction**

3823 The Department of Energy requires that NEPA documents explicitly address potential  
3824 environmental consequences of intentional destructive acts (DOE 2006). The purpose is to  
3825 inform the decision-maker and the public about the chances that reasonably foreseeable

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<sup>2</sup> The Ostrom Road Landfill is the primary landfill being used for debris from the Camp Fire. The website was checked in December 2019; no updates or capacity change have been posted.



DRAFT ENVIRONMENTAL ASSESSMENT

Environmental Assessment  
Environmental Consequences

Beale WAPA Interconnection Project  
Yuba County, California

3826 accidents and intentional destructive acts associated with the Project area could occur and their  
3827 potential adverse consequences.

3828 In order to evaluate the consequences of accidents and intentional destructive acts to human  
3829 health, three categories of people are considered: involved workers, noninvolved workers, and  
3830 the general public (DOE 2002). Consequences of accident to the environment include  
3831 evaluating the effects on biota and environmental media (DOE 2002). NEPA guidance  
3832 recommends that maximum reasonably foreseeable accidents with the most severe  
3833 consequences be analyzed, although these usually have a low probability of occurrence.

3834 In general, the electricity infrastructure proposed could potentially be the target of vandalism, an  
3835 act of sabotage, or terrorism. If targeted, potential threats to the Project could include bombs,  
3836 aircraft collisions, sabotage of electrical systems by gunshot or other methods, attacks on  
3837 personnel, or cyber-attacks on the facilities' control systems. If these types of intentional  
3838 destructive acts occurred, the general public would not feel any effects. The effects would be  
3839 mostly felt by Beale AFB, which would experience a temporary disturbance to their redundant  
3840 power. This would have a limited and temporary effect on workers and residents of Beale AFB  
3841 as the end users of the electricity. At the time of this type of event, few local involved and  
3842 noninvolved workers would be affected at the job sites; however, local emergency utility workers  
3843 and local fire departments would immediately respond.

3844 The effects to biota and media (land and water) during an act of destruction would be minimal.  
3845 Resulting fires may be the most likely effect from an accident and would mostly impact farmland  
3846 outside of Beale AFB and open space within Beale AFB; these areas would be quickly  
3847 extinguished by the local and regional fire departments and Beale AFB's internal fire  
3848 suppression network. WAPA vegetation management practices are designed to minimize  
3849 exacerbating wildfires around electrical substations and transmission line ROWs.

3850 The addition of transmission lines and associated facilities as part of the Project's purpose and  
3851 need (and siting criteria) would strengthen the reliability of delivering electricity to Beale AFB,  
3852 because if one line is affected by an intentional act of destruction or other disruption, redundant  
3853 lines would be available to continue the delivery of electricity.

3854 Intentional acts of destruction of facility structures or conductors are unpredictable events. The  
3855 chances of such acts occurring would be reduced by the remote access to the Project area  
3856 outside of Beale AFB and restricted access within Beale AFB. In addition, WAPA inspects their  
3857 transmission lines and substations on a regular O&M schedule for any signs of sabotage or  
3858 vandalism and acts immediately if a potential hazard is found.

3859 The potential for serious injury resulting from accidents and intentional acts of destruction is low.

3860 Remainder of page is intentionally left blank.

3861 **5.0 CUMULATIVE EFFECTS**3862 **5.1 INTRODUCTION**

3863 This EA considers the effects of cumulative impacts as required in 40 CFR 1508.7 and  
3864 concurrent actions as required in 40 CFR 1508.25[1]. A cumulative impact, as defined by the  
3865 Council of Environmental Quality (40 CFR 1508.7) is the "...impact on the environment which  
3866 results from the incremental impact of the action when added to other past, present, and  
3867 reasonably foreseeable future actions regardless of which agency (Federal or non-Federal) or  
3868 person undertakes such actions. Cumulative impacts can result from individually minor but  
3869 collectively significant actions taking place over a period of time."

3870 Agencies included during Project scoping were asked to provide input on present or future  
3871 projects in the area that they were aware of. Agencies did not identify any such projects (see  
3872 **Appendix B** for the Scoping Summary Report). Beale AFB has a number of projects ongoing  
3873 and in the planning phases to achieve their missions and energy goals. For the purposes of this  
3874 Project, past, present, and reasonably foreseeable future actions are those where Beale AFB  
3875 has begun environmental review, engineering design, and/or has approved funding *and* are  
3876 located within 3 miles of the Project area. Beale AFB is also limited in the amount and type of  
3877 Project information that can be shared publicly in this EA.

3878 **5.2 PROJECTS CONSIDERED CUMULATIVELY**

3879 WAPA and/or Beale AFB provided information on the following projects that should be  
3880 considered cumulatively:

- 3881 • **Three Rivers Levee Improvement Authority (TRLIA), Yuba Goldfields 200-Year**  
3882 **Flood Protection Project**

3883 TRLIA, as lead CEQA Agency, issued an EIR in 2015 and a Supplemented EIR in  
3884 September 2018 to analyze impacts from the Yuba Goldfields 200-year Flood Protection  
3885 Project. The project goals are to optimize flood risk reduction, further minimize  
3886 environmental impacts on mineral resources and wetlands, and maximum public  
3887 benefits.

3888 The project involves construction of a levee south of the Yuba Goldfields, which is  
3889 located 6 to 12 miles upstream of the town of Marysville. The levee would prevent Yuba  
3890 River flood flows during a 200-year flood event from flowing through the Goldfields and  
3891 flanking the State Plan of Flood Control. The levee would meet California Department of  
3892 Water Resources urban levee design criteria for 200-year flood risk reduction.

3893 As proposed in the 2018 Supplemental EIR, the levee and berm footprint would come  
3894 closest to the project area at the intersection of Hammonton-Smartville Road and Brophy  
3895 Road, which is approximately 0.1 mile northwest of the Preferred Alternative's  
3896 interconnection point with WAPA's Cottonwood-Roseville line. The TRLIA project  
3897 follows Hammonton-Smartville Road northeast, while the Preferred Alternative alignment  
3898 follows directly east toward Beale AFB.

3899 Construction of the levee is proposed to begin in spring 2020 and require approximately  
3900 8 months to complete. Construction of the levee will likely begin before the construction  
3901 of the Preferred Alternative, but there may be overlap.

3902 • **Beale AFB, 2-MW Solar Array and Microgrid Installation with Battery Storage**  
3903 **Project**

3904 Beale AFB plans to install a new 6-acre solar array field to produce 2 MW of power,  
3905 including a microgrid control structure with battery storage. The Project is proposed to  
3906 support Beale AFB achieve DoD's energy redundancy policies.

3907 The solar array is proposed to be located on the northeast corner of the Doolittle Drive  
3908 and Grumman Avenue; in proximity to the Project area, it would be south-southeast of  
3909 the terminus at the Doolittle Drive Substation.

3910 Construction for the solar array is planned to begin in 2020. Construction may overlap  
3911 with the Beale WAPA Interconnection Project.

3912 • **Beale AFB, Global Hawk Campus / MCE PAD Power Distribution Upgrade Project**

3913 Beale AFB is currently installing a new ATS to distribute redundant power to existing  
3914 buildings, transformers, and distribution boards already existing on Beale AFB. Existing  
3915 generators as well as HCAV facilities will need to be replaced. All facilities being  
3916 replaced as part of this update are located approximately 0.3 mile west of where the  
3917 Beale WAPA Interconnection Project would follow Doolittle Drive. Construction for this  
3918 project is in progress as of the writing of this EA and is expected to be complete prior to  
3919 the Beale WAPA Interconnection Project beginning construction.

3920 • **Beale AFB, Construct Munitions Warehouse and Office Project**

3921 Beale AFB will be demolishing two buildings and constructing one new consolidated  
3922 building with parking lot. The total footprint for the new building would be approximately  
3923 6,300 square feet. No new roads are proposed as part of this project, although some  
3924 underground facilities such as water and sewer lines may need to be replaced/repaired.

3925 The project location is approximately 0.2 mile east of Doolittle Drive, where the Beale  
3926 WAPA Interconnection Project proposes to install the underground portion of the  
3927 transmission line. The water and sewer lines that may need to be repaired intersect the  
3928 Project alignment where the Project line intersects and turns south to follow Doolittle  
3929 Drive.

3930 Building demolition and construction is expected to take place in 2021 and last  
3931 approximately 18 months. Construction may overlap with the Beale WAPA  
3932 Interconnection Project.

3933 • **Beale AFB, Doolittle Drive Substation and Switch Yard Upgrade Project**

3934 Beale AFB plans to rebuild and upgrade their existing Doolittle Drive Substation and  
3935 include a new switch yard. The upgrade will apply power to be supplied to the flight line  
3936 and other facilities on Beale AFB. This substation rebuild would occur whether or not  
3937 the Beale WAPA Interconnection Project is built. The footprint of the new substation will  
3938 be directly north and nearly adjacent to the existing substation. Construction for the

3939 rebuild is expected to begin in 2021 and last approximately 24 months. Construction  
3940 may overlap with the Beale WAPA Interconnection Project.

### 3941 **5.3 CUMULATIVE EFFECTS ANALYSIS**

#### 3942 **5.3.1 Introduction**

3943 Generally, the most likely cumulative impacts would arise from overlapping construction periods  
3944 among these projects. Since most Projects being considered cumulatively are located on Beale  
3945 AFB, much of these construction-related impacts would be avoided by close coordination  
3946 among Beale AFB departments. Specific cumulative impacts are addressed below, organized  
3947 by resource area analyzed in detail in this EA. All resources dismissed from close analysis in  
3948 this EA (see **Table 3-1**) are expected to not sustain impacts and thus, would not contribute  
3949 cumulatively to impacts from other proposed projects in the area. Cumulative impacts are  
3950 assessed as best as possible given the limited information available on the above projects.

#### 3951 **5.3.2 Aesthetics/Visual Resources**

3952 The development of the cumulatively considered projects would slightly alter the visual  
3953 character of the Project's WAPA Beale Interconnection Project's surrounding area. For  
3954 example, the construction of the munitions warehouse project would change the visual  
3955 landscape through the addition of solar generating equipment and its associated infrastructure.  
3956 However, the addition of these new and upgraded facilities would not be incongruous with Beale  
3957 AFB's existing facilities or the land use of the surrounding area, which is developed and  
3958 contains electrical infrastructure.

3959 The addition of buildings and solar and electrical facilities on Beale AFB would also be  
3960 consistent with Yuba County's land use designation of Public/Quasi-Public. The construction of  
3961 the proposed Project in combination with the other projects considered cumulatively would  
3962 result long-term negligible to no impacts to aesthetics/visual resources.

#### 3963 **5.3.3 Agriculture and Forestry Resources**

3964 The construction of the cumulatively considered projects would primarily create structures and  
3965 facilities within the already-developed Beale AFB. No designated forest or timber lands are  
3966 present in the area. Agricultural lands would not be at risk of conversion from actions taking  
3967 place on Beale AFB.

3968 The Yuba Goldfields 200-Year Flood Protection Project would be located near to portions of the  
3969 Preferred Alternative and would entail the conversion of around 91 acres of important farmland  
3970 to nonagricultural use (TRLIA 2018). The Preferred Alternative for the Project would convert  
3971 0.061 acre to nonagricultural uses. The construction and farmland conversions of the proposed  
3972 Project in combination with the other projects considered cumulatively would result long-term  
3973 negligible to no impacts to agricultural lands.

#### 3974 **5.3.4 Air Quality, GHG Emissions, and Climate Change**

3975 Construction of multiple projects within the same general timeframe could have short-term  
3976 cumulative adverse effects on air quality. These overlapping construction schedules would  
3977 contribute to temporary increases in O<sub>3</sub> and PM<sub>10</sub> as well as GHGs during construction. BMPs

3978 presented in **Appendix D** would reduce impacts to temporary regional air quality from the  
3979 proposed Project. No facilities of the proposed Project or projects considered cumulatively  
3980 would produce air emissions in the long-term; thus, there would be no long-term or significant  
3981 effects from projects in the area cumulatively.

3982 In the long-term, the Preferred Alternative being implemented would preclude the need for  
3983 Beale AFB to use back-up generators, thus lessening overall contribution to air quality  
3984 emissions cumulatively.

3985 The construction of the proposed Project in combination with the other projects considered  
3986 cumulatively would result in short-term minor to negligible impacts to air quality, GHG  
3987 emissions, and climate change.

### 3988 **5.3.5 Biological Resources**

3989 Analysis of habitats, vegetation, special-status plants, plant communities, wildlife, and special-  
3990 status wildlife for the Beale WAPA Interconnection Project can be found in Section 4.5,  
3991 Biological Resources Environmental Consequences. The long-term effects on biological  
3992 resources from the proposed Project in combination with the projects listed in Section 5.2,  
3993 Projects Considered Cumulatively, are unlikely to result in cumulative impacts to biological  
3994 resources but has potential to impact biological resources sensitive to ground disturbance.  
3995 However, cumulative effects on biological resources would be considered negligible with the  
3996 implementation of AMMs or BMPs similar to those listed in **Appendix D**. The construction of  
3997 the proposed Project in combination with the other projects considered cumulatively would  
3998 result in short-term minor to negligible impacts to biological resources.

### 3999 **5.3.6 Cultural and Tribal Resources**

4000 The construction of the Beale WAPA Interconnection Project would not impact any known  
4001 historic properties or tribal resources that are eligible for NRHP. Because no eligible historic  
4002 properties are present, the Preferred Alternative would not contribute to cumulative impacts  
4003 when considered alongside the projects listed in Section 5.2, Projects Considered Cumulatively.  
4004 However, unlisted and undiscovered cultural, tribal, and archaeological resources always have  
4005 the potential to be discovered and disturbed during ground disturbing construction but would not  
4006 result in significant impacts with the implementation of BMPs.

4007 This Project and the cumulatively considered projects all have the potential to disturb these  
4008 unknown resources. Impacts to unknown resources are unpredictable and would be reported  
4009 and evaluated as much as is possible in the construction of the Beale WAPA Interconnection  
4010 Project.

### 4011 **5.3.7 Geology/Soils**

4012 The construction of the Beale WAPA Interconnection Project and the cumulatively considered  
4013 projects could have a short-term, negligible effect on soils. The proposed Project would disturb  
4014 soils during the construction phase of the Project and could cause long-term soil disturbance  
4015 through the clearing of vegetation and short-term disturbances related to the proposed  
4016 construction.

4017 Soil disturbed during the construction phase of the project would contribute to the cumulative  
4018 modification of soils from ground disturbing activities conducted for the projects listed in Section  
4019 5.2, Projects Considered Cumulatively. However, with the implementation of the BMPs listed in  
4020 Section 4.7, Geology/Soils Environmental Consequences, the Project's cumulative impacts to  
4021 geology and soils are expected to be reduced.

### 4022 **5.3.8 Hydrology/Water Quality**

4023 The Beale WAPA Interconnection Project has been designed to preserve existing hydrology,  
4024 and groundwater would not be affected by the Project. However, the construction of the Project  
4025 as well as the cumulatively considered projects within the same general timeframe does have  
4026 potential to cause cumulative impacts to hydrology and water quality. Ground disturbing  
4027 activities associated with construction can cause the erosion of topsoil and increases in  
4028 turbidity. Construction-related impacts to hydrology and water quality would be short-term.  
4029 Implementation of the BMPs listed in Section 4.8, Hydrology/Water Quality Environmental  
4030 Consequences would minimize the Project's contribution to cumulative impacts. The  
4031 construction of the proposed Project in combination with the other projects would be short-term  
4032 and negligible.

### 4033 **5.3.9 Land Use and Planning, Growth-Inducing Impacts, Recreation, and AICUZ** 4034 **Compatibility**

4035 The Beale WAPA Interconnection Project is consistent with the land use and zoning  
4036 designations outlined in Yuba County's General Plan. The Project is also consistent with the  
4037 requirements of the Beale AFB AICUZ. The Project would create additive capacity for Beale  
4038 AFB and would not cause population growth beyond what Beale AFB is planning and managing  
4039 for currently. Analysis of land use, planning, growth-inducing impacts, recreation, and AICUZ  
4040 compatibility can be found in Section 4.9, Land Use and Planning, Growth-Inducing Impacts,  
4041 Recreation, and AICUZ Compatibility Environmental Consequences. Because the proposed  
4042 Project is expected to have no long-term or significant impacts to the categories mentioned, it  
4043 would have no impact considered cumulatively with other projects.

### 4044 **5.3.10 Noise**

4045 The construction of the Beale WAPA Interconnection Project in the same general timeframe as  
4046 the cumulatively considered projects could result in a short-term cumulative noise impact.  
4047 Noise from heavy machinery, power tools, and trucks could contribute to cumulative noise  
4048 impacts. Noise from construction would primarily be generated around Beale AFB.

4049 Construction-related noise would be short-term, only existing through the construction phase of  
4050 the project of the Project. Construction noise would not exceed Yuba County thresholds and  
4051 would be comparable to agricultural equipment frequently used in the surrounding area. The  
4052 Project's contribution to noise-related cumulative impacts would be reduced through the  
4053 implementation of the BMPs listed in Section 4.10, Noise Environmental Consequences. The  
4054 construction of the proposed Project in combination with the other projects considered  
4055 cumulatively would result in short-term negligible impacts.

4056 **5.3.11 Public Health and Safety and Hazardous Materials**

4057 The construction of the Beale WAPA Interconnection Project in the same general timeframe as  
4058 the cumulatively considered projects listed in Section 5.2, Projects Considered Cumulatively,  
4059 could result in a short-term increase in the presence of hazardous materials related to  
4060 construction activities. Because hazardous materials present in the long-term operation of the  
4061 proposed Project would be confined to the fenced substation, the Project would not contribute to  
4062 long-term cumulative risks related to hazardous materials.

4063 Hazardous materials used in the proposed Project and the cumulatively considered projects on  
4064 Beale AFB would be managed under Beale AFB's ICP and through the BMPs listed in Section  
4065 4.11, Public Health and Safety and Hazardous Materials Environmental Consequences, and  
4066 would be expected to have their potential to contribute to a cumulative impact reduced greatly.  
4067 The construction of the proposed Project in combination with the other projects considered  
4068 cumulatively would result in short-term negligible impacts.

4069 **5.3.12 Transportation/Traffic**

4070 The construction of the Beale WAPA Interconnection Project in the same general timeframe as  
4071 the cumulatively considered projects listed in Section 5.2, Projects Considered Cumulatively,  
4072 could result in cumulative impacts to transportation in the vicinity of Beale AFB. Impacts would  
4073 be related to construction and short-term. No long-term impacts from the proposed Project or  
4074 the projects considered cumulatively would occur.

4075 Implementation of the BMPs listed in Section 4.12, Transportation/Traffic Environmental  
4076 Consequences, would reduce the potential of the proposed Project to contribute to a cumulative  
4077 impact. The construction of the proposed Project in combination with the other projects  
4078 considered cumulatively would result in short-term negligible impacts.

4079 **5.3.13 Utilities/Service Systems**

4080 The construction of the Beale WAPA Interconnection Project and the cumulatively considered  
4081 projects listed in Section 5.2, Projects Considered Cumulatively, would have a long-term  
4082 beneficial cumulative effect on utilities and service systems. The proposed Project and the  
4083 cumulatively considered projects within Beale AFB would improve the electrical infrastructure on  
4084 Beale AFB in the long-term and have no adverse effects cumulatively.

4085 Remainder of page is intentionally left blank.

4086 **6.0 LIST OF PREPARERS**

4087 Individuals who contributed to the preparation of this EA are listed below.

<b>TABLE 6-1 LIST OF PREPARERS</b>	
<b>Name/Organization</b>	<b>Resource Area</b>
Gerald Robbins/WAPA	Environmental Manager; Document oversight
Tish Saare/WAPA	Management; Project description for WAPA Project components
Mike Prowatzke/WAPA	Biological and aquatic resources
Kathy Edwards/WAPA	Air quality
Cherie Waldear-Johnston/WAPA	Cultural resources
Susan Neilson/WAPA	Lands
Ray Wogec/Beale AFB	Management; Project description for Beale AFB Project components
Blaze Baker/Beale AFB	Management; Project description for Beale AFB Project components
Tamara Gallentine/Beale AFB	Biological, aquatic, and cultural resources
Nicole Dunlap/Transcon Environmental (Consultant)	Management; Chapters 1, 2, 6, 7, and 8
Molly Dodge/Transcon Environmental (Consultant)	Management; Chapters 1 and 2
Mike Cipra/Transcon Environmental (Consultant)	Aesthetics, agriculture, geology, lane use, public health and safety, transportation, and utilities (Chapters 3 and 4)
Ben Lardiere/Transcon Environmental (Consultant)	Biological and aquatic resources (Chapters 3 and 4)
Everett Bassett/Transcon Environmental (Consultant)	Cultural resources (Chapters 3 and 4)
Scott Riley/Transcon Environmental (Consultant)	Hydrology/Water Quality (Chapters 3 and 4)
Ian Snyder/Transcon Environmental (Consultant)	Air Quality and Noise (Chapters 3 and 4)
Penny Eckert/Transcon Environmental (Consultant)	Planning; overall quality assurance/quality control
Nick Bateman/Transcon Environmental (Consultant)	Planning; overall quality assurance/quality control

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# APPENDIX A

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## CEQA Checklist

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# APPENDIX B

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## Scoping Summary Report

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## Disturbance Acreage Table

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## Resource Protection Measures

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## Biological Resources Report

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## Special-Status Species List

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## Aquatic Resources Report

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## ACAM Air Quality Modeling Results

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