

SUPPLEMENT ANALYSIS

WESTERN AREA POWER ADMINISTRATION NORTH AREA RIGHT-OF-WAY MAINTENANCE PROGRAM ENVIRONMENTAL ASSESSMENT DOE/EA-1539-SA-01

Final



**Western Area
Power Administration**

**SIERRA NEVADA REGION
U.S. DEPARTMENT OF ENERGY**

114 Parkshore Drive
Folsom, California 95630

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Western Area Power Administration North Area Right-Of-Way Maintenance Program
Environmental Assessment

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Acronyms and Abbreviations

AAQS	ambient air quality standards
ACHP	Advisory Council on Historic Preservation
BLM	U.S. Department of the Interior – Bureau of Land Management
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalents
COTP	California-Oregon Transmission Project
CVP	Central Valley Project
dBA	A-weighted decibel scale
DOE	U.S. Department of Energy
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
ESA	federal Endangered Species Act
ESU	Evolutionarily Significant Unit
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
GPS	global positioning system
GIS	geographic information system
HCPs	habitat conservation plans
IEEE	Institute of Electrical and Electronics Engineers
IVM	Integrated Vegetation Management
kV	kilovolt
Ldn	day-night average sound level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Council
NESC	National Electric Safety Code
NHPA	National Historic Preservation Act
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NO ₂	nitrogen dioxide
North Area Program	North Area Right-of-Way Maintenance Program
NPS	National Park Service
NRA	National Recreation Area
NRHP	National Register of Historic Places

SUPPLEMENT ANALYSIS ENVIRONMENTAL ASSESSMENT

Western Area Power Administration North Area Right-Of-Way Maintenance Program

O ₃	ozone
O&M	operations and maintenance
PA	Programmatic Agreement
PACI	Pacific Alternating Current Intertie
PCMs	Project Conservation Measures
PM	particulate matter
PM _{2.5}	inhalable particulate matter less than 2.5 microns in diameter
PM ₁₀	inhalable particulate matter less than 10 microns in diameter
ROW	rights-of-way
SA	Supplement Analysis
SHPO	State Historic Preservation Officer
SO ₂	sulfur dioxide
SOPs	Standard Operating Procedures
TANC	Transmission Agency of Northern California
TCP	traditional cultural properties
USFS	U. S. Department of Agriculture – Forest Service
USFWS	U.S. Department of the Interior, Fish and Wildlife Service
WAPA	Western Area Power Administration
WSCC	Western Systems Coordinating Council

Chapter 1. Introduction

The Western Area Power Administration (WAPA), Sierra Nevada Region has prepared this Supplement Analysis (SA) in accordance with the U.S. Department of Energy (DOE) National Environmental Policy Act (NEPA) regulations (10 CFR 1021.330(d) and (e)) which require an evaluation of the adequacy of “site-wide” NEPA documents at least every five years. This SA addresses the Final Environmental Assessment (EA) prepared by WAPA in June 2010 for the North Area Right-of-Way Maintenance Program (North Area Program) and provides the information and analysis necessary to determine if there have been any “substantial” changes in the proposed action and if there are any “significant” new circumstances or information relevant to environmental concerns and impacts.

1.1 Background

WAPA is a power marketing administration of the DOE. WAPA owns, operates, and maintains 115-kilovolt (kV), 230-kV and 500-kV transmission lines through portions of central and northern California. These transmission lines include portions of the Central Valley Project (CVP) and the entire Pacific Alternating Current Intertie (PACI) transmission lines. WAPA also operates and maintains the California-Oregon Transmission Project (COTP) under contract to the Transmission Agency of Northern California (TANC), a joint powers authority under state law, which is the majority owner of the COTP. WAPA is a minority owner of the COTP. The COTP is an existing 339-mile-long, 1,600 megawatt, 500-kV transmission project between Captain Jack Substation in Klamath County, Oregon, and the Tesla Substation in San Joaquin County, California. In addition to the transmission line, TANC also owns multiple communication facilities throughout California that support COTP operations; these are also maintained by WAPA.

The North Area Program is an ongoing operations and maintenance (O&M) project. The project area extends from just north of the Oregon-California border, south to San Joaquin County, California, traversing a total of 17 counties. Routine O&M activities include, but are not limited to, facility inspection/repair (e.g., ground and area patrols, replacement of equipment within the confines of the existing fenced substation or facility perimeter, insulator maintenance), vegetation management (e.g., manual control, mechanical control), equipment upgrades (e.g., reconductoring, tower replacement), and maintenance and improvement of access roads. WAPA prepared a Final EA and Finding of No Significant Impact (FONSI) for the North Area Program in June 2010.

1.2 Purpose and Need for the North Area Program

The purpose of the North Area Program is to maintain existing transmission line, communication facility, and legal access road rights-of-way (ROW) to ensure reliability of the transmission system and safe, all-weather access to the transmission line structures and other WAPA facilities. WAPA designed the North Area Program to balance environmental protection with system reliability and compliance with the National Electric Safety Code (NESC), Western Systems Coordinating Council (WSCC) requirements, North American Electric Reliability Council (NERC) reliability standards, Institute of Electrical and Electronics Engineers (IEEE) standards, and WAPA directives for

maintaining system reliability and protection of human safety. In meeting this purpose, WAPA's objectives are to maintain its ROW to:

- prevent operational hazards;
- provide access for maintenance;
- protect facilities from fire;
- control the spread of noxious weeds and protect environmental quality;
- adhere to principles of WAPA's Integrated Vegetation Management (IVM) Program;
- establish stable, low-growing native plant communities under transmission ROW;
- develop a technically and economically efficient program;
- protect public and worker safety;
- maintain sound relationships with landowners and managers; and
- streamline regulatory permitting activities.

The need for the North Area Program includes:

- eliminating the threat for vegetation to interfere with the lines and towers (e.g., vegetation near transmission lines may pose a threat to public safety and the environment from arcing, which can cause fires, and from trees growing into or falling onto the transmission lines).
- controlling vegetation in a cost-effective manner that will benefit the public and avoid and minimize impacts on natural ecosystems; and
- maintaining the transmission line and legal access road ROW in a manner that facilitates safe, year-round access to transmission line structures and supporting sites.

1.3 Purpose and Need for the Supplement Analysis

The purpose of this SA is to:

- document whether there have been any changes in the project area or project activities for the North Area Program since the June 2010 Final EA;
- document whether there are any new circumstances or information relevant to environmental changes or environmental impacts for the North Area Program since the June 2010 Final EA;
- evaluate whether any project changes are "substantial" and if any new circumstances or information are "significant" in the context of NEPA; and
- based on the information and analysis present in the SA, make one of the following determinations: 1) the EA should be supplemented; 2) a new EA should be prepared; or 3) no further NEPA documentation is required.

An SA for the North Area Program is needed because:

- DOE NEPA regulations (10 CFR 1021.330(d) and (e)) require an evaluation of the adequacy of "site-wide" NEPA documents at least every five years. The Final EA for the North Area Program was prepared by WAPA in June 2010.

Chapter 2. Review of Project Changes

2.1 Changes in the Project Area and Project Activities

The North Area Program is an ongoing O&M program historically supported by activity-specific NEPA and California Environmental Quality Act (CEQA) compliance as appropriate. The North Area Program's transmission lines, communication and substation facilities, and other supporting infrastructure have been physically in place and part of the environmental setting for many years. The oldest of the transmission lines is the CVP, which was originally constructed in the 1940s. The most recent addition was the COTP, which was placed into service in March 1993. O&M activities conducted for the North Area Program have been ongoing since completion of construction and initial operation of the facilities. All the O&M activities addressed in the June 2010 Final EA are conducted within the existing and approved boundaries of the North Area Program transmission line ROW, legally deeded access roads, and communication and substation facilities.

One of the major purposes of preparing the June 2010 Final EA for the North Area Program was to consolidate all the ongoing and routine O&M activities into one comprehensive and programmatic environmental analysis. This was necessary to address NEPA appropriately and efficiently and CEQA (as applicable) requirements, and to minimize the need to develop separate NEPA and CEQA documentation every time a routine O&M activity is undertaken.

A review of whether there have been any changes in the project area or project activities for the North Area Program since the June 2010 Final EA is provided below.

2.1.1 Changes in Project Area

There have been no substantial changes to the project area for the North Area Program since the June 2010 Final EA. All North Area Program activities are conducted within the boundaries of transmission ROW, legally deeded access roads, and communication and substation facilities described in the June 2010 Final EA. However, some of the communication and substation facilities described in the June 2010 Final EA are no longer active.

As detailed in the June 2010 Final EA, the project area for the North Area Program Area includes transmission line ROW, communication and substation sites, and access roads that are owned and/or operated and maintained by WAPA's Sierra Nevada Region. The project area extends through northern California, and includes portions of Alameda, Butte, Colusa, Contra Costa, Glenn, Lassen, Modoc, Sacramento, San Joaquin, Shasta, Siskiyou, Solano, Sutter, Tehama, Trinity, Yolo, and Yuba counties. As shown on Figure 2-1, the project area includes the following specific facilities:

- The entire PACI between Malin and Round Mountain.
- Segments of the CVP transmission lines originating in the Shasta and Trinity areas.
- The entire COTP from the Oregon border to Tesla Substation.
- The Redding Maintenance Facility.
- The Captain Jack, Malin, Trinity, Carr, Whiskeytown, Spring Creek, Shasta, Flanagan, Keswick, Airport, Coleman Fish Hatchery, Cottonwood, Olinda, Maxwell, O'Banion, and Sutter substations.

- The Timber Mountain, Happy Camp, Widow Mountain, Big Valley, Bear Spring, Manzanita Lake, Southfork Mountain, Keswick, Olinda, Hooker Oak, Grapevine Pass, Sites, Maxwell, and Rumsey.
- Westside WD Meter 2 and Wick's Corner Fiber Optics Repeater

The project area includes more than 800 miles of transmission line ROW and approximately 250 miles of access roads. Approximately 16 percent of the project area is federal land, and 84 percent is non-federal, including transmission ROW, facility lots, and legally deeded access roads.

2.1.2 Changes in Project Activities

There have been no substantial changes in project activities for the North Area Program since the June 2010 Final EA. Project activities conducted under the North Area Program are routine O&M activities and are described in Section 2.2 of the June 2010 Final EA. For purposes of the environmental analysis in the June 2010 Final EA, the O&M activities were classified into three categories as follows:

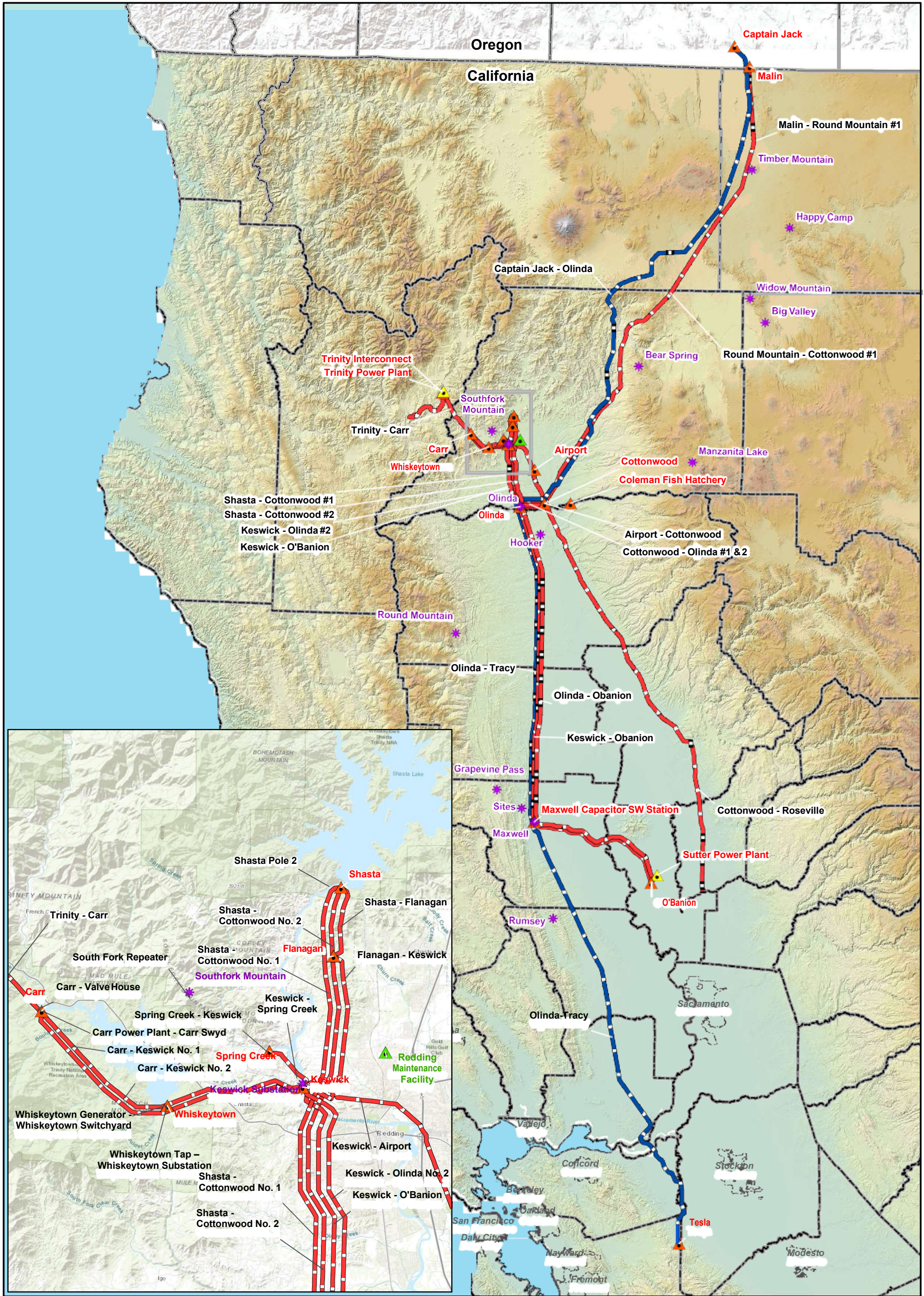
- 1) **Category A.** Maintenance activities in Category A are primarily inspection-type actions, with some minor repairs that cause minimal, if any, soil disturbance.
- 2) **Category B.** Maintenance activities in Category B include some of the typical repair tasks that occur along WAPA's ROW.
- 3) **Category C.** Maintenance activities in Category C are generally those activities that disturb large areas and utilize heavy equipment.

Category A activities have the least potential to affect sensitive environmental resources, and Category C activities have the greatest potential to affect sensitive environmental resources. A listing of typical activities within each of the maintenance categories is provided in Section 2.2.5 of the June 2010 Final EA.

While there have been no substantial changes in project activities for the North Area Program since the June 2010 Final EA, there have been updates to the representative listings of typical activities within each of the three maintenance categories. The updated representative listings of typical maintenance activities are provided below, with all updated items shown in **bold**. Tables 2-1, 2-2, and 2-3 below provide a comparison of the items in **bold** with the information from the June 2010 Final EA and a determination as to whether any of the items in **bold** constitute a substantial change in project activities.

Category A – Inspection and Minor Maintenance Activities

Category A maintenance activities are primarily inspection-type actions, with some minor repairs that would result in only minimal, if any, soil disturbance. These maintenance tasks would result in only nominal or no effects on sensitive resources if applicable Standard Operating Procedures (SOPs) are followed.



	Microwave Sites		WAPA
	Substation		TANC
	Power Plant		
	Maintenance Facility		

N

0 10 20

Miles

1:1,380,800

This cartographic product and GIS data were prepared in accordance with professional practice standards. The data represented on this map has been developed from the best available sources. Although efforts have been made to ensure that the data is accurate and reliable, errors may be reflected in the data. Users must be aware of these conditions and bear responsibility for the appropriate use of this map. The data on this map is for reference use only.

UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION
SIERRA NEVADA REGION - FOLSOM, CALIFORNIA

NORTH AREA ENVIRONMENTAL ASSESSMENT ZONE

D. Beecroft

Designed: _____ Approved: _____
Manager Title

G S March 12, 2021	Fig. 1.0
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Typical Category A activities may include, but are not limited to:

Substation Maintenance

- A-1: Maintenance and replacement of transformers and breakers;
- A-2: Servicing and testing of equipment at existing substations, including oil change-outs;
- A-3: Installation or replacement of bushings;
- A-4: Cleaning or replacement of capacitor banks;
- A-5: Maintenance or installation of propane tanks within a substation yard;
- A-6: Maintenance of switches, voltage regulators, reactors, tap changes, reclosers, and valves;
- A-7: Replacement of wiring in substations and switchyards;
- A-8: Replacement of existing substation equipment including regulators, capacitors, switches, wave traps, radiators, and lightning arresters;
- A-9: Installation of cut-out fuses;
- A-10: Adjustment and cleaning of disconnect switches;
- A-11: Placement of temporary transformers;
- A-12: Maintenance, installation, and removal of solar power arrays and controllers;
- A-13: Installation of foundation for storage buildings above ground mat within existing substation yard;
- A-14: New footings;
- A-15: Ground mat repairs;
- A-16: Remediation of small spills;**
- A-17: Clearing vegetation by hand within the property boundary of a fenced substation;
- A-18: Application of soil sterilants and herbicides within the property boundary of a fenced substation;
- A-19: Application of pesticides within the property boundary of a fenced substation and within 10 feet outside of the fencing; and**
- A-20: Maintenance or installation of oil containment structures.**

Transmission Line Maintenance

- A-21: Ground and aerial patrols;
- A-22: Ground wire maintenance;
- A-23: Aircraft warning device maintenance;
- A-24: Insulator maintenance;
- A-25: Bird guard maintenance;
- A-26: Cross-arm maintenance on wood pole structures;
- A-27: Emergency manual removal and/or pruning of danger trees or vegetation;
- A-28: Steel members of steel transmission line structures;
- A-29: Hardware on wood and steel transmission line structures;
- A-30: Dampener maintenance;
- A-31: X-brace and knee brace maintenance;
- A-32: Ground spike maintenance on wood pole structures;**
- A-33: Ground rod maintenance;
- A-34: Armor rod maintenance and clipping-in structures;
- A-35: Conductor upgrade, replacement, and/or maintenance;**

- A-36: Overhead ground-wire (OHGW) upgrade, replacement, and/or maintenance;**
- A-37: Wood preservative maintenance on wooden pole structures;**
- A-38: Routine minor erosion prevention at bases of poles or structures;**
- A-39: Emergency minor erosion control at bases of poles or structures to stabilize;**
- A-40: Remediation of small spills;**
- A-41: Antennae maintenance; and
- A-42: Structure mile marker maintenance.

Communication System

- A-43: Microwave radio tower maintenance;
- A-44: Communication tower and antenna maintenance;
- A-45: Light beacon maintenance;
- A-46: Microwave dish maintenance;
- A-47: Parabolic dish maintenance;
- A-48: Periodic antenna tower climbing inspections; and
- A-49: Maintenance or installation of propane tanks.**

Facilities Maintenance

- A-50: Building maintenance including interior and exterior painting; and roof, ceiling, floor, window, and door maintenance;
- A-51: Clearing vegetation by hand within the property boundary of fenced maintenance facilities;
- A-52: Application of soil sterilants and herbicides within the property boundary of fenced maintenance facility; and
- A-53: Application of pesticides within the property boundary of fenced maintenance facility and within 10 feet outside of the fencing.**

Category B – Routine Maintenance Activities

Category B maintenance activities include some of the typical repair tasks that occur along the existing ROW. Category B actions have the potential to cause minimal effects on sensitive resources, and may include, but are not limited to, the use of rubber-tire vehicles such as bucket trucks, backhoes, front end loaders, cranes, auger trucks, bobcats, and pole trucks. In addition to the SOPs, WAPA implements all Project Conservation Measures (PCMs) identified for resources in the work area for Category B maintenance activities. Typical activities under Category B activities include, but are not limited to:

Transmission Line Maintenance

- B-1: Maintenance and repair of existing culverts;
- B-2: Removal of soil deposition around tower legs;
- B-3: Installation or replacement of underground and overhead power, communication, or ground electrical line (less than 100 feet);
- B-4: Ground anchors maintenance;
- B-5: Wood pole maintenance;**

- B-6: Maintenance, grading and repair of existing access roads to approved standards;**
- B-7: Remediation of erosional features on access roads, and sources or causes of the erosion;**
- B-8: Remediation of small spills;**
- B-9: Installation of minor rip-rap on creeks and rivers;**
- B-10: Application of herbicides or soil sterilants;**
- B-11: Placement of fill or rock(s) around existing culverts;
- B-12: Placement of fill or rock(s) around existing towers or structures;
- B-13: Vehicle and equipment staging;
- B-14: Installation and repair of fences and gates;
- B-15: Installation or replacement of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet);**
- B-16: Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet);**
- B-17: Manual removal and/or pruning of danger trees or vegetation; and
- B-18: Mechanical vegetation management by means of masticators or other similar mechanical equipment.

Communication System Maintenance

- B-19: Foundations or footings maintenance;
- B-20: Installation of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet);**
- B-21: Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet);**
- B-22: Installation of equipment on existing towers;**
- B-23: Maintenance and repair of existing culverts;
- B-24: Remediation of small spills;**
- B-25: Application of soil sterilants and herbicides; and
- B-26: Maintenance and repair of existing access roads.**

Category C-New Infrastructure

Maintenance activities in Category C have the potential to cause adverse effects on sensitive resources if PCMs are not implemented. Category C tasks are generally those maintenance activities that disturb larger areas and utilize heavy equipment. Category C maintenance equipment includes, but is not limited to, the use of steel-tracked and/or rubber-tire bulldozers, graders, backhoes, and front-end loaders. Typical activities under Category C activities include, but are not limited to:

Transmission Line and Communication System Maintenance

- C-1: **Adding new access roads within the existing legal right-of-way;**
- C-2: Installation of new culverts;
- C-3: Installation of new foundation for storage building at existing facilities;
- C-4: Erosion-control projects at existing facilities;
- C-5: Reconductoring;

- C-6: Mechanical vegetation management by means of bulldozers or othersimilar mechanical equipment;
- C-7: Tower/pole relocation/realignment within the existing right-of-way;
- C-8: Installation or replacement of underground and overhead power, communication, fiber optics, or ground electrical line (greater than 100 feet);**
- C-9: Installation or replacement of power, communication, fiber optics, or electrical line over water features (greater than 100 feet);and**
- C-10: Remediation of small spills.**

Table 2-1 Category A: Inspection and Minor Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
Substation Maintenance		
A-16: Remediation of small spills	Remediation of small spills and hazardous materials (less than 1 gallon)	No. This activity has remained unchanged. The volume of spill was removed from the description because the volume doesn't necessarily relate to the severity of the spill. This activity is for remediation of small and minor spills.
A-19: Application of pesticides within the property boundary of a fenced substation and within 10 feet outside of the fencing	Application of soil sterilants and herbicides within the property boundary of a fenced substation	No. This activity has remained unchanged. In addition to application of pesticides within the property boundary, pesticides are also applied as necessary within 10 feet outside of the fencing. Potential disturbance and impacts are similar in nature and magnitude, and are minimized through adherence to the SOPs identified in the June 2010 Final EA.
A-20: Maintenance or installation of oil containment structures	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
Transmission Line Maintenance		
A-32: Ground spike maintenance on wood pole structures	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
A-35: Conductor upgrade, replacement, and/or maintenance	Conductor upgrade/maintenance	No. This activity has remained unchanged. The description was updated to clarify that routine minor O&M activities also included the replacement of conductors as needed.

Table 2-1 Category A: Inspection and Minor Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
A-36: Overhead ground-wire (OHGW) upgrade, replacement, and/or maintenance	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
A-37: Wood preservative maintenance on wooden pole structures	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
A-38: Routine minor erosion prevention at bases of poles or structures	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
A-39: Emergency minor erosion control at bases of poles or structures to stabilize	Emergency placement of rocks at bases of poles or structures to stabilize small eroded areas.	No. This activity has remained unchanged. "Placement of rocks" was updated with "minor erosion control" because rocks are not necessarily the best method to control erosion in emergency situations.
A-40: Remediation of small spills	Remediation of small spills and hazardous materials (less than 1 gallon)	No. This activity has remained unchanged. The volume of spill was removed from the description because the volume doesn't necessarily relate to the severity of the spill. This activity is for remediation of small and minor spills.
Communication System Maintenance		
A-49: Maintenance or installation of propane tanks	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine minor O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.

Table 2-1 Category A: Inspection and Minor Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
Facilities Maintenance		
A-53: Application of pesticides within the property boundary of fenced maintenance facility and within 10 feet outside of the fencing	Application of soil sterilants and herbicides within the property boundary of fenced maintenance facility	No. This activity has remained unchanged. In addition to application of pesticides within the property boundary, pesticides are also applied as necessary within 10 feet outside of the fencing. Potential disturbance and impacts are similar in nature and magnitude, and are minimized through adherence to the SOPs identified in the June 2010 Final EA.

Table 2-2 Category B: Routine Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
Transmission Line Maintenance		
B-5: Wood pole maintenance	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
B-6: Maintenance, grading and repair of existing access roads to approved standards	Grading existing access roads	No. This activity has remained unchanged. Description was updated to clarify that grading is not the only O&M activity for roads and that road maintenance and upgrades are necessary to meet approved standards.
B-7: Remediation of erosional features on access roads, and sources or causes of the erosion	Filling of erosional features on access roads	No. This activity has remained unchanged. Description was updated for clarification. Addressing erosion on access roads involves remediating the erosional features and addressing the causes of the erosion.

Table 2-2 Category B: Routine Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
B-8: Remediation of small spills	Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)	No. This activity has remained unchanged. The volume of spill was removed from the description because the volume doesn't necessarily relate to the severity of the spill. This activity is for remediation of small and minor spills.
B-9: Installation of minor riprap on creeks and rivers	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
B-10: Application of herbicides or soil sterilants	Application of herbicides	No. This activity has remained unchanged. Description was updated for clarification. Routine O&M activities may include application of soil sterilants in addition to herbicides.
B-15: Installation or replacement of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet)	Installation or replacement of underground and overhead power, communication, or ground electrical line (less than 100 feet)	No. This activity has remained unchanged. Description was updated for clarification. Routine O&M activities also include installation or replacement of fiber optics and ground wire.
B-16: Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet)	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA.	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
Communication System Maintenance		
B-20: Installation of underground and overhead power, communication, fiber optics, ground wire, or ground electrical line (less than 100 feet)	Installation of underground and overhead power, communication, or ground electrical line (less than 100 feet)	No. This activity has remained unchanged. Description was updated for clarification. Routine O&M activities also include installation or replacement of fiber optics and ground wire.

Table 2-2 Category B: Routine Maintenance Activities Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
B-21: Installation or replacement of power, communication, fiber optics, OHGW, or electrical line over water features (less than 100 feet)	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
B-22: Installation of equipment on existing towers	Installation of cellular equipment onto existing infrastructure	No. This activity has remained unchanged. Description was updated for clarification. Equipment that may be installed on existing towers is not necessarily limited to cellular equipment.
B-24: Remediation of small spills	Remediation of small spill of oil and hazardous materials (between 1 and 10 gallons)	No. This activity has remained unchanged. The volume of spill was removed from the description because the volume doesn't necessarily relate to the severity of the spill. This activity is for remediation of small and minor spills.
B-26: Maintenance and repair of existing access roads	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.

Table 2-3 Category C: New Infrastructure Comparison of Updated Description of Typical Activities with Description Provided in the June 2010 Final EA

Current Updated Description	Description from June 2010 Final EA	Substantial Change (Y/N)
Transmission Line and Communication System Maintenance		
C-1: Adding new access roads within the existing legal right-of-way	Adding new access roads	No. This activity has remained unchanged. Description was updated to clarify that new access roads are limited to the existing legal right-of-way.
C-8: Installation or replacement of underground and overhead power, communication, fiber optics, or ground electrical line (greater than 100 feet)	Installation or replacement of underground and overhead power, communication, or ground electrical line (greater than 100 feet)	No. This activity has remained unchanged. Description was updated for clarification. Routine O&M activities also include installation or replacement of fiber optics and ground wire.
C-9: Installation or replacement of power, communication, fiber optics, or electrical line over water features (greater than 100 feet)	N/A. This activity was not included in the list of typical activities in the June 2010 Final EA	No. This activity was added to the list of typical activities because it is a routine O&M activity. The disturbance and impacts associated with this activity are similar in nature and magnitude to the other typical activities identified in the June 2010 Final EA.
C-10: Remediation of small spills	Remediation of a small spill of oil and hazardous materials (greater than 10 gallons)	No. This activity has remained unchanged. The volume of spill was removed from the description because the volume doesn't necessarily relate to the severity of the spill. This activity is for remediation of small and minor spills.

2.1.3 Changes in Standard Operating Procedures and Project Conservation Measures

There have been no substantial changes in SOPs or PCMs for the North Area Program since the June 2010 Final EA; however, minor updates and additional PCMs were added for clarity and additional guidance. WAPA has incorporated numerous SOPs and PCMs into its ongoing O&M activities in accordance with its objectives to safely balance environmental concerns with system reliability. SOPs and PCMs are guidelines and directives utilized by WAPA's maintenance crews in planning and logistics to determine the ideal scheduling of specific O&M activities, as well as in determining

how specific activities should be executed to avoid or minimize the potential for any adverse effects on environmental resources.

While there have been no substantial changes in SOPs or PCMs for the North Area Program since the June 2010 Final EA, there have been minor updates to improve clarity in guidance and direction. Most of these changes have been minor rephrasing or additional language to maintain consistency with WAPA’s other O&M maintenance programs in northern California (i.e., Sacramento Valley and San Joaquin Valley). Other minor changes in the SOPs are identified in Table 2-4 and include modification of a cultural resource SOP (C-SOP-4) into two separate SOPs (C-SOP-4a and C-SOP-4b), the addition of two land use SOPs (LU-SOP-4 and LU-SOP-5), and modification of two water resources SOPs (WR-SOP-2 and WR-SOP-8). Other minor changes in the PCMs are identified in Table 2-5 and include additional PCMs for green sturgeon critical habitat (PCM-B052a) and longfin smelt (PCM-B120), modification of PCMs for western yellow-billed cuckoo (PCM-B083), modification of two cultural resources PCMs (PCM-C001 and PCM-C002), and the addition of two paleontological resources PCMs (PCM-P001 and PCM-P002). As detailed in Table 2-5 and Table 2-5, none of the changes in the SOPs or PCMs constitute a “substantial change” that would require additional NEPA analysis.

Table 2-4 Changes to SOPs Since the June 2010 Final EA

Current SOP	SOP from June 2010 Final EA	Substantial Change (Y/N)
Cultural Resources		
<p>C-SOP-4a: Upon discovery of potential buried, non-human remains cultural materials, 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. WAPA will comply with provisions in the NHPA and consult with the SHPO and appropriate tribes to determine measures to avoid the resource or mitigate during maintenance activities.</p> <p>C-SOP-4b: Upon inadvertent discovery of potential buried human remains, 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. WAPA will comply with provisions in the NHPA and the Native</p>	<p>C-SOP-4: Upon discovery of potential buried cultural materials, 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. WAPA will comply with provisions in the National Historic Preservation Act and consult with the California State Historic Preservation Officer and appropriate tribes to determine measures to avoid the resource or mitigate during maintenance activities.</p>	<p>No. This SOP was modified by WAPA to minimize the potential even further for adverse effects on cultural resources, and to provide further clarification regarding treatment of cultural resources.</p>

Table 2-4 Changes to SOPs Since the June 2010 Final EA

Current SOP	SOP from June 2010 Final EA	Substantial Change (Y/N)
<p>American Graves Protection and Repatriation Act (NAGPRA; 43 CFR Part 10) and consult with the SHPO and appropriate tribes to determine measures to avoid the resource or mitigate during maintenance activities.</p>		
Land Use		
<p>LU-SOP-4: WAPA will follow the guidelines established in Section 1, Chapter 3.1, "Protection of Underground Infrastructure," Article 2 of California Government Code 4216 4216.9. WAPA will contact the appropriate regional notification center at least two days prior to any proposed excavation. This contact will result in an Underground Service Alert notifying the utilities that have buried lines within 1,000 feet of the proposed maintenance activities. Representatives of the utilities are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area. This activity will result in all underground electric, water, gas, cable, or telecommunications lines within the vicinity of the proposed excavation being marked. WAPA will avoid impacts to marked utility locations, and will coordinate with utility owners, as appropriate, to avoid impacts from project activities.</p>	<p>N/A. The June 2010 Final EA did not include this SOP. WAPA has since incorporated this SOP into the ongoing North Area Program to provide additional direction regarding procedures to ensure that underground utilities are marked and avoided during O&M activities that involve excavation.</p>	<p>No. This SOP was incorporated into the North Area Program to provide improved clarity and direction regarding standard procedures for O&M activities that involve excavation.</p>

Table 2-4 Changes to SOPs Since the June 2010 Final EA

Current SOP	SOP from June 2010 Final EA	Substantial Change (Y/N)
<p>LU-SOP-5: WAPA will coordinate, as necessary, with Federal, state, and local land use authorities, as applicable, required, and appropriate, as part of each proposed activity to ensure WAPA’s activities are consistent with applicable land use plans and policies at the time of the activity.</p>	<p>N/A. The June 2010 Final EA did not include this SOP. WAPA has since incorporated this SOP into the ongoing North Area Program to provide additional direction regarding WAPA’s policy for coordinating with land managers, landowners, and agencies.</p>	<p>No. This SOP was incorporated into the North Area Program to provide improved clarity and direction regarding coordination with land managers, landowners, and agencies.</p>
Water Resources		
<p>WR-SOP-2: Should WAPA need to relocate a structure or access road affecting waters of the United States or waters of the State, WAPA will first consult with TANC (for TANC-owned facilities), and as appropriate for TANC and WAPA, consult with the Corps and/or State Water Board. TANC will be kept fully informed regarding these consultations and will have the option of attending such meetings at TANC’s discretion. Additional consultation with USFWS, NMFS, and CDFW may also be required under these same communications protocols.</p> <p>Bridges will be used at new stream crossings wherever possible. Any activity with the potential to cause the discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the United States will be subject to regulations enforced by the Corps under the CWA and could require a permit. WAPA Natural Resources Department will be contacted. Any discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the</p>	<p>WR-SOP-2: Should WAPA need to relocate a structure or access road affecting waters of the United States or waters of the state, WAPA will consult with TANC and, as appropriate, the U.S. Army Corps of Engineers (USACE) and the California State Water Resources Control Board (SWRCB). Bridges will be used at new stream crossings wherever possible. Any discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the United States will be subject to USACE regulations under the Clean Water Act and could require a permit. WAPA Natural Resources Department will be contacted. Any discharge of material (displaced soils and, in certain circumstances, vegetation debris) within waters of the state will be subject to SWRCB regulations under the Porter-Cologne Water Quality Control Act and applicable Clean Water Act regulations as administered on behalf of the United States by the SWRCB.</p>	<p>No. This SOP was revised to improve clarity and avoid confusion, and to be consistent with WAPA’s other northern California O&M programs. WAPA does not necessarily need to consult with TANC (e.g., non-TANC-owned facilities), but the revised measure clarifies coordination with TANC when activities at TANC-owned facilities require regulatory permitting. All or nearly all waters of the state within the project area also qualify as waters of the United States and permitting for discharge is typically under the federal Clean Water Act and not under the Porter-Cologne Water Quality Control Act. If any waters of the state, which are not also waters of the United States, will be affected by maintenance activities, permitting under the Porter-Cologne Water Quality Control Act may be required.</p>

Table 2-4 Changes to SOPs Since the June 2010 Final EA

Current SOP	SOP from June 2010 Final EA	Substantial Change (Y/N)
<p>United States and waters of the State will be subject to State Water Board regulations under the applicable CWA and Porter-Cologne Water Quality Control Act regulations.</p>		
<p>WR-SOP-8: All fill or riprap placed within a stream or river channel will be limited to the minimum area required for access or protection of existing WAPA facilities.</p>	<p>WR-SOP-8: Impacts to areas under the jurisdiction of the USACE and SWRCB 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 the O&M activity, which will identify and quantify the acreage of each jurisdictional area (wetland, riparian, etc.). WAPA will provide creation, restoration, or preservation mitigation consistent with the 404/401 permitting requirements. The mitigation will be implemented prior to or concurrent with the action, will be in-kind habitat, will include the appropriate buffers to protect the functions and values of the jurisdictional mitigation area, and is anticipated will be near the impact or in the same watershed (Valley) or Resource Conservation District (Redding/Trinity) or Resource Conservation and Development agency (Round Mountain/Modoc). The mitigation ratio will be determined during the permit process, but within a range of 1:1 to 4:1, depending on the sensitivity of the habitat and other factors. If required, annual reporting to USACE and/or</p>	<p>No. This SOP was revised to improve clarity and avoid confusion, and to be consistent with WAPA’s other northern California O&M programs. WAPA is required to obtain permits for discharge of dredged or fill materials into waters of the United States. The impacts and required compensatory mitigation are determined during the permitting process. The intent of this SOP is to ensure that material placed into streams is limited to the minimum amount necessary, so the SOP was revised to clearly state this directive.</p>

Table 2-4 Changes to SOPs Since the June 2010 Final EA

Current SOP	SOP from June 2010 Final EA	Substantial Change (Y/N)
	SWRCB will provide a complete accounting of impacts and mitigation.	

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
Green Sturgeon		
<p>PCM-B052a:</p> <p>Category A, B, and C: Critical habitat: There may be additional conditions imposed on O&M activities in critical habitat, resulting from formal (Section 7) consultation with USFWS and NMFS.</p> <p>Follow PCM-B050.</p> <p>For Category B and C activities, a description of the O&M activity, including location and duration, will be kept on file at WAPA's Natural Resources Department in support of NMFS reporting requirements.</p>	<p>N/A. The June 2010 Final EA did not include this PCM. WAPA has since incorporated this PCM into the ongoing North Area Program to ensure compliance with ESA requirements for greensturgeon critical habitat.</p>	<p>No. Green sturgeon was addressed in June 2010 Final EA. O&M activities are not likely to adversely affect critical habitat for green sturgeon. NMFS concurred with this determination in their ESA consultation letter dated December 23, 2009.</p>
Longfin Smelt		
<p>PCM-B120:</p> <p>Category A: Follow SOPs and PCM-W002.</p> <p>Category B: Follow PCM-W002. Because of potential range overlap with listed salmonids, instream work will occur only within work windows specified for listed salmon and steelhead (June 1 to September 1), unless otherwise authorized by USFWS. Instream O&M activities will be completely isolated from the active flowing stream. This will</p>	<p>N/A. The June 2010 Final EA did not include this PCM. WAPA has since incorporated this PCM into the ongoing North Area Program to further minimize the potential for adverse effects on longfin smelt.</p>	<p>No. Longfin smelt was addressed in June 2010 Final EA. This PCM was incorporated into the North Area Program to minimize the potential even further for effects on longfin smelt.</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>be accomplished by building cofferdams or temporary berms to keep O&M activities out of stream channels. Cofferdams or temporary berms will be constructed using non-erodible, clean materials. Water from these O&M envelopes will be transported off site or pumped to sediment or percolation basins. Cofferdams or berms will not impede the movement of fish at any time, and pump intakes will be screened to meet USFWS criteria. A description of the O&M activity, including location and duration, will be kept on file at WAPA's Natural Resources Department in support of USFWS reporting requirements.</p> <p>Category C: Follow all measures listed for A and B above. Prior to site mobilization, WAPA will provide notification of the O&M activity to the appropriate Federal land manager, landowner, or agency.</p>		
Western Yellow-billed Cuckoo		
<p>PCM-B083 (revised):</p> <p>Category A: Follow SOPs and PCM-W002.</p> <p>Category B and C: Follow PCM-W002. From May 1 to September 15, herbicide application (with the exception of direct application) and tree/vegetation disturbance will be prohibited in Great Valley riparian forest and scrub habitats at the crossings of the Sacramento River and Butte Slough by the joint Olinda-Obanion/Keswick-Obanion lines, at the crossing of the Feather River by the joint Obanion-Elverta</p>	<p>PCM-B083:</p> <p>Category A: Follow SOPs and PCM-W002.</p> <p>Category B and C: Follow PCM-W002. From March 15 to September 31 herbicide application (except for direct application) or tree/vegetation disturbance will be prohibited in riparian forest OR a qualified biologist will conduct nest surveys. If nesting activity is detected, a qualified biologist will mark and monitor an appropriate buffer zone around the nest within which all O&M activities</p>	<p>No. This PCM was modified in consultation with the USFWS to minimize the potential even further for adverse effects on the species.</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>#1/#2 and joint Obanion-Elverta (Sacramento Municipal Utility District/Obanion-Natomas lines, and where the Elverta-Hurley #1/#2 and Hurley-Tracy #1/#2 lines parallel the American River near Discovery Park and the California Expo Center.</p>	<p>and herbicide applications will be prohibited from March 15 to September 31.</p>	
<p>Cultural Resources</p>		
<p>PCM-C001: (Surveyed Areas – Resource Present)</p> <p>Category A: Vehicles or equipment will not be driven over archaeological sites. If infeasible, only vehicles with rubberized tires/treads will be allowed within sites; no skidding or steel-tracked equipment. Vehicles and equipment will be staged outside of cultural resource sites. Only the following activities will be allowed in cultural sites: manual clearing of vegetation and chip/broadcast disposal of cut vegetation.</p> <p>Category B and C: Cultural resource sites located within an area where ground-disturbing activity will take place will be flagged for avoidance, and ground-disturbing activities will avoid all cultural resource sites. Sites that cannot be avoided will require further consultation with the SHPO prior to any ground-disturbing activity. Use of petroleum-based herbicides will be prohibited in cultural sites. A monitor could be required during ground-disturbing activities.</p> <p>Category A, B, and C: Upon discovery of potential buried</p>	<p>PCM-C001: (Surveyed Areas – Resource Present)</p> <p>Category A: Avoid driving vehicles or equipment over archeological sites. If infeasible, only vehicles with rubberized tires/treads are allowed within sites; no skidding or steel-tracked equipment. Stage vehicles and equipment outside of cultural resource sites. Only the following activities are allowed in cultural sites: manual clearing of vegetation, and chip/broadcast disposal of cut vegetation.</p> <p>Category B and C: Cultural resource sites that are located within an area where ground-disturbing activity will take place shall be flagged for avoidance and ground-disturbing activities shall avoid all cultural resource sites. Sites that cannot be avoided will require further consultation with SHPO prior to any ground-disturbing activity. Use of petroleum-based herbicides is prohibited in cultural sites. A WAPA-approved archeological monitor may be required during ground disturbing activities. Contact WAPA’s Natural Resource Department.</p>	<p>No. This PCM was modified by WAPA to minimize the potential even further for adverse effects on cultural resources.</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>cultural materials, including human remains, work within 50 feet of the find will be halted and the discovery reported immediately to the WAPA Natural Resources Department or other designated point of contact. WAPA will comply with provisions in the NHPA (and NAGPRA, in the event of buried human remains) and consult with the SHPO (and tribes, as appropriate) to determine measures to avoid the resource or mitigate during maintenance activities.</p>		
<p>PCM-C002: (Areas Not Surveyed or Not Adequately Surveyed)</p> <p>Category A, B, and C: Crews will be instructed to pay particular attention for the presence or discovery of cultural materials in areas where protocol-level surveys could not be conducted.</p> <p>Upon discovery of potential buried cultural materials, including human remains, work within 50 feet of the find will be halted and the discovery reported immediately to the WAPA Natural Resources Department or other designated point of contact. WAPA will comply with provisions in the NHPA (and NAGPRA, in the event of buried human remains) and consult with the SHPO (and tribes, as appropriate) to determine measures to avoid the resource or mitigate during maintenance activities.</p> <p>A WAPA-approved archaeologist will be required to monitor such areas during any ground-disturbing maintenance activities.</p> <p>If cultural resources were discovered during project</p>	<p>PCM-C002: (Not Protocol-Surveyed Areas and Not Surveyed Areas)</p> <p>Category A: Instruct crews to pay particular attention for the presence or discovery of cultural materials in areas where protocol-level surveys were not previously conducted. Upon discovery of potential buried cultural materials, 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. WAPA will comply with provisions in the National Historic Preservation Act and consult with the California State Historic Preservation Officer to determine measures to avoid the resource or mitigate during maintenance activities. If cultural resources are discovered, provisions in PCM-C001 shall be followed.</p> <p>Category B: Follow all measures listed for A above. A WAPA-approved archeological monitor may be required during ground-disturbing activities. Contact</p>	<p>No. This PCM was modified by WAPA to minimize the potential even further for adverse effects on cultural resources.</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>activities, provisions in PCM-C001 will be followed.</p>	<p>WAPA’s Natural Resource Department.</p> <p>Mastication activities shall adhere to the following BMPs:</p> <ul style="list-style-type: none"> ▪ WAPA will require mastication operators to prevent blading devices from removing vegetation at ground level to avoid soil disturbance. All mowed vegetation shall not be cut below 6 inches. ▪ Mastication equipment will not be used within areas recently subjected to heavy rains to prevent rutting in wet soils from equipment tires. ▪ A qualified archaeologist will be on site during mastication activities to monitor survey areas being cleared of vegetation. Should any cultural resources be detected, mastication activities will cease in the area until an assessment and the significance of the find is made. Results of the monitoring and survey activities will be provided in the annual report. <p>Category C: Follow measures listed for A and B above. A WAPA-approved archeological monitor may be required. Contact WAPA’s Natural Resource Department.</p>	
Paleontological Resources		
<p>PCM-P001: (Surveyed Areas – Resource Present)</p> <p>Category A: Vehicles or equipment should not be driven over known paleontological sites. If infeasible, only vehicles with</p>	<p>N/A. The June 2010 Final EA did not include this PCM. The O&M activities conducted under the North Area Program have little to no potential to adversely affect paleontological resources. WAPA has since incorporated this PCM</p>	<p>No. Paleontological resources are addressed in the June 2010 Final EA. This PCM was incorporated into the North Area Program to minimize the potential even</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>rubberized tires/treads will be allowed within sites; no skidding or steel-tracked equipment. Only the following activities will be allowed in known paleontological sites: manual clearing of vegetation and chip/broadcast disposal of cut vegetation.</p> <p>Category B and C: Known paleontological resource sites located within an area where ground-disturbing activity will take place will be flagged for avoidance, and ground-disturbing activities will avoid all known paleontological resource sites, to the extent feasible. A WAPA-approved paleontologist or archaeologist could be required to monitor known paleontological sites during ground-disturbing activities.</p> <p>Category A, B, and C: Upon discovery of potential buried vertebrate fossils, work within 50 feet of the find will be halted and the discovery reported immediately to the WAPA Natural Resources Department or other designated point of contact. WAPA will determine measures to avoid the resource or mitigate during maintenance activities.</p>	<p>into the ongoing North Area Program to minimize the potential even further for adverse effects on paleontological resources.</p>	<p>further for adverse effects on paleontological resources.</p>
<p>PCM-P002: (Areas Not Surveyed or Not Adequately Surveyed)</p> <p>Category A, B, and C: Crews will be instructed to pay particular attention for the presence or discovery of paleontological materials in areas where paleontological surveys have not been conducted. Upon discovery of potential buried vertebrate fossils, work within 50 feet of the find will be halted and the</p>	<p>N/A. The June 2010 Final EA did not include this PCM. The O&M activities conducted under the North Area Program have little to no potential to adversely affect paleontological resources. WAPA has since incorporated this PCM into the ongoing North Area Program to minimize the potential even further for adverse effects on paleontological resources.</p>	<p>No. Paleontological resources are addressed in the June 2010 Final EA. This PCM was incorporated into the North Area Program to minimize the potential even further for adverse effects on paleontological resources.</p>

Table 2-5 Changes to PCMs Since the June 2010 Final EA

Current PCM	PCM from June 2010 Final EA	Substantial Change (Y/N)
<p>discovery reported immediately to the WAPA Natural Resources Department or other designated point of contact. WAPA will determine measures to avoid the resource or mitigate during maintenance activities. A WAPA-approved paleontologist or archaeologist may be required to monitor areas with suspected vertebrate paleontological resources during any ground-disturbing maintenance activities. If paleontological resources were discovered during project activities, provisions in PCM-P001 will be followed.</p>		

Chapter 3. Analysis

3.1 Introduction

This section presents the results of the analysis that was performed for each resource area addressed in the June 2010 Final EA. The purpose of the analysis is to provide an evaluation of whether there have been any significant new circumstances or new information that may be relevant to environmental concerns or environmental impacts.

3.2 Analysis

The analysis performed for each resource area addressed in the June 2010 Final EA is provided below. Given that there have not been any substantial changes in the project area or project activities for the North Area Program since the June 2010 Final EA, the analysis is focused on evaluating if there have been any new circumstances or information for the resource areas since the June 2010 Final EA. The results of the analysis are summarized in Table 3-1. A discussion of the results of the analysis for each of the resource areas is provided following the table.

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
Habitats and Vegetation	No new significant impacts on habitats and vegetation beyond those identified in the June 2010 Final EA would occur. Minor changes in vegetation management were required to comply with current NERC standards and federal land management agency requirements. WAPA continues to implement the SOPs and PCMs to protect sensitive resources during vegetation management activities.	No
Special-Status Plants and Plant Communities	One plant species that could occur within the North Area Program project was designated a “candidate” species under CESA since the June 2010 Final EA. No plant species that could occur within the North Area Program project have been listed, proposed, or designated as “candidate” species under the ESA since the June 2010 Final EA. There are six plant species that are currently designated as “sensitive” by NPS or BLM that were not included in the June 2010 Final EA and that could occur in the North Area Program’s Redding-Trinity region. WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. None of the changes since the June 2010 Final	No

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
	EA constitute new significant circumstances or information for special-status plants and plant communities.	
Wildlife	WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Given WAPA’s coordination with federal agencies when activities are conducted on their lands and WAPA’s existing procedures for protection of biological resources, there are no new significant circumstances or information related to wildlife.	No
Special-Status Wildlife	<p>There are several species addressed in the June 2010 Final EA for which there has been a change in designation of “sensitive” status by BLM, NPS, and/or USFS since the June 2010 Final EA. All these species were previously addressed in the June 2010 Final EA, and WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies.</p> <p>There are eight species addressed in the June 2010 Final EA and four species not addressed in the June 2010 Final EA for which there has been a change in ESA or CESA status since the document was written. PCMs were identified for the eight species addressed in the June 2010 Final EA, and the remaining four species have limited potential to be affected by the project. There have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA.</p> <p>There are several special-status species that were not addressed in the June 2010 Final EA but could occur within the North Area Program project area, and that are currently designated as “sensitive” by BLM and/or USFS and/or as species of special concern by CDFW. For the species designated as “sensitive” by BLM and/or USFS, WAPA continues to coordinate with BLM and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. As discussed in Section 3.7.2 of the June 2010 Final EA, WAPA affords protection to state- and federally listed species throughout the project area. In addition, species with agency-specific status (e.g., USFS sensitive) are afforded protection on</p>	No

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
	<p>agency-specific lands. Special-status species outside of these parameters (e.g., CDFW species of special concern) are considered, but PCMs are not necessarily designated specifically for these species. The existing SOPs and PCMs, especially those designed to protect biological resources and aquatic habitat, routinely implemented by WAPA as part of the ongoing North Area Program avoid or minimize the potential for adverse effects on these species.</p> <p>There is one state-listed species, Shasta salamander, that was addressed in the June 2010 Final EA, but at that time was determined to either occur outside the impact area of O&M activities or to occur in habitats not affected by O&M activities. Based on current information on the range of Shasta salamander and habitats utilized by the species, portions of the North Area Program project area lie within habitats that could be used by Shasta salamander. As part of the ongoing North Area Program, WAPA currently implements BMPs for Shasta salamander in areas where there is a potential for its occurrence.</p> <p>There are no significant new information or circumstances relating to special-status wildlife.</p>	
Fish	<p>WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Given WAPA's coordination with federal agencies when activities are conducted on their lands and WAPA's existing procedures for protection of biological resources, there are new significant circumstances or information related to fish.</p>	No
Special-Status Fish	<p>Since the June 2010 Final EA: 1) there have been changes in designation of "sensitive" status by BLM, NPS, and/or USFS for several species; 2) USFWS added longfin smelt to the list of candidate species under the ESA; 3) WAPA has identified several CDFW species of special concern that could occur within the North Area Program project area, but that were not addressed in the June 2010 Final EA; and 4) USFWS designated critical habitat for Lost River sucker and shortnose sucker.</p> <p>WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities</p>	No

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
	<p>continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. None of the changes since the June 2010 Final EA constitute new significant circumstances or information for special-status fish.</p>	
Cultural Resources	<p>Given that WAPA: 1) has conducted extensive field surveys to inventory archaeological and historic sites within or near the North Area Program facilities; 2) maintains a GIS database to documents locations of cultural resource sensitivity; 3) implements SOPs and PCMs that protect both known and unknown sensitive cultural resources; and 4) complies with NHPA Section 106 requirements and ACHP regulations through adherence to the terms and measures of the February 2010 PA, there is no new information or circumstances of concern for cultural resources.</p>	No
Paleontological Resources	<p>Given that: 1) there have been no changes in the project area or project activities since the June 2010 Final EA; 2) the ongoing O&M activities have been conducted in the same or substantially similar manner since initial construction and operation of the facilities; 3) the O&M activities have little to no potential to adversely affect paleontological resources; and 4) WAPA has implemented PCMs for paleontological resources to further minimize the potential for adverse effects, there are no new significant circumstances or information related to paleontological resources.</p>	No
Land Use	<p>WAPA has preemptive jurisdiction for O&M of the North Area Program facilities and is not subject to local land use and permitting requirements. However, WAPA does attempt to follow some county codes and general plans to the extent that it does not conflict with appropriate management of the North Area Program facilities and would not impose a direct regulation of WAPA. WAPA—as a federal agency—is not a party to any regional HCPs or NCCPs.</p> <p>North Area Program traverses lands managed by BLM, NPS, and USFS. As part of the ongoing North Area Program, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies.</p>	No

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
	There are no new significant circumstances or information related to land use.	
Recreation	The SOPs identified in the June 2010 Final EA for recreation, aesthetics, air quality, noise, and public health ensure that impacts on recreational areas are minimized to acceptable levels. There are no significant concerns or new information for recreational impacts that warrant additional NEPA analysis.	No
Aesthetics	WAPA continues to implement the SOPs for aesthetics identified in the June 2010 Final EA, and continues to collaborate with BLM, NPS, and USFS for activities conducted on federal lands. Given that O&M activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for aesthetics.	No
Water Resources	WAPA continues to implement the SOPs and PCMs identified in the June 2010 Final EA to protect water resources during O&M activities. Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to water resources.	No
Geology and Soils	WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect geology and soils during O&M activities. Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to geology and soils.	No
Public Health and Safety	Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to public health and safety.	No
Air Quality	WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect air quality. Given that there have been no changes in the project area or project activities and that SOPs continue to be implemented, there are no new significant circumstances that would impact air quality. Updated documentation for Federal, State, and local air district's standards and thresholds of significance were included. Conformity analysis was conducted and the project is exempt	No

Table 3-1 (Summary of the Results of the Analysis)

Resource Area	Summary	Significant New Circumstances or Information?
Noise	<p>from general conformity requirements. Project emissions were modeled for all equipment including helicopters and would not exceed <i>de minimis</i> thresholds for criteria pollutants. Project activities would continue to be temporary, intermittent, and of short duration.</p> <p>WAPA continues to implement the SOPs for noise identified in the June 2010 Final EA, and continues to collaborate with BLM, NPS, and USFS for activities conducted on federal lands. Given that the North Area Program activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for noise.</p>	No
Transportation	<p>The current workforce used to complete activities under the North Area Program is the same size as it was when the June 2010 Final EA was published, and substantially the same size as it was since the facilities were originally put into service. As such, there has not been a significant increase the number of vehicles used for the North Area Program; and there are no additional transportation impacts or concerns beyond those addressed in the June 2010 Final EA.</p>	No
Environmental Justice	<p>Given that O&M activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for environmental justice.</p>	No
Intentional Destructive Acts	<p>The O&M activities have occurred since initial construction and operation of the facilities and do not involve activities that would increase the potential for significant environmental effects due to intentional destructive acts. Based on past and current experience, intentional destructive acts are rare, limited in extent, and benign in overall impact. WAPA also takes reasonable and prudent measures to protect its infrastructure from destructive acts, including regular monitoring and periodic patrols of the facilities.</p>	No
Climate Change	<p>The O&M activities would not produce significant quantities of greenhouse gas emissions. Vegetation maintenance would continue to reduce the risk of wildfire. Greenhouse gas project emissions were modeled, and greenhouse gas emissions would not exceed thresholds of significance for local air districts.</p>	No

3.2.1 Habitats and Vegetation

Vegetation maintenance for the North Area Program ensures that vegetation does not interfere with human safety, transmission line conductors, towers, other hardware, or impede access to the transmission lines for maintenance crews. In general, vegetation maintenance is performed using a variety of methods including manual methods (hand-controlled, powered, or non-powered tools such as chainsaws and clippers), mechanical methods (such as heavy-duty mowers), and herbicidal applications (used either to prohibit or retard vegetative growth) as described in the June 2010 Final EA.

WAPA's IVM program (WAPA 2007) identifies various vegetation maintenance approaches that are used in specific areas based on the sensitivity of resources, reliability and safety issues, and environmental laws and regulations. IVM is a practice of managing undesirable vegetation in which action clearance thresholds are established and proactively monitored. For those areas that are in violation of the threshold, all possible control options are evaluated, an appropriate option is selected, and then it is implemented. Control options are based on worker and public safety, environmental impact, effectiveness, site characteristics (existing vegetation and regrowth rates), appropriate easement rights, and economics. Control options are also based on coordination with the appropriate landowner and /or land manager and the corresponding easement documents.

A combination of vegetation management practices is implemented for the North Area Program. These practices are consistent with the principles and objectives of IVM, contractual agreements in applicable easements, and current NERC transmission vegetation management reliability standards and required minimum clearance distances. WAPA's vegetation management plans stipulate line clearances to prevent hazards to system reliability. Clearance 1 distances represent the minimum post-maintenance vegetation clearance distance thresholds allowable, which are currently 23 feet high near 230-kV lines, and 29 feet high for 500-kV lines. The minimum clearance distances to be maintained always are no less than 5.3 feet from 230-kV conductors, and 11.3 feet from 500-kV conductors. WAPA does not clear the ground of all vegetation, but instead directs that lower growing grasses and forbs be maintained to provide ground cover, prevent soil erosion, provide habitat, and minimize potential fire and flame length severity through reduced fuel loading.

WAPA has been conducting vegetation management activities since the North Area Program facilities were constructed. WAPA is also required to comply with current NERC standards, and to maintain current coordination with federal agencies (e.g., Bureau of Land Management [BLM], National Park Service [NPS], U.S. Forest Service [USFS]) for vegetation management activities on federal lands. NERC standards and required minimum clearance distances are subject to change as new information and agency direction on best practices to protect human safety and system reliability become available. Additionally, WAPA continues to work with the appropriate federal agencies to determine specific requirements for vegetation management on their respective lands. No new significant impacts on habitats and vegetation beyond those identified in the June 2010 Final EA would occur as a result in minor changes in vegetation management to comply with current NERC standards and federal land management agency requirements. WAPA also continues to implement the SOPs and PCMs to protect sensitive resources during vegetation management activities.

Conclusion

There are no new significant circumstances or information for habitat and vegetation, and no further NEPA evaluation is required.

3.2.2 Special-Status Plants and Plant Communities

Special-status plants are defined as plant species whose geographic range and habitats overlap with the North Area Program boundaries and are:

- federally or state-listed, proposed for listing as threatened or endangered species, and candidate species;
- designated as “sensitive” by USFS for national forests affected by the North Area Program (i.e., Shasta-Trinity, Lassen, and Modoc National Forest);
- designated as “sensitive” by BLM (only on BLM lands); and
- considered sensitive by NPS (i.e., Whiskeytown National Recreation Area[NRA]).

To support preparation of the June 2010 Final EA, biological field surveys were conducted throughout the North Area Program project area. The survey areas included more than 800 miles of transmission line ROW, 250 miles of access roads, and seven WAPA-maintained communication facilities and their associated access roads. The surveys included mapping habitats and mapping of special-status species occurrences using a global positioning system (GPS) unit. Existing information on special-status plant species distribution and potential habitats was collected before surveys commenced. This included coordination with the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), National Marine Fisheries Service (NMFS), USFS, BLM, and NPS.

Field surveys were conducted between April and September 2005, with subsequent visits to select areas occurring during the winter and spring of 2006. Field surveys at the communication sites were conducted in November 2007. Two-person survey teams, including a wildlife biologist and a botanist, conducted meandering pedestrian surveys. Habitats were mapped and described according to a classification system based on Holland’s Preliminary Descriptions of the Terrestrial Communities of California (Holland 1986). Habitats were assessed for their potential to support special-status species and any special-status species that were encountered were documented. All biological survey results and locations were incorporated into WAPA’s O&M geographic information system (GIS) database. WAPA continues to maintain and update the GIS database as part of the ongoing North Area Program.

For the purposes of this SA, an updated information review was conducted to determine if any plant species that could occur within the North Area Program project area: 1) have been listed, proposed, or designated as “candidate” species under the federal Endangered Species Act or California Endangered Species Act since the June 2010 Final EA; or 2) have been designated as “sensitive” by USFS, BLM, or NPS since the June 2010 Final EA. In April 2021, a review of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) databases was completed to identify records of special-status species occurrences, location information, and habitat information.

Due to the physical extent of the North Area Program, species lists were generated by county, BLM field office area, NRA, or by the national forest in which facilities occur. The North Area Program passes through 17 counties, five BLM field office areas, one NRA, and three national forests. Species lists were compared against information from the biological surveys and habitat conditions within the North Area Program project area.

There is one plant species addressed in the June 2010 Final EA for which there has been a change in ESA or CESA status since the June 2010 Final EA. Shasta snow-wreath (*Neviusia cliftonii*) was listed as a candidate species under CESA on May 1, 2020. This species was addressed in the June 2010 Final EA, and PCMs were identified for it. As part of the ongoing North Area Program, WAPA continues to implement the SOPs and applicable PCMs identified in the June 2010 Final EA. There have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA, and thus no changes in impacts on this species. Therefore, no additional NEPA review is necessary. The changes in CESA listing status since the June 2010 Final EA are not considered significant new information or circumstances. There are six plant species that are designated as “sensitive” by NPS (one of these is also designated as “sensitive” by BLM) that were not included in the June 2010 Final EA and that could occur in the North Area Program’s Redding-Trinity region. These species are identified in Table 3-2.

Table 3-2 NPS and BLM Sensitive Plant Species Not Addressed in June 2010 Final EA

Species Name Common Name (Scientific Name)	Status (State/ Federal)	Agency Sensitive Species (USFS/BLM/ NPS)	General Habitat Description /Blooming Period	Region of Potential Occurrence (Valley/Redding -Trinity/Round Mountain- Modoc)
Elkgrass (<i>Carex geyeri</i>)	N/A	/ /NPS	Dry areas in mountain meadows, grasslands, and open forest. Elevation: 780–2,260 meters. Blooming period: May 1–August 30.	Redding-Trinity
Coville ceanothus (<i>Ceanothus pinetorum</i>)	N/A	—/—/NPS	Low lying shrub native to California. Elevation: 1,600–2,745 meters. Blooming period: May 1–July 31.	Redding-Trinity
MacNab’s cypress (<i>Cupressus macnabiana</i> or <i>Hesperocyparis macnabiana</i>)	N/A	—/—/NPS	Endemic to northern California, found growing in chaparral, oak woodland, and coniferous woodland. Elevation: 120– 1,530 meters. Blooming period: N/A.	Redding-Trinity
Nuttall’s pondweed (<i>Potamogeton epiphydrus</i> ssp. <i>nuttallii</i>)	N/A	—/—/NPS	Shallow water, ponds, lakes, streams, irrigation ditches. Elevation: 370–2,170 meters. Blooming period: July 1– September 30.	Redding-Trinity

Table 3-2 NPS and BLM Sensitive Plant Species Not Addressed in June 2010 Final EA

Species Name Common Name (<i>Scientific Name</i>)	Status (State/ Federal)	Agency Sensitive Species (USFS/BLM/ NPS)	General Habitat Description /Blooming Period	Region of Potential Occurrence (Valley/Redding -Trinity/Round Mountain- Modoc)
Sanford's arrowhead (<i>Sagittaria sanfordii</i>)	N/A	BLM/—/NPS	In standing or slow-moving freshwater ponds, marshes, and ditches. Elevation: 0–650 meters. Blooming period: May 1– October 31.	Redding-Trinity
Viburnum (<i>Viburnum ellipticum</i>)	N/A	—/—/NPS	Chaparral, cismontane woodland, lower montane coniferous forest. Elevation: 100–1,160 meters. Blooming period: May1–June 30.	Redding-Trinity

As discussed above, the plants identified in Table 3-2 are treated as special-status plants and afforded protection when activities are conducted on lands managed by the federal agency which has designated the plants as “sensitive”. As part of the ongoing North Area Program, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Among other measures, these SOPs include annual awareness training of WAPA crews for sensitive biological resources and biological pre-maintenance awareness training for contract crews. Given WAPA’s coordination with federal agencies when activities are conducted on their lands and WAPA’s existing procedures for protection of biological resources, there are no new significant circumstances or information related to special-status plants and plant communities.

Conclusion

There are no new significant circumstances or information for special-status plants and plant communities, and no further NEPA evaluation is required.

3.2.3 Wildlife

The June 2010 Final EA (Section 3.4) provides a description of the general wildlife resources and wildlife species associated with the North Area Program project area. For purposes of the June 2010 Final EA and this SA, general wildlife refers to all mammal, bird, invertebrate, reptile, and amphibian species that do not meet the criteria for “special-status” wildlife species (see Section 3.2.4 below).

As discussed in Section 3.2.2 (Special-Status Plants and Plant Communities) above, biological field surveys were conducted throughout the North Area Program project area to support preparation of the June 2010 Final EA. The surveys included habitat mapping and a wildlife inventory. Additionally,

data were gathered through literature review and previous visits to the project area. The June 2010 Final EA provides a detailed discussion of the habitat types and general wildlife species by each of the North Area Program's regions (i.e., Valley region, Redding/Trinity region, Round Mountain/Modoc region).

As detailed in the June 2010 Final EA, O&M activities have the potential to adversely affect wildlife in a variety of ways, ranging from direct harm to indirect loss of habitat, from short-term and/or temporary impacts to long-term and/or permanent impacts. Adverse impacts may occur indirectly through habitat fragmentation or degradation (e.g., surface run-off from upland vegetation removal or access road maintenance). Additionally, adverse impacts may occur from the direct loss of life through disruption of breeding and consequent loss of eggs, chicks, or fledglings; through collision mortality on roads; or through direct or indirect contact with herbicides and/or mechanical equipment.

The June 2010 Final EA identifies SOPs and PCMs that have been developed to ensure that the potential to adversely affect general wildlife is avoided or minimized during O&M activities. As part of the ongoing North Area Program, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Among other measures, these SOPs include annual awareness training of WAPA crews for sensitive biological resources and biological pre-maintenance awareness training for contract crews. Given WAPA's coordination with federal agencies when activities are conducted on their lands and WAPA's existing procedures for protection of biological resources, there are no new significant circumstances or information related to wildlife.

Conclusion

There are no new significant circumstances or information pertaining to wildlife, and no further NEPA evaluation is required.

3.2.4 Special-Status Wildlife

Special-status wildlife is defined as wildlife species whose geographic ranges and habitats overlap with the North Area Program boundaries and are:

- federally or state-listed, proposed for listing as threatened or endangered species, and candidate species;
- CDFW species of special concern and fully protected species;
- designated as "sensitive" by USFS for national forests affected by the North Area Program (i.e., Shasta-Trinity, Lassen, and Modoc National Forest);
- designated as "sensitive" by BLM (only on BLM lands); and
- considered sensitive by NPS (i.e., Whiskeytown NRA).

As discussed in Section 3.2.2 (Special-Status Plants and Plant Communities) above, biological field surveys were conducted throughout the North Area Program project area to support preparation of the June 2010 Final EA. The surveys included habitat mapping, a wildlife inventory, and mapping of special-status species occurrences using a GPS unit. Existing information on special-status wildlife

species distribution and potential habitats was collected before surveys commenced, which included coordination with USFWS, CDFW, NMFS, USFS, BLM, and NPS.

For the purposes of this SA, an updated information review was conducted to determine if any wildlife species that could occur within the North Area Program project area and were not addressed in the June 2010 Final EA: 1) have been listed, proposed, or designated as “candidate” species under the federal Endangered Species Act or California Endangered Species Act since the June 2010 Final EA; or 2) have been designated as “sensitive” by USFS, BLM, or NPS since the June 2010 Final EA. In April 2021, a review of the California Natural Diversity Database (CNDDDB) and California Native Plant Society (CNPS) databases was completed to identify records of special-status species occurrences, location information, and habitat information.

Due to the physical extent of the North Area Program, species lists were generated by county, BLM field office area, NRA, or by the national forest in which facilities occur. The North Area Program passes through 17 counties, five BLM field office areas, one NRA, and three national forests. Species lists were compared against information from the biological surveys and habitat conditions within the North Area Program project area.

There are several species addressed in the June 2010 Final EA for which there has been a change in the designation of “sensitive” status by BLM, NPS, and/or USFS (i.e., species have been added or removed from the sensitive lists) since the June 2010 Final EA. These species include: Shasta salamander (*Hydromantes shastae*), Oregon spotted frog (*Rana pretiosa*), western pond turtle (*Emys marmorata*), northern goshawk (*Accipiter gentilis*), golden eagle (*Aquila chrysaetos*), Swainson’s hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), white-tailed kite (*Elanus leucurus*), American peregrine falcon (*Falco peregrinus anatum*), greater sandhill crane (*Grus canadensis tabida*), bald eagle (*Haliaeetus leucocephalus*), California black rail (*Laterallus jamaicensis coturniculus*), bank swallow (*Riparia riparia*), northern spotted owl (*Strix occidentalis caurina*), California spotted owl (*Strix occidentalis*), pallid bat (*Antrozous pallidus*), pygmy rabbit (*Brachylagus idahoensis*), Marysville California kangaroo rat (*Dipodomys californicus eximius*), western red bat (*Lasiurus blossevillii*), and Pacific fisher (*Martes pennanti*). All these species were previously addressed in the June 2010 Final EA, and Western continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Therefore, the changes in sensitive status (as designated by BLM, NPS, and/or USFS) are not considered significant new information or circumstances.

There are eight species addressed in the June 2010 Final EA and four species not addressed in the June 2010 Final EA for which there has been a change in ESA or CESA status since that document was written. These species include: California tiger salamander (*Ambystoma californiense*), Cascades frog (*Rana cascadae*), foothill yellow-legged frog (*Rana boylei*), Oregon spotted frog, tricolored blackbird (*Agelaius tricolor*), western yellow-billed cuckoo, northern spotted owl, Pacific fisher, gray wolf (*Canis lupus*), Crotch bumble bee (*Bombus crotchii*), western bumble bee (*Bombus occidentalis*), and Suckley’s cuckoo bumble bee (*Bombus suckleyi*). The ESA and/or CESA status changes since the June 2010 Final EA for each of these species is provided in Table 3-3. Eight of the

species were addressed in the June 2010 Final EA, and PCMs were identified for each of these species. The remaining four species have limited potential to be affected by the project, with the gray wolf adapting to many habitats, and the three bumble bee species having very limited current distribution and specific habitat requirements that are uncommon in project areas. As part of the ongoing North Area Program, WAPA continues to implement the SOPs and applicable PCMs identified in the June 2010 Final EA. There have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA, and thus no changes in impacts on the species listed in Table 3-3. Therefore, no additional NEPA review is necessary. The changes in ESA and CESA listing status since the June 2010 Final EA are not considered significant new information or circumstances.

There are several special-status species that were not addressed in the June 2010 Final EA but could occur within the North Area Program project area, and that are currently designated as “sensitive” by BLM and/or USFS and/or as species of special concern by CDFW. These species are identified in Table 3-4 and include: nugget pebblesnail (*Fluminicola seminalis*), kneecap lanx (*Lanx patelloides*), Shasta chaparral (*Trilobopsis roperi*), Shasta Hesperian (*Vespericola shasta*), northern leopard frog (*Lithobates pipiens*), southern long-toed salamander (*Ambystoma macrodactylum sigillatum*), California glossy snake (*Arizona elegans occidentalis*), northern California legless lizard (*Anniella pulchra*), grasshopper sparrow (*Ammodramus savannarum*), Suisun song sparrow (*Melospiza melodia maxillaris*), Song sparrow-“Modesto” population (*Melospiza melodia*), mountain plover (*Charadrius montanus*), American white pelican (*Pelecanus erythrorhynchos*), purple martin (*Progne subis*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), Oregon snowshoe hare (*Lepus americanus klamathensis*), and western white-tailed jackrabbit (*Lepus townsendii townsendii*). For the above species designated as “sensitive” by BLM and/or USFS, WAPA continues to coordinate with BLM and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies.

Table 3-3 ESA and CESA Status Changes Since the June 2010 Final EA

Species Name Common Name (Scientific Name)	Current Status (State/Federal)	Status in June 2010 Final EA (State/Federal)	Date of Status Change	Significant New Information or Circumstances?
California tiger salamander <i>(Ambystoma californiense)</i>	T/T	SSC/T	California tiger salamander was listed as “threatened” under CESA on August 19, 2010.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. Western continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Cascades frog <i>(Rana cascadae)</i>	C/—	SSC/—	Cascades frog was designated as “candidate” under CESA on October 27, 2017.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Foothill yellow-legged frog <i>(Rana boylei)</i>	varies/—	SSC/—	Foothill yellow-legged frog was listed under CESA in parts of its range on March 20, 2020	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Oregon spotted frog <i>(Rana pretiosa)</i>	SSC/T	SSC/C	Oregon spotted frog was listed as “threatened” under ESA on September 29, 2014.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Tricolored blackbird <i>(Agelaius tricolor)</i>	T/—	SSC/—	Tricolored blackbird was designated as “threatened” under CESA on March 18, 2019.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Western yellow-billed cuckoo	E/T	E/C	Western yellow-billed cuckoo was designated as “threatened” under	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no

Table 3-3 ESA and CESA Status Changes Since the June 2010 Final EA

Species Name Common Name (<i>Scientific Name</i>)	Current Status (State/Federal)	Status in June 2010 Final EA (State/Federal)	Date of Status Change	Significant New Information or Circumstances?
<i>Coccyzus americanus occidentalis</i>			ESA on November 3, 2014.	changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Northern spotted owl (<i>Strix occidentalis caurina</i>)	T/T	—/T	Northern spotted owl was designated as “threatened” under CESA on June 21, 2017.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Pacific fisher (<i>Martes pennanti</i>)	SSC/—	SSC/C	On March 15, 2020, the USFWS determined that listing the Northern California-Southern Oregon Distinct Population Segment (DPS) of Pacific fisher under ESA was not warranted.	No. This species was addressed in the June 2010 Final EA. The June 2010 Final EA identifies PCMs for this species. WAPA continues to implement the SOPs and applicable PCMs. There have been no changes in impacts since the June 2010 Final EA, and no additional SOPs or PCMs are necessary for this species.
Gray wolf (<i>Canis lupus</i>)	E/DR	not discussed in 2010 document; would have been —/E	On January 1, 2017, gray wolf was designated as “endangered” under CESA. The USFWS delisted the species due to recovery effective January 4, 2021.	No. This species was not addressed in the June 2010 Final EA because the species had not been documented in California since the 1920s. As the species has continued to expand its range, a few dispersing individuals have ventured into California. The species is a habitat generalist and should not be affected by the project.

Table 3-3 ESA and CESA Status Changes Since the June 2010 Final EA

Species Name Common Name (<i>Scientific Name</i>)	Current Status (State/Federal)	Status in June 2010 Final EA (State/Federal)	Date of Status Change	Significant New Information or Circumstances?
Crotch bumble bee (<i>Bombus crotchii</i>)	C/—	—/—	Crotch bumble bee was designated as “candidate” under CESA on June 18, 2019.	No. This species, which requires open grassland and scrub habitat, has historically been found in the Central Valley, but it is largely extirpated due to land conversion to agriculture and urban use. WAPA continues to implement all SOPs to protect biological resources. Given the implementation of SOPs for biological resources and WAPA’s coordination with resource agencies and land managers, no “take” of Crotch bumble bee is anticipated to occur during O&M activities, and adverse effects are avoided or minimized to the extent practicable. No additional SOPs or PCMs are necessary for this species.
Western bumble bee (<i>Bombus occidentalis</i>)	C/—	—/—	Western bumble bee was designated as “candidate” under CESA on June 18, 2019.	No. This species has historically been found throughout much of the western US. In California, it is now believed to be found primarily in high elevation meadows and a few sites on the coast. WAPA continues to implement all SOPs to protect biological resources. Given the implementation of SOPs for biological resources and WAPA’s coordination with resource agencies and land managers, no “take” of western bumble bee is anticipated to occur during O&M activities, and adverse effects are avoided or minimized to the extent practicable. No additional SOPs or PCMs are necessary for this species.
Suckley’s cuckoo bumble bee (<i>Bombus suckleyi</i>)	C/—	—/—	Suckley’s cuckoo bumble bee was designated as “candidate” under CESA on June 18, 2019.	No. This species is confined to meadows in mountainous areas and requires western bumble bee colonies for reproduction. WAPA continues to implement all SOPs to protect biological resources. Given the implementation of SOPs for biological resources and WAPA’s coordination with resource agencies and land managers, no “take” of Suckley’s cuckoo bumble bee is anticipated to occur during O&M activities, and adverse effects are avoided or minimized to the extent practicable. No additional SOPs or PCMs are necessary for this species.

Table 3-3 ESA and CESA Status Changes Since the June 2010 Final EA

Species Name Common Name (<i>Scientific Name</i>)	Current Status (State/Federal)	Status in June 2010 Final EA (State/Federal)	Date of Status Change	Significant New Information or Circumstances?
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Status codes: E = endangered, T = threatened, C = candidate, SSC = species of special concern, DR = delisted due to recovery

^a In listing the foothill yellow-legged frog, CDFW defined six distinct clades (~geographic area); the project area intersects five of these six clades. The species is listed as endangered in Sutter, Yuba, and Butte Counties, threatened in Sacramento, Contra Costa, San Joaquin, and Alameda Counties, and neither threatened nor endangered throughout the rest of the project area.

Regarding the above species that are designated as CDFW species of special concern, as discussed in Section 3.7.2 of the June 2010 Final EA, WAPA affords protection to state- and federally listed species throughout the project area. In addition, species with agency-specific status (e.g., USFS sensitive) are afforded protection on agency-specific lands. Special-status species outside of these parameters (e.g., CDFW species of special concern) are considered, but PCMs are not necessarily designated specifically for these species. The existing SOPs and PCMs, especially those designed to protect biological resources and aquatic habitat, routinely implemented by WAPA as part of the ongoing North Area Program, avoid or minimize the potential for adverse effects on these species. No additional NEPA review or analysis is required.

There is one federally and state-listed species, gray wolf (*Canis lupus*), that was not addressed in the June 2010 Final EA but could occur within the North Area Program project area. Gray wolf was listed as “endangered” under ESA on April 10, 1978, and as “endangered” under CESA on October 18, 2014. Gray wolves historically inhabited California, but they have been considered extirpated since 1924 when the last known naturally occurring gray wolf was trapped in Lassen County (California Department of Fish and Wildlife 2015a). On December 28, 2011, a 2½-year-old male radio-collared gray wolf (designated OR7) entered California after traveling from northeast Oregon. Since 2011, OR7 has entered California several times but primarily remains in Oregon (California Department of Fish and Wildlife 2015b). Suitable habitat for gray wolf is present in northern California, and the CDFW currently reports one area of persistent wolf activity in Lassen and Plumas Counties, outside the project area. Dispersing wolves travel widely with unpredictable movements and likely intersect the project area occasionally. Currently, the likelihood of encountering gray wolves in California is very low. However, as a best management practice (BMP), WAPA implements the following measure in areas where there is a potential for gray wolf.

Between January 1 and August 31, off-road vehicle travel and activity will be avoided to the extent practical. If off-road travel or ground disturbance is required in potential gray wolf habitat, a qualified biologist will conduct a survey to determine if dens are present. If dens are present, then activities will be avoided by a buffer determined by WAPA’s biologist.

Given the low likelihood of encountering gray wolves in California, the existing SOPs and PCMs, and WAPA’s best management practices for gray wolf, there is no significant new information or circumstances concerning gray wolf.

There is one state-listed species, Shasta salamander (*Hydromantes shastae*), that was addressed in the June 2010 Final EA, but at that time was determined to either occur outside the impact area of O&M activities or to occur in habitats not affected by O&M activities. The Shasta salamander is a terrestrial salamander species endemic to the southeastern Klamath Mountains located north and northeast of Redding, Shasta County, California. Shasta salamander was originally listed as “rare” under CESA in 1971, and later as “threatened” in 1984. In 1991, Shasta salamander was known from only 12 populations (California Department of Fish and Game 1991). Historically described as a habitat specialist associated with limestone rock formations (Gorman and Camp 1953, Olson 2005), Shasta salamanders are now known to occupy numerous non-limestone habitats (Lindstrand 2000, Nauman and Olson 2004, Olson 2005) including coniferous forests, mixed woodlands, and chaparral with metasedimentary or metavolcanic rock outcrops and talus, and areas with little or scattered

surface rock. Recent survey work (e.g., Lindstrand 2008, Lindstrand et al. 2012) has significantly increased the number of known populations, habitat associations, and the species' geographic and elevation range. Based on current information on the range of Shasta salamander and habitats utilized by the species, portions of the North Area Program project area lie within habitats that could be used by Shasta salamander. As part of the ongoing North Area Program, WAPA currently implements the following BMPs in areas that may provide habitat for Shasta salamander:

- *Activities will only occur during dry or frozen conditions in Shasta salamander habitat, specifically in the vicinity of limestone outcrops. If greater than 2 inches of precipitation occurs during any 14-day period between June 1 and October 15, operations shall be suspended. If greater than 0.5 inch of precipitation occurs during any 7-day period between October 16 and May 1, operations shall be suspended. Operations may resume after 7 consecutive days of no precipitation or after 24 hours with no precipitation if surveys are conducted and no Shasta salamanders are detected.*
- *A 100-foot buffer will be marked around all limestone outcrops. Vegetation removal will be avoided within this area to the extent possible. If vegetation removal within this buffer is necessary, only manual clearing will be allowed.*
- *If a Shasta salamander is detected, ground disturbing activities will be suspended within 500 feet of habitat until further notice from WAPA.*

Additionally, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Given the BMPs currently in place for Shasta salamander, the ongoing coordination with federal land management agencies, and the existing SOPs and PCMs in place to protect biological resources, there are no significant new information or circumstances for Shasta salamander.

On August 15, 2014, the USFWS proposed to designate critical habitat for yellow-billed cuckoo. The proposed critical habitat extends along the Sacramento River in Colusa, Glenn, Butte, and Tehama counties and along a portion of the Sutter Bypass in Sutter County. The southern portion of WAPA's CVP transmission line and the O'Banion power facility in Sutter County are in proximity to, but outside of, the proposed critical habitat for yellow-billed cuckoo. All North Area Program activities are conducted within the boundaries of transmission ROW, legally deeded access roads, and communication and substation facilities described in the June 2010 Final EA. None of these areas occur within proposed critical habitat for yellow-billed cuckoo and O&M activities would not affect proposed critical habitat for yellow-billed cuckoo. Therefore, there are no significant new information or circumstances relating to proposed critical habitat for yellow-billed cuckoo.

Conclusion

There are no new significant circumstances or information for special-status wildlife, and no further NEPA evaluation is required.

Table 3-4 BLM and USFS Sensitive Animal Species and CDFW Species of Special Concern Not Addressed in June 2010 Final EA

Species Name Common Name (Scientific Name)	Status (State/Federal)	Agency Sensitive Species (USFS/BLM/NPS)	General Habitat Description	Region of Potential Occurrence (Valley/Redding- Trinity/Round Mountain-Modoc)
Invertebrates				
Nugget pebblesnail <i>(Fluminicola seminalis)</i>	N/A	USFS/—/—	Originally from near mouth of the Sacramento River upstream into the Pit River. Now extirpated from the Sacramento River.	Round Mountain- Modoc
Kneecap lanx <i>(Lanx patelloides)</i>	N/A	USFS/—/—	Endemic to upper Sacramento River system. Breathe entirely through mantle and are very sensitive to polluted water.	Redding-Trinity, Round Mountain-Modoc
Shasta chaparral <i>(Trilobopsis roperi)</i>	N/A	USFS/—/—	Found within 100 meters of limestone outcroppings and talus slopes with some protective shade, or caves with shrubs or oak cover.	Redding-Trinity
Shasta Hesperian <i>(Vespericola shasta)</i>	N/A	USFS/—/—	Primarily found near streams in the vicinity of Shasta Lake, upto 915 meters elevation.	Redding-Trinity, Round Mountain-Modoc
Amphibians				
Shasta salamander <i>(Hydromantes shastae)</i>	T/—	USFS/BLM/—	Cool, wet ravines and valleys; dominant vegetation is oak woodland or chaparral, also pine and fir; 100 to 2,550 feet elevation.	Redding-Trinity, Round Mountain-Modoc
Southern long-toed salamander <i>(Ambystoma macrodactylum sigillatum)</i>	SSC/—	—/—/—	Alpine meadows, high mountain ponds and lakes. Adults are terrestrial and spend considerable time in rotten logs or underground. They are rarely seen outside the breeding season.	Round Mountain- Modoc
Northern leopard frog <i>(Lithobates pipiens)</i>	SSC/—	N/A	Native range is east of Sierra Nevada-Cascade Crest. Near permanent or semi-permanent water in a variety of habitats.	Round Mountain- Modoc

Table 3-4 BLM and USFS Sensitive Animal Species and CDFW Species of Special Concern Not Addressed in June 2010 Final EA

Species Name Common Name (Scientific Name)	Status (State/Federal)	Agency Sensitive Species (USFS/BLM/NPS)	General Habitat Description	Region of Potential Occurrence (Valley/Redding- Trinity/Round Mountain-Modoc)
Reptiles				
Northern California legless lizard <i>(Anniella pulchra)</i>	SSC/—	USFS/—/—	Sandy or loose loamy soils under sparse vegetation.	Valley
California glossy snake <i>(Arizona elegans occidentalis)</i>	SSC/—	N/A	Arid scrub, rocky washes, grasslands, chaparral. Prefers microhabitats of open areas and areas with soil loose enough for easy burrowing. In project area, only expected to occur along the Livermore-Tracy line.	Valley

Table 3-4 BLM and USFS Sensitive Animal Species and CDFW Species of Special Concern Not Addressed in June 2010 Final EA

Species Name Common Name (Scientific Name)	Status (State/Federal)	Agency Sensitive Species (USFS/BLM/NPS)	General Habitat Description	Region of Potential Occurrence (Valley/Redding- Trinity/Round Mountain-Modoc)
Birds				
Grasshopper sparrow <i>(Ammodramus savannarum)</i>	SSC/—	N/A	Dense grasslands on rolling hills, lowland plains, in valleys, and on hillsides on lower mountain slopes.	Valley
Suisun song sparrow <i>(Melospiza melodia maxillaris)</i>	SSC/—	N/A	Resident of brackish-water marshes surrounding Suisun Bay.	Valley
Song sparrow - “Modesto” population <i>(Melospiza melodia)</i>	SSC/—	N/A	Freshwater marshes and areas of dense riparian vegetation in the Delta and southern half of the Sacramento River valley.	Valley
Mountain plover <i>(Charadrius montanus)</i>	SSC/—	—/BLM/—	Nests in shortgrass prairies and in high, open, semidesert habitats in western North America. Winters in similar agricultural habitats, prairies, and alkaline flats. Does not breed in California, but winters here.	Valley
American white pelican <i>(Pelecanus erythrorhynchos)</i>	SSC/—	N/A	Colonial nester on large interior lakes.	Round Mountain- Modoc
Purple martin <i>(Progne subis)</i>	SSC/—	N/A	Inhabits woodlands and low-elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine.	Valley, Redding-Trinity, Round Mountain- Modoc
Yellow-headed blackbird <i>(Xanthocephalus xanthocephalus)</i>	SSC/—	N/A	Nests in freshwater emergent wetlands with dense vegetation and deep water. Often along borders of lakes or ponds.	Valley, Round Mountain-Modoc

Table 3-4 BLM and USFS Sensitive Animal Species and CDFW Species of Special Concern Not Addressed in June 2010 Final EA

Species Name Common Name (Scientific Name)	Status (State/Federal)	Agency Sensitive Species (USFS/BLM/NPS)	General Habitat Description	Region of Potential Occurrence (Valley/Redding- Trinity/Round Mountain-Modoc)
Mammals				
Oregon snowshoe hare <i>(Lepus americanus klamathensis)</i>	SSC/—	N/A	Above the yellow pine zone in Canadian and Hudsonian provinces in northern California	Redding-Trinity, Round Mountain-Modoc
Western white-tailed jackrabbit <i>(Lepus townsendii townsendii)</i>	SSC/—	N/A	Sagebrush, subalpine conifer, juniper, alpine dwarf shrub and perennial grassland.	Round Mountain-Modoc

3.2.5 Fish

The June 2010 Final EA (Section 3.6) provides a description of the general fish species associated with the North Area Program project area. For purposes of the June 2010 Final EA and this SA, general fish species refers to all fish species that do not meet the criteria for special-status fish species (see Section 3.2.6 below).

As discussed in Section 3.2.2 (Special-Status Plants and Plant Communities) above, biological field surveys were conducted throughout the North Area Program project area to support preparation of the June 2010 Final EA. The surveys included habitat mapping and mapping of streams, ponds, and other aquatic features. Additionally, data were gathered through literature review and previous visits to the project area. The June 2010 Final EA provides a detailed discussion of the native and non-native general fish species that occur in each of the North Area Program's regions (i.e., Valley region, Redding/Trinity region, Round Mountain/Modoc region).

As detailed in the June 2010 Final EA, fish have evolved to thrive in a variety of aquatic habitats and conditions that range from small creeks to large lakes, cold water to warm, slow and muddy to fast and clean, deep to shallow, fresh to saline to alkaline, interior to coastal, and heavily shaded to wide open. They are, however, highly sensitive to changes to the environmental conditions to which they are adapted. Potential adverse effects to fish are closely related to water quality. Specifically, turbidity, sedimentation, loss of large organic debris, loss of shading (and associated temperature increases), and exposure to hazardous substances adversely affect fish.

The June 2010 Final EA identifies SOPs and PCMs that have been developed to ensure that the potential to adversely affect general fish is avoid or minimized during O&M activities. As part of the ongoing North Area Program, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Among other measures, these SOPs include annual awareness training of WAPA crews for sensitive biological resources and biological pre-maintenance awareness training for contract crews. Given WAPA's coordination with federal agencies when activities are conducted on their lands and WAPA's existing procedures for protection of biological resources, there are no new significant circumstances or information related to fish.

Conclusion

There are no new significant circumstances or information for fish, and no further NEPA evaluation is required.

3.2.6 Special-Status Fish

Special-status fish is defined as fish species whose geographic ranges and habitats overlap with the North Area Program boundaries and are:

- federally or state-listed, proposed for listing as “threatened or endangered” species, and “candidate” species;

- CDFW species of special concern and fully protected species;
- designated as “sensitive” by USFS for national forests affected by the North Area Program (i.e., Shasta-Trinity, Lassen, and Modoc National Forest);
- designated as “sensitive” by BLM (only on BLM lands); and
- considered “sensitive” by NPS (i.e., Whiskeytown NRA).

As discussed in Section 3.2.2 (Special-Status Plants and Plant Communities) above, biological field surveys were conducted throughout the North Area Program project area to support preparation of the June 2010 Final EA. In addition to the field surveys, coordination was conducted with USFWS, CDFW, NMFS, USFS, BLM, and NPS.

For the purposes of this SA, an updated information review was conducted to determine if any fish species that could occur within the North Area Program project area, and were not addressed in the June 2010 Final EA: 1) have been listed, proposed, or designated as “candidate” species under the federal Endangered Species Act or California Endangered Species Act since the June 2010 Final EA; or 2) have been designated as “sensitive” by USFS, BLM, or NPS since the June 2010 Final EA. In April 2021, a review of the CNDDDB database was completed to identify records of special-status species occurrences, location information, and habitat information.

Due to the physical extent of the North Area Program, species lists were generated by county, BLM field office area, NRA, or by the national forest in which facilities occur. The North Area Program passes through 17 counties, five BLM field office areas, one NRA, and three national forests. Species lists were compared against information from the biological surveys and habitat conditions within the North Area Program project area.

There are species addressed in the June 2010 Final EA for which there has been a change in designation of “sensitive” status by BLM, NPS, and/or USFS (i.e., species have been added or removed from the sensitive lists) since the June 2010 Final EA. These species include: rough sculpin (*Cottus asperimus*), Central Valley steelhead (*Oncorhynchus mykiss*), Central Valley fall- and late fall-run Evolutionarily Significant Unit (ESU) Chinook salmon (*Oncorhynchus tshawytscha*), and Central Valley spring-run ESU Chinook salmon (*Oncorhynchus tshawytscha*). All these species were previously addressed in the June 2010 Final EA, and WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. Additionally, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect biological resources during O&M activities. Therefore, the changes in sensitive status (as designated by BLM, NPS, and/or USFS) are not considered significant new information or circumstances.

On April 2, 2012, the USFWS added longfin smelt (*Spirinchus thaleichthys*) to the list of candidate species under the ESA. Candidate species do not receive statutory protection under the ESA, but their status is reviewed annually by the USFWS. Longfin smelt was listed as a threatened species under CESA when the June 2010 Final EA was published, and this species was addressed in the June 2010 Final EA. As part of the ongoing North Area Program, WAPA continues to implement the SOPs and applicable PCMs identified in the June 2010 Final EA. There have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA, and thus no changes in impacts on the species addressed in the June 2010 Final EA. The change in ESA status for longfin smelt is not considered significant new information or circumstances.

On February 27, 2018, the USFWS added the Chinook salmon [Upper Klamath-Trinity River Spring ESU] to the list of candidate species under the ESA. CDFW similarly added it to the list of candidate species under the CESA on February 12, 2019. While candidate species do not receive statutory protection under the ESA, candidates do receive statutory protection under CESA pending review for formal listing. While no PCMs have been developed specifically for the Upper Klamath-Trinity River Spring ESU Chinook salmon, PCM-W002 provides general protection for aquatic environments such as the Trinity River. In addition, measures like PCM-B048 and PCM-B049 (for Chinook salmon [Central Valley ESU]) will likely be developed should the species receive formal protection under ESA. The change in ESA/CESA status for Upper Klamath-Trinity River Spring ESU Chinook salmon is not considered significant new information or circumstances.

There are several species that are designated as “species of special concern” by CDFW that could occur within the North Area Program project area, but that were not addressed in the June 2010 Final EA. These species include Sacramento perch (*Archoplites interruptus*), Pit roach (*Lavinia symmetricus mitrulus*), blue chub (*Gila coerulea*), steelhead [Klamath Mountains Province DPS] (*Oncorhynchus mykiss*)¹, McCloud River redband trout (*O. mykiss stonei*)¹, bigeye marbled sculpin (*Cottus klamathensis macrops*), white sturgeon (*Acipenser transmontanus*), Sacramento hitch (*Lavinia exilicauda exilicauda*), northern California brook lamprey (*Entosphenus folletti*), Pit-Klamath brook lamprey (*Entosphenus lethophagus*), Klamath River lamprey (*Entosphenus similis*)¹, Pacific lamprey (*Entosphenus tridentatus*)². Additionally, hardhead (*Mylopharodon conocephalus*)¹ was added to the CDFW list since the June 2010 Final EA. Although this species was addressed in the EA, at that time, it had only appeared on the USFS sensitive list. As discussed in Section 3.7.2 of the June 2010 Final EA, WAPA affords protection to state- and federally listed species throughout the project area. In addition, species with agency-specific status (e.g., USFS sensitive) are afforded protection on agency-specific lands. Special-status species outside of these parameters (e.g., CDFW species of special concern) are considered, but PCMs are not necessarily designated specifically for these species. The existing North Area Program SOPs and PCMs, especially those designed to protect biological resources and aquatic habitat, avoid or minimize the potential for adverse effects on both listed and non-listed fish species. The species above are not listed under ESA or CESA, and no additional SOPs or PCMs are necessary to avoid or minimize adverse effects on these species.

On October 9, 2009, NMFS designated critical habitat for green sturgeon (*Acipenser medirostris*). In California, the designated critical habitat includes the Sacramento River; lower Feather River; lower Yuba River; the Sacramento-San Joaquin Delta; and Suisun, San Pablo, and San Francisco bays. The June 2010 Final EA addresses green sturgeon and identifies SOPs and PCMs to avoid adverse effects on the species, but it does not specifically address critical habitat for green sturgeon. With implementation of the SOPs and PCMs identified in the June 2010 Final EA, O&M activities are not likely to adversely affect critical habitat for green sturgeon. NMFS concurred with this determination in their ESA consultation letter dated December 23, 2009, which was included in the June 2010 Final EA. WAPA continues to implement the SOPs and PCMs identified in the June 2010 Final EA, and there is no significant new information or circumstances relating to designated critical habitat for green sturgeon.

¹ Steelhead [Klamath Mountains Province DPS], McCloud River redband trout, and Klamath River lamprey are also USFS sensitive species.

² Pacific lamprey is also a USFS and BLM sensitive species.

On December 11, 2012, NMFS designated critical habitat for Lost River sucker (*Deltistes luxatus*) and shortnose sucker (*Chasmistes brevirostris*). Both federally listed species were addressed in the June 2010 Final EA. In California, the designated critical habitat is limited to specific drainages and water bodies in the western portion of Modoc County outside of the North Area Program project area. Therefore, there is no significant new information or circumstances relating to designated critical habitat for Lost River sucker and shortnose sucker.

3.2.7 Cultural Resources

Cultural resources include features of the physical environment that relate to human culture and society and cultural institutions that hold communities together and link them to their surroundings. Once damaged or destroyed, these resources are essentially nonrenewable, though the tangible evidence of the past sometimes may be restored or reconstructed to some degree. They can include expressions of human culture and history in the physical environment (such as prehistoric and historic sites, buildings, structures, objects, districts, and other places, including natural features) considered important to a culture, subculture, or community.

To support preparation of the June 2010 Final EA, WAPA conducted cultural resource investigations and prepared a complete inventory of archaeological sites and historic buildings and structures located within or near the North Area Program facilities. The cultural resources investigation included a literature search at the California Historical Resources Information System (CHRIS); California Historical Resources Information System 2014). The North Area Program facilities are located within the territories of four CHRIS information centers: CHRIS Northeast Information Center at California State University, Chico (for Modoc, Shasta, Lassen, Tehama, Siskiyou, Butte, Trinity, Glenn, and Sutter counties); CHRIS Northwest Information Center, located at Sonoma State University, Rohnert Park (for Colusa, Yolo, Solano, Contra Costa, and Alameda counties); CHRIS North Central Information Center (for Sacramento, and Yuba counties); and CHRIS Central California Information Center (for San Joaquin County).

WAPA also consulted with the California Native American Heritage Commission (NAHC) to obtain a current list of appropriate Native American contacts for the North Area Program. WAPA contacted the individuals and organizations listed by the NAHC to ask their assistance in identifying sacred lands or traditional cultural properties (TCPs) that might be affected by North Area Program activities. A total of 23 tribes were consulted, and field work was conducted with members of the Pit River Tribe, to identify TCPs in the Program Area. No TCPs would be affected by North Area Program activities.

Field surveys for cultural resources covered a total of 814 miles of transmission rights-of-way, 265 miles of legally deeded access roads, 7 communication tower sites, and 38 miles of legally deeded access roads associated with these sites. Field surveys were conducted by teams of qualified archaeological technicians meeting the qualifications criteria from the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation Professional Qualifications Standards (48 CFR 44716). The field surveys were conducted between April 26, 2005, and January 21, 2006, with subsequent visits to select sites in spring 2006. Surveys of the communication sites were conducted in November 2007. The field teams conducted an intensive pedestrian survey, using systematic transects no wider than 20 meters apart to inventory cultural resources including historic archaeological sites, prehistoric sites, historic buildings and structures, and other cultural properties.

The cultural resources surveys resulted in rerecording of 168 previously recorded sites and discovery of 150 new sites, for a total of 318 sites in the Program Area. There are 16 sites that have been determined eligible for National Register of Historic Places (NRHP) nomination and 17 sites that have been determined ineligible. Two sites were previously nominated but not listed. The locations and boundaries of all the sites are identified in WAPA's North Area GIS database.

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of projects under their jurisdiction on properties listed or eligible for listing in the NRHP (16 USC 470 et seq.). Consultation with the State Historic Preservation Officer (SHPO) is also required before granting permits, funding, or other authorization of the undertaking. In 2005, WAPA initiated consultation for its facilities in California with the Advisory Council on Historic Preservation (ACHP) and the California SHPO pursuant to 36 CFR §800.14(b) (iv) of the regulations implementing Section 106 of the NHPA. In February 2010, a Programmatic Agreement (PA) was executed. By carrying out the terms of the PA, WAPA fulfills its NHPA Section 106 obligations for activities at its California facilities.

Some North Area Program facilities (e.g., access road, tower areas) are located within the boundaries of known archaeological sites. To avoid adverse impacts on cultural resources, WAPA implements applicable SOPs and PCMs. The SOPs are implemented in all cases for all covered activities whether there is a presence of sensitive resources within proximity to the immediate action. The PCMs are applied in a focused manner to protect specific targeted cultural resources that are known to occur.

Given that WAPA: 1) has conducted extensive field surveys to inventory archaeological and historic sites within or near the North Area Program facilities; 2) maintains a GIS database to document locations of cultural resource sensitivity; 3) implements SOPs and PCMs that protect both known and unknown sensitive cultural resources; and 4) complies with NHPA Section 106 requirements and ACHP regulations through adherence to the terms and measures of the February 2010 PA, there is no new information or circumstances of concern for cultural resources.

Conclusion

There are no new significant circumstances or information for cultural resources, and no further NEPA evaluation is required.

3.2.8 Paleontological Resources

Paleontological sensitivity is defined as the potential for a geologic unit to produce scientifically significant fossils. The potential for occurrence is typically determined by rock type, history of the geologic unit in producing significant fossils, and fossil localities recorded from that unit. Specific field surveys for paleontological resources were not completed during preparation of the June 2010 Final EA because O&M activities would have little or no adverse effect on paleontological resources. The O&M activities conducted under the North Area Program are not expected to adversely affect paleontological resources because: 1) the majority of activities would not involve substantial ground disturbance; 2) the activities that do involve ground disturbance would generally require only shallow excavations which are not likely to impact paleontological resources since such resources are typically uncovered during deeper excavations; and 3) O&M activities have been occurring since the facilities were constructed in the 1940s, and no paleontological resources have been encountered to

date. Nonetheless, WAPA's current conservation practices do include PCMs for paleontological resources to further minimize the potential for adverse effects. Among other measures, these PCMs require training crews to identify paleontological materials if they are encountered during O&M activities, stopping work if potential paleontological materials are encountered, and monitoring ground-disturbing activities in areas that could have paleontological materials.

Given that: 1) there have been no changes in the project area or project activities since the June 2010 Final EA; 2) the ongoing O&M activities have been conducted in the same or substantially similar manner since initial construction and operation of the facilities; 3) the O&M activities have little to no potential to adversely affect paleontological resources; and 4) WAPA has implemented PCMs for paleontological resources to further minimize the potential for adverse effects, there are no new significant circumstances or information related to paleontological resources.

Conclusion

There are no new significant circumstances or information for paleontological resources, and no further NEPA evaluation is required.

3.2.9 Land Use

As detailed in Section 3.9 of the June 2010 Final EA, the North Area Program facilities span more than 1,000 miles of land between central and northern California and crosses through portions of 17 counties. While much of the land is rural agricultural or open space, there are also multiple urban areas. The North Area Program's Valley Region includes the following urban areas: the city of Bethel Island in Alameda County, the city of Rio Vista in Contra Costa County, the cities of Oroville and Chico in Butte County, the city of Red Bluff in Tehama County, and the city of Anderson in Shasta County. In the North Area Program's Redding/Trinity Region, urban areas include the cities of Anderson and Redding in Shasta County. The North Area Program's Round Mountain/Modoc Region only crosses a few acres of urban and residential land. Overall, the North Area Program transmission lines traverse 46 miles (588 acres) of BLM land, 18 miles (144 acres) of NPS lands in the Whiskeytown NRA, and 103 miles (2,289 acres) of USFS lands.

Typical land uses surrounding the North Area Program include:

- Agricultural (e.g., citrus and subtropical crops; deciduous fruit and nut orchards; farmsteads, feed lots, dairies and poultry farms; field crops; grain and hay crops; idle land; pasture; rice fields; nursery and berry crops and vineyards);
- Industrial (e.g., manufacturing, assembling and general processing; extractive industries; storage and distribution; sawmills; oil refineries; paper mills; meat packing plants; steel and aluminum mills; sewage treatment plants; waste accumulation sites and wind farms);
- Native Vegetation (e.g., riparian, water surface, barren, and wasteland);
- Residential (e.g., single-family residences, multi-family residences, and trailer courts);
and

- Urban (e.g., commercial, landscaped, and vacant).

Cities and counties in California are required by law to adopt a comprehensive, long-term General Plan for the physical development of their jurisdictional areas. These plans include land use elements that establish a pattern of appropriate land uses as well as policies and guidelines for the development of those uses. With specific regard to compliance with local requirements, WAPA has preemptive jurisdiction for O&M of the North Area Program facilities and is not subject to local land use and permitting requirements. However, WAPA does attempt to follow some county codes and general plans to the extent that it does not conflict with appropriate management of the North Area Program facilities and would not impose a direct regulation of WAPA. There are no new significant circumstances or information relating to local agency land use planning.

The North Area Program is within the boundaries of several active and planned habitat conservation plans (HCPs). Currently active HCPs in the area include the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan and the East Contra County Habitat Conservation Plan and Natural Community Conservation Plan (NCCP) (U.S. Fish and Wildlife Service 2015). HCPs are also under development in Butte, Solano, Yolo, Yuba, and Sutter counties (U.S. Fish and Wildlife Service 2015). The Program Area is also within the boundaries of several implemented and planned NCCP areas. The NCCP in the area that is currently being implemented is the East Contra Costa County Plan (California Department of Fish and Wildlife 2015c). NCCPs that are in the area and that are still in the planning phase include Bay Delta Conservation Plan, Butte Regional Conservation Plan, Yuba-Sutter, and Yolo National Heritage Program (California Department of Fish and Wildlife 2015c). The North Area Program transmission lines and supporting facilities have been physically in place and part of the environmental setting since the completion of construction and initial operation many years ago. The HCPs and NCCPs that are currently active were implemented after the facilities became operational and consider the presence of existing infrastructure of all sorts, including the North Area Program's transmission systems and ROW. WAPA as a federal agency is not a party to any HCPs or NCCPs, and there are no new significant circumstances or information related to HCP or NCCP land use planning.

As described above, the North Area Program traverses lands managed by BLM, NPS, and USFS. Consequently, activities in these areas are subject to applicable plans and policies of these federal agencies as well as various use permits required by each agency. The SOPs and PCMs identified in the June 2010 Final EA for land use and other issue areas were developed in coordination with BLM, NPS, and USFS, and were designed to ensure consistency of the North Area Program activities with the plans and policies of these agencies. As part of the ongoing North Area Program, WAPA continues to coordinate with BLM, NPS, and USFS for activities on their lands to ensure that O&M activities continually comply with any revisions or amendments of applicable federal land management plans and policies. There are no new significant circumstances or information related to land use on federal lands.

Conclusion

There are no new significant circumstances or information for land use, and no further NEPA evaluation is required.

3.2.10 Recreation

As detailed in the June 2010 Final EA, the North Area Program facilities span multiple local and regional recreation areas. The largest recreation areas include: 46 miles (or 588 acres) of BLM land, 18 miles (or 144 acres) of NPS land, and 103 miles (or 2,289 acres) of USFS land. These lands include trails, national forests, and NRAs. Other local recreation areas include those found in the cities of Bethel Island (Contra Costa County), Rio Vista (Solano County), Oroville (Butte County), Chico (Butte County) Red Bluff (Tehama County), Anderson (Shasta County), and Redding (Shasta County). The recreation areas include parks and open space with opportunities for picnicking, walking, hiking, biking, horseback riding, sports, camping, fishing, swimming, paddling, backpacking, hunting, and other outdoor recreation.

Since publication of the June 2010 Final EA, the region-wide population has expanded 14.8 percent (U.S. Census Bureau 2013), and it is presumed that there has been a corresponding increase in use of the region's recreational lands and facilities. All the North Area Program activities take place within existing transmission line ROW; developed and maintained communication and substation sites; and legally deeded, routinely maintained access roads. These facilities have been part of the environment since their initial construction and operation. As such, there is little potential for conflict with recreational uses, even with an increase in population and use of recreational lands. The North Area Program does not increase demand for recreation activities and does not result in the loss of recreational lands. However, when activities are conducted in proximity to recreational areas, short-term and temporary impacts can occur. These impacts are relatively minor and may include temporary restriction to trails or other facilities, or noise and other construction-related disturbance that can detract from the recreational experience.

The SOPs identified in the June 2010 Final EA for recreation, aesthetics, air quality, noise, and public health ensure that impacts on recreational areas are minimized to acceptable levels. There are no significant concerns or new information for recreational impacts that warrant additional NEPA analysis.

Conclusion

There are no new significant circumstances or information for recreation, and no further NEPA evaluation is required.

3.2.11 Aesthetics

The visual resources, including landscapes, visual quality, and other aesthetic resources are detailed in Section 3.12 of the June 2010 Final EA. The transmission lines, communication and substation sites, and other supporting facilities in the Program Area have been physically in place and part of the environmental setting since completion of construction and initial operation. As such, they are an existing component of the viewshed and the aesthetic features of the landscape. As discussed in Section 2.1 above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. WAPA continues to implement the SOPs for aesthetics identified in the June 2010 Final EA, and continues to collaborate with BLM, NPS, and USFS for activities conducted on federal lands.

For the North Area Program transmission system to operate in a safe, reliable, and efficient manner, system components will continue to be installed, replaced, or upgraded as needed based on the age, condition, and technology of the equipment. Given that these activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for aesthetics.

Conclusion

There are no new significant circumstances or information for aesthetics, and no further NEPA evaluation is required.

3.2.12 Water Resources

The June 2010 Final EA (Section 3.12) describes the groundwater and surface water resources present within the North Area Program project area. State and federal laws mandate a series of programs for the management of surface water quality. In the state of California, water resources are protected under the federal Clean Water Act of 1972, as amended (Title 33, United States Code Section 1251) and the state Porter-Cologne Water Quality Control Act of 1969. The latter Act created the State Water Resources Control Board and the nine Regional Water Quality Control Boards (RWQCBs)

Most of the North Area Program project area lies within the Sacramento River hydrologic region (HR). Small portions of the project area extend into the San Joaquin River HR (Contra Costa, San Joaquin, and Alameda counties) and the North Coast HR (Trinity County). The Sacramento River HR covers 27,210 square miles and includes the entire area drained by the Sacramento River. The principal streams are the Sacramento River and its larger tributaries: Pit, Feather, Yuba, Bear, and American rivers to the east; and Cottonwood, Stony, Cache, and Putah creeks to the west. Major reservoirs and lakes in northern California include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa (Central Valley Regional Water Quality Control Board 2007). The Sacramento River HR is the main water supply for much of California's urban and agricultural areas. Annual run-off in the HR averages about 22.4 million acre-feet, which is nearly one-third of the state's total natural run-off (California Department of Water Resources 2003).

Water resources, including perennial and intermittent streams, ponds, agricultural drainages, springs, and wetlands, within the North Area Program project area were identified and mapped using a GPS unit during the field surveys that were conducted between 2005 and 2007. Location data for water resources were incorporated into WAPA's O&M GIS database. The June 2010 Final EA evaluates the potential for O&M activities to affect water resources and identifies SOPs and PCMs to avoid adverse effects. As discussed in Section 2.1 (Changes in the Project Area and Project Activities) above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. As part of the ongoing North Area Program, WAPA continues implement the SOPs and PCMs identified in the June 2010 Final EA to protect water resources during O&M activities.

Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to water resources.

Conclusion

There are no new significant circumstances or information for water resources, and no further NEPA evaluation is required.

3.2.13 Geology and Soils

The June 2010 Final EA (Section 3.13) describes the geologic and seismic conditions and general soil types within the North Area Program project area. The potential for impacts on geologic and soil resources was evaluated, and eight SOPs that avoid or minimize adverse effects on geology and soils were identified. As discussed in Section 2.1 (Changes in the Project Area and Project Activities) above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. As part of the ongoing North Area Program, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect geology and soils during O&M activities.

Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to geology and soils.

Conclusion

There are no new significant circumstances or information for geology and soils, and no further NEPA evaluation is required.

3.2.14 Public Health and Safety

The June 2010 Final EA (Section 3.14) evaluates the potential for the North Area Program to result in impacts on public health and safety. Potential impacts on public health are primarily related to hazardous materials, physical hazards, and fire hazards. Nine SOPs that avoid or minimize adverse effects on public health and safety were identified in the June 2010 Final EA. As discussed in Section 2.1 above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. As part of the ongoing North Area Program, WAPA continues implement the SOPs identified in the June 2010 Final EA to protect public health and safety during O&M activities. Additionally, all WAPA's operations, including all O&M activities, are conducted in coordination with federal, state, and local emergency response and contingency plan requirements as outlined in WAPA's Hazardous Materials Business Plans and Spill Prevention, Control, and Countermeasures Plans.

The North Area Program transmission infrastructure provides electricity for heating, lighting, and other services essential to public health and safety. The North Area Program is designed to continue to operate the infrastructure in a safe, reliable, and efficient manner. Given that there have been no changes in the project area or project activities and that SOPs and applicable PCMs continue to be implemented, there are no new significant circumstances or information related to public health and safety.

Conclusion

There are no new significant circumstances or information for public health and safety, and no further NEPA evaluation is required.

3.2.15 Air Quality

As detailed in the June 2010 Final EA (Section 3.15), the quality of surface air (air quality) is evaluated by measuring ambient concentrations of pollutants that are known to have deleterious effects on public health. The degree of air quality degradation is then compared to ambient air quality standards, such as the California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS).

Criteria air pollutants refer to a group of pollutants for which regulatory agencies have adopted ambient air quality standards and region-wide pollution reduction plans. Criteria air pollutants include ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), particulate matter (PM), and lead. Toxic air contaminants refer to a category of air pollutants that pose a present or potential hazard to human health, but that tend to have more localized impacts than criteria air pollutants. Reactive organic gases (ROG) and nitrogen oxides (NO_x) are also regulated as criteria pollutants because they are precursors to O₃ formation. Certain ROGs may also qualify as toxic air contaminants. Two subsets of PM are inhalable: PM less than 10 microns in diameter (PM₁₀) and fine PM less than 2.5 microns in diameter (PM_{2.5}).

Both California and the federal government have adopted ambient air quality standards for criteria air pollutants that are known to have harmful effects on public health (CAAQS and NAAQS). Historically, CAAQS have been more stringent than NAAQS for the protection of public health. However, the U.S. Environmental Protection Agency (EPA) recently tightened NAAQS for PM and O₃ to achieve a similar level of protection (EPA 2015). The current CAAQS and NAAQS for criteria air pollutants are shown in Table 3-5.

Table 3-5 California and National Ambient Air Quality Standards for Air Pollutants

Air Pollutant Standard	CAAQS	NAAQS	
		Primary ¹	Secondary ²
1 Hour O ₃	0.09 ppm	No Standard	Same as Primary Standard
8 Hour O ₃	0.070 ppm	0.070 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	Same as Primary Standard
Annual Arithmetic Mean PM ₁₀	20 µg/m ³	No Standard	Same as Primary Standard
24 Hour PM ₁₀	50 µg/m ³	150 µg/m ³ , not to be exceeded more than once per year on average over 3 years	Same as Primary Standard

Table 3-5 California and National Ambient Air Quality Standards for Air Pollutants

Air Pollutant Standard	CAAQS	NAAQS	
		Primary ¹	Secondary ²
Annual Arithmetic Mean PM _{2.5}	12 µg/m ³	12 µg/m ³ , annual mean averaged over 3 years	15 µg/m ³
24 Hour PM _{2.5}	No Standard	35 µg/m ³ , 98th percentile averaged over 3 years	Same as Primary Standard
1 Hour CO	20 ppm	35 ppm, not to be exceeded more than once per year	No Standard
8 Hour CO	9 ppm	9 ppm, not to be exceeded more than once per year	No Standard
30 Day Average Lead	1.5 µg/m ³	No Standard	No Standard
Calendar Quarter Lead	No Standard	1.5 µg/m ³ (for certain areas) ³	Same as Primary Standard
3 Month Rolling Average Lead	No Standard	0.15 µg/m ³ , not to be exceeded	Same as Primary Standard
1 Hour NO ₂	0.18 ppm	100 ppb, 98th percentile averaged over 3 years	No Standard
Annual Arithmetic Mean NO ₂	0.030 ppm	0.053 ppm, annual mean	Same as Primary Standard
1 Hour Average SO ₂	0.25 ppm	75 ppb (0.075 ppm), 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	No Standard
3 Hour SO ₂	No Standard	No Standard	50 ppb (0.05 ppm)
24 Hour SO ₂	0.04 ppm	0.14 ppm	No Standard
Annual Arithmetic Mean SO ₂	No Standard	0.030 ppm	No Standard

Key: ppb (parts per billion by volume), ppm (parts per million by volume), µg/m³ (micrograms per cubic meter of air), O₃ (ozone), CO (carbon monoxide), NO₂ (nitrogen dioxide), SO₂ (sulfur dioxide), PM₁₀ (particulate matter less than ten microns in diameter), PM_{2.5} (fine particulate matter less than 2.5 microns in diameter).

1,2. The Clean Air Act identifies two types of national ambient air quality standards. Primary standards provide public health protection, including protecting the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards provide public welfare protection, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings (EPA 2015).

3. CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016.

Pursuant to the federal Clean Air Act, EPA designates counties as attainment, non-attainment, or unclassified for compliance with the NAAQS. If NAAQS are met, the county is given an “attainment” designation; if NAAQS are not met, the county is given a “nonattainment” designation;

and if there is insufficient data to decide if the county is given an “unclassified” designation. The California Clean Air Act established the CAAQS. These standards are generally more stringent and include more pollutants than the NAAQS. Compliance of the CAAQS is overseen by the California Air Resources Board (CARB). California contains a wide variety of climates, physical features, and emission sources, which makes the task of improving air quality complex. Therefore, to better manage common air quality problems, California is divided into 15 air basins. Within these air basins, similar to the EPA, CARB designates air basins or partial air basins as attainment, nonattainment, or unclassified for meeting the CAAQS. The North Area Program facilities traverse five of the California’s 15 air basins and 17 counties throughout central and northern California.

All the counties within the North Area Program are currently identified as either attainment or unclassified for both NAAQS and CAAQS for lead, CO, NO₂, and SO₂ (CARB 2018a). Current attainment designations for individual counties within the North Area Program for O₃, PM_{2.5}, and PM₁₀ are identified in Table 3-6.

Table 3-6 Air Pollutant Designation for Counties within the North Area Program Project Area

County	Ozone		PM _{2.5}		PM ₁₀	
	California	National	California	National	California	National
Alameda	NA	NA	NA	NA	NA	U
Butte	NA	NA	NA	U/A	NA	U
Colusa	A	U/A	A	U/A	NA	U
Contra Costa	NA	NA	NA	NA	NA	U
Glenn	A	U/A	A	U/A	NA	U
Lassen	A	U/A	A	U/A	U	U
Modoc	A	U/A	A	U/A	U	U
Sacramento	NA	NA	A	NA	NA	A
San Joaquin	NA	NA	NA	NA	NA	A
Shasta	NA	U/A	A	U/A	A	U
Siskiyou	A	U/A	A	U/A	A	U
Solano	NA	NA	U	NA	NA	U
Sutter	NA	U/A	A	U/A	NA	U
Tehama	NA	U/A	U	U/A	NA	U
Trinity	A	U/A	A	U/A	A	U
Yolo	NA	NA	U	NA	NA	U
Yuba	NA	U/A	A	U/A	NA	U

Key: NA (Nonattainment), A (Attainment), U (Unclassified), Source: CARB 2018a

General Conformity

General conformity requirements were adopted as part of the federal Clean Air Act Amendments in 1990 and implemented by EPA in 1993. General conformity requires that all federal actions must conform to the EPA-approved State Implementation Plan. The purpose of the general conformity program is to ensure that actions taken by the federal government do not undermine state or local efforts to achieve and maintain the NAAQS. EPA regulations in 40 CFR Part 93 Section 153(b)(1) exempt projects in nonattainment and maintenance areas from general conformity requirements if their projected emissions do not exceed specified *de minimis* levels. This analysis of general conformity was conducted for all categories of O&M activities in the 2010 EA because several project counties are designated nonattainment for O₃ and PM_{2.5} for the NAAQS. The *de minimis* levels applicable to the North Area Program are presented in Table 3-7.

Table 3-7 Applicable Federal De Minimis Thresholds for the North Area Program (tons per year)

County ¹	O ₃	PM _{2.5}
Alameda	100 tpy	100 tpy
Butte	100 tpy	100 tpy
Contra Costa	100 tpy	100 tpy
Sacramento	100 tpy	100 tpy
San Joaquin	10 tpy	100 tpy
Solano	100 tpy	100 tpy
Sutter	100 tpy	100 tpy
Tehama	100 tpy	--
Yolo	100 tpy	100 tpy
Yuba	--	100 tpy

Key: AQMD (Air Quality Management District), APCD (Air Pollution Control District), O₃ (ozone), PM_{2.5} (particulate matter less than 2.5 microns in diameter), tpy (tons per year)

1.Counties that are designated nonattainment do not have to meet the Federal *de minimis* thresholds.

Source: EPA 2019

Local Air District Standards

The State is divided into Air Pollution Control Districts (APCD) and Air Quality Management Districts (AQMD), which are also called air districts. These agencies are county or regional governing authorities that have primary responsibility for controlling air pollution from stationary sources. The thresholds of significance set by the air districts for the North Area Program are presented in Table 3-8.

Table 3-8 Air Pollutant Thresholds of Significance

County	Air District	ROG	NO _x	PM ₁₀	PM _{2.5}	CO	SO _x
Alameda	Bay Area AQMD	54 lb/day 10 tpy	54 lb/day 10 tpy	82 lb/day 15 tpy	54 lb/day 10 tpy	-	-
Butte	Butte County AQMD	25 lb/day	25 lb/day	80 lb/day	-	-	-
Colusa	Colusa County APCD	-	-	-	-	-	-
Contra Costa	Bay Area AQMD	54 lb/day 10 tpy	54 lb/day 10 tpy	82 lb/day 15 tpy	54 lb/day 10 tpy	-	-
Glenn	Glenn County APCD	-	-	-	-	-	-
Lassen	Lassen County APCD	-	-	-	-	-	-
Modoc	Modoc County APCD	-	-	-	-	-	-
Sacramento	Sacramento Metropolitan AQMD	65 lb/day	65 lb/day	80 lb/day 14.6 tpy ¹	82 lb/day 15 tpy ¹	-	-
San Joaquin	San Joaquin Valley APCD	10 tpy	10 tpy	15 tpy	15 tpy	100 tpy	27 tpy
Shasta	Shasta County APCD	-	-	-	-	-	-
Siskiyou	Siskiyou County APCD	-	-	-	-	-	-
Solano	Yolo-Solano AQMD	10 tpy	10 tpy	80 lb/day	-	-	-
Sutter	Feather River AQMD	25 lb/day	25 lb/day	80 lb/day	-	-	-
Tehama	Tehama County APCD	25 lb/day	25 lb/day	80 lb/day	-	-	-
Trinity	North Coast Unified APCD	BACT	BACT	BACT	BACT	BACT	BACT
Yolo	Yolo-Solano AQMD	10 tpy	10 tpy	80 lb/day	-	-	-
Yuba	Feather River AQMD	25 lb/day	25 lb/day	80 lb/day	-	-	-

Key: AQMD (Air Quality Management District), APCD (Air Pollution Control District), ROG (reactive organic gases), NO_x (nitrogen oxides), PM₁₀ (particulate matter less than 10 microns in diameter), PM_{2.5} (particulate matter less than 2.5 microns in diameter), CO (carbon monoxide), SO_x (sulfur dioxide), lb/day (pound per day), tpy (tons per year), BACT (best available control technology)

1. Threshold applies if all feasible BACT/best management practices are used. If BACT/best management practices are not used, the threshold is zero (0) lb/day.

Sources: Feather River AQMD 2010, Sacramento Metropolitan AQMD 2015, Bay Area AQMD 2017, Butte County AQMD 2014, San Joaquin Valley APCD 2015, YSAPCD 2007, TCAPCD 2015, NCUAPCD 2019

Program Emissions

As discussed in Chapter 2 (Changes in the Project Area and Project Activities), there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. The current workforce used to complete activities under the North Area Program is the same

size as when the June 2010 Final EA was published, and substantially the same size as when the facilities were originally put into service. As such, there has not been a significant increase in the number of vehicles used for the North Area Program or vehicle emissions. A list of vehicles and off-road equipment utilized for all Category A, B, and C O&M activities is presented in Table 3-9.

Table 3-9 Operations and Maintenance Equipment and Vehicles

Off-Road Equipment	On-Road Vehicles	Aerial Equipment
Aerial Lifts	Light Heavy-Duty Vehicles	Helicopter
Crawler Tractors	Medium Duty Vehicles	
Forklifts	Medium Heavy Duty Diesel Trucks	
Skid Steer Loaders	Water Trucks	
Tractors/Loaders/Backhoes	Heavy Duty Diesel Trucks	
All-terrain Vehicles (ATVs)		

Emissions were calculated using CalEEMod version 2016.3.2 for all O&M equipment, based on use rates for 2017 and 2018 (in hours or miles, as applicable) and modeled for 2019 (Appendix A). Construction activities were assumed to be limited to regrading of 10% of access roads. All other activities were included as operational mobile and off-road equipment emissions. Construction of new access roads, new support buildings, and new transmission lines was not included in the emissions modeling because of the rarity of these activities. In the event they should occur, independent emissions modeling and evaluation will be conducted. Helicopter emissions were calculated using emissions factors from the Swiss Confederation Guidance on the Determination of Helicopter Emissions. Emissions calculations are presented in Appendix A. Emissions estimates with SOP implementation included are presented in Table 3-10.

Table 3-10 North Area Program Emissions Estimates

	ROG	NO _x	PM ₁₀	PM _{2.5}	CO	SO _x
Annual Emissions (tpy)						
Mobile	0.01	0.13	1.55	0.16	0.07	0.00
Offroad	0.02	0.21	0.01	0.01	0.23	0.00
Grading	0.01	0.23	0.38	0.05	0.38	0.00
Helicopter	0.01	0.01	0.00	0.00	0.02	0.00
Total	0.06	0.58	1.93	0.23	0.69	0.00
Annual Thresholds of Significance (tpy)						
De Minimis Thresholds	10	10	70	100	-	-
Bay Area AQMD	10	10	15	10	-	-

Table 3-10 North Area Program Emissions Estimates

	ROG	NO _x	PM ₁₀	PM _{2.5}	CO	SO _x
Feather River AQMD	-	-	25	-	-	-
Sacramento Metropolitan AQMD	-	-	15	14.6	-	-
San Joaquin Valley APCD	10	10	15	15	100	27
Yolo-Solano AQMD	10	10	-	-	-	-
Average Daily Emissions (lb/day)						
Mobile	0.05	0.69	8.47	0.87	0.36	0.00
Offroad	0.11	1.15	0.06	0.05	1.27	0.00
Grading	0.07	1.26	2.06	0.26	2.07	0.00
Helicopter	0.08	0.06	0.00	0.00	0.10	0.00
Total	1.69	3.16	10.58	1.18	3.81	0.01
Maximum Daily Emissions (lb/day)						
Mobile	0.06	0.91	11.01	1.13	0.48	0.00
Offroad	1.92	19.93	1.04	0.96	18.75	0.03
Grading	0.15	2.53	4.94	0.61	4.16	0.01
Helicopter	14.12	11.37	0.36	0.36	17.59	0.00
Total	16.25	34.74	17.35	3.05	40.98	0.04
Daily Thresholds of Significance (lb/day)						
Bay Area AQMD	54	54	82	54	-	-
Butte County AQMD	25	25	80	-	-	-
Feather River AQMD	25	25 ¹	80	-	-	-
Sacramento Metropolitan AQMD	65	65	82	80	-	-
Daily Thresholds of Significance (lb/day)						
Tehama County APCD	25	25	80	-	-	-
Yolo-Solano AQMD	-	-	80	-	-	-

Key: AQMD (Air Quality Management District), APCD (Air Pollution Control District), ROG (reactive organic gases), NO_x (nitrogen oxides), PM₁₀ (particulate matter less than 10 microns in diameter), PM_{2.5} (particulate matter less than 2.5 microns in diameter), CO (carbon monoxide), SO_x (sulfur dioxide), lb/day (pound per day), tpy (tons per year)

1. Emissions standard based on average daily emissions, not maximum daily emissions.

Source: Appendix A

The June 2010 Final EA identifies seven SOPs that avoid or minimize adverse effects on air quality. Among other measures, these SOPs require WAPA to adhere to all requirements of those agencies

having jurisdiction over air quality matters and to obtain any necessary permits from these agencies for O&M activities. Also, the SOPs require WAPA to keep machinery and vehicles in good operating condition and to replace equipment to ensure compliance with California emission standards. As part of the ongoing North Area Program, WAPA continues to implement the SOPs identified in the June 2010 Final EA to protect air quality, as follows:

- AQ-SOP-1 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-SOP-2 Machinery and vehicles will be kept in good operating condition and older equipment will be replaced with equipment meeting more stringent standards.
- California emission standards, appropriate emissions-control equipment will be maintained for vehicles and equipment, per California, EPA, and WAPA air-emission requirements.
- AQ-SOP-3 Idle equipment will be shut down when not in active use; visible emissions from stationary generators will be controlled.
- AQ-SOP-4 Dust-control measures will be implemented in road construction and maintenance, as needed. Trucks transporting loose material will be covered or maintain at least 2 feet of freeboard and will not create any visible dust emissions.
- AQ-SOP-5 There will be no open burning of construction trash.
- AQ-SOP-6 Grading activities will cease during periods of high winds (as determined by local air quality management districts).
- AQ-SOP-7 Major operations will be avoided on days when the local Air Quality Index is expected to exceed 150.

Summary

For O₃ precursors (ROG and NO_x), PM₁₀, and PM_{2.5}, emissions would not exceed the *de minimis* thresholds for any of the North Area Program counties in nonattainment; therefore, the project is exempt from general conformity requirements. Annual emissions would not exceed any emission standards set by local air quality authorities. Although maximum daily emissions of NO_x would exceed the 25 lb/day thresholds set by several air districts, this situation is unlikely to occur because helicopter emissions account for one third of the maximum daily NO_x emissions but would only be used two days of the year. Additionally, offroad equipment would not be used every day, reducing the likelihood of exceeding the maximum daily threshold. Furthermore, average daily emissions for all pollutants are well below the thresholds of significance established by applicable air districts. Therefore, the project follows CAAQS and NAAQS.

WAPA would continue to employ vegetation management practices that would promote low-growing plant communities within the ROW, thereby minimizing long-term maintenance requirements and resulting in a long-term lessening of air quality emissions from management activities. Vehicles used to conduct project activities would be subject to EPA and National Highway and Traffic Safety Administration standards for heavy-duty trucks to reduce air emissions, which were issued in August 2011. All equipment used for project activities would follow the CARB On-Road Diesel, Off-Road Diesel, and Portable Diesel Equipment Requirements. AQ-SOP-1 through AQ-SOP-7 would remain in place to ensure that impacts to air quality are minimized.

Conclusion

Air emissions result mainly from equipment used for maintenance, as well as workers' vehicles and trucks transporting equipment, parts, and materials. The emissions modeling in this document (Appendix A) shows that project emissions would not exceed *de minimis* thresholds for criteria pollutants. Project activities would continue to be temporary, intermittent, of short duration, and generally widely dispersed along a narrow, long strip of land. Therefore, in accordance with the emissions modeling in this document, and the continued implementation of the SOPs described in this section, it is anticipated that the project would not cause a significant impact to air quality under the significance criteria in the Final EA. The project would also be highly unlikely to exceed local air district thresholds. Project activities and regulations would not cause a substantial or significant impact to the air quality and impacts from the project would remain less than significant.

3.2.16 Noise

Noise-sensitive receptors and areas are distributed throughout the North Area Program facilities. Ecological conservation areas, colleges, public schools, rest homes, wildlife management areas, recreational areas, and hospitals are among the most common sensitive receptors. As detailed in the June 2010 Final EA (see Section 3.16), to describe environmental noise and to assess project impacts on noise sensitive areas, a measurement scale that simulates human perception is customarily used. The A-weighted scale of frequency sensitivity accounts for the sensitivity of the human ear, which is less sensitive to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Noise is measured in decibels, which are logarithmic units that conveniently compare wide ranges of sound intensities.

Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range and high above 60 dBA. In wilderness areas, the day-night average sound level (Ldn) (an average level occurring over a 24-hour day/night period) can be below 35 dBA. In small towns or wooded and lightly used residential areas, the Ldn is more likely to be around the 50 or 60 dBA. Levels around 75 dBA are more common in busy urban areas (e.g., areas located near downtown Sacramento), and levels up to 85 dBA occur near major freeways and airports (California Public Utilities Commission 2010).

Typical noise levels of standard construction equipment that is used for the North Area Program (e.g., backhoes, excavators, trucks, cranes, and pavers) generally range from 80 to 89 dBA (Federal Transportation Authority 1995). Other sources of noise from North Area Program activities include the use of chainsaws for vegetation management and the use of aircraft for aerial inspections. While existing ambient noise in the Program Area has not been measured, noise levels are the highest near major transportation facilities, especially highway and freeway crossings, and near other localized noise sources such as airport and industrial operations. Another noise source along the existing ROW is audible power line noise generated from corona discharge, which is usually experienced as a random crackling or hissing sound. Corona noise is primarily audible during wet weather such as fog and rain. The corona noise for a 500-kV transmission line is generally below 50 dBA. Corona noise for transmission lines less than 230 kV is not substantially audible.

All vehicles and equipment used to perform work for the North Area Program are equipped with required exhaust-noise-abatement devices (e.g., muffler, catalytic converters); and work is generally

not performed in areas located near sensitive receptors. Furthermore, most noise-generating activities are temporary and conducted for a relatively short duration. As discussed in Section 2.1 (Changes in the Project Area and Project Activities) above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. WAPA continues to implement the SOPs for noise identified in the June 2010 Final EA and continues to collaborate with BLM, NPS, and USFS for activities conducted on federal lands.

Given that the North Area Program activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for noise.

Conclusion

There are no new significant circumstances or information for noise, and no further NEPA evaluation is required.

3.2.17 Transportation

The June 2010 Final EA (Section 3.17) describes transportation resources that can be impacted by WAPA's O&M activities such as streets, highways, railroads, airports, and waterways that are crossed by or run parallel to the rights-of-way and access roads. The potential for transportation impacts such as substantial increases in traffic, major traffic delays or roadway closures, road damage and hazardous road conditions, and adverse effects on air-traffic patterns were evaluated.

As discussed in Section 2.1 above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. The current workforce used to complete activities under the North Area Program is the same size as it was when the June 2010 Final EA was published, and substantially the same size as it was since the facilities were originally put into service. As such, there has not been a significant increase the number of vehicles used for the North Area Program, and there are no additional transportation impacts or concerns beyond those addressed in the June 2010 Final EA.

Conclusion

There are no new significant circumstances or information for transportation, and no further NEPA evaluation is required.

3.2.18 Environmental Justice

As detailed in the June 2010 Final EA (Section 5.1), on February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*. This order requires that “each Federal agency make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations...” (Executive Order 12898, 59 FR 7629 [section 1-101]).

In 1997, the U.S. EPA Office of Environmental Justice released the Environmental Justice Implementation Plan, supplementing the EPA environmental-justice strategy and providing a framework for developing specific plans and guidance for implementing Executive Order 12898. In 1998, the EPA provided federal agencies with a framework for the assessment of environmental justice in the *Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis*.

After the June 2010 Final EA, the DOE, along with 16 other federal agencies, signed an August 11, 2011 environmental justice Memorandum of Understanding (MOU) reflecting the Obama Administration's continuing efforts to protect the health of U.S. communities overburdened by pollution. The MOU recommitted the federal agencies to Executive Order 12898 and to "declare the continued importance of identifying and addressing environmental justice considerations in agency programs, policies, and activities as provided in Executive Order 12898." On February 10, 2014, President Barack Obama issued a Presidential Proclamation in recognition of the 20th Anniversary of Executive Order 12898 on Environmental Justice.

As discussed in Section 5.1 of the June 2010 Final EA, the North Area Program does not involve establishing new ROW, and all activities are conducted within the existing ROW. The maintenance activities that are needed are dictated by the condition of the facilities at a particular point within the ROW. The activities that occur under the North Area Program are required maintenance activities for existing facilities and do not have significant effects on the public (e.g., air quality, public health, and safety). As such, no environmental justice effects are anticipated because of the North Area Program.

As discussed in Section 2.1 (Changes in the Project Area and Project Activities) above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. For the North Area Program transmission system to operate in a safe, reliable, and efficient manner, system components will continue to be installed, replaced, or upgraded as needed based on the age, condition, and technology of the equipment. Given that these activities have been occurring since initial construction and operation of the facilities and that they are conducted in the same or a substantially similar manner as identified in the June 2010 Final EA, there are no new significant circumstances or information for environmental justice.

Conclusion

There are no new significant circumstances or information for environmental justice, and no further NEPA evaluation is required.

3.2.19 Intentional Destructive Acts

As detailed in the June 2010 Final EA (Section 3.18), intentional destructive acts could be directed at the North Area Program transmission system and facilities. Destroying a tower or equipment could disrupt the supply of electricity, in turn affecting utility customers and end users. Air quality could temporarily decrease if those customers must rely on backup generators. However, vandalism and theft are the more-likely forms of destruction. Although potentially costly, they do not usually disrupt the provision of electricity or have significant environmental effects. The incidence of an intentional destructive act is purely speculative and could occur at any location within the Program Area. If an act were to take place, however, it would likely not result in significant environmental impacts.

As discussed in Section 2.1 (Changes in the Project Area and Project Activities) above, there have been no substantial changes in the project area or project activities since publication of the June 2010 Final EA. The North Area Program activities are maintenance activities that have occurred since initial construction and operation of the facilities; and they do not involve activities that would increase the potential for significant environmental effects due to intentional destructive acts. Based on past and current experience, intentional destructive acts are rare, limited in extent, and benign in overall impact. WAPA also takes reasonable and prudent measures to protect its infrastructure from destructive acts, including regular monitoring and periodic patrols of the facilities.

Conclusion

There are no new significant circumstances or information for intentional destructive acts, and no further NEPA evaluation is required.

3.2.20 Climate Change

Climate change was addressed under the air quality section in the 2010 Final EA. Climate change has been separated into an independent section in this SA to address potential impacts more thoroughly.

Affected Environment

It is widely recognized that emissions of greenhouse gases (GHG) associated with human activities are contributing to changes in the global climate, and that such changes are having and will continue to have adverse effects on the environment, the economy, and public health.

Man-made GHG emissions are largely comprised of carbon dioxide (CO₂) from the combustion of fossil fuels. Other GHGs, such as methane and nitrous oxide, also contribute to climate change but occur in much smaller quantities. When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually considered by normalizing their rates to a CO₂ equivalent (CO₂e) emission rate. The major categories of fossil fuel combustion sources can be broken into sectors: residential, commercial, industrial, transportation, and electricity generation. The transportation sector includes all motor gasoline and diesel fuel combustion.

California's GHG emissions are large in a world-scale context. The State emitted 429.4 million metric tons CO₂e in 2016. Electricity generation within California contributed 16 percent of the total Statewide CO₂ emissions in 2016 (CARB 2018b). Fuel consumption estimates are included in Appendix A.

Regulatory Environment

Assembly Bill 32 (AB 32) requires that California's GHG emissions be reduced to 1990 levels by 2020 (CARB 2018c). GHG is defined as any gas that absorbs infrared radiation in the atmosphere. GHGs include CO₂, methane, and nitrous oxide. AB 32 required CARB to develop a Scoping Plan that describes the approach California will take to reduce GHGs to achieve the goal. The Scoping Plan was approved by the CARB in 2008 and must be updated every five years. CARB is moving forward with a second update to the Scoping Plan to reflect the 2030 target established by Executive Order B-30-15 which aims to reduce emissions 40 percent below 1990 levels by 2030.

EPA and California have taken the following steps to limit emissions that cause climate change:

- EPA and the National Highway and Traffic Safety Administration worked together to set GHG and fuel economy standards for passenger vehicles in model years 2012-2016 and 2017-2025.
- EPA and National Highway and Traffic Safety Administration issued standards for heavy-duty trucks and buses, in August 2011.
- In January 2011, states and EPA initiated Clean Air Act permitting of GHG pollution from the largest new and modified stationary sources. In the first year of permitting, dozens of large sources such as power plants, cement plants, refineries, and steel mills received pre-construction permits for GHG emissions.
- In March 2012, Executive Order B-16-2012 was signed affirming a long-range climate goal for California to reduce GHG from transportation to 80 percent below 1990 levels by 2050.
- In 2013, California launched a Cap-and-Trade Program for GHG emissions.
- In 2014, CARB in collaboration with the Climate Action Team, prepared the first update to the Climate Change Scoping Plan.
- On August 3, 2015, the EPA unveiled the Clean Power Plan, a historic and important step in reducing carbon pollution from power plants; however, the current EPA administration in 2017 repealed the plan, effective October.
- In November 2017, CARB released an update to the Climate Change Scoping Plan.

The EPA and National Highway and Traffic Safety Administration jointly finalized standards for medium- and heavy-duty vehicles to improve fuel efficiency and cut carbon pollution to reduce the impacts of climate change. The vehicle and engine performance standards cover model years 2018-2027 for certain trailers and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks.

Local Authority

Of the local air authorities applicable to the Project, Bay Area AQMD, Sacramento Metropolitan AQMD, and Tehama County APCD have established thresholds for GHG emissions. Bay Area AQMD and Sacramento Metropolitan AQMD have set the threshold of significance at 1,100 MT/year CO₂e (Bay Area AQMD 2017, Sacramento Metropolitan AQMD 2015) and Tehama County APCD has set a threshold of significance at 900 MT/year CO₂e (Tehama County APCD 2015).

Significance Criteria

A significant impact on climate change would result if any of the following were to occur:

- Generate GHG emissions that may exceed local air authority thresholds of significance (1,100 MT CO₂e/year or 900 MT CO₂e/year)
- Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHG

Greenhouse Gas Emission Changes

GHG emissions from the project would be minor during operations, consisting of exhaust from vehicles carrying service technicians around the project area, helicopters and small planes conducting periodic aerial inspections, operation of maintenance equipment, and commuting of employees. No sulfur hexafluoride emissions would be generated during the project.

Emissions were calculated using CalEEMod version 2016.3.2 and the assumptions outlined in Section 3.2.15, Air Quality. Table 3-11 presents project emissions estimates of approximately 121 MT/year CO₂e with implementation of WAPA SOPs (Appendix A). The project would not generate quantities of GHG to cause a substantial impact related to global climate change or disrupt the CARB progress on achieving the goals of the California Global Warming Solutions Act of 2006 (AB 32). Annual project emissions would not exceed 900 MT CO₂e/year, the strictest applicable threshold. The project remains consistent with the most recent update of the CARB Climate Change Scoping Plan (CARB 2018c), which is based on continuing the reliable delivery of electricity to customers in California.

Table 3-11 Estimated GHG Emissions

	GHG Emissions (MT/year CO₂e)
Project Emissions	121
Thresholds of Significance	
Tehama County APCD	900
Sacramento Metropolitan AQMD	1,100
Bay Area AQMD	1,100

Key: AQMD (Air Quality Management District), APCD (Air Pollution Control District), GHG (greenhouse gas), MT/year CO₂e (metric tons per year carbon dioxide equivalents)

In addition, climate change has increased the frequency of wildfire. Project maintenance activities, such as vegetation removal, will reduce the risk of wildfire in the project area, thus reducing the impacts of climate change-induced wildfire on the infrastructure characterized in this document.

Standard Operating Procedures

As part of the ongoing North Area Program, WAPA implements SOPs (Table 2-4) to protect air quality, including GHG emissions during O&M activities.

- AQ-SOP-1 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-SOP-2 Machinery and vehicles will be kept in good operating condition and older equipment will be replaced with equipment meeting more stringent standards.
- California emission standards, appropriate emissions-control equipment will be maintained for vehicles and equipment, per California, EPA, and WAPA air-emission requirements.
- AQ-SOP-3 Idle equipment will be shut down when not in active use; visible emissions from stationary generators will be controlled.
- AQ-SOP-4 Dust-control measures will be implemented in road construction and maintenance, as needed. Trucks transporting loose material will be covered or maintain at least 2 feet of freeboard and will not create any visible dust emissions.

- AQ-SOP-5 There will be no open burning of construction trash.

Conclusion

Emissions modeling in Appendix A illustrates that project GHG emissions would not exceed thresholds of significance; therefore, the project would not have a significant impact on climate change. In addition, the project would help to protect WAPA transmission and distribution assets from wildfire associated with climate change.

Chapter 4. Conclusion

The Final EA for the North Area Program was prepared by WAPA in June 2010. This SA was prepared in accordance with DOE NEPA regulations (10 CFR 1021.330(d) and (e)) which require an evaluation of the adequacy of “site-wide” NEPA documents at least every five years.

The purpose of this SA is to: 1) document whether there have been any changes in the project area or project activities for the North Area Program since the June 2010 Final EA; 2) document whether there are any new circumstances or information relevant to environmental changes or environmental impacts; 3) evaluate whether any project changes are substantial and if any new circumstances or information are significant in the context of NEPA; and 4) determine if additional NEPA documentation is required.

As discussed in Chapter 2 of this SA, there have been no changes to the project area for the North Area Program since the June 2010 Final EA. All North Area Program activities are conducted within the boundaries of transmission ROW, legally deeded access roads, and communication and substation facilities included in the North Area Program. There have also been no substantial changes in project activities for the North Area Program since the June 2010 Final EA. Project activities conducted under the North Area Program are routine O&M activities that have been occurring since initial construction and operation of the facilities, and they are conducted in the same or substantially similar manner as identified in the June 2010 Final EA. There have been no substantial changes in SOPs or PCMs for the North Area Program since the June 2010 Final EA, although additional PCS were added and some were edited. The SOPs and PCMs serve as guidelines and directives to assist in scheduling and implementing O&M activities in a manner that avoids or minimizes the potential for adverse effects on environmental resources. Changes to the SOPs and PCMs since the June 2010 Final EA have been limited to incorporating additional measures to enhance resource protection and further minimize the potential for adverse effects on environmental resources, or minor changes to existing measures to provide improved clarity and direction.

Chapter 3 of this SA presents the results of the analysis that was performed for each resource area addressed in the June 2010 Final EA. The purpose of the analysis is to provide an evaluation of whether there have been any significant new circumstances or new information that may be relevant to environmental concerns or environmental impacts. Given that there have not been any substantial changes in the project area or project activities for the North Area Program since the June 2010 Final EA, the analysis is focused on evaluating if there have been any new circumstances or information for the resource areas since the June 2010 Final EA. The results of the analysis indicate that there are no significant new circumstances or information relevant to environmental concerns or impacts for the North Area Program since the June 2010 Final EA.

Chapter 5. Determination

This SA has been prepared in accordance with DOE NEPA regulations (10 CFR 1021.314(c)) and ((d)) to determine whether supplemental or new NEPA documentation for the North Area Program should be prepared. This SA provides an analysis of whether there have been any “substantial” project changes and if there has been any “significant” new circumstances or information in the context of NEPA since the June 2010 Final EA and FONSI.

The analysis in this SA indicates that there have been no substantial project changes relevant to environmental concerns and that there are no new circumstances or information relevant to environmental concerns bearing on the North Area Program or its impacts that are significant. Based on this analysis, WAPA has determined that preparation of a supplemental or new NEPA documentation is not warranted and that no further NEPA analysis is required.

Based on my review of the information contained in this SA, I have determined that no further NEPA documentation for the North Area Program is required at this time.

LaTisha Saare
Supervisory Environmental Protection Specialist

Date

I concur with the above determination.

Sonja Anderson
Senior VP & Sierra Nevada Regional Manager

Date

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APPENDIX A

Air Quality and Greenhouse Gas Emissions Calculations

Appendix A

North Area Program Air Quality and Greenhouse Gas Emissions Calculations

Assumptions

Annual emissions for the North Area Maintenance ROW were calculated for O&M activities (categories A, B, and C) for the Sacramento Valley Air Basin, in which the project is primarily located. A list of vehicles and off-road equipment utilized for all Category A, B, and C O&M activities is presented in Table 1.

Table 1 Compilation of Operations and Maintenance Equipment

Off-Road Equipment	Average Horsepower	Quantity	Total Hours
Aerial lifts	72	5	97
Crawler tractors	157	5	20
Forklifts	71	4	84
Graders	150	1	5
Skid steer loaders	61	1	24
Tractor/loaders/backhoes	130	2	90
All-terrain Vehicles (ATVs)	124 (Default)	2	1,000
On-Road			Daily VMT
Medium Duty Vehicles	-	-	27
Light Heavy Duty Vehicles	-	-	134
Medium Heavy Duty Diesel Truck	-	-	42
Heavy Duty Diesel Trucks	-	-	16
Water Trucks	-	-	-
Aerial			Total Hours
Helicopter	-	1	16

Note: Equipment was assumed to be used 8 hours/day

Annual emissions were calculated for all O&M equipment based on actual use rates for 2017 and 2018 (in hours or miles, as applicable). Except for ATVs, the same type of equipment was assumed to not be used simultaneously. Emissions calculations for on-road vehicles, off-road equipment, and grading were completed using CalEEMod. Helicopter emissions were completed using emissions factors from the Swiss Confederation Guidance on the Determination of Helicopter Emissions. The calculation summary and CalEEMod outputs follow this appendix.

CalEEMod

CalEEMod was used to calculate the off-road, on-road, and grading emissions associated with the North Area ROW Maintenance Area. The inputs used in CalEEMod are detailed in Table 2. The CalEEMod output follows this appendix.

Table 2 CalEEMod Inputs

Criteria	Input
Location	Sacramento Valley Air Basin
Climate Zone	3
Urbanization Level	Rural
Construction Start Date	1/1/2019
Operational Year	2020
Land Use Type	General Heavy Industry
Project Size (acres)	17,879
Total Acres Graded	90.9
Number of Days Grading	182
Operational Weekday Trip Rate (/1000 sqft/day)	0.00001769
Operational Saturday Trip Rate (/1000 sqft/day)	0.00000354
Operational Sunday Trip Rate (/1000 sqft/day)	0.00000354
Operational Fleetmix:	
MDV	0.14
LHD1	0.22
LHD2	0.35
MHD	0.22
HHD	0.07
All other vehicle types	0
Operational Offroad Equipment	See Table 1
Mitigation	
Vehicle Mitigation	Tier 3
Water Trucks	2 times per day
Speed Limit	15 mph

Helicopter

Helicopter emissions were calculated using emission factors from the Swiss Confederation Guidance on the Determination of Helicopter Emissions. Calculations assumed one helicopter would be used for two 8-hour days each year. The helicopter model was assumed to be a Hughes MD500. The following equation was used to calculate annual emissions:

$$AE_i = EFi \times FF(\text{hp}) \times t$$

where

AE_i = annual emissions of chemical i (lb i/yr)

EF_i = chemical i emission factor (lb i/ kg fuel)

FF = fuel flow as a function of horsepower (kg fuel/hr)

t = total annual number of hours of operation (hr/yr)

Summary

Emissions from CalEEMod and the helicopter model were combined to determine annual and daily emissions, presented in Table 3 and Table 4, respectively.

Table 3 Average Annual Emissions for Operations and Maintenance

	Annual Emissions (tpy)						(MT/yr)
	ROG	NO _x	CO	SO ₂	PM _{2.5}	PM ₁₀	CO _{2e}
Mobile	0.01	0.13	0.07	0.00	0.16	1.55	37.15
Offroad	0.02	0.21	0.23	0.00	0.01	0.01	31.27
Grading	0.01	0.23	0.38	0.00	0.05	0.38	47.19
Helicopter	0.01	0.01	0.02	--	0.00	0.00	5.63
Total	0.06	0.58	0.70	0.00	0.22	1.93	121.25
Thresholds of Significance							
De minimis Threshold	10	10	--	--	100	70	--
Bay Area AQMD	10	10	--	--	10	15	1100
Modoc County APCD	40	40	100	40	25	15	--
North Coast Unified AQMD	40	40	100	40	10	15	--
Sacramento Metropolitan AQMD	--	--	--	--	15	14.6	1100
San Joaquin Valley APCD	10	10	100	27	15	15	--
Siskiyou County APCD	40	40	100	40	25	15	--
Tehama County APCD	--	--	--	--	--	--	900
Yolo-Solano AQMD	10	10	--	--	--	--	--

Notes:

1. Calculations include mitigation.

CO = carbonmonoxide

NO_x = nitrogen oxidePM_{2.5} = particulate matter less than 2.5 micronsin diameterPM₁₀ = particulate matter less than 10 micronsindiameter

ROG = reactive organic gases (includes volatile organic compounds[VOC])

SO₂ = sulfurdioxide

tpy = tons per year

Table 4 Daily Emissions for Operations and Maintenance

	ROG	NO_x	CO	SO₂	PM_{2.5}	PM₁₀
Average Daily Emissions (lb/day)¹						
Mobile	0.05	0.69	0.36	0.00	0.87	8.47
Offroad	0.11	1.15	1.28	0.00	0.05	0.06
Grading	0.07	1.26	2.07	0.00	0.26	2.06
Helicopter	0.08	0.06	0.10	--	0.00	0.00
Total	1.69	3.16	3.81	0.01	1.18	10.58
Maximum Daily Emissions (lb/day)						
Mobile	0.06	0.91	0.48	0.00	1.13	11.01
Offroad	1.92	19.93	18.75	0.03	0.96	1.04
Grading	0.15	2.53	4.16	0.01	0.61	4.94
Helicopter	14.12	11.37	17.59	--	0.36	0.36
Total	16.25	34.74	40.98	0.04	3.05	17.35
Thresholds of Significance						
Bay Area AQMD	54	54	--	--	54	82
Butte County AQMD	25	25	--	--	--	80
Feather River AQMD	25	25	--	--	--	80
North Coast Unified AQMD	50	50	500	80	50	80
Sacramento Metropolitan AQMD	65	65	--	--	82	80
Tehama County APCD	25	25	--	--	--	80
Yolo-Solano AQMD	--	--	--	--	--	80

Notes:

1. Average daily emissions were calculated from annual emissions presented in Table3.
2. Calculations include mitigation.

CO = carbonmonoxide

lb/day = pounds per day

NO_x = nitrogen oxidePM_{2.5} = particulate matter less than 2.5 micronsin diameterPM₁₀ = particulate matter less than 10 micronsindiameter

ROG = reactive organic gases (includes volatile organic compounds [VOC])

SO₂ = sulfur dioxide

References

- Bay Area AQMD 2017a. California Environmental Quality Act Air Quality Guidelines. May.
- Butte County APCD 2014. CEQA Air Quality Handbook. Guidelines for Assessing Air Quality and greenhouse Gas Impacts for Projects Subject to CEQA Review. October 23.
- EPA 2018. General Conformity Training Modules: Appendix A Sample Emissions Calculations. Last Updated January 16, 2018. Accessed January 18, 2018 at <https://www.epa.gov/general-conformity/general-conformity-training-modules-appendix-sample-emissions-calculations>
- Feather River AQMD 2010. Indirect Source Review Guidelines.
- Sacramento Metropolitan AQMD 2015. CEQA Guide: SMAQMD Thresholds of Significance Table. May.
- San Joaquin Valley APCD 2015. Air Quality Thresholds of Significance – Criteria Pollutants. March 19.
- Swiss Confederation 2009. DETEC and FOCA "Guidance on the Determination of Helicopter Emissions.
- Tehama County APCD 2015. Air Quality Planning and Permitting Handbook. Guidelines for Assessing Air Quality Impacts. April.
- Yolo-Solano AQMD 2007. Handbook for Assessing and Mitigating Air Quality Impacts. July 11.

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Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	778,800.00	1000sqft	17,878.79	778,800,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	65
Climate Zone	3			Operational Year	2020
Utility Company					
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use -

Construction Phase - Assume 10% of all access roads will be regraded and a rate of 0.5 acre/day

Off-road Equipment - Basic grading equipment for unpaved access roads

On-road Fugitive Dust - Access roads are unpaved

Grading - Assume 10% of all access roads will be regraded

Vehicle Trips - From WAPA equipment list VMT data

Road Dust - Access Roads are unpaved

Consumer Products - N/A

Area Coating - N/A

Landscape Equipment - N/A

Energy Use - N/A

Water And Wastewater - N/A

Solid Waste - N/A

Construction Off-road Equipment Mitigation - Minimum tier 3 vehicles

Operational Off-Road Equipment - From WAPA Equipment list

ATVs calculated as off-highway tractors

Same type of equipment not used simultaneously

Fleet Mix - From WAPA equipment list

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	389400000	0
tblAreaCoating	Area_Nonresidential_Interior	1168200000	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	15,500.00	182.00
tblConstructionPhase	PhaseEndDate	5/30/2078	9/11/2019

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tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	3.542E-08
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	5.15E-09
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblFleetMix	HHD	0.04	0.07
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LHD1	0.03	0.22
tblFleetMix	LHD2	6.1670e-003	0.35
tblFleetMix	MCY	6.0010e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MH	1.1070e-003	0.00
tblFleetMix	MHD	0.02	0.22
tblFleetMix	OBUS	1.6840e-003	0.00
tblFleetMix	SBUS	7.9600e-004	0.00
tblFleetMix	UBUS	1.9140e-003	0.00
tblGrading	AcresOfGrading	91.00	90.90
tblLandscapeEquipment	NumberSummerDays	180	1
tblOffRoadEquipment	HorsePower	187.00	150.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00

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tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	13.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	11.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	1.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	63.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperHorsePower	63.00	72.00
tblOperationalOffRoadEquipment	OperHorsePower	212.00	157.00
tblOperationalOffRoadEquipment	OperHorsePower	89.00	71.00
tblOperationalOffRoadEquipment	OperHorsePower	187.00	150.00
tblOperationalOffRoadEquipment	OperHorsePower	65.00	61.00
tblOperationalOffRoadEquipment	OperHorsePower	97.00	130.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	90
tblSolidWaste	SolidWasteGenerationRate	965,712.00	0.00
tblVehicleTrips	ST_TR	1.50	3.5400e-006
tblVehicleTrips	SU_TR	1.50	3.5400e-006
tblVehicleTrips	WD_TR	1.50	1.7690e-005

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tblWater	IndoorWaterUseRate	180,097,500,000.00	0.00
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2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0617	0.5949	0.3740	5.2000e-004	0.6060	0.0332	0.6393	0.0614	0.0306	0.0920	0.0000	46.8437	46.8437	0.0140	0.0000	47.1925
Maximum	0.0617	0.5949	0.3740	5.2000e-004	0.6060	0.0332	0.6393	0.0614	0.0306	0.0920	0.0000	46.8437	46.8437	0.0140	0.0000	47.1925

Mitigated Construction (Grading in Table 3)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.0135	0.2303	0.3783	5.2000e-004	0.3644	0.0111	0.3755	0.0370	0.0111	0.0481	0.0000	46.8436	46.8436	0.0140	0.0000	47.1925
Maximum	0.0135	0.2303	0.3783	5.2000e-004	0.3644	0.0111	0.3755	0.0370	0.0111	0.0481	0.0000	46.8436	46.8436	0.0140	0.0000	47.1925

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	78.15	61.28	-1.17	0.00	39.87	66.67	41.26	39.70	63.77	47.71	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-1-2019	3-31-2019	0.2320	0.0862
2	4-1-2019	6-30-2019	0.2345	0.0871
3	7-1-2019	9-30-2019	0.1881	0.0699
		Highest	0.2345	0.0871

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.5500e-003	0.1255	0.0660	4.0000e-004	1.5442	1.2100e-003	1.5454	0.1568	1.1600e-003	0.1580	0.0000	37.1240	37.1240	1.1000e-003	0.0000	37.1514
Offroad	0.0198	0.2101	0.2332	3.5000e-004		0.0103	0.0103		9.4800e-003	9.4800e-003	0.0000	31.0185	31.0185	0.0100	0.0000	31.2693
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0321	0.3359	0.3392	7.5000e-004	1.5442	0.0117	1.5559	0.1568	0.0108	0.1676	0.0000	68.2198	68.2198	0.0113	0.0000	68.5032

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	8.5500e-003	0.1255	0.0660	4.0000e-004	1.5442	1.2100e-003	1.5454	0.1568	1.1600e-003	0.1580	0.0000	37.1240	37.1240	1.1000e-003	0.0000	37.1514
Offroad	0.0198	0.2101	0.2332	3.5000e-004		0.0103	0.0103		9.4800e-003	9.4800e-003	0.0000	31.0185	31.0185	0.0100	0.0000	31.2693
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	0.0321	0.3359	0.3392	7.5000e-004	1.5442	0.0117	1.5559	0.1568	0.0108	0.1676	0.0000	68.2198	68.2198	0.0113	0.0000	68.5032

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2019	9/11/2019		18	

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Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90.9

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders		8.0	15	0.4

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading		3.0	0.0	0.0	16.8	6.6	20.0	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

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3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0482	0.0000	0.0482	5.2000e-003	0.0000	5.2000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0601	0.5936	0.3609	4.9000e-004		0.0332	0.0332		0.0306	0.0306	0.0000	43.7908	43.7908	0.0139	0.0000	44.1371
Total	0.0601	0.5936	0.3609	4.9000e-004	0.0482	0.0332	0.0814	5.2000e-003	0.0306	0.0358	0.0000	43.7908	43.7908	0.0139	0.0000	44.1371

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6500e-003	1.3100e-003	0.0131	3.0000e-005	0.5578	2.0000e-005	0.5579	0.0562	2.0000e-005	0.0562	0.0000	3.0529	3.0529	1.0000e-004	0.0000	3.0554
Total	1.6500e-003	1.3100e-003	0.0131	3.0000e-005	0.5578	2.0000e-005	0.5579	0.0562	2.0000e-005	0.0562	0.0000	3.0529	3.0529	1.0000e-004	0.0000	3.0554

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3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0217	0.0000	0.0217	2.3400e-003	0.0000	2.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0118	0.2290	0.3652	4.9000e-004		0.0111	0.0111		0.0111	0.0111	0.0000	43.7907	43.7907	0.0139	0.0000	44.1371
Total	0.0118	0.2290	0.3652	4.9000e-004	0.0217	0.0111	0.0327	2.3400e-003	0.0111	0.0134	0.0000	43.7907	43.7907	0.0139	0.0000	44.1371

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6500e-003	1.3100e-003	0.0131	3.0000e-005	0.3427	2.0000e-005	0.3427	0.0347	2.0000e-005	0.0347	0.0000	3.0529	3.0529	1.0000e-004	0.0000	3.0554
Total	1.6500e-003	1.3100e-003	0.0131	3.0000e-005	0.3427	2.0000e-005	0.3427	0.0347	2.0000e-005	0.0347	0.0000	3.0529	3.0529	1.0000e-004	0.0000	3.0554

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	8.5500e-003	0.1255	0.0660	4.0000e-004	1.5442	1.2100e-003	1.5454	0.1568	1.1600e-003	0.1580	0.0000	37.1240	37.1240	1.1000e-003	0.0000	37.1514
Unmitigated	8.5500e-003	0.1255	0.0660	4.0000e-004	1.5442	1.2100e-003	1.5454	0.1568	1.1600e-003	0.1580	0.0000	37.1240	37.1240	1.1000e-003	0.0000	37.1514

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	13.78	2.76	2.76	41,062	41,062
Total	13.78	2.76	2.76	41,062	41,062

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.000000	0.000000	0.000000	0.140000	0.220000	0.350000	0.220000	0.070000	0.000000	0.000000	0.000000	0.000000	0.000000

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825
Unmitigated	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825
Total	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000	0.0825

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	tons/yr										MT/yr						
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000		0.0825
Total	3.7600e-003	3.7000e-004	0.0400	0.0000		1.4000e-004	1.4000e-004		1.4000e-004	1.4000e-004	0.0000	0.0773	0.0773	2.1000e-004	0.0000		0.0825

7.0 Water Detail

7.1 Mitigation Measures Water

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Heavy Industry	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000

9.0 Operational Offroad

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Aerial Lifts	1	8.00	13	72	0.31	Diesel
Crawler Tractors	1	8.00	3	157	0.43	Diesel
Forklifts	1	8.00	11	71	0.20	Diesel
Graders	1	5.00	1	150	0.41	Diesel
Off-Highway Tractors	2	8.00	63	124	0.44	Diesel
Skid Steer Loaders	1	8.00	3	61	0.37	Diesel
Tractors/Loaders/Backhoes	1	8.00	12	130	0.37	Diesel

UnMitigated/Mitigated

Equipment Type	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Aerial Lifts	2.9000e-004	4.7800e-003	8.1300e-003	1.0000e-005		1.1000e-004	1.1000e-004		1.0000e-004	1.0000e-004	0.0000	1.0959	1.0959	3.5000e-004	0.0000	1.1048
Crawler Tractors	8.5000e-004	8.7000e-003	5.9700e-003	1.0000e-005		4.9000e-004	4.9000e-004		4.5000e-004	4.5000e-004	0.0000	0.7632	0.7632	2.5000e-004	0.0000	0.7693
Forklifts	6.3000e-004	5.6900e-003	5.1800e-003	1.0000e-005		4.2000e-004	4.2000e-004		3.9000e-004	3.9000e-004	0.0000	0.5892	0.5892	1.9000e-004	0.0000	0.5940
Graders	1.9000e-004	1.8700e-003	1.2300e-003	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004	0.0000	0.1470	0.1470	5.0000e-005	0.0000	0.1482
Off-Highway Tractors	0.0164	0.1752	0.1949	3.0000e-004		8.5000e-003	8.5000e-003		7.8200e-003	7.8200e-003	0.0000	26.0088	26.0088	8.4100e-003	0.0000	26.2191
Skid Steer Loaders	1.1000e-004	1.5000e-003	1.9600e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.2556	0.2556	8.0000e-005	0.0000	0.2577
Tractors/Loaders/Backhoes	1.2500e-003	0.0123	0.0158	2.0000e-005		6.2000e-004	6.2000e-004		5.7000e-004	5.7000e-004	0.0000	2.1588	2.1588	7.0000e-004	0.0000	2.1762
Total	0.0198	0.2101	0.2332	3.5000e-004		0.0103	0.0103		9.4900e-003	9.4900e-003	0.0000	31.0185	31.0185	0.0100	0.0000	31.2693

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Annual

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

North Area ROW Maintenance EA SA
Sacramento Valley Air Basin, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Heavy Industry	778,800.00	1000sqft	17,878.79	778,800,000.00	0

1.2 Other Project Characteristics

Urbanization	Rural	Wind Speed (m/s)	3.5	Precipitation Freq (Days)	65
Climate Zone	3			Operational Year	2020
Utility Company					
CO2 Intensity (lb/MWhr)	0	CH4 Intensity (lb/MWhr)	0	N2O Intensity (lb/MWhr)	0

1.3 User Entered Comments & Non-Default Data

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

Project Characteristics -

Land Use -

Construction Phase - Assume 10% of all access roads will be regraded and a rate of 0.5 acre/day

Off-road Equipment - Basic grading equipment for unpaved access roads

On-road Fugitive Dust - Access roads are unpaved

Grading - Assume 10% of all access roads will be regraded

Vehicle Trips - From WAPA equipment list VMT data

Road Dust - Access Roads are unpaved

Consumer Products - N/A

Area Coating - N/A

Landscape Equipment - N/A

Energy Use - N/A

Water And Wastewater - N/A

Solid Waste - N/A

Construction Off-road Equipment Mitigation - Minimum tier 3 vehicles

Operational Off-Road Equipment - From WAPA Equipment list

ATVs calculated as off-highway tractors

Same type of equipment not used simultaneously

Fleet Mix - From WAPA equipment list

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	389400000	0
tblAreaCoating	Area_Nonresidential_Interior	1168200000	0
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 3
tblConstructionPhase	NumDays	15,500.00	182.00
tblConstructionPhase	PhaseEndDate	5/30/2078	9/11/2019

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	3.542E-08
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	5.15E-09
tblEnergyUse	LightingElect	2.70	0.00
tblEnergyUse	NT24E	4.16	0.00
tblEnergyUse	NT24NG	3.84	0.00
tblEnergyUse	T24E	1.96	0.00
tblEnergyUse	T24NG	17.03	0.00
tblFleetMix	HHD	0.04	0.07
tblFleetMix	LDA	0.53	0.00
tblFleetMix	LDT1	0.04	0.00
tblFleetMix	LDT2	0.20	0.00
tblFleetMix	LHD1	0.03	0.22
tblFleetMix	LHD2	6.1670e-003	0.35
tblFleetMix	MCY	6.0010e-003	0.00
tblFleetMix	MDV	0.12	0.14
tblFleetMix	MH	1.1070e-003	0.00
tblFleetMix	MHD	0.02	0.22
tblFleetMix	OBUS	1.6840e-003	0.00
tblFleetMix	SBUS	7.9600e-004	0.00
tblFleetMix	UBUS	1.9140e-003	0.00
tblGrading	AcresOfGrading	91.00	90.90
tblLandscapeEquipment	NumberSummerDays	180	1
tblOffRoadEquipment	HorsePower	187.00	150.00
tblOnRoadDust	HaulingPercentPave	100.00	90.00
tblOnRoadDust	VendorPercentPave	100.00	90.00
tblOnRoadDust	WorkerPercentPave	100.00	90.00

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	13.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	11.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	1.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	63.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	3.00
tblOperationalOffRoadEquipment	OperDaysPerYear	260.00	12.00
tblOperationalOffRoadEquipment	OperHorsePower	63.00	72.00
tblOperationalOffRoadEquipment	OperHorsePower	212.00	157.00
tblOperationalOffRoadEquipment	OperHorsePower	89.00	71.00
tblOperationalOffRoadEquipment	OperHorsePower	187.00	150.00
tblOperationalOffRoadEquipment	OperHorsePower	65.00	61.00
tblOperationalOffRoadEquipment	OperHorsePower	97.00	130.00
tblOperationalOffRoadEquipment	OperHoursPerDay	8.00	5.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	2.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblOperationalOffRoadEquipment	OperOffRoadEquipmentNumber	0.00	1.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	100	90
tblSolidWaste	SolidWasteGenerationRate	965,712.00	0.00
tblVehicleTrips	ST_TR	1.50	3.5400e-006
tblVehicleTrips	SU_TR	1.50	3.5400e-006
tblVehicleTrips	WD_TR	1.50	1.7690e-005

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

tblWater	IndoorWaterUseRate	180,097,500,000.00	0.00
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2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.6801	6.5389	4.1089	5.7100e-003	7.9819	0.3653	8.3472	0.8067	0.3360	1.1427	0.0000	566.3687	566.3687	0.1690	0.0000	570.5933
Maximum	0.6801	6.5389	4.1089	5.7100e-003	7.9819	0.3653	8.3472	0.8067	0.3360	1.1427	0.0000	566.3687	566.3687	0.1690	0.0000	570.5933

Mitigated Construction (Grading in Table 4)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2019	0.1499	2.5326	4.1567	5.7100e-003	4.8145	0.1217	4.9363	0.4876	0.1217	0.6094	0.0000	566.3687	566.3687	0.1690	0.0000	570.5933
Maximum	0.1499	2.5326	4.1567	5.7100e-003	4.8145	0.1217	4.9363	0.4876	0.1217	0.6094	0.0000	566.3687	566.3687	0.1690	0.0000	570.5933

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	77.96	61.27	-1.17	0.00	39.68	66.67	40.86	39.55	63.78	46.68	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870		170.4424	170.4424	0.4571		181.8690
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0614	0.9104	0.4825	2.8100e-003	11.0019	8.6900e-003	11.0106	1.1180	8.3000e-003	1.1263		290.0838	290.0838	8.7700e-003		290.3031
Offroad	1.9160	19.9292	18.7500	0.0277		1.0430	1.0430		0.9595	0.9595		2,683.4529	2,683.4529	0.8679		2,705.1500
Total	9.5058	21.5785	99.2571	0.0365	11.0019	1.3386	12.3405	1.1180	1.2548	2.3728		3,143.9791	3,143.9791	1.3337	0.0000	3,177.3221

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870		170.4424	170.4424	0.4571		181.8690
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0614	0.9104	0.4825	2.8100e-003	11.0019	8.6900e-003	11.0106	1.1180	8.3000e-003	1.1263		290.0838	290.0838	8.7700e-003		290.3031
Offroad	1.9160	19.9292	18.7500	0.0277		1.0430	1.0430		0.9595	0.9595		2,683.4529	2,683.4529	0.8679		2,705.1500
Total	9.5058	21.5785	99.2571	0.0365	11.0019	1.3386	12.3405	1.1180	1.2548	2.3728		3,143.9791	3,143.9791	1.3337	0.0000	3,177.3221

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Grading	Grading	1/1/2019	9/11/2019		18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 90.9

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating - sqft)

Offroad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Grading	Graders		8.00	15	0.4

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Grading	:	3.00	0.00	0.00	16.8	6.6	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

3.2 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5297	0.0000	0.5297	0.0572	0.0000	0.0572			0.0000			0.0000
Off-Road	0.6604	6.5227	3.9654	5.3500e-003		0.3650	0.3650		0.3358	0.3358		530.4512	530.4512	0.1678		534.6470
Total	0.6604	6.5227	3.9654	5.3500e-003	0.5297	0.3650	0.8947	0.0572	0.3358	0.3930		530.4512	530.4512	0.1678		534.6470

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0198	0.0162	0.1434	3.6000e-004	7.4523	2.6000e-004	7.4525	0.7495	2.4000e-004	0.7497		35.9174	35.9174	1.1600e-003		35.9464
Total	0.0198	0.0162	0.1434	3.6000e-004	7.4523	2.6000e-004	7.4525	0.7495	2.4000e-004	0.7497		35.9174	35.9174	1.1600e-003		35.9464

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3.2 Grading - 2019

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2384	0.0000	0.2384	0.0257	0.0000	0.0257			0.0000			0.0000
Off-Road	0.1302	2.5164	4.0133	5.3500e-003		0.1215	0.1215		0.1215	0.1215	0.0000	530.4512	530.4512	0.1678		534.6470
Total	0.1302	2.5164	4.0133	5.3500e-003	0.2384	0.1215	0.3598	0.0257	0.1215	0.1472	0.0000	530.4512	530.4512	0.1678		534.6470

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0198	0.0162	0.1434	3.6000e-004	4.5762	2.6000e-004	4.5765	0.4619	2.4000e-004	0.4621		35.9174	35.9174	1.1600e-003		35.9464
Total	0.0198	0.0162	0.1434	3.6000e-004	4.5762	2.6000e-004	4.5765	0.4619	2.4000e-004	0.4621		35.9174	35.9174	1.1600e-003		35.9464

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	0.0614	0.9104	0.4825	2.8100e-003	11.0019	8.6900e-003	11.0106	1.1180	8.3000e-003	1.1263			290.0838	290.0838	8.7700e-003		290.3031
Unmitigated	0.0614	0.9104	0.4825	2.8100e-003	11.0019	8.6900e-003	11.0106	1.1180	8.3000e-003	1.1263			290.0838	290.0838	8.7700e-003		290.3031

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Heavy Industry	13.78	2.76	2.76	41,062	41,062
Total	13.78	2.76	2.76	41,062	41,062

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Heavy Industry	14.70	6.60	6.60	59.00	28.00	13.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Heavy Industry	0.000000	0.000000	0.000000	0.140000	0.220000	0.350000	0.220000	0.070000	0.000000	0.000000	0.000000	0.000000	0.000000

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Heavy Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
Category	lb/day										lb/day						
Mitigated	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870			170.4424	170.4424	0.4571		181.8690
Unmitigated	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870			170.4424	170.4424	0.4571		181.8690

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e	
SubCategory	lb/day										lb/day						
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000				0.0000
Landscaping	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870			170.4424	170.4424	0.4571		181.8690
Total	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870			170.4424	170.4424	0.4571		181.8690

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870		170.4424	170.4424	0.4571		181.8690
Total	7.5284	0.7390	80.0246	5.9400e-003		0.2870	0.2870		0.2870	0.2870		170.4424	170.4424	0.4571		181.8690

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

North Area ROW Maintenance EA SA - Sacramento Valley Air Basin, Winter

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
Aerial Lifts	1	8.00	13	72	0.31	Diesel
Crawler Tractors	1	8.00	3	157	0.43	Diesel
Forklifts	1	8.00	11	71	0.20	Diesel
Graders	1	5.00	1	150	0.41	Diesel
Off-Highway Tractors	2	8.00	63	124	0.44	Diesel
Skid Steer Loaders	1	8.00	3	61	0.37	Diesel
Tractors/Loaders/Backhoes	1	8.00	12	130	0.37	Diesel

UnMitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Aerial Lifts	0.0452	0.7356	1.2506	1.9200e-003		0.0164	0.0164		0.0151	0.0151		185.8513	185.8513	0.0601		187.3540
Crawler Tractors	0.5669	5.8013	3.9767	5.7900e-003		0.3241	0.3241		0.2982	0.2982		560.8246	560.8246	0.1814		565.3592
Forklifts	0.1149	1.0351	0.9416	1.2200e-003		0.0771	0.0771		0.0709	0.0709		118.0920	118.0920	0.0382		119.0468
Graders	0.3842	3.7492	2.4548	3.3400e-003		0.2092	0.2092		0.1924	0.1924		324.0738	324.0738	0.1048		326.6941
Off-Highway Tractors	0.5215	5.5626	6.1876	9.4000e-003		0.2699	0.2699		0.2483	0.2483		910.1511	910.1511	0.2944		917.5101
Skid Steer Loaders	0.0750	0.9970	1.3045	1.9400e-003		0.0432	0.0432		0.0397	0.0397		187.8507	187.8507	0.0608		189.3695
Tractors/Loaders/Backhoes	0.2083	2.0485	2.6342	4.1000e-003		0.1032	0.1032		0.0950	0.0950		396.6096	396.6096	0.1283		399.8164
Total	1.9160	19.9292	18.7500	0.0277		1.0430	1.0430		0.9595	0.9595		2,683.4529	2,683.4529	0.8679		2,705.1500

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
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Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type
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User Defined Equipment

Equipment Type	Number
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11.0 Vegetation
