NAPA RESOURCE CONSERVATION DISTRICT

Pope Creek Weed Management Project

Initial Study/Mitigated Negative Declaration

December 2019

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Pope Creek Weed Management Project

Initial Study/Mitigated Negative Declaration

Prepared for:

Napa County Resource Conservation District
1303 Jefferson Street, Suite 500B
Napa, California 94559

Prepared by:

Horizon Water and Environment, LLC
266 Grand Avenue, Suite 210
Oakland, California 94610
Contact: Ken Schwarz
(510) 986-1851

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Acronyms and Abbreviations

Term	Definition
A	
AB	Assembly Bill
amplitude	pressure level or energy content
APN	assessor's parcel number
B	
BAAQMD	Bay Area Air Quality Management District
BLM	U.S Bureau of Land Management
BMP	best management practice
C	
CAL FIRE	California Department of Forestry and Fire Protection
CalARP	California Accidental Release Program
CalEEMod	California Emission Estimator Model
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (also known as the Superfund Act)
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CWA	Clean Water Act
D	
dB	decibel
dBA	A-weighted decibel

Term	Definition
DPM	diesel particulate matter
E	
EIA	U.S. Energy Information Administration
EIR	Environmental Impact Report
EO	Executive Order
ESA	Endangered Species Act
F	
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
frequency	rate of oscillation of sound waves
ft	feet
FTA	Federal Transit Administration
FYLF	foothill yellow-legged frog
G	
GHG	greenhouse gas
H	
HCP	habitat conservation plan
Hz	Hertz
I	
IPaC	Information for Planning and Consultation
ILRP	Irrigated Lands Regulatory Program
IS	initial study
K	
kW/m^2	kilowatt per square meter
L	
L_{dn}	energy average of the A weighted sound levels occurring during a 24 hour period
L_{eq}	equivalent steady-state sound level
L_{max}	maximum sound level measured during a given measurement period
L_{min}	minimum sound level measured during a given measurement period
L_{xx}	sound level exceeded x percent of a specific time period
M	
MBTA	Migratory Bird Treaty Act
MT CO_2e/yr	metric tons of carbon dioxide equivalents per year

Term	Definition
N	
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	natural community conservation plan
NCPCWG	Napa County Putah Creek Watershed Group
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NOx	nitrogen oxides
NPPA	Native Plant Protection Act of 1977
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O	
OEHHA	[California] Office of Environmental Health Hazard Assessment
P	
PM10	particulate matter of aerodynamic radius of 10 micrometers or less
PM2.5	particulate matter of aerodynamic radius of 2.5 micrometers or less
Porter–Cologne Act	Porter–Cologne Water Quality Control Act
PPV	peak particle velocity
Proposed Project	Pope Creek Weed Management Project
R	
RCRA	Resource Conservation and Recovery Act of 1976
ROG	reactive organic gases
RPS	Renewables Portfolio Standard
RWQCB	Regional Water Quality Control Board
S	
SARA	Superfund Amendment and Reauthorization Act
SB	Senate Bill
SFBAAB	San Francisco Bay Area Air Basin
SO_2	Sulfur dioxide
SWRCB	State Water Resources Control Board
T	
TAC	toxic air contaminant
TCP	traditional cultural properties
TCR	tribal cultural resource

Term	Definition
U	
U.S.	United States of America
USC	U.S. Code
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
V	
VdB	vibration decibel
W	
Williamson Act	California Land Conservation Act of 1965
Symbols	
ºF	degrees Fahrenheit
§	section

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Chapter 1
INTRODUCTION

The Napa County Resource Conservation District (RCD) has prepared this Initial Study/Mitigated Negative Declaration (IS/MND) to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Pope Creek Weed Management Project (Proposed Project). This document was prepared pursuant to the requirements of the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.).

1.1 Introduction

Pope Creek is a major tributary of Lake Berryessa in Napa County, California (**Figure 1-1**). Invasive plant species have spread within Pope Creek over time, degrading habitat quality within the creek and surrounding riparian area. Through the Proposed Project, the RCD proposes to implement chemical, mechanical, and biological invasive plant management activities along a 2.7-mile reach of Pope Creek (Figure 1-1). Target invasive plant species are tamarisk (*Tamarix* sp.), Himalayan blackberry (*Rubus armeniacus*), Arundo (*Arundo donax*), and tree of heaven (*Ailanthus altissima*). The Proposed Project would reduce the population of invasive plants up and downstream along Pope Creek, and reduce the potential for this population to provide source material for new populations downstream in Lake Berryessa. Additionally, the Proposed Project would improve habitat values, and preserve and restore hydro-geomorphic functions in Pope Creek.

1.2 Project Location

The Proposed Project is located along a 2.7-mile reach of Pope Creek, a major tributary to Lake Berryessa in northern Napa County, California (Figure 1-1). The Proposed Project reach is sub-divided into six management units, shown as Units A through F in Figure 1-1. Figure 1-1 shows areas identified for initial Proposed Project implementation, under coordination with local landowners.

Land use in the Pope Creek watershed is largely open space and agricultural land uses. Within the Proposed Project reach, there are parcels owned by California Department of Fish and Wildlife (CDFW), U.S. Bureau of Land Management (BLM), and private landowners. The parcels owned by CDFW and BLM are managed for wildlife conservation and wilderness preservation. The Proposed Project area includes portions of 14 parcels (Figure 1-1) and covers approximately 63 acres.

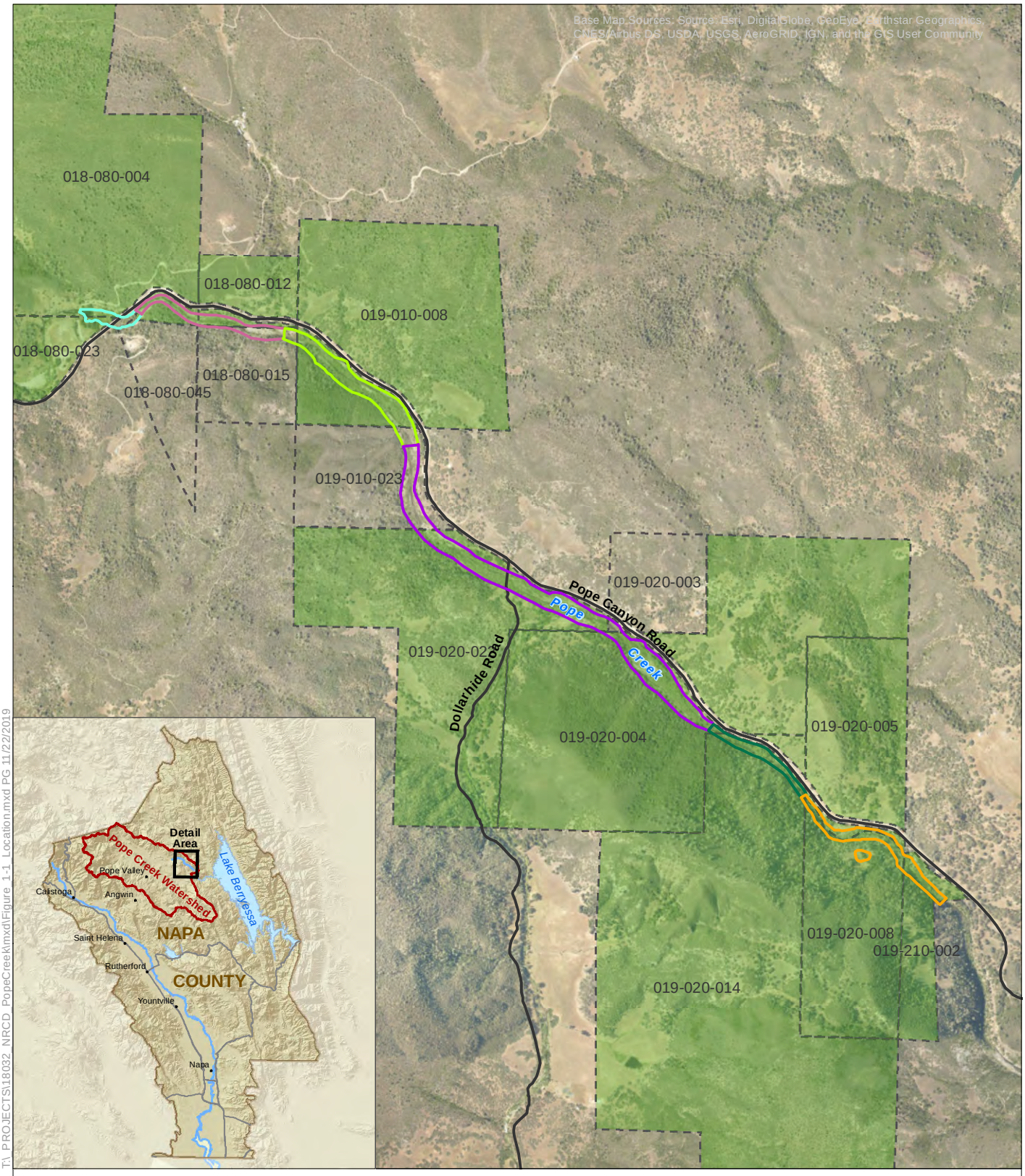

Figure 1-1
Project Location

Pope Creek
Weed Management Project

1.3 Intent and Scope of this Document

This IS/MND has been prepared in accordance with CEQA, under which the Pope Creek Weed Management Project constitutes a "project." RCD, as the lead agency under CEQA, will consider the potential environmental impacts of project activities when it considers whether to approve the project. This IS/MND is an informational document to be used in the local planning and decision-making process. The IS/MND does not recommend approval or denial of the Proposed Project.

The IS describes the Proposed Project and its environmental setting, including the Proposed Project area's existing conditions and applicable regulatory requirements. This IS/MND also evaluates potential environmental impacts from the Project to the following resources:

- *Aesthetics*
- *Agricultural and Forestry Resources*
- *Air Quality*
- *Biological Resources*
- *Cultural Resources*
- *Energy*
- *Geology, Soils, and Seismicity*
- *Greenhouse Gas Emissions*
- *Hazards and Hazardous Materials*
- *Hydrology and Water Quality*
- *Land Use and Planning*
- *Mineral Resources*
- *Noise*
- *Population and Housing*
- *Public Services*
- *Recreation*
- *Transportation and Traffic*
- *Tribal Cultural Resources*
- *Utilities and Service Systems*
- *Wildfire*

The Proposed Project incorporates measures to ensure there would be no significant adverse impacts on the environment.

1.4 Organization of this Document

This IS/MND document contains the following elements:

Chapter 1, *Introduction*. This chapter provides a brief project introduction, summarizes the scope and contents of the IS/MND, provides contact information for commenting on the document, and describes terminology used in this document to describe environmental impacts of the Proposed Project.

Chapter 2, *Project Description*. This chapter summarizes the Proposed Project, including descriptions of the project purpose and objectives; the project development process; project elements; project implementation and oversight; measures to avoid and minimize impacts; and related permits and approvals.

Chapter 3, *Environmental Checklist*. This chapter presents the checklist used to evaluate the Proposed Project's potential environmental effects. The checklist is based on the information provided in Appendix G of the State's CEQA Guidelines. This chapter includes a brief environmental setting description for each resource topic and describes the Proposed Project's anticipated environmental impacts.

Chapter 4, *Report Preparation.* This chapter provides a list of persons involved in preparing this IS/MND.

Chapter 5, *References.* This chapter provides a bibliography of printed references, web sites, and personal communications used in preparing this IS/MND.

Appendix A. Air Quality and Greenhouse Gas Estimates

Appendix B. Biological Resources Appendix

Appendix C. Cultural Resources Assessment Report

Appendix D. Correspondence with Native American Tribes Pursuant to AB 52

1.5 Impact Terminology

This IS/MND uses the following terminology to describe environmental effects of the Proposed Project:

- A finding of *no impact* is made when the analysis concludes that the Proposed Project would not affect the particular environmental resource or issue, or if the impact does not apply to the Project.

- An impact is considered *less than significant* if the analysis concludes that there would be no substantial adverse change in the environment and that no mitigation is needed.

- An impact is considered *less than significant with mitigation* if the analysis concludes that no substantial adverse change in the environment would result with the inclusion of the mitigation measures described.

- An impact is considered *significant or potentially significant* if it results in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by using specific significance criteria as a basis of evaluation. Mitigation measures are identified to reduce these potential effects on the environment.

- Impacts defined as "temporary" are limited to the Proposed Project implementation period (10-12 weeks in Year 1, and shorter durations in future years). Impacts defined as "short term" are those impacts that could occur within a year following the Proposed Project implementation period.

- This IS/MND identifies particular mitigation measures that are intended to lessen Proposed Project impacts. The State CEQA Guidelines (14 CCR 15370) define mitigation as:

    - avoiding the impact altogether by not taking a certain action or parts of an action;

  - minimizing impacts by limiting the degree or magnitude of the action and its implementation;
  - rectifying the impact by repairing, rehabilitating, or restoring the impacted environment;
  - reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action; and
  - compensating for the impact by replacing or providing substitute resources or environments.

- A cumulative impact refers to one that can result when a change in the environment would result from the incremental impacts of a project along with other related past, present, or reasonably foreseeable future projects. Significant cumulative impacts might result from impacts that are individually minor but collectively significant. The cumulative impact analysis in this IS/MND focuses on whether the Proposed Project's incremental contribution to significant cumulative impacts caused by the project in combination with past, present, or probable future projects is cumulatively considerable.

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Chapter 2
PROJECT DESCRIPTION

2.1 Project Background

Several invasive plant species have spread within Pope Creek over time and have resulted in degradation of creek and riparian habitat quality. Tamarisk is the dominant invasive plant species in Pope Creek. Adverse effects of tamarisk infestations include altered channel morphology and degraded floodplain functions, decreased or altered plant and animal diversity, increased evapotranspiration, and increased fire risk (Sher et al. 2010). These adverse outcomes appear evident in portions of Pope Creek. Tamarisk can outcompete many native riparian species and establish dense monocultures that drastically reduce species diversity. Within portions of Pope Creek, mature stands of tamarisk are so dense that the stream can no longer migrate within the floodplain. This degrades channel functions and results in a simplified channel form that lacks habitat heterogeneity and complexity.

The need for invasive plant control within Pope Creek was initially identified by the non-profit organization Tuleyome. The distribution of target invasive plant species was mapped in 2013 and 2014. In 2014 the Napa County Resource Conservation District (RCD) conducted an aquatic habitat assessment of the Proposed Project reach (Napa RCD 2014). The RCD's assessment included a stream habitat survey and a snorkel survey. A rare plant study was also conducted in the Proposed Project area (Napa Botanical Survey Services 2014). Following these surveys, a Weed Management Plan was developed in 2015 by Tuleyome. The Weed Management Plan identifies an approach and strategies for invasive plant control along the Proposed Project reach and informs this CEQA document.

2.2 Project Purpose and Objectives

The primary purpose of the Proposed Project is to:

- Preserve and enhance the quality of native plant and wildlife habitat via invasive species removal and native riparian vegetation recovery, and
- Preserve and restore hydro-geomorphic functions in Pope Creek.

Controlling invasive tamarisk may also lead to increased water yield by reducing evapotranspiration, as well as increasing groundwater recharge in the Proposed Project reach.

The objectives of the Proposed Project are listed below in order of their priority:

- Suppress and/or contain tamarisk
- Eradicate Arundo
- Eradicate tree of heaven

- Suppress or contain Himalayan blackberry
- Restore native vegetation communities and/or floodplain functions in areas previously occupied by tamarisk and other management species listed above

More detailed information on objectives for individual management units within the Proposed Project reach are discussed in Section 2.5, "Implementation Strategy and Restoration."

2.3 Species Targeted for Vegetation Management and Control

This section provides a general description of the ecology of the target management species along with information on their spatial distribution in the Proposed Project reach. Understanding the presence and extent of the target vegetation provides a basis for the further description of the Proposed Project's vegetation management activities, which is presented in Section 2.4, "Weed Management Strategies and Techniques."

2.3.1 Tamarisk

Tamarisk, also called saltcedar, is a deciduous shrub or tree that typically ranges in height from 5 to 30 feet (see **Figure 2-2** for photographs). Most tamarisk in North America is a hybrid of *Tamarix ramosissma* (native to Russia) and *T. chinensis* (native to China) (Sher 2010); *T. gallica* and *T. parviflora* have also colonized streams in the western U.S. (Bell et al. 2002). Tamarisk was intentionally introduced in the U.S. in the late 1800s for erosion control, wind breaks, shade, and ornamental purposes (Sher et al. 2010). Tamarisk has spread rapidly throughout the western U.S., displacing well over a million acres of native riparian habitat (Sher et al. 2010).

Tamarisk spreads primarily by seed but may also reproduce vegetatively by adventitious root sprouting or from cuttings rooting in damp soil (Lovich 2000, Sher 2010). Tamarisk seed production is prolific: an individual plant may produce 500,000 seeds, and dense stands may produce 100 seeds per square inch (Lovich 2000). Seeds are very small, weighing 0.1 mg, and may be transported long distances by wind and water (DiTomaso 1996, Lovich 2000). The transport of seeds downstream to Lake Berryessa is a concern, as this species could easily colonize the lake's shoreline and spread to tributary drainages. As described above, tamarisk has formed dense stands in and along Pope Creek and has resulted in adverse habitat effects.

2.3.2 Arundo

Arundo, also known as giant reed, is a cane-like grass that grows 9 to 30 feet high (Dudley 2000). It is originally from the Indian subcontinent, although it likely came to North America from the Mediterranean region (Dudley 2000). It reproduces vegetatively, either through rhizome growth or when plant fragments are transported downstream during floods (Dudley 2000). Arundo can form very dense stands that displace native vegetation and provide little habitat value to native wildlife (Dudley 2000). It may also alter hydrology, and is a known fire hazard (Dudley 2000).

There are a few isolated stands of Arundo in Pope Creek. Eradication of these plants before they spread and become a larger issue within the watershed would be an effective use of resources, as treatment of invasive plants before they become extremely well established is more cost effective.

2.3.3 Tree of Heaven

Tree of heaven is a compound-leaved deciduous tree that may grow 30 to 65 feet high (Hunter 2000). It often sprouts from the roots, and also reproduces by seed (Hunter 2000). It is native to China, and was widely planted in California prior to the 1890s (Hunter 2000). Tree of heaven can produce dense thickets that displace native vegetation, especially in riparian zones (Hunter 2000). It spreads by wind-dispersed seeds, as well as through abundant root sprouting (Hunter 2000).

There are several areas in Pope Creek affected by tree of heaven, and one significant stand along the Cedar Roughs trail to the south of Pope Creek. At this time, this species is still relatively patchy in its invasion of Pope Creek.

2.3.4 Himalayan Blackberry

Himalayan blackberry grows as a vine or shrub and has canes with stout prickles. This species of blackberry is native to the Middle East, and was introduced to North America in the late 1800s as a crop (Hoshovsky 2000). Birds and animals eat the berries and distribute the seeds (Hoshovsky 2000). Vegetative reproduction by rooting at the cane tips also occurs (Hoshovsky 2000). This species tends to grow in disturbed areas. It is a very competitive plant, and also forms dense thickets that exclude native plants (Hoshovsky 2000).

Himalayan blackberry is found sporadically along Pope Creek. It is excluding or displacing native species, but is not yet a dominant invader. Suppression/control of this species is the recommended strategy.

2.4 Weed Management Strategies and Techniques

This section provides an overview of weed management terminology and techniques that are used to manage invasive species. Emphasis is placed on techniques that are considered to be best suited to target species and physical conditions in the Proposed Project reach.

The following terms are commonly used to describe the general approaches to managing invasive species (adapted from Norton 2010).

Eradicate: to completely eliminate an invasive species from within a defined management area.

Suppress: to reduce abundance of an invasive species within a defined management area. This is typically measured or estimated in terms of plant cover or density.

Eradication is generally considered very difficult to accomplish unless the target species is present in very small numbers (Norton 2010). Suppression is the general approach for tamarisk and blackberry in the Proposed Project reach. Complete eradication of tamarisk throughout the Proposed Project reach is not considered to be practical, although it may be possible to eradicate it in certain management units. It may be possible to eradicate tree of heaven and Arundo in the entire Proposed Project reach. A more detailed discussion of the proposed management actions is provided Section 2.5, “Implementation Strategy and Restoration.”

The weed management techniques to be used under the Proposed Project are grouped into the following categories: chemical, mechanical (or physical), and biological controls. The control methods can be used independently, but are often used in conjunction with one another in what is referred to as integrated pest management (IPM). This section provides an overview of the weed management techniques that would be used in the Proposed Project reach.

2.4.1 Chemical Control

Chemical control would include both foliar, hack and squirt/injection, and/or cut-stump application of herbicide to targeted invasive species. All herbicide use will follow label requirements and be under the control of someone with a Qualified Applicator License or Qualified Applicator Certificate. The QAL/QAC will make final decisions regarding which herbicides are most appropriate for the site conditions, and in accordance with BMP Gen-3 and BMP Bio-3.

Foliar application entails spraying the herbicide onto the leaves (foliage) of the plant. The application will be carried out with a backpack sprayer or a spray rig carrying several gallons of diluted herbicide. The sprayer tank is kept pressurized through the use of a generator in the case of the spray rig or through hand pumping a lever on the backpack sprayer. Foliar spray from a helicopter may also be used. When using the foliar spray method, wind conditions are always monitored and applications will cease if wind gusts exceed 5-10 mph. Foliar spraying would take place in the late summer/early fall to maximize translocation of herbicide to the roots (DiTomaso 2010, Nissen 2010).

Ground-based herbicide application would be used in most cases. However, aerial application of herbicide from a helicopter may be the most cost effective method in areas with dense monocultures of tamarisk, and may be used as the treatment option in these areas. The standard helicopter treatment for imazapyr is 64 ounces of imazapyr (1 pound of active ingredient) plus 1% non-ionic surfactant or methylated seed oil applied in 10-15 gallons of water per acre (Nissen 2010). Slow helicopter air speeds and very large spray droplets reduces the potential for herbicide impacts to non-target native vegetation (Nissen 2010). A mix of imazapyr and glyphosate may also be used for aerial application of herbicide in order to reduce the amount of imazapyr used (USFS 2010). In these extremely dense areas, herbicide-treated tamarisk stands would be allowed to deteriorate naturally over time.

Hack and squirt/injection herbicide application are two similar methods that can be effective for treatment of woody invasive plants where the aboveground biomass does not need to be removed. These methods would be used for tree of heaven to minimize sprouting, and cut-stump application may also be used for this species. In hack and squirt, downward-angled incisions are made evenly spaced around the stem and herbicide is sprayed into the incisions. Injection of herbicide occurs via holes drilled in the stem.

Cut-stump application involves applying a high concentration of herbicide directly to the cut face of the stump. This would occur in the late summer or early fall. Applications occur through the use of a small paint brush or hand sprayer with a cloth tied around the nozzle. Because there is direct access to the cambium, the amount of herbicide used on each stump is low. This method ensures that there are very few adverse effects associated with herbicide contacting other plants surrounding the treatment area or coming in contact with the water surface. If

herbicide is not applied immediately after the initially cutting, the stump would be re-cut to provide a fresh surface. Herbicides used for cut-stump application may include triclopyr and imazapyr. Foliar spray herbicides may consist of glyphosate, imazapyr, and triclopyr. These herbicides would be used according to label instructions, and would only include formulations approved for aquatic use. Trade names of these herbicides include products such as Habitat® (imazapyr), Garlon 3A® (triclopyr), Aquamaster® and Rodeo® (glyphosate).

Imazapyr is the most effect herbicide for foliar spray of tamarisk (ground-based or aerial) (Nissen 2010). However, as use of imazapyr has resulted in off-target and soil residual effects in other weed control project in Napa County (Michael Gordon, Napa County Flood Control District, personal communication), use of other herbicides may be emphasized for this project. Foliar spray of glyphosate or a mixture of glyphosate and imazapyr may also occur for tamarisk control, although application of only glyphosate typically only offers partial control of tamarisk (DiTomaso et al. 2013). Cut-stump treatment of tamarisk should use imazapyr or triclopyr (Nissen 2010). For Himalayan blackberry, triclopyr or glyphosate should be used (DiTomaso 2010). For Arundo control, foliar application of glyphosate or a combination of glyphosate and imazapyr is effective. Cut-stump application of these herbicides may also be used; however, this application technique is more labor intensive and may be less effective in controlling Arundo than foliar spray, due to reduced control percentage (Bell 1997). Tree of heaven would be controlled with hack and squirt, injection, or cut-stump application of herbicide (glyphostate, triclopyr, or imazapyr). Hack and squirt/injection during treatment year 1, followed by cut-stump herbicide application has been found to completely kill the tree (DiTomaso et al. 2013).Mechanical removal without herbicide application for this species results in growth of abundant root suckering and stump sprouts (Hunter 2000), and cut-stump herbicide application may also result in root suckering.

2.4.2 Mechanical Control

Mechanical removal of invasive species may include both heavy equipment and removal with hand tools such as chainsaws. The technique used would depend on equipment access within each management unit and potential for inadvertent damage to non-target species. If there is potential for significant damage to non-target species from heavy equipment, hand tools would be used to avoid or minimize these potential impacts. Heavy equipment may include a skid steer or tractor with a mastication attachment, or an excavator with a bucket modified for tree extraction, or other types of masticating equipment (Photo 2 in Figure 2-2). Mechanical control will generally occur between April 15 and October 15.

Invasive plant biomass would be mulched in place, moved to an appropriate upland disposal area, or stacked in upland areas outside of the active floodway. No un-mulched material would be left in the active floodway.

2.4.3 Biological Control

Biological control of invasive species typically involves using introduced natural enemies of the target species. Tamarisk is the species within the Project reach that is most suitable for biological control methods.

The tamarisk leaf beetle (*Diorhabda elongata*) was first released in 2001 as a biocontrol agent for tamarisk in the U.S (Bell et al. 2002). Two species of tamarisk leaf beetle are currently present in California (*D. carinulata* and *D. elongata*) (Norelli 2017). Tamarisk leaf beetle larvae and adults feeding results in host plant defoliation and dieback; and substantial plant mortality has been recorded after 3 and 4 years in some areas (Norelli 2017).

Biological control of tamarisk for the Project would involve release of *D. elongata* beetles in the Project reach.

2.5 Implementation Strategy and Restoration

The Proposed Project would meet the primary objectives by conducting invasive plant management actions in the 2.7-mile Proposed Project reach of Pope Creek, within the six management units (**Figure 2-1**). The management units were based primarily on the infestation level of tamarisk and access to the stream for heavy equipment. Land ownership and land use were also considered. Specific management actions are proposed based on conditions and opportunities within each of the management units. Invasive plant management in Pope Creek would include both chemical, mechanical, and biological treatments. Treatment recommendations for each reach are primarily based on the level of infestation and accessibility for treatment. **Table 2-1** provides a summary of project activities by reach. Best management practices (BMPs) would be implemented to avoid or minimize potential impacts from Proposed Project implementation (see **Table 2-2** for a list of BMPs).

2.5.1 Management Unit A

Management Unit A has a few large, contiguous strands of tamarisk covering approximately 0.4 acres, along 850 linear feet of Pope Creek (Figure 2-1 and Photo 3 in Figure 2-2). The stream substrate is predominately gravel and cobble, with some large boulders.

There is good access at the upstream end of the management unit for heavy equipment to enter the channel and mechanically remove tamarisk throughout much of the floodway. Stands that are inaccessible to heavy equipment would be removed using hand tools. Cut-stump herbicide application (triclopyr or imazapyr) would immediately follow above ground biomass removal, or stumps would be re-cut if application is not immediate.

Himalayan blackberry is relatively abundant in Management Unit A. This species would be controlled with a combination of mechanical removal and foliar herbicide application (triclopyr or glyphosate). Two years of follow-up with foliar spray herbicide application would be needed to control regrowth and sprouting.

This section of Pope Creek is a dynamic system, and recruitment of native vegetation is anticipated in areas where tamarisk and blackberry would be treated. As such, passive restoration is proposed in this reach. Passive restoration is a method where an environmental stressor (in this case invasive weeds) is removed, and an ecosystem is allowed to recover on its own. Active restoration is where management techniques such as planting seedlings or cuttings are implemented.

Table 2-1. Summary of Project Activities by Reach

Reach	Reach length (ft)	Total Weed Treatment Area (acres)	Main species of concern	Mechanical/ by-hand (acres)	Mechanical/ heavy equipment (acres)	Chemical (cut-stump or hack and squirt/ injection) (acres)	Chemical (foliar spray) (acres)	Active Revegetation (acres)
A	850	0.4	Wildlife: Foothill yellow-legged frog (FYLF), western pond turtle (WPT)	0.1	0.3	0.4 (initial treatment)	0.08 (2 years follow-up treatment, only on resprouts)	0
B	2,100	0.14	Wildlife: FYLF, WPT Plants: *Erigeron greenii, Senecio clevelandii* var. *clevelandii*	0	0	0	0.14 (initial treatment) 0.03 (2 years follow-up treatment of resprouts)	0
C	2,285	5.45	Wildlife: FYLF, WPT, bald eagle Plants: *Helianthus exilis, Astragalus clevelandii*	0	0	0	5.45 (initial treatment) 1.09 (2 years follow-up treatment)	0.55
D	5,808	8.13	Wildlife: FYLF, WPT Plants: Helianthus exilis, Toxicoscordion fontanum, Astragalus clevelandii	2.03	2.03	4.06 (initial treatment)	4.06 (intial treatment) 1.63 (2 years follow-up treatment, resprouts only)	0.81
E	1,560	0.3	Wildlife: FYLF, WPT	0.1	0	0.1	0.2 (initial treatment) 0.06 (follow-up treatment)	0
F	2,500	1.25	Wildlife: FYLF, WPT	1.25	0	1.25	0.25 (2 years follow-up treatment, resprouts only)	0.13

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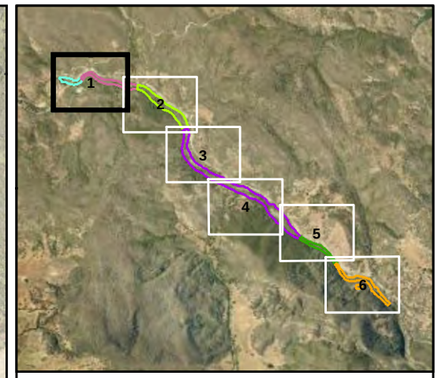

Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek
Management Units

Figure 2-1
Sheet 1

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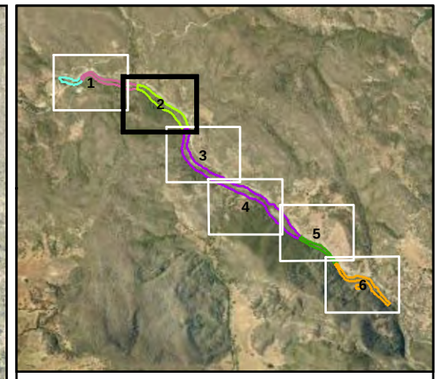

Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tree of Heaven *(Ailanthus altissima)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek Management Units

Figure 2-1
Sheet 2

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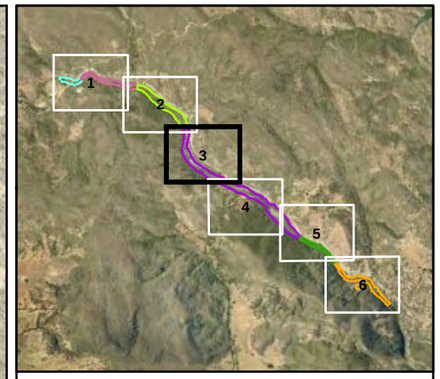

Pope Canyon Road

Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek Management Units

Figure 2-1 Sheet 3

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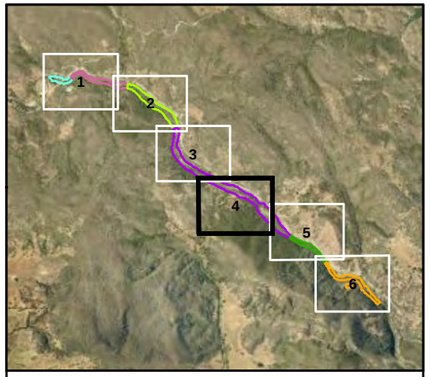

Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tree of Heaven *(Ailanthus altissima)*
- Arundo *(Arundo donax)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek Management Units

Figure 2-1
Sheet 4

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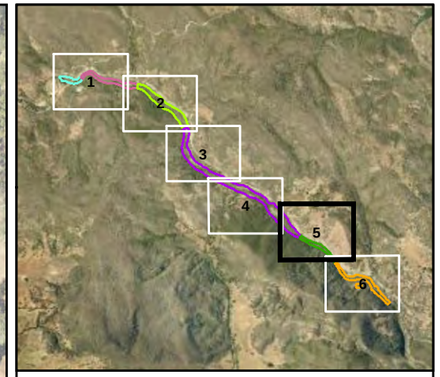

Pope Canyon Road

Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek
Management Units
Figure 2-1
Sheet 5

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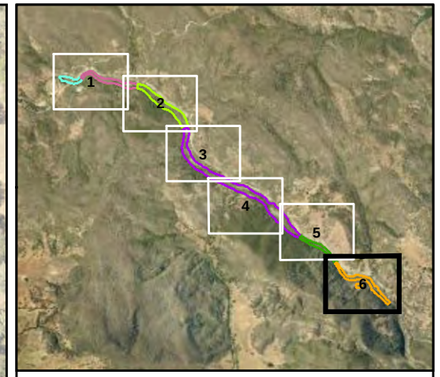
Pope Canyon Road



Invasive Species Occurrences

- Tamarisk *(Tamarix parviflora)*
- Blackberry *(Rubus armeniacus)*
- Tree of Heaven *(Ailanthus altissima)*
- Tamarisk Treatment Areas
- Parcel Boundary
- Protected Lands
- Staging Areas
- Access Routes

Management Units

- Unit A
- Unit B
- Unit C
- Unit D
- Unit E
- Unit F

N

0 100 200 400

Feet

Invasive species occurence GPS data collected by Tuleyome on June 13, October 24-25, and November 1, 5 and 15, 2013 and May 6, May 24, and July 8, 2014
Tararisk treatment areas were mapped using Google Earth imagery from August 2014.

Pope Creek Management Units

Figure 2-1
Sheet 6

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2.5.2 Management Unit B

Management Unit B covers approximately 2,100 linear feet of stream (Figure 2-1, sheets 1 and 2). Tamarisk invasion in this unit is spotty, covering approximately 0.14 acres. Coarse substrate in this area may be limiting the establishment of tamarisk. Three blackberry clusters were mapped in this reach.

Due to the relatively low cover of invasive species in this unit, the control would consist of foliar herbicide application by hand (imazapyr or glyphosate for tamarisk, triclopyr or glyphosate for blackberry). Two years of follow-up with foliar herbicide application would be needed to control regrowth and sprouting. Passive restoration is proposed in this reach; no active revegetation is proposed at this time.

2.5.3 Management Unit C

Management Unit C contains dense, mature stands of tamarisk covering a relatively broad channel (Photo 4, Figure 2-2). Here, tamarisk covers almost the entire bottom of the channel for 2,285 linear feet, totaling 5.45 acres (Figure 2-1, sheets 2 and 3). There are also some Himalayan blackberry clusters within this reach. Due to the extremely dense infestation, mechanical removal is cost-prohibitive.

Chemical control of tamarisk in this reach is proposed. Aerial foliar herbicide application (imazapyr or a mixture of imazapyr and glyphosate) from a helicopter is anticipated to be the most effective control method from a cost and efficacy standpoint. Many of the plants are too tall and robust to effectively treat with ground-based foliar herbicide application. Helicopter application of imazapyr or a mixture of imazapyr and glyphosate is proposed for Management Unit C (see Section 2.4 for a description of typical helicopter application rates). However, ground-based foliar herbicide application may be used if helicopter application becomes infeasible during Proposed Project permitting. Management Unit C is the only unit where helicopter application of herbicide is proposed.

Herbicide treatment of tamarisk in this unit would leave contiguous stands of dead plants. Removal of the biomass is not proposed. Natural disturbance would break down the remaining litter over time. Active revegetation is recommended in this unit to facilitate the recovery of the riparian vegetation community. Installation of willow pole cuttings is proposed in 10 percent of the treated areas.

2.5.4 Management Unit D

Management Unit D is the largest unit, encompassing approximately 1.1 river miles. The channel here is generally wider and drier than in other units. There are 8.13 acres of tamarisk in this reach, as well as many Himalayan blackberry plants. Tree of heaven and Arundo are also present in this unit. Tamarisk in this unit appeared to be dying back, possibly due to drought conditions in recent years. However, tamarisk is drought tolerant and will generally resprout when wetter conditions return.

There is intermittent equipment access in this unit. Mechanical removal is proposed for 50% of the total area of tamarisk infestation in the unit. It is assumed that half of the mechanical

removal would be accomplished using heavy machinery and half would require using hand tools. Cut-stump herbicide application (triclopyr or imazapyr) would immediately follow biomass removal, or stumps would be re-cut if application is not immediate.

The tamarisk that is not mechanically removed would receive foliar application of herbicide (imazapyr or glyphosate). Blackberry would be controlled with a combination of mechanical removal and foliar herbicide application (triclopyr or glyphosate). Tree of heaven would be controlled using the hack and squirt/injection method of herbicide application (glyphosate or triclopyr) or mechanical removal followed by cut-stump herbicide application (glyphosate or triclopyr). Arundo would be controlled with either foliar spray (glyphosate or a mix of glyphosate and imazapyr) or mechanical removal followed by cut-stump herbicide application (mix of glyphosate and imazapyr). Two years of follow-up with foliar spray herbicide application would be needed to control regrowth and sprouting.

Natural disturbance would break down the standing dead biomass that is not mechanically mulched or removed. Active revegetation is recommended in this unit to facilitate the recovery of the riparian vegetation community. Installation of willow pole cuttings is proposed in 10 percent of the treated areas.

2.5.5 Management Unit E

In Management Unit E, the valley narrows and Pope Creek becomes confined by the adjacent hillslopes (Photo 5 in Figure 2-2). Land in this unit is part of the Cedar Roughs Wilderness Area, and as such carries the land use restrictions of a designated wilderness area (e.g., no use of motorized equipment). This unit covers 1,560 linear feet of the creek. Tamarisk is relatively sparse in this area, and covers approximately 0.2 acres (Figure 2-1, sheets 5 and 6). There are many Himalayan blackberry clusters in this unit.

Due to the landscape and the wilderness area restrictions, weed control would be limited to foliar application of herbicide (imazapyr or glyphosate for tamarisk, triclopyr or glyphosate for blackberry). Two years of follow-up with foliar spray herbicide application would be needed to control regrowth and sprouting for all species. Passive restoration is proposed in this reach; no active revegetation is proposed at this time.

2.5.6 Management Unit F

As the creek leaves the Cedar Roughs Wilderness Area, the valley and floodplain widen again. Management Unit F contains 1.25 acres of tamarisk on 2,500 linear feet of Pope Creek (Figure 2-1, sheet 6 Stands in this area are relatively large, but less dense than in Management Unit D. Along the trail to the south of Pope Creek there is an area with some mature tree of heaven, saplings, and sprouts (Photo 6, Figure 2-2).

Vehicle access to the channel is limited in this area, so tamarisk would be controlled with non-mechanized hand tools followed by cut-stump herbicide application (imazapyr or triclopyr). Tree of heaven would be controlled with the hack and squirt/injection method of herbicide application (glyphosate or triclopyr) or mechanical removal, followed by cut-stump herbicide application (glyphosate or triclopyr). Two years of follow-up with foliar spray herbicide application would be needed to control regrowth and sprouting. Active revegetation is recommended in this unit to facilitate the recovery of the riparian vegetation community. Installation of willow pole cuttings is proposed in 10 percent of the treated areas.

Photo 1. Dense stands of tamarisk alter the channel morphology and physical processes in portions of the Project reach.

Photo 2. Skid steer with masticating/mulching attachment.

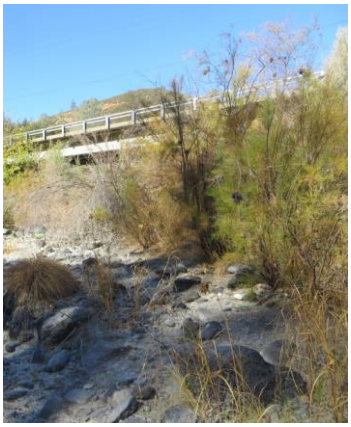

Photo 3. Typical conditions in Management Unit A.

Photo 4. Dense, 20-foot-tall tamarisk stands. Person in white for scale.

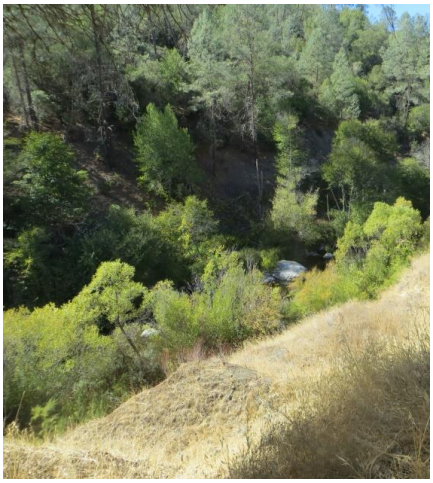

Photo 5. Pope Creek is confined by adjacent hillslopes in Management Unit E. Consequently, the riparian zone is narrower than in other management units.

Photo 6. Tree of heaven in Management Unit F.

Figure 2-2. Photographs

2.6 Monitoring and Adaptive Management

2.6.1 Maintenance and Monitoring

Monitoring following Year 1 and Year 2 of invasive species treatment would be completed by a plant ecologist, weed specialist, or other persons trained in the identification and treatment of the target species. During summer following treatment, the trained professionals would walk all treated management units and record the condition and status of invasive plants within each unit. These individuals would record the locations of any invasive plant resprouts or seedlings using a geographic positioning system (GPS) unit. They would mark these plants with pin flags or surveyor's tape for field identification. A licensed applicator would then re-treat any marked invasive species with foliar herbicide spray. Small plants might also be removed by hand pulling or with hand tools. No heavy machinery would be used for follow-up treatment. The acreage to be treated in Years 2 and 3 is estimated to be 80 to 90 percent less than the initial treatment in Year 1. Aerial images may also be evaluated to quantify reduction in total cover by invasive species in the Proposed Project reach.

Long-term monitoring and maintenance (up to 10 years following the three years of intensive weed management) of these management units is anticipated in order for weed control and/or eradication within the Proposed Project reach to be successful. Success of the project is defined by an overall decrease in percent aerial cover of invasive species, and an increase in percent aerial cover of native riparian species, compared to existing conditions. After Year 3, trained volunteers, coordinated by RCD or partner organization, would walk the treated management reaches annually to identify regrowth of target invasive species. They would record these locations using a GPS unit and also mark these plants with pin flags or surveyor's tape. A licensed applicator would then re-treat any marked invasive species with foliar herbicide spray.

2.6.2 Adaptive Management

Adaptive management is likely to be necessary with an infestation this large and a stream that is highly dynamic. Adaptive management would include adjusting treatment techniques based on lessons learned from the success of initial control activities and adjusting to the distribution of invasive species. Upstream portions of Putah Creek that do not have large invasive species populations could potentially be a reference site for the Proposed Project. Revegetation and restoration of some treated areas may be needed if passive restoration methods do not result in recruitment of native species. During the Year 3 annual monitoring, the plant ecologist or weed expert would evaluate the state of native vegetation recovery in treated areas.

2.6.3 Timing of Work

Proposed Project activities are anticipated to occur over several years. Initial invasive species treatment activities would occur in Year 1. In Years 2 and 3, follow-up maintenance would occur. This would be followed by a 10-year maintenance and monitoring period. Proposed Project activities may be phased such that Year 1 activities have different start years in some management units, depending on funding availability Revegetation activities would occur following the Year 3 annual monitoring. Invasive species treatment activities are anticipated to occur over an approximately 10- to 12-week duration during Year 1, with shorter work durations

during Years 2 (four to six weeks anticipated) and 3 (two to four weeks anticipated). Per BMP-1, Proposed Project work would generally occur between April 15 and October 15.

It is anticipated that crews would work full 10-hour work days. Invasive species treatment would occur between 7:00 a.m. and 7:00 p.m., Monday through Friday, consistent with the County's Noise Ordinance.

2.6.4 Staging and Access

Machinery and workers would access the Proposed Project reach from Pope Canyon Road. Proposed access points and staging areas are shown in Figure 2-1.

2.6.5 Best Management Practices

Table 2-2 summarizes General (GEN-) and Biological Resource (BIO-) BMPs that would be implemented during the Proposed Project. Biological Resource BMPs would be implemented as appropriate to avoid and minimize impacts on special-status species. Biological Resource BMPs may be modified during Project permitting.

Table 2-2. Best Management Practices to be Implemented for the Proposed Project

BMP Number	BMP Title	BMP Description
General		
GEN-1	Work Windows	▪ Project work will generally occur between April 15 and October 15. ▪ All ground-disturbing Project activities (i.e., mechanized vegetation management) occurring adjacent to the channel will take place between June 15 and October 15. ▪ Herbicide applications will occur between June 15 and November 15, with an extension through December 31 or until the first occurrence of: – Local rainfall greater than 0.5 inches[1] is forecasted within a 24-hour period from planned application events. [1]Significant rain event as defined by the Central Valley Regional Water Quality Control Board.
GEN-2	Minimize the Area of Disturbance	To minimize impacts to natural resources, soil disturbance will be kept to the minimum footprint necessary to complete the Proposed Project.
GEN-3	Standard Herbicide Use Requirements	▪ Only herbicides and surfactants that have been approved for aquatic use by the U.S. Environmental Protection Agency (USEPA) and are registered for use by the California Department of Pesticide Regulation (CDPR) will be used for aquatic vegetation control work. ▪ Herbicide application will be consistent with Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) label instructions and use conditions issued by the USEPA, CDPR, and the Napa County Agricultural Commissioner. ▪ Herbicide application in upland areas will not be made within 48 hours of predicted rainfall. ▪ The lowest recommended rate to achieve Project objectives of both herbicides and surfactants will be utilized to achieve desired control. – Cut-stump application of herbicides will be used where feasible to reduce the amount of herbicide used. This is anticipated to be in reaches with smaller amounts of invasive species, and on tree of heaven. – Ground-based foliar spray will typically be used in areas with larger infestations of invasive weeds, and will be the typical method for Arundo control. – Aerial application of herbicide would only occur in Reach C, where the tamarisk infestation is extremely dense. ▪ An indicator dye may be added to the tank mix to help the applicator identify areas that

BMP Number	BMP Title	BMP Description
		have been treated and better monitor the overall application. ▪ No application of herbicides will be made to plants whose base is submerged in the channel. Application of herbicides to plants growing directly in the water is not covered under this Project and requires additional authorizations according to state and local regulations.
GEN-4	Erosion and Sediment Control Measures	▪ Upland soils exposed due to Project activities will be seeded and stabilized using erosion control fabric or hydroseeding. The seed mix will contain native grass and forb species. The channel bed and areas below the ordinary high water mark (OHWM) are exempt from this BMP. ▪ Erosion control fabrics will consist of natural fibers that will biodegrade over time. No plastic or other non-porous material will be used as part of a permanent erosion control approach. Plastic sheeting may be used to temporarily protect a slope from runoff, but only if there are no indications that special-status species would be impacted by the application. ▪ Erosion control materials will be installed according to manufacturer's specifications. ▪ Appropriate measures include, but are not limited to, the following: – Silt Fences – Straw Bale Barriers – Brush or Rock Filters – Erosion Control Blankets and Mats – Soil Stabilization (i.e. Tackified straw with seed, jute or geotextile blankets, broad cast and hydro-seeding, etc.) ▪ All temporary Project-related erosion control methods (e.g., silt fences) shall be removed at the completion of the Project.
GEN-5	Air Quality	1. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for Project workers at all access points. 2. All Project equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

BMP Number	BMP Title	BMP Description
GEN-6	Staging and Stockpiling of Materials	▪ To the extent feasible, staging will occur on access roads, pullouts adjacent to surface streets, or other disturbed areas that are already compacted and only support ruderal vegetation. ▪ Cut plant material will generally be chipped on-site, but some plant material may be off hauled. ▪ No runoff from the staging areas may be allowed to enter water ways, including the creek channel or storm drains, without being subjected to adequate filtration (e.g., vegetated buffer, hay wattles or bales, silt screens).
GEN-7	Stream Access	RCD personnel and contractors will use existing access ramps and roads to the extent feasible. If necessary to avoid large mature trees, native vegetation, or other significant habitat features, temporary access points will be constructed in a manner that minimizes impacts according to the following guidelines: 1. Temporary access points will be constructed as close to the work area as possible to minimize equipment transport. 2. In considering channel access routes, slopes of greater than 20 percent will be avoided, if possible. 3. Disturbed areas will be revegetated or filled with compacted soil, seeded, and stabilized with erosion control fabric immediately to prevent future erosion. 4. Personnel will use the appropriate equipment for the job that minimizes impacts. Appropriately-tired vehicles, either tracked or wheeled, will be used depending on the site.

BMP Number	BMP Title	BMP Description
GEN-8	On-Site Hazardous Materials Management	▪ An inventory of all hazardous materials used (and/or expected to be used) at the worksite and the end products that are produced (and/or expected to be produced) after their use will be maintained by the worksite manager. ▪ As appropriate, containers will be properly labeled with a "Hazardous Waste" label and hazardous waste will be properly recycled or disposed of off-site. ▪ Contact of chemicals with precipitation will be minimized by storing chemicals in watertight containers or in a storage shed (completely enclosed), with appropriate secondary containment to prevent any spillage or leakage. ▪ Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials will not contact soil and not be allowed to enter surface waters or the storm drainage system. ▪ All toxic materials, including waste disposal containers, will be covered when they are not in use, and located as far away as possible from a direct connection to the storm drainage system or surface water. ▪ All trash that is brought to a site during Project activities (e.g., plastic water bottles, plastic lunch bags, cigarettes) will be removed from the site daily.
GEN-9	Existing Hazardous Materials	▪ If hazardous materials, such as oil, batteries or paint cans, are encountered at the Project site, the RCD will carefully remove and dispose of them according. RCD staff and contractors will wear proper protective gear and store the waste in appropriate hazardous waste containers until it can be disposed at a hazardous waste facility.
GEN-10	Spill Prevention and Response	The RCD will prevent the accidental release of chemicals, fuels, lubricants, and non-storm drainage water into channels following these measures: 5. New field personnel will be appropriately trained in spill prevention, hazardous material control, and cleanup of accidental spills. 6. Equipment and materials for cleanup of spills will be available on site and spills and leaks will be cleaned up immediately. 7. Field personnel will ensure that hazardous materials are properly handled and natural resources are protected by all reasonable means. 8. Spill prevention kits will always be in close proximity when using hazardous materials (e.g., at crew trucks and other logical locations). All field personnel will be advised of these locations.

BMP Number	BMP Title	BMP Description
		9. RCD staff will routinely inspect the work site to verify that spill prevention and response measures are properly implemented and maintained. Spill Response Measures: 10. For small spills on impervious surfaces, absorbent materials will be used to remove the spill, rather than hosing it down with water. 11. For small spills on pervious surfaces such as soil, the spill will be excavated and properly disposed rather than burying it. 12. Absorbent materials will be collected and disposed of properly and promptly.
GEN-11	Fire Prevention	13. All heavy equipment and portable equipment with internal combustion engines will be equipped with spark arrestors. 14. During the high fire danger period (April 1–December 1), work crews will: a) Have appropriate fire suppression equipment available at the work site. b) Keep flammable materials, including flammable vegetation slash, at least 10 feet away from any equipment that could produce a spark, fire, or flame. c) Personnel will not use portable tools powered by gasoline-fueled internal combustion engines within 25 feet of any flammable materials unless a round-point shovel or fire extinguisher is within immediate reach of the work crew (no more 25 feet away from the work area).
GEN-12	Vehicle and Equipment Maintenance	15. All vehicles and equipment will be kept clean. Excessive build-up of oil and grease will be prevented. 16. All equipment used in the creek channel will be inspected for leaks each day prior to initiation of work. Action will be taken to prevent or repair leaks, prior to use. 17. Incoming vehicles and equipment will be checked for leaking oil and fluids (including delivery trucks, and employee and subcontractor vehicles). Leaking vehicles or equipment will not be allowed on site. 18. No heavy equipment will operate in or cross a live stream. 19. No equipment servicing will be done in the creek channel or immediate floodplain, unless equipment stationed in these locations cannot be readily relocated (i.e., pumps and generators). 20. If necessary, all servicing of equipment done at the job site will be conducted in a designated, protected area to reduce threats to water quality from vehicle fluid spills. Designated areas will not directly connect to the ground, surface water, or the storm drain system. The service area will be clearly designated with berms, sandbags, or other barriers.

BMP Number	BMP Title	BMP Description
		Secondary containment, such as a drain pan, to catch spills or leaks will be used when removing or changing fluids. Fluids will be stored in appropriate containers with covers, and properly recycled or disposed of offsite. 21. If emergency repairs are required in the field, only those repairs necessary to move equipment to a more secure location will be conducted in the channel or floodplain. 22. Equipment will be cleaned of any sediment or vegetation before transferring and using in a different watershed to avoid spreading pathogens or exotic/invasive species. 23. Vehicle and equipment washing can occur on site only as needed to prevent the spread of sediment, pathogens or exotic/invasive species. No runoff from vehicle or equipment washing is allowed to enter water bodies, including creek channels and storm drains, without being subjected to adequate filtration (e.g., vegetated buffers, hay wattles or bales, and silt screens). The discharge of decant water from any on-site wash area to water bodies or to areas outside of the active project site is prohibited.
GEN-13	Vehicle and Equipment Fueling	24. No fueling will be done in the channel (top-of-bank to top-of-bank) or immediate floodplain unless equipment stationed in these locations cannot be readily relocated (e.g., pumps and generators). 25. All off-site fueling sites (i.e., on access roads above the top-of-bank) will be equipped with secondary containment and avoid a direct connection to soil, surface water, or the storm drainage system. 26. For stationary equipment that must be fueled onsite, secondary containment, such as a drain pan or drop cloth, will be used to prevent accidental spills of fuels from reaching the soil, surface water, or the storm drain system.

BMP Number	BMP Title	BMP Description
Public Safety		
GEN-14	Planning for Pedestrians, Traffic Flow, and Safety Measures	27. Work will be staged and conducted in a manner that maintains two-way traffic flow on public roadways in the vicinity of the work site. If temporary lane closures are necessary, they will be coordinated with the appropriate jurisdictional agency and scheduled to occur outside of peak traffic hours (7:00 – 10:00 a.m. and 3:00 – 6:00 p.m.) to the maximum extent practicable. Any lane closures will include advance warning signage, a detour route and flaggers in both directions. When work is conducted on public roads and may have the potential to affect traffic flow, work will be coordinated with local emergency service providers as necessary to ensure that emergency vehicle access and response is not impeded. 28. Access to driveways and private roads will be maintained. If brief periods of work would temporarily block access, property owners will be notified prior to project activities.
GEN-15	Public Safety Measures	The RCD will implement public safety measures during the Project as follows: 29. If necessary, signs will be posted at job sites warning the public of vegetation management work and to exercise caution. 30. Where work is proposed adjacent to a recreational trail, warning signs will be posted several feet beyond the limits of work. Signs will also be posted if trails will be temporarily closed. 31. When necessary, RCD or contracted staff will provide traffic control and site security.
GEN-16	Minimize Noise Disturbances to Residential Areas	The RCD will implement practices that minimize disturbances to residential areas. 32. With the exception of emergencies, work will be conducted during normal working hours (8:00 a.m. – 5:00 p.m.). Project work will not occur on Saturdays, Sundays, or RCD observed holidays except during emergencies, or with approval by the local jurisdiction and advance notification of surrounding residents. 33. Advanced notification will be provided 1 week prior to the start of work to adjacent properties within 180 feet of where heavy equipment will be used. 34. If a helicopter is used for project work, advanced notification will be provided 1 week prior to the start of work to adjacent properties within 2000 feet of where the helicopter will be used. 35. Powered equipment (vehicles, heavy equipment, and hand equipment such as chainsaws) will be equipped with adequate mufflers. 36. Excessive idling of vehicles will be prohibited beyond 5 minutes.

BMP Number	BMP Title	BMP Description
GEN-17	Work Site Housekeeping	▪ RCD employees and contractors will maintain the work site in neat and orderly conditions on a daily basis, and will leave the site in a neat, clean, and orderly condition when work is complete. Slash, sawdust, cuttings, etc. will be removed to clear the site of vegetation debris. As needed, paved access roads and trails will be swept and cleared of any residual vegetation or dirt resulting from the Project. ▪ For activities that last more than one day, materials or equipment left on the site overnight will be stored as inconspicuously as possible, and will be neatly arranged.
Biological Resources		
BIO-1	Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures	37. For activities occurring between February 1 and August 31, a qualified biologist will check Project areas for nesting birds within 2 weeks prior to starting work. If a lapse in Project-related work of 2 weeks or longer occurs, another focused survey will be conducted before Project work can be reinitiated. 38. If nesting birds are found, a buffer will be established around the nest and maintained until the young have fledged. Appropriate buffer widths are 250 feet for raptors, herons, and egrets; 25 feet for ground-nesting non-raptors; and 50 feet for non-raptors nesting on trees, shrubs and structures. A qualified biologist may identify an alternative buffer based on a site specific-evaluation. No work within the buffer will occur without written approval from a qualified biologist, for as long as the nest is active. 39. The boundary of each buffer zone will be marked with fencing, flagging, or other easily identifiable marking if work will occur immediately outside the buffer zone. 40. All protective buffer zones will be maintained until the nest becomes inactive, as determined by a qualified biologist. If monitoring shows that disturbance to actively nesting birds is occurring, buffer widths will be increased until monitoring shows that disturbance is no longer occurring. If this is not possible, work will cease in the area until young have fledged and the nest is no longer active.

BMP Number	BMP Title	BMP Description
BIO-2	Protection of Sensitive Fauna Species from Herbicide Use	Approved herbicides and adjuvants may be applied in sensitive wildlife habitat only if applications occur in accordance with federal and state regulations. ▪ For sprayable or dust formulations: when the air is calm or moving away from sensitive wildlife habitat, applications will commence on the side nearest the habitat and proceed away from the habitat. When air currents are moving toward habitat, applications will not be made within 200 yards (600 feet) by air or 40 yards (120 feet) by ground upwind from occupied habitat. ▪ A qualified fisheries biologist will review proposed herbicide application methods and locations. The fisheries biologist will conduct a pre-application survey (and any other appropriate data research) to determine whether the proposed herbicide application would adequately prevent against fish kills, and prescribe measures to ensure adequate protection of biological resources.
BIO-3	Applicator Qualifications	The RCD will ensure that applicators are properly trained in handling and use of herbicides, have a current Qualified Applicator Certificate (QAC), or Qualified Applicator License (QAL), or are working under the direct supervisions of a QAC/QAL. A QAC/QAL must complete 20 hours of continuing education every 2 years to stay licensed, and therefore are up-to-date on the latest techniques for pest control.

BMP Number	BMP Title	BMP Description
BIO-4	Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities	41. Surveys of the Project area for special status plant species will be conducted by a qualified botanist prior to commencement of work. 42. Surveys will be conducted during the appropriate time of the year to adequately identify plants. 43. The qualified botanist will ensure avoidance and minimize impacts by implementing one or more of the following, as appropriate, per the botanist's recommendation: a. Flag or otherwise delineate in the field the special status plant populations and/or sensitive natural community to be protected; b. Allow adequate buffers around plants or habitat; the location of the buffer zone will be shown on the design drawings and marked in the field with stakes and/or flagging in such a way that exclusion zones are visible to Project personnel without excessive disturbance of the sensitive habitat or population itself (e.g., from installation of fencing). c. Time Project activities during dormant and/or non-critical life cycle period; and d. Limit the operation of Project equipment to established roads whenever possible. 44. No herbicides, terrestrial or aquatic, will be used in areas identified as potential habitat for special status plants species or containing sensitive natural communities, until a qualified botanist has surveyed the area and determined the locations of special status plant species present. 45. If special status plant species are present and maintenance cannot avoid impacts to the species, then a qualified botanist will determine the ecologically appropriate minimization measures for the species. Minimization measures may include transplanting, seed collection, or both, depending on the physiology of the species. 46. The RCD will not conduct Project activities that would result in the reduction of a plant species range or compromise the viability of a local population.

BMP Number	BMP Title	BMP Description
BIO-5	Protection of Special-Status Amphibian and Reptile Species	47. A qualified biologist will conduct one daytime survey within a 7-day period preceding the onset of Project activities. 48. If no special status amphibian or reptile is found within the activity area during a pre-activity survey, the work may proceed. 49. If a special-status amphibian or reptile, or the eggs or larvae of a special status amphibian or reptile, is found within the activity area during a pre-activity survey or during Project activities, the qualified biologist shall conduct the following work specific activities: a) The qualified biologist shall conduct a special-status species survey on each morning of and prior to the scheduled work commencing. b) If eggs or tadpoles of a special status species are found, a buffer will be established around the location of the eggs/tadpole and work may proceed outside of the buffer zone. Work within the buffer zone will be rescheduled until the time that eggs have hatched and/or larvae have metamorphosed. c) If an active western pond turtle nest is detected within the activity area, a 25 ft-buffer zone around the nest will be established and maintained during the breeding and nesting season (April 1 – August 31). The buffer zone will remain in place until the young have left the nest, as determined by a qualified biologist. 50. If adults or juveniles of a special status species are found, the individual will be captured and relocated by a qualified biologist (with USFWS and/or CDFW approval, depending on the listing status of the species in question), and work may proceed.
BIO-6	Protection of Dusky-footed Woodrats	51. If a woodrat nest is identified in a work area, the RCD will attempt to preserve the nest and maintain an intact dispersal corridor between the house and undisturbed riparian habitat. 52. If the woodrat nest cannot be avoided, a qualified biologist shall deconstruct the nest by hand and relocate the nest materials to the nearest undisturbed suitable riparian habitat.

2.7 Equipment

Equipment anticipated to be used during invasive species treatment activities includes:

Mechanical: Heavy Equipment

- 1 large-sized excavator (CAT 320 or equivalent)
- 1 medium-sized excavator (Komatsu PC88MR or equivalent)
- 2 skid steers
- 2 Morookas (track-trucks)
- 1 dozer
- 1 chipper

Trucks would also be used to import rock to create access road ramps into the floodplain. Other utility vehicles would be used for general Project implementation.

Mechanical: Hand Equipment

- Chainsaws
- brushcutters
- backpack herbicide sprayers

2.8 Required Permits and Approvals

The permits and regulatory compliance requirements for the Proposed Project are described in **Table 2-3**. In addition to the requirements summarized below, the Proposed Project must conform to the policies and standards established in the current Napa County General Plan (Napa County 2008), which is relevant to all resource topics analyzed under CEQA.

Table 2-3. Permit and Regulatory Requirements Applicable to the Proposed Project

Regulatory Agency	Law/Regulation	Purpose	Permit/Authorization Type
California Department of Fish and Wildlife – Bay Delta Region	Fish and Game Code Section 1600	Applies to activities that will substantially modify a river, steam, or lake. The Streambed Alteration Agreement includes reasonable conditions necessary to protect those resources.	Notification of Streambed Alteration (1602 permit) California Endangered Species Act (no California Endangered Species Act listed species likely to be taken)

Regulatory Agency	Law/Regulation	Purpose	Permit/Authorization Type
State Historic Preservation Officer	National Historic Preservation Act Section 106	Napa RCD would consult with State Historic Preservation Officer if historic properties or prehistoric archaeological sites may be affected by the Proposed Project.	Consultation
State Water Quality Control Board	CWA Section 402	National Pollutant Discharge Elimination System (NPDES) program regulates discharges of pollutants.	NPDES Residual Aquatic Pesticide Discharges Permit
Napa County Public Works	Encroachment Permit	Napa RCD would need to obtain an encroachment permit from the County for any work within the County right-of-way.	Encroachment permit
Napa County Engineering Division	County Municipal Code	Soil disturbance >1 acre requires a County Grading Permit	County Grading Permit

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Chapter 3
ENVIRONMENTAL CHECKLIST

This chapter of the Initial Study/Mitigated Negative Declaration (IS/MND) assesses the environmental impacts of the Pope Creek Weed Management Project (Proposed Project) based on the environmental checklist provided in Appendix G of the California Environmental Quality Act (CEQA) Guidelines. The environmental resources and potential environmental impacts of the Proposed Project are described in the individual subsections below. Each section includes a discussion of the rationale used to determine the significance level of the Proposed Project's environmental impact for each checklist question. For environmental impacts that have the potential to be significant, mitigation measures are identified that would reduce the severity of the impact to a less-than-significant level.

1.	**Project Title**	Pope Creek Weed Management Project
2.	**Lead Agency Name and Address**	Napa County Resource Conservation District 1303 Jefferson St #500b, Napa, CA 94559
3.	**Contact Person, Phone Number and Email**	Frances Knapczyk 707-252-4189 x3124 frances@naparcd.org
4.	**Project Location and Assessor's parcel number (APN)**	The Proposed Project is located along a 2.7 mile reach of Pope Creek located parallel to Pope Canyon Road in unincorporated Napa County. 18-080-004, 18-080-023, 18-080-045, 18-080-012, 18-080-015, 19-010-008, 19-010-023, 19-020-003, 19-020-004, 19-020-005, 19-020-008, 19-020-014, 19-020-022, 19-210-002
5.	**Property Owner(s)**	Multiple
6.	**General Plan Designation**	Agriculture, Watershed and Open Space
7.	**Zoning**	Agricultural Watershed
8.	**Description of Project**	See Chapter 2, Project Description.
9.	**Surrounding Land Uses and Setting**	open space and agricultural
10.	**Other Public Agencies whose Approval or Input May Be Needed**	Napa County Public Works Napa County Engineering Division Regional Water Quality Control Boards (Central Valley Region) State Historic Preservation Officer

		California Department of Fish and Wildlife U.S. Bureau of Land Management
12.	**Native American Consultation**	See Section 3.18 and Appendix D

Environmental Factors Potentially Affected

The environmental factors checked below would potentially be affected by the Proposed Project, as indicated by the checklist on the following pages.

☒ Aesthetics

☐ Agriculture and Forestry Resources

☒ Air Quality

☒ Biological Resources

☒ Cultural Resources

☒ Energy

☒ Geology/Soils

☒ Greenhouse Gas Emissions

☒ Hazards and Hazardous Materials

☒ Hydrology/Water Quality

☒ Land Use/Planning

☐ Mineral Resources

☒ Noise

☐ Population/Housing

☒ Public Services

☒ Recreation

☒ Transportation

☒ Tribal Cultural Resources

☒ Utilities/Service Systems

☒ Wildfire

☐ Mandatory Findings of Significance

Determination

The conclusions and recommendations contained herein are professional opinions derived in accordance with current standards of professional practice. They are based on a review of sources of information cited in this document, and the comments received, conversations with knowledgeable individuals; the preparer's personal knowledge of the area; and, where necessary, observations made during visits to the site.

On the basis of this initial evaluation:

☐ I find that the Proposed Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT (EIR) is required.

☐ I find that the Proposed Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed Project, nothing further is required.

Frances Knapczyk 12-11-19

Signature Date

Name: Frances Knapczyk

Napa County RCD

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3.1 Aesthetics

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Except as provided in Public Resources Code Section 21099, would the Project:				
Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐
Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

3.1.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to Aesthetic Resources in relation to the Proposed Project.

State Laws, Regulations, and Policies

The State Scenic Highways Program was created in California to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to State highways. Napa County contains no officially designated State Scenic Highways.

Local Laws, Regulations, and Policies

The Napa County General Plan identifies more than 280 miles of County-designated scenic roadways; however, none have been officially designated as Scenic Highways by the State of California. Although several segments of Highway 29, State Route 121, and State Route 221 are eligible for State designation, the County has not pursued inclusion in the State Scenic Highway Program at this time. Instead, the General Plan has an adopted a Viewshed Protection Program,

which contains polices aimed at protecting the County-designated scenic roadways. These policies are primarily focused on ensuring aesthetic compatibility of new development or infrastructure constructed along these sensitive corridors.

3.1.2 Environmental Setting

The Napa County General Plan (Napa County 2008) identifies aesthetics as one of the important factors contributing to the County's "community character," and includes goals and policies that bear directly on the preservation of aesthetic character and visual resources. Consistent with the General Plan's emphasis on aesthetic values, the County's Viewshed Protection Ordinance defines standards and creates guidelines for grading and construction in hillside areas, with the specific aim of protecting views from scenic roadways. Additional General Plan goals and policies protect land uses such as agriculture and open space that contribute to the County's aesthetic character; protect cultural and historic resources, many of which are aesthetically as well as culturally valuable; and provide guidance for preserving dark sky values in rural areas

Visual Character and Quality of the Site

The following is an abbreviated discussion of the relevant information contained in the Visual and Aesthetic Resources chapter of the Napa County Baseline Data Report (BDR)[1] (Napa County 2005).

The visual character of Napa County is greatly diverse. Napa County is situated within the California Coastal Range, the mountains of which surround the area to the east, north, and west, and run through the County. The mountainous ridgelines that frame the County's eastern and western boundaries provide visually distinct valley regions. The visual character of these mountain areas is varied; some are densely forested with evergreen trees, while others are open grasslands dominated by mature oak trees. The Project location is within these mountain areas.

The Project site is located in a natural environment with little to no development. The primary visual access to the site is from Pope Canyon Road, a two-lane rural road which follows the Pope Creek alignment and connects Pope Valley to Lake Berryessa. Pope Canyon Road is identified in the Napa County General Plan as a County-designated scenic roadway (Napa County 2008). The surrounding hills have woodland and grassland natural areas with Pope Creek and the riparian corridor along the western side of the road. There are publicly accessible vantage points where drivers can pull off the road to look at the scenic vista of the riparian corridor and adjacent hills to the west.

Viewer Groups Sensitivity

Viewer groups would primarily include motorists, and potentially agricultural properties on the hillsides, depending on vegetation density. Groups who view the Project channel from a distance or for short duration (i.e., motorists) experience a more moderate viewer sensitivity because they are generally not highly focused on details of the channel. Rather, the visual

[1] The Napa County BDR was developed to provide a baseline of existing condition information for a wide range of environmental and resource topics in Napa County. Initially developed to support the update of the Napa County General Plan, the BDR continues to provide environmental setting information for use in environmental compliance, permitting, and planning projects in Napa County.

features of the channels appear as a backdrop to the overall visual surroundings. If drivers stop next to the roadway to experience the Pope Creek channel from a closer perspective, viewer sensitivity can be moderately high because they are more likely to value the natural environment, appreciate the visual experience, and be more sensitive to changes in views or incompatible elements.

3.1.3 Discussion of Checklist Responses

a. Adverse effects on scenic vistas—Less than significant

A scenic vista is generally considered a view of an area that has remarkable scenery or a natural or cultural resource that is indigenous to the area. The Project area does not contain any State-designated scenic vistas. However, the County General Plan identifies Pope Canyon Road as a scenic roadway and identifies scenic beauty as one of the County's most important and characteristic attributes. Therefore, this analysis treats all vistas in the Project area as scenic vistas.

Proposed Project activities would typically be conducted within the channel corridor, which is situated at lower elevations in the watershed than Pope Canyon Road. Some Proposed Project activities may be visible from Pope Canyon Road, but it is unlikely that Proposed Project activities would have a pronounced effect on scenic vistas from these viewpoints. Access routes or staging areas located along the Pope Canyon Road or areas where maintenance occurs at similar elevations as the road may be visible from scenic viewpoints.

Proposed Project activities would involve use of heavy equipment; however, activities using heavy equipment would occur temporarily and only during daytime hours on weekdays. Subsequently, Proposed Project activities are not anticipated to greatly reduce the quality of views from nearby adjacent lands or the roadway. As detailed in Chapter 2, *Project Description*, maintenance activities would be performed in a manner to restore channel capacities and natural function. Treatment activities would be tailored to specific management units based on the level of invasive plant infestation and accessibility to do the minimum maintenance necessary and feasible to protect and enhance riparian habitat. Activities would not result in the construction of any structures or facilities that would block views of surrounding scenic vistas.

In the long term, the Proposed Project is anticipated to improve scenic vistas due to increased native riparian vegetation. Due to the sensitive manner in which activities would be performed and long-term improvement to vistas, the impact on scenic vistas would be **less than significant**.

b. Damage to scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway—Less than significant

While the presence of maintenance equipment along Pope Creek could temporarily disrupt scenic views, such disruption would be temporary. Vegetation removal along Pope Creek would not substantially affect aesthetic quality in the long term, due to recovery of native vegetation in Pope Creek over time following removal of invasive vegetation. As described above, the Proposed Project is anticipated to improve scenic vistas in the long term.

The following best management practices (BMPs) are included as part of the Proposed Project to address temporary visual impacts during maintenance. Descriptions of each BMP are provided in Chapter 2, *Project Description*.

BMP GEN-2: Minimize the Area of Disturbance

BMP GEN-6: Staging and Stockpiling of Materials

BMP GEN-7: Stream Access

BMP GEN-17: Work Site Housekeeping

BMP BIO-4: Avoid and Minimize Impacts to Special-Status Plane Species and Sensitive Natural Vegetation Communities

Because Proposed Project activities would be temporary and visual disruptions along scenic corridors would be short-term, there would be no substantial or long-term degradation of the scenic resources as viewed by the various viewer groups. This impact would be **less than significant**.

c. Conflict with applicable zoning and other regulations governing scenic quality?—Less than significant

The visual character of the creek varies from densely vegetated to sparsely vegetated riparian areas. Viewing opportunities are primarily from roadways that parallel the channel and from more restricted areas on privately-owned land (not officially designated for public access). While Proposed Project activities could result in a temporary degradation of visual quality, the overall long-term effect of the Project would improve the visual quality and character of the Project area. The Project would, therefore, be consistent with the General Plan's emphasis on aesthetic values and result in a **less-than-significant** impact.

d. New sources of substantial light or glare -No impact

The Proposed Project does not include any facilities that would require new or modified sources of lighting. Project construction would be conducted during daylight hours only, thus no nighttime lighting would be needed. Consequently, there would be **no impact** on light or glare.

3.2 Agriculture and Forestry Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

3.2.1 Regulatory Setting

State Laws, Regulations, and Policies

California Land Conservation Act of 1965 (Williamson Act)

The California Land Conservation Act of 1965 (commonly referred to as the Williamson Act) allows local governments to enter into contracts with private landowners for the purpose of preventing conversion of agricultural land to non-agricultural uses (California Department of Conservation [CDOC] 2019). In exchange for restricting their property to agricultural or related open space use, landowners who enroll in Williamson Act contracts receive property tax assessments that are substantially lower than the market rate.

3.2.2 Environmental Setting

The preservation of the County's agricultural land has long been at the forefront of the County's planning approach, and is critically important to the overall character and economic viability of Napa County. Napa County is a renowned grape-growing and wine-making region, which as of 2017, boasts 16 separate designated American Viticultural Areas for vineyards. The greatest amount of vineyard acreage is devoted to the production of red varieties of wine grapes (Napa County 2018). Pope Creek drains approximately 80 percent of the agricultural lands used for wine grape production from the northwest section of the Putah Creek watershed (Napa County Putah Creek Watershed Group [NCPCWG] 2004).

The Napa County General Plan contains two land use designations for agricultural uses:

- Agriculture, Watershed and Open Space (AWOS), and
- Agricultural Resource (AR).

The Proposed Project is located in an area designated AWOS. This designation is used to identify areas of watersheds, reservoirs, and floodplain tributaries of the County where agriculture is currently, and should continue to be, a predominant land use. Permissible land uses are the same as those for the AR designation. Incompatible uses, including urbanized uses, are to be precluded in AWOS areas. The minimum parcel size for the AWOS designation is 160 acres, with a maximum of one single-family residential unit per parcel.

The Napa County Zoning Ordinance Title 18 provides three agricultural zoning designations: Agricultural Watershed (AW), Agricultural Preserve (AP), and Agricultural Combination (A) District. The Proposed Project reaches are in an area zoned AW. This zoning classification is applied to the County's watersheds, reservoirs, and floodplain tributaries, where agricultural activities are currently taking place and should continue to be the predominant land use, where uses incompatible to agriculture should be precluded, and where the development of urban uses would be detrimental to the continuance of agriculture and the maintenance of open space.

Land use planning in the Project area is governed by the Napa County General Plan and Zoning Ordinance. As identified above, the Proposed Project reaches are designated as AWOS lands in the General Plan (Napa County 2008) and are zoned AW. Land in the Proposed Project area is classified as Grazing Land and Other Land by the Farmland Mapping & Monitoring Program (FMMP). No parcels in the Project area are currently enrolled as under the Williamson Act (CDOC 2016).

3.2.3 Discussion of Checklist Responses

a-e. Conflicts or loss of agricultural or forest lands—No impact

All Proposed Project activities would take place within and along the immediate Pope Creek channel corridor. Land adjacent to the Proposed Project is not actively used for agriculture. The Proposed Project activities include invasive plant species removal followed by long-term vegetation monitoring. These activities would not alter land use designations or farmland/timberland classifications at either the local or state level. Furthermore, the maintenance actions of the Proposed Project would not create pressure for future land conversions. No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, forest lands, or lands under a Williamson Act contract would be converted by, or conflict with, Proposed Project activities. As a result, **no impact** would occur.

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3.3 Air Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
When available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the Project:				
Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Regulatory Setting

The Clean Air Act is implemented by the U.S. Environmental Protection Agency (USEPA) and sets ambient air limits, the National Ambient Air Quality Standards (NAAQS), for six criteria pollutants: particulate matter, carbon monoxide, nitrogen oxides (NOx), ground-level ozone and lead. Of these criteria pollutants, particulate matter and ground-level ozone pose the greatest threat to human health. The California Air Resources Board (CARB) sets standards for criteria pollutants that are more stringent than NAAQS, and includes the following additional contaminants: visibility reducing particles, sulfates, and vinyl chloride. The Project area is located within the San Francisco Bay Area Air Basin (SFBAAB), which includes all or portions of the nine-county Bay Area, including Napa County. The Bay Area Air Quality Management District (BAAQMD) manages air quality within the SFBAAB for attainment and permitting purposes. **Table 3.3-1** shows the current Bay Area attainment status for the state and federal ambient air quality standards.

Table 3.3-1. Bay Area Attainment Status of the State and Federal Ambient Air Quality Standards

Contaminant	Averaging Time	Concentration	State Standards Attainment Status[1]	Federal Standards Attainment Status[2]
Ozone	1-hour	0.09 ppm	N	See footnote 3
	8-hour	0.070 ppm	N	N
Carbon Monoxide	1-hour	20 ppm	A	n/a
		35 ppm	n/a	A
	8-hour	9.0 ppm	A	A[4]
Nitrogen Dioxide	1-hour	0.18 ppm	A	n/a
		0.100 ppm[6]	n/a	U
	Annual arithmetic mean	0.030 ppm	A	n/a
		0.053 ppm	n/a	A
Sulfur Dioxide (SO_2)	1-hour	0.25 ppm	A	n/a
		0.075 ppm	n/a	A
	24-hour	0.04 ppm	A	n/a
		0.14 ppm	n/a	A
	Annual arithmetic mean	0.030 ppm	n/a	A
Particulate Matter (PM10)	24-hour	50 µg/m^3	N	n/a
		150 µg/m^3	n/a	U
	Annual arithmetic mean	20 µg/m^3	N	n/a
Fine Particulate Matter (PM2.5)	24-hour	35 µg/m^3	n/a	N (Moderate)[7]
	Annual arithmetic mean	12 µg/m^3	N	U/A
Sulfates	24-hour	25 µg/m^3	A	n/a
Lead[8]	30-day average	1.5 µg/m^3	A	n/a
Hydrogen Sulfide	1-hour	0.03 ppm	U	n/a
Vinyl Chloride[8] (chloroethene)	24-hour	0.010 ppm	U	n/a
Visibility Reducing Particles	8 hour (10:00 to 18:00 PST)	See footnote 5	U	n/a

A – attainment
N – non-attainment
U – unclassified
ppm – parts per million
µg/m^3 – micrograms per cubic meter
n/a – not applicable

Notes:

1. California standards for ozone, carbon monoxide, sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM10, and visibility-reducing particles are values that are not to be exceeded. The standards for sulfates, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour, or 24-hour average (i.e., all standards except for lead and the PM10 annual standard), then some measurements may be excluded. In particular, measurements that are excluded include those that the California Air Resources Board (CARB) determines would occur less than once per year on average.
2. National standards shown are the "primary standards" designed to protect public health. National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety. National standards other than for ozone, particulates, and those based on annual averages are not to be exceeded more than once per year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the 3-year average of the 4th highest daily concentrations is 0.075 ppm (75 parts per billion) or less. The 24-hour PM10 standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 $\mu g/m^3$. The 24-hour PM2.5 standard is attained when the 3-year average of 98th percentiles is less than 35 $\mu g/m^3$. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM10 is met if the 3-year average falls below the standard at every site. The annual PM2.5 standard is met by spatially averaging annual averages across officially designated clusters of sites and then determining if the 3-year average of these annual averages falls below the standard.
3. The national 1-hour ozone standard was revoked by USEPA on June 15, 2005. On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 ppm to 0.070 ppm. An area meets the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. This table provides the attainment statuses for the 2015 standard of 0.070 ppm.
4. In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.
5. Statewide Visibility-Reducing Particle Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.
6. To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average of nitrogen dioxide at each monitoring station within an area must not exceed 0.100 ppm (effective January 22, 2010).
7. On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour PM2.5 national standard.
8. CARB has identified lead and vinyl chloride as toxic air contaminants with no threshold level of exposure below which there are no adverse health effects determined.

Source: CARB 2017, USEPA 2019, BAAQMD 2017b, BAAQMD 2019

The BAAQMD has also developed thresholds of significance for criteria air pollutants, which were published in the BAAQMD's *California Environmental Quality Act Air Quality Guidelines* (2017a). **Table 3.3-2** provides the BAAQMD's recommended significance criteria for analysis of air quality impacts, including cumulative impacts. The term "sensitive receptor" is used by the BAAQMD to refer to facilities or land uses that include members of the population particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. The only sensitive receptors in the vicinity of the Project area are residential structures.

The Napa County 2008 General Plan includes policies to reduce air pollution by achieving and maintaining air quality in Napa County that meets or exceeds state and federal standards.

Table 3.3-2. BAAQMD CEQA Thresholds of Significance for Criteria Air Pollutants

Criteria Air Pollutants and Precursors (Regional)	Construction Thresholds Average Daily Emissions (lb/day)
Reactive Organic Gases (ROG)	54
Nitrogen oxides (NOx)	54
Particulate Matter (PM_{10})	82
Particulate Matter ($PM_{2.5}$)	54
PM_{10}/$PM_{2.5}$ (fugitive dust)	None
Local Carbon Monoxide (CO)	9.0 ppm (8-hour average), 20.0 ppm (1-hour average)
Odors	Five confirmed complaints per year averaged over 3 years

tpy – tons per year; lb/day – pounds per day; ppm – parts per million

Source: BAAQMD 2017a

3.3.2 Environmental Setting

Pope Creek is located in the Vaca Range east of Napa Valley, in an area that has later springs, earlier frosts, and hotter, drier summers than much of the rest of Napa County (Napa Valley Register 2011). The area receives approximately 24 inches of rain per year and the annual average maximum and minimum temperatures are 74 °F and 49 °F respectively (WRCC 2019). Mountains surrounding Pope Valley can serve as barriers to prevailing regional northwesterly winds. During the summer and fall, winds can transport non-local air pollution from the Bay Area to the south or from the Sacramento Valley to the east, and together with locally-generated ozone precursors, effectively trap and concentrate the pollutants under stable conditions. The local upslope and downslope flows set up by the surrounding mountains may also recirculate pollutants, adding to the total burden. The high frequency of light winds and associated stable conditions during the later fall and winter contributes to the buildup of particulates and carbon monoxide from automobiles, agricultural burning and fireplace burning (BAAQMD 2017a).

3.3.3 Discussion of Checklist Responses

a, b. Conflict with or obstruct implementation of the applicable air quality plan, or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is a nonattainment area—Less than significant

Use of vehicles, off-road equipment, such as Morookas and excavators, and herbicides for weed management activities would generate emissions of criteria air pollutants. Fuel combustion involved with vehicle use and operating off-road equipment would release particulate matter ($PM_{2.5}$ and PM_{10}) and other contaminants associated with motor vehicle operation, including carbon monoxide and ozone precursors (reactive organic gases [ROG] and NOx). Herbicide use would result in emissions of ROG (specifically volatile organic compounds).

The Proposed Project would require use of a variety of vehicles (light- and heavy-duty pickups, excavators, a helicopter, etc.). Although proposed activities would likely be conducted over multiple years, emissions were estimated conservatively using the assumption that all work would be completed in one year over a 10-week period. While the work period in Year 1 would last 10-12 weeks, the air quality analysis used the lower end of that range to ensure average daily emissions were estimated conservatively.

Estimated emissions of criteria air pollutants were modeled using CalEEMod 2016.3.2 and are presented in **Table 3.3-3**. Maximum daily emissions estimates present a conservative scenario, as daily average emissions for each management unit would be less. However, since the BAAQMD's significance thresholds are for average daily emissions, both the Proposed Project's maximum and average daily emissions were estimated. For additional information on how emissions were estimated, refer to Appendix A.

Table 3.3-3. 2020 Maximum and Average Daily Emissions Estimates (pounds per day)

Source	ROG	NOx	PM10 (Exhaust)	PM2.5 (Exhaust)
Vehicles/Equipment	0.7	6.7	0.3	0.3
Herbicide Use	0.09	-	-	-
Total	*0.79*	*6.7*	*0.3*	*0.3*
Daily Average	*0.40*	*2.7*	*0.1*	*0.1*
BAAQMD Threshold	54	54	82	54

Note: Average emissions were calculated by dividing the total project emissions by the expected number of work days (51). See Table 3.3-2 for BAAQMD CEQA Thresholds of Significance for criteria air pollutants.

Source: Data compiled by Horizon Water and Environment in 2019 (refer to Appendix A).

Table 3.3-3 shows that Project activities would generate maximum and average daily emissions substantially below the BAAQMD's significance thresholds (average daily) for all criteria air pollutants. As a result, the Proposed Project would not violate any air quality standards or plans. The BAAQMD significance thresholds utilized also represent cumulative thresholds. Therefore, the Proposed Project would not make a considerable contribution to cumulative impacts related

to air quality (also refer to Checklist Response B in Section 3.21, "Mandatory Findings of Significance"). Work in future years (Years 2 and 3) is anticipated to be smaller in scope and shorter in duration than Year 1 work, so emissions from work in these years would also be below the thresholds described above. This impact would be **less than significant** and no mitigation is required.

c, d. Expose sensitive receptors to substantial pollutant concentrations, or result in other emissions affecting a substantial number of people—Less than significant

The Proposed Project would involve the use of herbicides and the combustion of gasoline and diesel fuels during operation of vehicles and equipment. These activities have the potential to generate emissions of toxic air contaminants (TACs) or objectionable odors. Due to the variable nature of weed management activities, the generation of TAC emissions would be temporary, especially considering the short amount of time such equipment is typically operating within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations.

Chronic and cancer-related health effects estimated over short periods due to emissions expected with the Proposed Project are uncertain. Cancer potency factors are based on animal lifetime studies or worker studies with long-term exposure to the carcinogenic agent. There is considerable uncertainty in trying to evaluate the cancer risk from exposure that would last only a small fraction of a lifetime. Some studies (California Office of Environmental Health Hazard Assessment [OEHHA] 2015) indicate that the dose rate may change the potency of a given dose of a carcinogenic chemical. In others words, a dose delivered over a short period may have a different potency than the same dose delivered over a lifetime. Furthermore, impacts are most severe adjacent to the work area and decrease rapidly with increasing distance. Concentrations of mobile-source diesel particulate matter (DPM) emissions are typically reduced by 70 percent at a distance of approximately 500 feet (CARB 2005).

The BAAQMD indicates that odor impacts could result from siting a new odor source near existing sensitive receptors. Sensitive receptors in the vicinity of the Proposed Project area are limited; the Proposed Project area is in a sparsely populated part of the county with only a few residences, the closest of which is 400 feet from the Proposed Project area. Aerial spraying, which has the potential to generate odors, would only take place in Management Unit C. There is one potential receptor located 400 feet southeast of this unit. As the Proposed Project's weed management activities would be temporary, infrequent, and distributed along a long, linear Proposed Project area, the number of people exposed to odors or TACs from any weed management work would be small (anticipated to be one to three residences) and the duration of exposure would be anticipated to occur on one day of aerial spraying. Implementation of the following BMPs will help minimize both the application of herbicides and emissions from vehicles and equipment:

BMP GEN-3: Standard Herbicide Use Requirements

BMP GEN-5: Air Quality

BMP GEN-12: Vehicle and Equipment Maintenance

Therefore, the Proposed Project is not considered to have the potential to generate substantial annoyances from odors to sensitive receptors. This is considered a **less-than-significant** impact. No mitigation is required.

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3.4 Biological Resources

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:					
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS)?	☐	☒	☐	☐
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS?	☐	☐	☒	☐
c.	Have a substantial adverse effect on state or federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f.	Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan, or other approved local, regional, or state HCP?	☐	☐	☐	☒

3.4.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Endangered Species Act

The Endangered Species Act (ESA) (16 U.S. Code [USC] Section 1531 *et seq*.; 50 Code of Federal Regulations [CFR] Parts 17 and 222) provides for conservation of species that are endangered or threatened throughout all or a substantial portion of their range, as well as protection of the habitats on which they depend. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. In general, USFWS manages terrestrial and freshwater species, whereas NMFS manages marine and anadromous species.

Section 9 of the ESA and its implementing regulations prohibit the "take" of any fish or wildlife species listed under the ESA as endangered or threatened, unless otherwise authorized by federal regulations. The ESA defines the term "take" to mean "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct" (16 USC Section 1532). Section 7 of the ESA (16 USC Section 1531 *et seq*.) outlines the procedures for federal interagency cooperation to conserve federally listed species and designated critical habitats. Section 10(a)(1)(B) of the ESA provides a process by which nonfederal entities may obtain an incidental take permit from USFWS or NMFS for otherwise lawful activities that incidentally may result in "take" of endangered or threatened species, subject to specific conditions. A habitat conservation plan (HCP) must accompany an application for an incidental take permit.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC Sections 703–712; 50 CFR Subchapter B) makes it unlawful to pursue, hunt, take, capture, kill, or possess any migratory birds, or part, nests, or eggs of such migratory birds, that are listed in wildlife protection treaties between the United States and Canada, Mexico, Japan, and Russia. The MBTA applies to almost all avian species that are native to California. The MBTA prohibits the take of such species, including the removal of nests, eggs, and feathers. It requires that all federal agencies consult with USFWS on activities or proposed activities authorized, funded, or undertaken by that agency that may adversely affect migratory birds.

The Migratory Bird Treaty Reform Act amends the MBTA so that nonnative birds or birds that have been introduced by humans to the United States or its territories are excluded from protection under the MBTA.

Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs each federal agency taking actions that have or may have adverse impacts on migratory bird populations to work with USFWS to develop a memorandum of understanding to promote the conservation of migratory bird populations.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act prohibits the taking or possession of and commerce in bald and golden eagles, with limited exceptions (16 USC 668). Under the Bald and Golden Eagle Protection Act, it is a violation to "…take, possess, sell, purchase, barter, offer to sell, transport, export or import, at any time or in any manner, any bald eagle commonly known as the American eagle, or golden eagle, alive or dead, or any part, nest or egg, thereof…". "Take" is defined to include pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, destroy, molest, and disturb. "Disturb" is further defined in 50 CFR Part 22.3 as "to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."

Clean Water Act

Section 404 of the Clean Water Act (CWA) regulates the discharge of dredged and fill materials into waters of the U.S., which include all navigable waters, their tributaries, and some isolated waters, as well as some wetlands adjacent to the aforementioned waters (33 CFR Section 328.3). Areas typically not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial waterbodies such as swimming pools, vernal pools, and water-filled depressions (33 CFR Part 328). Areas meeting the regulatory definition of waters of the U.S. are subject to the jurisdiction of U.S. Army Corps of Engineers (USACE) under the provisions of CWA Section 404. Activities involving placement of fill into jurisdictional waters of the U.S. are regulated by USACE through permit requirements. No USACE permit is effective in the absence of state water quality certification pursuant to Section 401 of CWA.

Section 401 of the CWA requires an evaluation of water quality when a proposed activity requiring a federal license or permit could result in a discharge to waters of the U.S. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards (RWQCBs) issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a Basin Plan). Applicants for a federal license or permit to conduct activities that may result in the discharge to waters of the U.S. (including wetlands or vernal pools) must also obtain a Section 401 water quality certification to ensure that any such discharge will comply with the applicable provisions of the CWA.

State Laws, Regulations, and Policies

California Fish and Game Code

The California Fish and Game Code includes various statutes that protect biological resources, including the Native Plant Protection Act of 1977 (NPPA) and the California Endangered Species Act (CESA) (California Fish and Game Code Sections 2050–2098). The NPPA (California Fish and Game Code Section 1900-1913) authorizes the Fish and Game Commission to designate plants as endangered or rare and prohibits take of any such plants, except as authorized in limited circumstances.

CESA prohibits state agencies from approving a project that would jeopardize the continued existence of a species listed under CESA as endangered or threatened. Section 2080 of the California Fish and Game Code prohibits the take of any species that is state listed as endangered or threatened, or designated as a candidate for such listing. California Department of Fish and Wildlife (CDFW) may issue an incidental take permit authorizing the take of listed and candidate species if that take is incidental to an otherwise lawful activity, subject to specified conditions.

California Fish and Game Code Sections 3503 and 3513 protect native and migratory birds, including their nests and eggs, from all forms of take. In addition, Section 3511, Section 4700, Section 5050, and Section 5515 identify species that are fully protected from all forms of take. Section 3511 lists fully protected birds, Section 5515 lists fully protected fish, Section 4700 lists fully protected mammals, and Section 5050 lists fully protected amphibians.

CDFW regulates activities that will interfere with the natural flow of, or substantially alter, the channel, bed, or bank of a lake, river, or stream. Section 1602 of the California Fish and Game Code requires that CDFW be notified of lake or streambed alteration activities. If CDFW subsequently determines that such an activity might adversely affect an existing fish and wildlife resource, it has the authority to issue a streambed alteration agreement, including requirements to protect biological resources and water quality.

3.4.2 Environmental Setting

Pope Creek supports a riparian zone that ranges from approximately 80 to 200 feet wide in the Proposed Project reach. The plant community along the stream is most commonly riparian scrub, mainly Brewer's willow (*Salix brewerii*) and arroyo willow thickets (*S. lasiolepis*). Tamarisk (*Tamarix* sp.) is dominant or co-dominant in many portions of the Project reach.

The hillslopes adjacent to the stream primarily support shrublands and annual grasslands. The upper slopes support foothill pine woodland, which is dominated by grey (=foothill) pine (*Pinus sabiniana*) and contains various oak species. The hillslopes on the south side of the creek support mixed oak forest dominated by several oak species (*Quercus agrifolia*, *Q. douglasii* and *Q. lobata*).

Special-Status Species

Serpentine soils occurring in the area support local and regional endemic plant species. During initial botanical surveys for the Proposed Project, at least one California Rare Plant Rank (CRPR) 1B.2 plant species (rare and endangered in California) was identified (Napa Botanical Survey Services 2014). Four plant species with a CRPR 4 (limited distribution) ranking were observed in the Project reach (Napa Botanical Survey Services 2014).

A foothill yellow-legged frog (*Rana boylii*) (FYLF) habitat assessment was conducted in May 2019 in the Proposed Project Area (Horizon Water and Environment 2019). While FYLF individuals, tadpoles, or egg masses were not observed during the survey, suitable habitat for the species was identified throughout the reach of Pope Creek within the Proposed Project area.

During the FYLF habitat assessment conducted in May 2019, western pond turtles (*Emys* [=*Actinemys*] *marmorata*) were observed in the Proposed Project reach. An active bald eagle

(*Haliaeetus leucocephalus*) nest was also observed approximately 400 feet northeast of the Proposed Project reach, upslope from Pope Canyon Road.

3.4.3 Discussion of Checklist Responses

a. Substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species—Less than significant with mitigation

For the purposes of this assessment, special-status species are those that are listed as CRPR 1A, 1B, 2A, or 2B species; rare; species of concern; candidate threatened or endangered; and threatened or endangered by the USFWS, NMFS, or CDFW[2]. Special-status plant and animal species with the potential to occur in the Project area were identified through a review of the following resources:

- USFWS Information for Planning and Consultation (IPaC) Species List (USFWS 2019, Appendix B)
- California Natural Diversity Database (CNDDB) query for the Walter Springs 7.5-minute U.S. Geological Survey (USGS) quadrangle and the eight quadrangles surrounding it (CDFW 2019, Appendix B)
- California Native Plant Society (CNPS) Rare Plant Inventory Database query for the Walter Springs 7.5' USGS quadrangle and the eight quadrangles surrounding it for California Rare Plant Rank 1A, 1B, 2A, and 2B species (CNPS 2019, Appendix B)
- Rare Plant Study for the Pope Creek Watershed Rehabilitation Project (Napa Botanical Survey Services 2014), Appendix B)

Figure 3.4-1 and **Figure 3.4-2,** respectively, show CNDDB occurrences of special-status plant and animal species within 5 miles of the Proposed Project. Appendix B lists the species known to occur within the vicinity of the Proposed Project area. The potential for special-status species to occur in areas affected by Proposed Project activities was evaluated according to the following criteria:

- **None:** the Proposed Project area contains a complete lack of suitable habitat, the local range for the species is restricted, and/or the species is extirpated in this region.
- **Not expected**: suitable habitat or key habitat elements might be present but might be of poor quality or isolated from the nearest extant occurrences, and/or the species is not known to occur in the Proposed Project area.
- **Possible**: presence of suitable habitat or key habitat elements in the Proposed Project area that potentially support the species.

[2] Includes California Rare Plant Rank List 1 and 2 species.

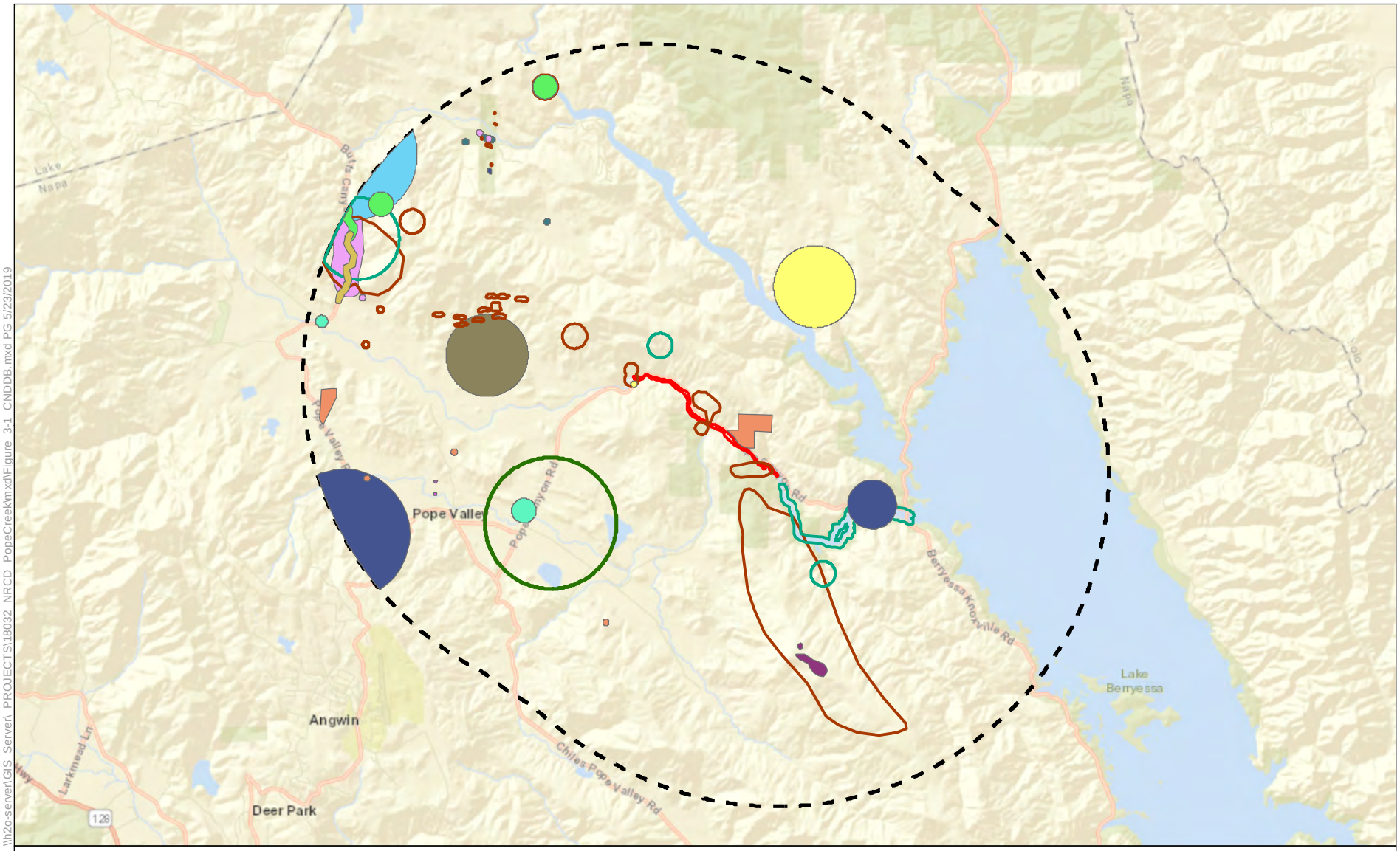

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Figure 3.4-1
Special-status Plants in the Vicinity of the Proposed Project

Pope Creek
Weed Management Project

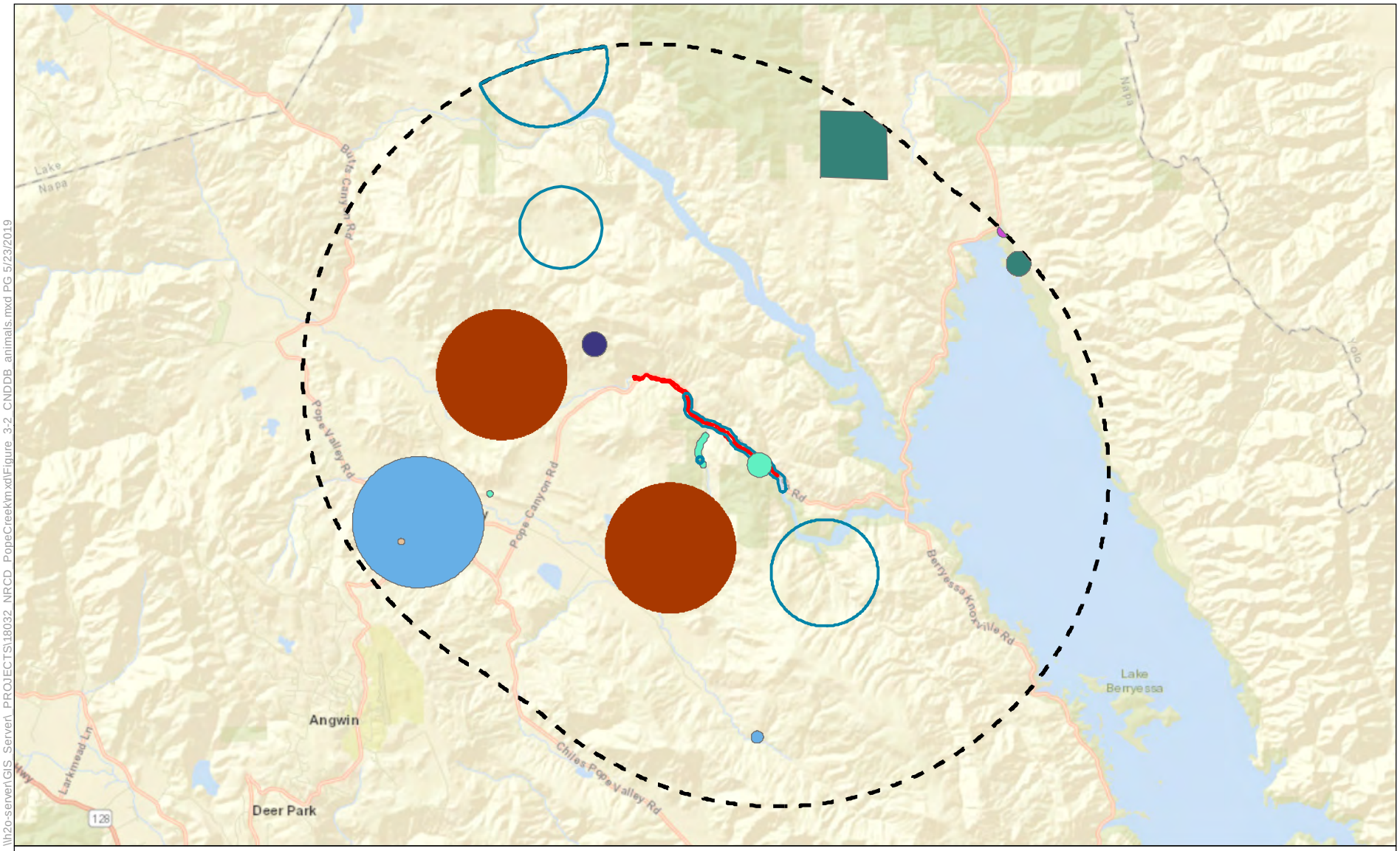

Figure 3.4-2
Special-status Animals in the Vicinity of the Proposed Project

Pope Creek
Weed Management Project

- **Present**: the species was either observed directly or its presence was confirmed by field investigations or in previous studies in the Proposed Project area.

A discussion of the Proposed Project's potential effects on special-status species and the resultant level of impacts are provided below.

Special-status Plant Species

During initial botanical surveys, one CRPR 1B.2 species, Greene's narrow-leaved daisy (*Erigeron greenei*), was identified in the Project area (Napa Botanical Survey Services 2014). An unconfirmed identification of two-carpellate western flax (*Hesperolinon bicarpellatum*) in the Proposed Project area was also made during the same survey effort (Napa Botanical Survey Services 2014). Four plant species with a CRPR 4 (limited distribution) ranking were also observed in the Proposed Project area during the same surveys (Napa Botanical Survey Services 2014). These species are Cleveland's milk-vetch (*Astragalus clevelandii*), serpentine sunflower (*Helianthus exilis*), Cleveland's ragwort (*Senecio clevelandii* var. *clevelandii* [=*Packera clevelandii*]), and marsh zigadenus (*Toxicoscordion fontanum*). Several other plant species have the potential to occur within the Proposed Project area (Appendix B and Napa Botanical Survey Services 2014).

The Proposed Project could result in impacts to special-status plant species through trampling, use of heavy machinery, and herbicides. Implementation of biological controls for the Proposed Project is not anticipated to result in impacts to special-status plant species, as tamarisk leaf beetles are obligate feeders on tamarisk species, and do not consume other plants. Implementation of BMP BIO-4: *Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities* would reduce the potential for impacts to special-status plant species though preconstruction surveys by a botanist as well as flagging and avoidance of special-status plant populations. With the implementation of this BMP, impacts to special-status plant species would be less than significant.

Special-status Amphibians and Reptiles

Special-status amphibian and reptile species known to occur in the vicinity of the Proposed Project area are listed in Appendix B. Species with the potential to occur in the Proposed Project area are discussed below.

FYLF (state candidate threatened and species of special concern) have been observed in the vicinity of the Proposed Project, including an occurrence (#782) from 1974 that is presumed extant and located within the lower two-thirds of Pope Creek within the Proposed Project (CDFW 2019). FYLF is one of the few obligate stream breeding ranid frogs in the United States. The FYLF breeding season typically commences from mid-March through May, depending on water conditions, and usually lasts approximately two weeks (Morey 2008). During surveys to assess FYLF habitat within the Proposed Project, no FYLF individuals were encountered (Horizon Water and Environment 2019). However, the assessment concluded that suitable habitat for the species was present throughout the reach of Pope Creek within the Proposed Project (Horizon Water and Environment 2019). The upstream two-thirds of the Proposed Project represent comparatively more suitable habitat than the downstream third (Horizon Water and Environment 2019). Western pond turtles (species of special concern) were observed in the

Proposed Project reach during May 2019 biological surveys (Horizon Water and Environment 2019).

If FYLF or western pond turtle individuals are present during Proposed Project implementation, activities such as vegetation removal and herbicide application could result in adverse impacts to these species. The Proposed Project is anticipated to result in improved habitat conditions for FYLF and western pond turtle through increasing suitable basking habitat, allowing more natural fluvial geomorphic changes within Pope Creek that would increase stream habitat diversity (i.e., stream complexity) and establish a more natural flow regime.

Implementation of BMP BIO-7: *Protection of Special-Status Amphibian and Reptile Species* would reduce the potential for impacts to FYLF and western pond turtle though preconstruction surveys; establishment of buffer zones around FYLF egg masses or tadpoles, and western pond turtle nests; and relocation of special-status species prior to or during project activities with appropriate regulatory agency approval. Implementation of BMP BIO-2: *Protection of Sensitive Fauna Species from Herbicide Use* would reduce the potential for impacts to FYLF and western pond turtle though adherence to federal and state regulations, and measures to avoid herbicide drift to occupied habitat. With the implementation of these BMPs, impacts to special-status amphibians and reptiles would be less than significant.

Special-status Birds

Special-status bird species known to occur in the vicinity of the Proposed Project area are listed in Appendix B. Species with the potential to occur in the Proposed Project area are discussed below.

Two bird species of special concern have been observed in the Proposed Project area during biological surveys. Yellow warbler (*Setophaga petechia*) is a passerine bird that nests in riparian vegetation. Vaux's swift (*Chaetura vauxi*) is a passerine that favors hollow trees are for nesting and roosting sites. Project activities such as vegetation removal could result in temporary adverse impacts to these species. Implementation of BMP BIO-1: *Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures* would reduce any potential implementation-related impacts to these or other special-status bird species to a less than significant level. This BMP includes pre-maintenance site inspections during the nesting season (February 1 through August 31). If an active bird nest is found, a buffer will be established around the nest and maintained until the young have fledged or the nest is determined inactive by a qualified biologist. The Proposed Project is anticipated to ultimately result in improved nesting habitat for yellow warbler by allowing native riparian vegetation to establish along Pope Creek and allowing increased suitable nesting habitat for Vaux’s swift as native riparian trees develop cavities and snags accumulate.

Bald eagles (*Haliaeetus leucocephalus*), a federally delisted, state endangered, and fully protected species, are known to nest in the vicinity of Lake Berryessa (CDFW 2019). An active bald eagle nest was observed approximately 400 feet upslope of the Proposed Project area during May 2019 surveys. If bald eagles nest in the vicinity of the Proposed Project during implementation, the Proposed Project activities could disturb an active nest through the generation of noise, vibration, and visual disturbance. The Proposed Project would not remove suitable nesting habitat for this species. With implementation of Mitigation Measure BIO-1, the

Proposed Project would minimize impacts on active bald eagle nests by identifying occupied nests and establishing appropriate no-work buffer areas until the nest(s) is/are inactive. With the implementation of Mitigation Measure BIO-1 and BMP BIO-1, impacts to special-status birds would be less than significant.

> **Mitigation Measure BIO-1: Conduct Pre-construction Surveys for Nesting Eagles and Implement No-Work Buffer Areas if Necessary.**
>
> If Proposed Project activities occur during the bald eagle breeding season (January 1 through July 31), a pre-construction survey shall be conducted by a qualified biologist in all accessible areas of suitable nesting habitat within ¼-mile of Project work areas. If active eagle nests are found, no Project activities shall occur within ¼-mile of the nest from January 1 through July 31, or until a qualified biologist has determined that the young have fledged or the nest is no longer active.

b. Substantial adverse effect on any riparian habitat or other sensitive natural community—Less than significant

The Proposed Project is located along Pope Creek, which contains riparian habitat. Riparian habitat in the Proposed Project area is currently dominated by invasive species such as tamarisk. As described in Chapter 2, *Project Description*, adverse effects of tamarisk invasion include altered channel morphology and degraded floodplain functions, decreased or altered plant and animal diversity, increased evapotranspiration, and increased fire risk (Sher et al. 2010). The primary purpose of the Proposed Project is to preserve and enhance the quality of native plant and wildlife habitat, and preserve and restore hydro-geomorphic functions in Pope Creek.

Impacts associated with removal of invasive species would result in short-term (1-2 years) loss of functions and values of largely non-native riparian habitat, such as reduction in shade and bird nesting substrate. These impacts would be minimized by active revegetation in Management Units C, D, and F. In addition, implementation of BMPs such as GEN-2*: Minimize the Area of Disturbance*, GEN-4: *Erosion and Sediment Control Measures*, GEN-6*: Staging and Stockpiling of Materials*, GEN-7: *Stream Access*, GEN-10: *Spill Prevention and Response,* and BIO-4: *Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities* would reduce the potential for significant impacts to riparian vegetation. Therefore, short-term impacts to riparian habitat are considered **less than significant**. Ultimately, the Proposed Project would have beneficial impacts on riparian habitat and sensitive natural communities through active and natural native riparian establishment and restored hydro-geomorphic functions of Pope Creek.

c. Substantial adverse effects on state or federally protected wetlands—Less than significant

The Proposed Project would not result in excavation or placement of fill in jurisdictional waters of the U.S. or state. Chipped material would not be left in the stream channel. Removal of existing invasive vegetation would occur along Pope Creek, but this activity is not anticipated to impact state or federally protected wetlands. Overall, the Proposed Project is anticipated to improve the functions and values of Pope Creek. Thus, the Proposed Project's effects to

jurisdictional waters are considered beneficial. Impacts to state or federally protected wetlands are **less than significant**.

d. Substantial interference with wildlife movement, established wildlife corridors, or the use of native wildlife nursery sites—Less than significant

Pope Creek is located upstream of Lake Berryessa and the associated Monticello Dam, which forms an impassible barrier to anadromous fish, thus Proposed Project activities would not interfere with anadromous fish passage. Creeks and riparian areas often provide movement corridors for wildlife. The Proposed Project may result in temporary disruption of wildlife movement through Pope Creek due to increased human presence during Proposed Project activities, but these would occur over a relatively short duration (10-12 weeks in Year 1 and shorter durations in following years) in discontinuous phases. However, adjacent open space and other undeveloped land would still be available for wildlife movement during Project implementation. Following completion of the Proposed Project, habitat values for wildlife movement and rearing are expected to improve, resulting from the removal of invasive riparian species and the recovery of native riparian vegetation.

The Proposed Project area contains suitable nesting habitat for birds. A wide variety of native birds have been observed during biological surveys of the Proposed Project area, including species that depend on riparian habitat for nesting, such as yellow warbler, black-headed grosbeak (*Pheucticus melanocephalus*), belted kingfisher (*Megaceryle alcyon*), and common merganser (*Mergus merganser*). Active nests of most native birds are protected under the MBTA; California Fish and Game Code Section 3503 protects nests and eggs; and raptors are protected under California Fish and Game Code Section 3503.5. Noise and disturbance associated with implementation of the Proposed Project could temporarily adversely affect birds during their nesting season. Potential Project effects on protected bird nests are discussed above, under checklist topic “a”.

The vegetation communities abutting and above Pope Creek (shrubland, foothill pine woodland, mixed oak forest) provide high-quality habitat near a source of water, all of which contribute to a diverse and rich community of upland and riparian bird species in the canyon as a whole. In the absence of invasive plant species treatment within Pope Creek, the riparian zone could eventually become a monoculture of tamarisk. This would reduce the structural and successional complexity within the riparian zone, which would likely affect the ability of the currently diverse bird species to use the riparian habitat along Pope Creek and occur within the canyon overall.

Bird surveys in the Proposed Project area noted the reduced presence of riparian-obligate birds in areas where tamarisk and other invasive species are the only riparian vegetation. Although some bird species have been documented nesting in tamarisk within the Proposed Project area, the removal of tamarisk and the eventual recovery of native riparian vegetation following project implementation is anticipated to be beneficial overall for the native bird species that use riparian habitat in the Project area. Implementation of BMP BIO-1: *Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures* would reduce any potential implementation-related impacts to active bird nests to a less-than-significant level. This BMP includes pre-maintenance site inspections during the nesting season (February 1 through August 31). If an active bird nest is found, a buffer will be established around the nest and maintained

until the young have fledged. Therefore, the Proposed Project is not expected to affect the nesting bird population currently present within the Proposed Project reach, and it is expected to result in a long-term benefit to the local nesting bird population over time.

Dusky-footed woodrats (*Neotoma fuscipes*) are common in California (Brylski 2008). The current taxonomy recognizes 11 subspecies within the species' range, which extends from northern Oregon to northern Baja California (Matocq 2002). The subspecies that occurs in the Project area belongs to the northern California and Oregon group of subspecies (*N. fuscipes fuscipes*), which is not designated as a species of special concern by CDFW. However, California Fish and Game Code Section 4150 affords protection to nongame mammals, and under CEQA substantial interference with native wildlife breeding could be considered a significant impact. Woodrats build houses (i.e., nests) constructed primarily of sticks within scrub or wooded vegetation communities. Vegetation removal could potentially impact woodrat houses, if present in the Proposed Project area. Implementation of BMP BIO-6: *Protection of Dusky-footed Woodrats* would avoid and/or reduce these impacts to a less-than-significant level. With the implementation of the BMPs listed above, impacts to native wildlife nursery sites, including nesting birds, would be **less than significant**.

e. Conflict with local policies or ordinances protecting biological resources—No impact

Title 16, Chapter 4 of the Napa County municipal code addresses floodplain management in the County. Section 16.4.750 of the municipal code includes restrictions on riparian zone vegetation removal applicable to all proposed activities within any riparian zone. The Proposed Project would not remove any native trees. Disturbed upland soils would be revegetated with native seed mixes as detailed under BMP GEN-4: *Erosion and Sediment Control Measures*. Furthermore, BMP BIO-4: *Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities* would be implemented and require that special-status plants species are assessed and protected prior to the implementation of Proposed Project activities. With these measures the Proposed Project would not conflict with any of the restrictions described in the Napa County municipal code and; therefore, **no impact** would occur.

f. Conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or state HCP—No impact

The only HCP adopted in Napa County is the Terra Springs LLC Low Effect HCP (HCP Permit #TE065890-0) which covers impacts to northern spotted owl (*Strix occidentalis caurina*) over 76 acres of second-growth Douglas fir forest. No adopted natural community conservation plans (NCCP) occur in Napa County. Proposed Project activities would not occur within the HCP coverage area; therefore, Proposed Project activities would not conflict with the provisions of this HCP. Consequently, **no impact** would occur.

3.5 Cultural Resources

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:				
Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	☐	☒
Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Regulatory Setting

Federal Laws, Regulations, and Policies

The Proposed Project does not require any federal permits; however, portions of the Project intersect with U.S Bureau of Land Management (BLM) lands; therefore, federal laws applicable to cultural resource protection will apply to the Proposed Project.

National Historic Preservation Act

Projects that require federal permits, receive federal funding, or are located on federal lands must comply with 54 USC 306108, formally and more commonly known as Section 106 of the National Historic Preservation Act (NHPA). To comply with Section 106, a federal agency must "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places [NRHP]." The implementing regulations for Section 106 are found in 36 CFR Part 800, as amended.

The implementing regulations of the NHPA require that cultural resources be evaluated for NRHP eligibility if they cannot be avoided by an undertaking or project. To determine if a site, district, structure, object, and/or building is significant, the NRHP Criteria for Evaluation are applied. A resource is significant and considered a historic property when it:

A. Is associated with events that have made a significant contribution to the broad patterns of our history; or

B. Is associated with the lives of persons significant in our past; or

C. Embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or

D. Yields, or may be likely to yield, information important in prehistory or history.

In addition, 36 CFR Section 60.4 requires that, to be considered significant and historic, resources must also exhibit the quality of significance in American history, architecture, archaeology, engineering, or culture and must possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Other "criteria considerations" need to be applied to religious properties, properties that are less than 50 years old, a resource no longer situated in its original location, a birthplace or grave of a historical figure, a cemetery, a reconstructed building, and commemorative properties. These types of properties are typically not eligible for NRHP inclusion unless the criteria for evaluation and criteria considerations are met.

For archaeological sites evaluated under criterion D, "integrity" requires that the site remain sufficiently intact to convey the expected information to address specific important research questions.

Traditional cultural properties (TCPs) are locations of cultural value that are historic properties. A place of cultural value is eligible as a TCP "because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community's history, and (b) are important in maintaining the continuing cultural identity of the community" (Parker and King 1990, rev. 1998). A TCP must be a tangible property, meaning that it must be a place with a referenced location, and it must have been continually a part of the community's cultural practices and beliefs for the past 50 years or more.

State Laws, Regulations, and Policies

CEQA and CEQA Guidelines

Section 21083.2 of CEQA requires that the lead agency determine whether a project may have a significant effect on unique archaeological resources. A unique archaeological resource is defined in CEQA as an archaeological artifact, object, or site about which it can be clearly demonstrated that there is a high probability that it:

- Contains information needed to answer important scientific research questions, and there is demonstrable public interest in that information;
- Has a special or particular quality, such as being the oldest of its type or the best available example of its type; or
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

- Although not specifically inclusive of paleontological resources, these criteria may also help to define "a unique paleontological resource or site."

- Measures to avoid, conserve, preserve, or mitigate significant effects on these resources are also provided under CEQA Section 21083.2.

Section 15064.5 of the CEQA Guidelines notes that "a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Substantial adverse changes include physical changes to the historic resource or to its immediate surroundings, such that the significance of the historic resource would be materially impaired. Lead agencies are expected to identify potentially feasible measures to mitigate significant adverse changes in the significance of a historic resource before they approve such projects. Historical resources are those that are:

- listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (Public Resources Code Section 5024.1(e));

- included in a local register of historic resources (Public Resources Code Section 5020.1(k)) or identified as significant in an historic resource survey meeting the requirements of Public Resources Code Section 5024.1(g); or

- determined by a lead agency to be historically significant.

CEQA Guidelines Section 15064.5 also prescribes the processes and procedures found under Health and Safety Code Section 7050.5 and Public Resources Code (PRC) Section 5097.95 for addressing the existence of, or probable likelihood of, Native American human remains, as well as the unexpected discovery of any human remains within the project site. This includes consultation with the appropriate Native American tribes.

CEQA Guidelines Section 15126.4 provides further guidance about minimizing effects to historical resources through the application of mitigation measures. Mitigation measures must be legally binding and fully enforceable.

The lead agency having jurisdiction over a project is also responsible to ensure that paleontological resources are protected in compliance with CEQA and other applicable statutes. Paleontological and historical resource management is also addressed in Public Resources Code Section 5097.5, "Archaeological, Paleontological, and Historical Sites." This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute would apply to any construction or other related project impacts that would occur on state-owned or state-managed lands.

California Register of Historical Resources

PRC Section 5024.1 establishes the CRHR. The register lists all California properties considered to be significant historical resources. The CRHR includes all properties listed as or determined to be eligible for listing in the NRHP, including properties evaluated under Section 106 of the National

Historic Preservation Act. The criteria for listing are similar to those of the NRHP. Criteria for listing in the CRHR include resources that:

1. Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Are associated with the lives of persons important in our past;
3. Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
4. Have yielded, or may be likely to yield, information important in prehistory or history.

The regulations set forth the criteria for eligibility as well as guidelines for assessing historical integrity and resources that have special considerations.

3.5.2 Environmental Setting

Prehistoric Native American Context

Archaeological records show that the Napa region has a long history of occupation by Native Americans. Research indicates that the Napa Valley was certainly well-inhabited by 3,000 B.C., and possibly as far back as 5,000 B.C. Evidence from Lake Berryessa suggests an even older date of 6,000 B.C. However, use of Napa Valley and the surrounding mountains likely occurred much earlier, as archaeological sites from adjacent Sonoma and Lake counties point to occupation dating to 10,000 B.C., and possibly earlier (Moratto 2004). In Napa Valley, remnants of ancient occupation may be buried under the alluvium that has accumulated at the valley edges and on the valley floor. The earliest cultural remains suggest that people were transient or seasonal visitors to the region. As various populations moved through the area and the region became more populated, indigenous groups began to settle for longer periods of time. By 500 B.C., populations had become mostly sedentary and large villages were established in the valley (Bennyhoff 1977).

Ethnographic Context

The very northeastern portions of Napa County, including Pope Valley and much of the Putah Creek headwaters, were in Lake Miwok territory, though the Wappo and Hill Patwin lived in close proximity (Callaghan 1978). These tribes shared similar lifestyles, technologies, subsistence strategies, and settlement patterns.

The majority of the Lake Miwok territory was in the southeast corner of Lake County to the southeast shore of Clear Lake. Two Lake Miwok villages, *co-kyomi pukut* and *alokyomi pukut*, are in Pope Valley (Callaghan 1978). The Patwin inhabited the southern reaches of Napa County, from Napa to Suisun Bay, and all lands east of the Wappo territory, including the valley where modern-day Lake Berryessa stands, and beyond into the Sacramento Valley (Johnson 1978). The Wappo were the primary occupants within Napa County (Sawyer 1978). They held the entirety of the Napa Valley from just north of present-day Napa, north to beyond the county line to Cobb Mountain in Lake County. Within Napa County, the western limits of their territory, during ethnographic times, roughly corresponded to the current County boundary along the ridge of

the Mayacmas Mountains. To the east, their lands extended to the area around Angwin and included Chiles Valley.

Hispanic and American Periods

In 1823, the first European explorers, Don Francisco Castro and Franciscan Friar Jose Altamira, traveled through Napa Valley in search of a site for a new mission. They explored present-day Petaluma, Sonoma, and Napa before settling on Sonoma as the location for the mission.

Pope Valley was named after William (Julian) Pope. William Pope (1805–1843) was born in Kentucky and became a trapper while living in New Mexico. Pope came to California on the Gila route in 1827, and later returned to New Mexico. In 1835, Pope and his wife Maria Juliana Salazar (1810–1900) joined an overland party led by Isaac Slover and came to Los Angeles (Beales and Beales 1978).

William Pope joined with Cyrus Alexander, William Knight and William Gordon on a trip to the Napa Valley in 1841. They stayed at George C. Yount's home at Rancho Caymus in Napa Valley before they parted, each claiming a valley for his own. Pope petitioned General Vallejo and the acting governor of California, Manuel Jimeno, for a two-square-league (8,873-acre) property on the east side of Howell Mountain called Rancho Locoallomi (Palmer 1881). The rancho's lands encompassed Pope Valley, surrounded by the Mayacamas Mountains. Juliana and the four children moved from Los Angeles and stayed at Yount's ranch while her husband built their first home on his new property. In 1843, the Pope family moved wagons and livestock from Yount's ranch to their adobe house. Unfortunately, William Pope died in an accident in 1843 (Palmer 1881).

When California was granted statehood in 1850, Napa was part of the district of Sonoma. Later that year, when counties were established throughout the state, Napa became one of the original 27 California counties, with Napa City (later shortened to Napa) as the County seat.

With the cession of California to the United States following the Mexican-American War, the 1848 Treaty of Guadalupe Hidalgo provided that existing land grants would be honored. As required by the Land Act of 1851, a claim for Rancho Locoallomi was filed with the Public Land Commission in 1852, and the grant was patented to the heirs of William Pope in 1862.

Quicksilver mining in the hills northwest of Pope Valley was a big industry that began in the early 1860s. The Oat Hill Mine was an active producing mine for more than 50 years, producing more quicksilver than any other mine in the world. George Fellows located the Aetna Springs Quicksilver Mine in 1897, which proved rich in ore but excessive heat in the mine prevented it from being worked extensively.

While Pope Valley was known during the mid-19th century for quicksilver, the Napa Valley, to the west of Pope Valley, became synonymous with grapes. The Spanish and Mexican missionaries are credited with planting the first grapevines and introducing winemaking to California. In 1838, the first grape vines in Napa Valley were planted by George Yount. While Yount is considered the first to plant table grapes in Napa Valley, it was Agoston Haraszthy who made the first effort to improve the variety of planted grapes, growing techniques, and winemaking.

The wine industry continued to grow in Napa Valley during the 1870s, with the number of wineries between Calistoga and Oakville doubling from 15 to 30. Since then, the wine industry weathered a series of highs and lows—phylloxera infestations, the San Francisco earthquake of 1906, Prohibition, and the economic crisis of the Great Depression—however, viticulture remained the dominant agricultural activity in Napa Valley. Pope Valley has also become a center for growing grapes and a number of wineries now exist in the valley.

3.5.3 Discussion of Checklist Responses

a. Adverse change in the significance of a historical resource—No impact

As defined in Section 15064.5 of the State CEQA Guidelines, historical resources are resources that are:

- listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR) (PRC Section 5024.1[e]);
- included in a local register of historic resources (PRC Section 5020.1[k]) or identified as significant in an historic resource survey meeting the requirements of PRC Section 5024.1(g); or
- determined by a lead agency to be historically significant.

To be eligible for listing in the CRHR, a cultural resource must meet one of the criteria found in PRC 5024.1(c). The criteria for listing in the CRHR include resources that:

1) Are associated with the events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2) Are associated with the lives of persons important in our past;
3) Embody the distinctive characteristics of a type, period, region, or method of construction, or represent the work of an important creative individual, or possess high artistic values; or
4) Have yielded, or may be likely to yield, information important in prehistory or history.

A records search was conducted by the Northwest Information Center of the California Historical Resources Information System at Sonoma State University in June 2018. The purpose of the record search was to identify the presence of any previously recorded cultural resources within the Project site and to determine whether any portions of the Project site had been surveyed for cultural resources. The record search (IC # 17-2946) indicated that sections of the Project area have been previously surveyed for cultural resources, and three cultural resources projects have been conducted within the ¼–mile search buffer (see **Table 3.5-1**). No cultural resources have been identified within the Project boundary. One prehistoric archaeological site, P-28-000228, was recorded initially in 1971 (Beard 1971) about 800 feet west of the northwest boundary of the Project area. It was characterized as having habitation debris and that the site had been leveled for recreation access. The site was re-inspected in 2006 and was determined

to have not been further disturbed since its original recordation (Origer 2006). It does not appear that this site has ever been formally evaluated as an historical resource/property under CEQA or NHPA.

Table 3.5-1. Previous Cultural Resource Investigations Intersecting the Project Area

Report No.	Title	Year	Authors
S-007107	Archaeological Reconnaissance of the Pope Canyon Road Bridge Project, Napa County, California.	1985	Suzanne Baker
S-021260	Rock Fences of Napa County: A Pilot Study	1998	Kim J. Tremaine and John A. Lopez
S-028921	A Cultural Resources Study within the Cedar Roughs Wildlife Area, Napa County, California	2004	Damon Haydu

Archaeologists with Horizon Water and Environment conducted an archaeological survey of the Pope Creek Project area on March 13, 2019, and a subsequent survey was conducted on May 21, 2019. Results of these surveys are documented in Appendix C. Due to the steep conditions on either side of the creek, only areas accessible for pedestrian survey were inspected (e.g. slopes over 15 percent were not surveyed). The entire reach of Pope Creek contains substantial vegetation and grass cover that decreased the surface visibility for identifying archaeological materials; however, periodic trowel scrapes and closer inspection of exposures were conducted. The entire southern side of the creek was inaccessible during the March survey due to high water levels; however, the southern side is also extremely steep and heavily vegetated, which significantly reduces the potential for archaeological deposits. No archaeological resources were identified during the March survey of the Proposed Project area. The subsequent survey in May 2019 sought to access the southern side of the creek in order to survey an area above the Maxwell Creek confluence with Pope Creek. Given the proximity to the confluence, and being above the high water mark of the creeks, this location would likely be utilized for prehistoric or historic cultural activity; however, upon survey, this location did not yield any evidence of cultural materials. A single isolated obsidian fragment was identified within the dry creek bed of Maxwell Creek. It was highly weathered and did not indicate substantial modification. This isolated artifact is not considered a historical resource or unique archaeological resource under CEQA due to the lack of context and scientific value.

Native American Consultation

An email request was made to the Native American Heritage Commission (NAHC) on February 12, 2019, to review its files for the presence of recorded sacred sites on the Proposed Project site. The NAHC responded on February 20, 2019, stating that no significant resources were identified in the Proposed Project area as a result of a search of their files. The NAHC also provided a list of four tribes and tribal contacts with a traditional and cultural affiliation with the Proposed Project area for notification pursuant to PRC Section 21080.3.1 (Assembly Bill 52). Coordination with tribes is described in Section 3.18, “Tribal Cultural Resources.” The Yocha Dehe Wintun Nation was the only tribe that requested consultation on the Proposed Project.

No historical resources, as defined in Section 15064.5 of the State CEQA Guidelines, are known to be located within the Proposed Project footprint; therefore, there would be **no impact** on historical resources.

It is important to note that historical resources that are archaeological in nature may be accidentally discovered during Proposed Project implementation. Archaeological resources discovered during Proposed Project implementation are discussed further in item "b" below.

b. Adverse change in the significance of an archaeological resource—Less than significant with mitigation

An archaeological survey of the Proposed Project area was conducted in March and May 2019 by qualified archaeologists from Horizon Water and Environment. The survey team did not identify any archaeological resources, as defined in Section 15064.5 of the State CEQA Guidelines, within the Proposed Project footprint. Although an archaeological survey was conducted and no archaeological resources were identified, archaeological remains may be buried with no surface manifestation. Ground disturbing activities related to the Proposed Project have a low potential for uncovering archaeological materials during Proposed Project implementation; however, the possibility remains that such ground disturbance could uncover buried archaeological materials. Prehistoric materials most likely would include obsidian and chert flaked-stone tools (e.g., projectile points, knives, and choppers), tool-making debris, or milling equipment such as mortars and pestles. Historic-era materials that might be uncovered include cut (square) or wire nails, tin cans, glass fragments, or ceramic debris.

If archaeological remains are accidentally discovered that are determined eligible for listing in the CRHR, and Proposed Project activities would affect them in a way that would render them ineligible for such listing, a significant impact would result. Should previously undiscovered archaeological resources be found, implementation of **Mitigation Measures CR-1** and **CR-2** would ensure that impacts on CRHR-eligible archaeological sites accidentally uncovered during construction are reduced to a less-than-significant level by requiring the contractor to immediately halt work if materials are discovered, evaluate the finds for NRHP/CRHR eligibility, and implement appropriate mitigation measures, as necessary. Implementation of Mitigation Measures CR-1 and CR-2 would reduce impacts related to accidental discovery of significant archaeological resources to a level that is **less than significant with mitigation**.

Mitigation Measure CR-1: Conduct Cultural Resources Awareness Training

A cultural resources awareness training program will be provided to all construction personnel active on the Project site during earth moving activities. The training will be provided prior to the initiation of ground disturbing activities. The training will be developed and conducted in coordination with a qualified archaeologist meeting the U.S. Secretary of Interior professional standards in archaeology, as defined in 48 Code of Federal Register Parts 44720–44723, and the Yoche Dehe Wintun Nation will be invited to participate in the training. The program will include relevant information regarding sensitive cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating State laws and regulations. The worker cultural resources awareness program will also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the Project site and will

outline what to do and whom to contact if any potential archaeological resources or artifacts are encountered. The program will also underscore the requirement for confidentiality and culturally appropriate treatment of any finds of significance to Native Americans, consistent with Native American tribal values.

Mitigation Measure CR-2: Immediately Halt Project Activities If Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the NRHP/CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources.

Construction monitoring of ground disturbing activities by archaeological or Native American monitors is not currently planned by Napa RCD. However, tribal representatives from a local traditionally and culturally affiliated tribe are invited to visit the construction site at any time to observe project implementation, as long as the RCD project manager is notified in advance.

Napa RCD shall include this measure in construction plans and specifications. If any cultural resources, such as structural features, unusual amounts of bone or shell, flaked or ground stone artifacts, historic-era artifacts, human remains, or architectural remains, are encountered during any project activities, work shall be suspended immediately at the location of the find and within a radius of at least 50 feet and Napa RCD will be contacted. RCD will then contact a qualified archaeologist who meet the U.S. Secretary of the Interior's professional standards and a Native American representative from a traditionally and culturally affiliated tribe, as appropriate (i.e., a Native American site rather than a historic era site), to assess the significance of the find and make recommendations for further evaluation and treatment as necessary.

All cultural resources accidentally uncovered during Project implementation within the Project site shall be evaluated for eligibility for inclusion in the NRHP/CRHR. Resource evaluations will be conducted by individuals who meet the U.S. Secretary of the Interior's professional standards in archaeology, history, or architectural history, as appropriate. If any of the resources meet the eligibility criteria identified in PRC Section 5024.1 or 14 CCR Section 21083.2(g), mitigation measures will be developed and implemented in accordance with State CEQA Guidelines Section 15126.4(b) before Project activity resumes.

For resources eligible for listing in the NRHP/CRHR that would be rendered ineligible by the effects of Project activities, additional mitigation measures shall be implemented. Mitigation measures for archaeological resources may include (but are not limited to) avoidance; incorporation of sites within parks, greenspace, or other open space; capping the site; deeding the site into a permanent conservation easement; or data recovery excavation. Mitigation measures for archaeological resources shall be developed in consultation with responsible agencies and, as appropriate, interested parties such as Native American tribes. Native American consultation is required if an archaeological site is determined to be a tribal cultural resource (TCR). Implementation of the approved mitigation would be required before resuming any Project activities with potential to affect identified eligible resources at the site.

c. Disturbance of any human remains, including those interred outside of formal cemeteries

No evidence of human remains was observed at the Proposed Project site, nor are human remains known to exist in or near the Proposed Project area. Although unlikely, there is the possibility that ground disturbance associated with the Proposed Project could uncover burials, if they are present. Impacts on accidentally discovered human remains would be considered a significant impact. Implementation of **Mitigation Measure CR-3** would require that, if human remains are uncovered, work must be halted and the County Coroner must be contacted. Adherence to these procedures and provisions of the California Health and Safety Code would reduce potential impacts on human remains to a level that is **less than significant with mitigation**.

> **Mitigation Measure CR-3: Immediately Halt Project Activities if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code.**
>
> Napa RCD shall include this measure in construction plans and specifications. If human remains are accidentally discovered during the Proposed Project's activities, the requirements of California Health and Human Safety Code Section 7050.5 shall be followed. Potentially damaging excavation shall halt in the vicinity of the remains, with a minimum radius of 100 feet, and the Napa County Coroner shall be notified. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (California Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). Pursuant to the provisions of PRC Section 5097.98, the NAHC shall identify a most likely descendent (MLD). The MLD designated by the NAHC shall have at least 48 hours to inspect the site and propose treatment and disposition of the remains and any associated grave goods. Napa RCD shall work with the MLD to ensure that the remains are removed to a protected location and treated with dignity and respect. Native American human remains may also be determined to be tribal cultural resources.

3.6 Energy

		Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the Project:					
a.	Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	☐	☐	☒	☐
b.	Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

3.6.1 Regulatory Setting

This section describes the federal, state, and local regulations related to energy resources. Section 3.8, "Greenhouse Gas Emissions," contains additional discussions of greenhouse gas (GHG)-related regulations that may also be relevant to energy resources.

At the federal level, the USEPA and the National Highway Traffic Safety Administration (NHTSA) have developed regulations to improve the efficiency of cars, and light-, medium-, and heavy-duty vehicles. These regulations are discussed in greater detail in Section 3.8.

Energy resource-related regulations, policies, and plans at the state level, require the regular analysis of energy data and developing recommendations to reduce statewide energy use, and setting requirements on the use of renewable energy sources. Senate Bill (SB) 1389, passed in 2002, requires the California Energy Commission (CEC) to prepare an Integrated Energy Policy Report for the governor and legislature every 2 years (CEC 2019a). The report analyzes data and provides policy recommendations on trends and issues concerning electricity and natural gas, transportation, energy efficiency, renewable energy, and public interest energy research (CEC 2019a). The 2018 Integrated Energy Policy Report Update includes policy recommendations such as addressing the vulnerability of California's energy infrastructure to extreme events related to climate change, including sea level rise and coastal flooding (CEC 2018).

In addition, since 2002, California has established a Renewables Portfolio Standard (RPS) program, through multiple senate bills (SB 1078, SB 107, SB X1-2, SB 350, SB 100) and executive orders (S-14-08, B-55-18), that requires increasingly higher targets of electricity retail sales be served by eligible renewable resources. The established eligible renewable source targets include 20 percent of electricity retail sales by 2010; 33 percent of electricity retail sales by 2020; 50 percent by 2030; and 100 percent zero-carbon electricity for the state and statewide carbon neutrality by 2045 (CEC 2019b, CEC 2019c).

Section 3.8, "Greenhouse Gas Emissions," provides additional details on California's 2017 Climate Change Scoping Plan, which details the state's strategy for achieving the state's GHG targets, including energy-related goals and policies. It contains measures and actions that may pertain to the proposed Project relating to vehicle efficiency and transitioning to alternatively powered vehicles (CARB 2017).

The 2008 Napa County General Plan includes policies aimed at reducing local contributions to global climate change. These policies include supporting efforts to reduce GHG emissions, participating in programs related to global climate change, promoting sustainable practices and green technology in development, promoting the research and development of renewable energy technology, and providing incentives for energy-efficient forms of transportation, among others. Napa County has prepared a Second Revised Draft Climate Action Plan (Napa County 2019) that contains GHG and energy-related strategies and measures.

3.6.2 Environmental Setting

Energy Resources and Consumption

California has extensive energy resources, including an abundant supply of crude oil, high production of conventional hydroelectric power, and leads the nation in electricity generation from renewable resources (solar, geothermal, and biomass resources) (U.S. Energy Information Administration (EIA) 2019). California has the second highest total energy consumption in the United States but one of the lowest energy consumption rates per capita (48th in 2016) due to its mild climate and energy efficiency programs (EIA 2019). A comparison of California's energy consuming end-use sectors indicates that the transportation sector is the greatest energy consumer, by approximately two to three times compared to the other end-use sectors (Industrial, Commercial, and Residential, which are listed in order of greatest to least consumption) (EIA 2019). California is the largest consumer of motor gasoline and jet fuel in the United States (EIA 2019).

In Napa County, data collected for the Revised Draft Climate Action Plan indicates that communitywide sources in the unincorporated county in 2014 had a different pattern than that exhibited statewide. The largest sources of GHG emissions (and presumably energy use) were from building energy use (31 percent), followed by on-road vehicles (26 percent), solid waste (17 percent), and off-road vehicles (9 percent) (Napa County 2018).

3.6.3 Discussion of Checklist Responses

a, b. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources or Conflict with or obstruct a state or local plan for renewable energy or energy efficiency

The Proposed Project's activities would require the consumption of energy (fossil fuels) for equipment (including helicopter use), worker vehicles, and truck trips. The Proposed Project would not involve any activities that would require electricity-based energy use. The consumption of energy for the Proposed Project's equipment and vehicles would be minimized by leaving removed vegetation on site as mulch and by minimizing vehicle idling (BMP GEN-5: *Air Quality*). **Table 3.6-1** shows the estimated annual fuel use from construction equipment,

worker vehicles, and truck trips. The calculations used to develop these estimates are presented in Appendix A.

Table 3.6-1. Project Fossil Fuel Use

Source Type	Diesel Fuel Use (gallons)	Gasoline Fuel Use (gallons)
Off-road Construction Equipment[1]	1,032	
Worker Vehicles[2]		216
Hauling Vehicles[3]	105	

[1] Fuel use for off-road construction equipment was estimated using a fuel use factor from CARB's off-road in-use engine emissions model of 0.408 and 0.367 pound of diesel per horsepower-hour for engines below 100 hp and greater than or equal to 100 hp respectively and diesel fuel density of 7.1089 pounds per gallon. This value includes the use of construction equipment and a helicopter.

[2] Fuel use for construction worker vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 25.4 gallons per mile.

[3] Fuel use for hauling vehicles was estimated using fuel use estimates from EMFAC with an estimated rate of 5.9 gallons per mile.

Energy consumption during weed management work is necessary for invasive species control, habitat improvement, and resource protection. These activities would not cause wasteful, inefficient, and unnecessary consumption of energy or cause a substantial increase in energy demand and the need for additional energy resources. Although no mitigation measures are necessary to reduce this impact to a less-than-significant level, implementation of BMP GEN-5 would reduce the Proposed Project's effect by requiring minimization of idling times and requiring that all equipment be maintained and tuned properly. As a result, the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy.

In addition, the RCD's activities would not conflict with any of the goals, policies, or implementation actions identified in the applicable energy plans, such as the 2018 Integrated Energy Policy Report Update, Napa County's General Plan, and Napa County's Second Revised Draft Climate Action Plan, because the Proposed Project would not create any future permanent energy demands and would be completed as efficiently as possible. Temporary energy demands from the use of worker vehicles would occur during the follow-up maintenance activities. However, the follow-up maintenance activities would be of short duration, and the associated vehicle use would be limited and conducted as efficiently as possible. Thus, the Proposed Project would not conflict with any plans relating to renewable energy or energy efficiency. Therefore, this impact is considered **less than significant**. No mitigation is required.

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3.7 Geology, Soils, and Seismicity

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☐	☒	☐
iii Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv. Landslides?	☐	☐	☒	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

3.7.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to geology, soils, and seismicity in relation to the Proposed Project.

State Laws, Regulations, and Policies

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Section 2621 *et seq*.) was passed to reduce the risk to life and property from surface faulting in California. The Alquist-Priolo Act prohibits construction of most types of structures intended for human occupancy directly on or across the surface traces of active faults and strictly regulates construction in the corridors along active faults (earthquake fault zones). It also defines criteria for identifying active faults, giving legal weight to terms such as "active," and establishes a process for reviewing building proposals in and adjacent to earthquake fault zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across them is strictly regulated if they are "sufficiently active" and "well defined." Before a Project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings would not be constructed across active faults.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) establishes statewide minimum public safety standards for mitigation of earthquake hazards. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, such as strong ground shaking, liquefaction, and seismically induced landslides. Its provisions are similar in concept to those of the Alquist-Priolo Act: the State of California is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped seismic hazard zones. In addition, the act addresses expansive soils, settlement, and slope stability. Under the Seismic Hazards Mapping Act, cities and counties may withhold the development permits for a site within a seismic hazard zone until appropriate site-specific geologic and/or geotechnical investigations have been carried out and measures to reduce potential damage have been incorporated into the development plans.

California Public Resources Code

California Public Resources Code, Section 5097.5 states that "no person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor." As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

3.7.2 Environmental Setting

Geology

Napa County is located in the Coast Ranges geomorphic province, which is bounded on the west by the Pacific Ocean and on the east by the Great Valley geomorphic province (Napa County 2005). The Project is located in the Berryessa/Knoxville area subregion, which is generally characterized by northwest trending ridge systems with intervening deeply incised stream canyons (Napa County 2005). Maximum ridgeline elevations are less than 2,000 feet with the former Berryessa Valley (now Lake Berryessa) containing the lowest elevation (the reservoir spillway is about 440 feet).

Local geology in the vicinity of the Project area is predominately ultramafic rock (serpentinite) and Early Cretaceous/Late Jurassic sandstone and shale (CDOC 2010). These rock types are generally known for their relatively high incidence of land sliding (Napa County 2005). Holocene and Late Pleistocene landslide deposits and alluvium are present in at the base of many hillslopes and valley/canyon floors.

Soils

The principal soil in this region consists of the Henneke-Montara Series (NRCS 2019). This soil unit is located along the hillslopes and consists of a shallow layer (12 to 16 inches) of gravelly loam to clay loam with bedrock underneath. These soils are well-drained and prone to erosion. Riverwash consisting of sandy and gravelly alluvium underlies the creek channel and floodplain.

Seismicity

Within the Inner Coast Range, the Berryessa Fault and other minor faults associated with the Hunting Creek-Berryessa fault system are located in close proximity to the Project area and parallel the Pope Creek Valley. The lower segment of Pope Creek follows a Quaternary fault with a northwest-southeast orientation (CDOC 2010). Seismic risk is not isolated to active faults within Project area; ground shaking can result from displacement of one other major regional faults (i.e., West Napa and San Andreas faults).

Shaking Scenarios

The chance for a magnitude 6.7 or larger earthquake to occur in the greater Bay Area by the year 2043 is 72 percent (USGS 2016). Similar smaller earthquakes (between magnitudes 6.0 and 6.7) have a 90 percent chance of occurrence by 2043 (USGS 2016). Earthquakes of these sizes are capable of considerable damage depending on epicenter proximity. The Berryessa Fault is capable of producing an estimated 7.1 magnitude earthquake and would have a shaking severity of “Very Strong” or an 8 the Modified Mercalli Scale (Association of Bay Area Governments [ABAG] 2014).

Landslides

Landslides occur most often along the base of slopes and steep stream banks while slumps can occur on both hills and gently sloping valley areas. Similarly, areas susceptible to lateral spreading and liquefaction are the younger alluvial areas such as those adjacent to incised portions of the Creek.

The California Geological Survey (CGS) compiled and created statewide landslide susceptibility maps through interpolation of historic landslide information, local geology, rock strength, and hillslope angle (methodology by Wilson and Keefer 1985 and implemented by Ponti et al. 2008) to create classes of landslide susceptibility (where 0 is low and 10 is high) (CDOC 2019). The Proposed Project area has adjacent hillslopes with moderate (6) to high (10) susceptibility of landslides. In addition, preliminary mapping of landslide deposits for the Pope Creek watershed show a high landslide density within the Proposed Project area (CDOC 2015).

Liquefaction

Soil liquefaction is a phenomenon that occurs when saturated sandy or silty soils lose strength during cyclic loading, such as caused by earthquakes. During the loss of strength, the soil acquires mobility sufficient to permit both horizontal and vertical movements, essentially behaving like a liquid. The factors known to influence liquefaction potential are soil type and depth, grain size, density, groundwater level, degree of saturation, and both the intensity and duration of ground shaking.

The alluvial valley within the Proposed Project area may be susceptible to liquefaction due to the coarse grain size and the intermittently saturated soil conditions. According to USGS liquefaction susceptibility maps, the northern half of the Proposed Project area has a "high" to "very high" susceptibility to liquefaction (ABAG 2014).

Paleontological Resources

A paleontological resource is defined as fossilized remains of vertebrate and invertebrate organisms, fossil tracks, and plant fossils. In California, paleontological resources are generally observed in sedimentary and metasedimentary deposits. Based on a database query of the University of California Museum of Paleontology in search of paleontological discoveries, 11 recorded collections were found along Pope Creek and Northwest Berryessa. Specimens were all invertebrates from the Cretaceous and Jurassic period and located in the Paskenta and Knoxville geologic formations (University of California Museum of Paleontology 2019a, b).

3.7.3 Discussion of Checklist Responses

a, c, d. Expose people or structures to potential substantial adverse effects associated with seismic activity (including ground shaking, ground failure, liquefaction), landslides, or location on unstable or expansive soils—Less than significant

The Proposed Project area could be subject to ground shaking as a result of seismic activity on any of a number of regional faults. The unconsolidated sandy alluvium in the Proposed Project area may be prone to liquefaction in the event of an earthquake. The Pope Creek floodplain and adjacent hillslopes are underlain by gravelly loam to clay loam and may be prone to landslides. However, the Project would not construct structures that would be exposed to adverse effects associated with seismic activity. There would be no change in exposure of structures to these risks as a result of this Proposed Project.

Shrink-swell potential is inferred to be low since most underlying soils are dominated by sand, gravel, or loams and expansive behavior directly correlates with high percentages of clays and fines. In addition, the Project would not construct new facilities that may expose people or structures to expansive soils.

During Project implementation, RCD employees or contractors may be working in an area of elevated risk to seismic-induced landslide. However, Proposed Project activities would be short in duration and the likelihood of an earthquake triggering a landslide during Proposed Project activities is discountable. The Proposed Project does not propose to create any additional facilities which would be permanently or temporarily occupied. In the long term, maintenance activities would not increase population or development within the Project area. The activities proposed under the Proposed Project are related to vegetation management. These activities would not substantially affect, or be affected by risks related to seismic events or other geologic hazards; therefore, impacts would be **less than significant**.

b. Substantial soil erosion or the loss of topsoil—Less than significant

Erosion resulting from the Proposed Project may occur during three different phases: implementation phase, immediate post-vegetation removal phase, and vegetation recovery phase. During the implementation phase, the Proposed Project would involve minor ground-disturbing activities including removal of vegetation and channel access and staging, which may result in erosion from the streambanks or sediment loading into the channel.

The following BMP are included for Project activities to minimize the potential for erosion and sedimentation from proposed Project activities. Descriptions of these BMPs are provided in Chapter 2, *Project Description*.

BMP GEN-2: Minimize the Area of Disturbance

BMP GEN-4: Erosion and Sediment Control Measures

BMP GEN-6: Staging and Stockpiling of Materials

BMP GEN-7: Stream Access

Tamarisk invasion has been well documented to increase hydraulic roughness in channels, trapping and stabilizing transported sediments and causing channel aggradation, eventually often leading to narrowing of river channels during high flows (Richardson et al. 2007). During the immediate post-vegetation removal phase, channel roughness is likely to be reduced in some areas, which would increase the stream velocity in these areas. The increase in stream velocity has the potential to increase sediment transport and erosion within the treated areas. This phase is anticipated to occur for three years following invasive plant removal in the channel. In Management Unit C, which is the area with the highest density of tamarisk shrubs, the treatment proposed is foliar application of herbicide, without aboveground biomass removal. The aboveground biomass would degrade over time, maintaining channel roughness while native vegetation recovers, which would reduce the potential for large-scale sediment transport or erosion in this reach.

Approximately three years following the implementation phase, native vegetation (passively recruited or actively restored, depending on the Management Unit) is anticipated to recover and provide channel roughness that was lost by removal of invasive vegetation. Active revegetation (planting willow poles) is proposed in Management Units C, D, and F. This roughness would reduce stream velocity, and reduce the risk of channel erosion/sediment transport in the Proposed Project. In the long term, the Proposed Project would restore hydro-geomorphic function to Pope Creek to a more natural regime, compared to the altered regime caused by tamarisk invasion.

With implementation of BMPs, the retention of aboveground biomass of tamarisk in some reaches, and active revegetation in some reaches, this impact would be **less than significant**.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems in areas where sewers are not available for the disposal of wastewater—No impact

The Proposed Project would not result in the generation of wastewater, nor involve the construction or modification of any septic tanks or alternative wastewater disposal systems. As such, the Proposed Project would have **no impact** associated with placement of such systems on unsuitable soils in the Proposed Project area.

f. Destruction of a unique paleontological resource or site or unique geological feature—Less than significant

Although fossils have been discovered in the Project vicinity, the majority of Project activities are expected to be confined to the alluvial deposits along Pope Creek where the young age of the alluvial material possess a very low likelihood and sensitivity for paleontological resources to be encountered. In addition, the Project proposes mechanical and manual techniques for vegetation management that would limit the depth of potential ground disturbance to the uppermost soil horizon. Therefore, potential impacts to unique paleontological resources or geologic features would be considered **less than significant**.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

3.8.1 Regulatory Setting

This section describes the federal, state, and local regulations related to GHG emissions and climate change.

Federal Laws, Regulations, and Policies

At the federal level, the USEPA has developed regulations to reduce GHG emissions from motor vehicles and has developed permitting requirements for large stationary emitters of GHGs. On April 1, 2010, USEPA and the NHTSA established a program to reduce GHG emissions and improve fuel economy standards for new model year 2012–2016 cars and light trucks. On August 9, 2011, USEPA and the NHTSA announced standards to reduce GHG emissions and improve fuel efficiency for heavy-duty trucks and buses. In August 2016, USEPA and the NHTSA jointly finalized Phase 2 Heavy-Duty National Program standards to reduce GHG emissions and improve fuel efficiency of medium- and heavy-duty vehicles for model year 2018 and beyond (USEPA 2017). However, in April 2017, the USEPA stated it may adjust the later years of the 2017–2025 standards, and thus the increased mileage standard requirements may be subject to change (Center for Climate and Energy Solutions 2018).

State Laws, Regulations, and Policies

In recent years, California has enacted a number of policies and plans to address GHG emissions and climate change. In 2006, the California State Legislature enacted Assembly Bill (AB) 32, the Global Warming Solutions Act, which set the overall goals for reducing California's GHG emissions to 1990 levels by 2020. Senate Bill (SB) 32 codified an overall goal for reducing California's GHG emissions to 40 percent below 1990 levels by 2030. Executive Orders (EOs) S-3-05 and B-16-2012 further extend this goal to 80 percent below 1990 levels by 2050. The CARB has completed rulemaking to implement several GHG emission reduction regulations and continues to investigate the feasibility of implementing additional GHG emission reduction regulations. These include the low carbon fuel standard, which reduces GHG emissions associated with fuel usage, and the RPS, which requires electricity suppliers to increase the amount of electricity generated from renewable sources to certain thresholds by various deadlines. In 2018, SB 100 updated the RPS to require 50 percent renewable resources by the

end 2026, 60 percent by the end of 2030, and 100 percent renewable energy and zero carbon resources by 2045. EO B-55–18 signed by Governor Jerry Brown set a goal of statewide carbon neutrality by 2045 and net negative emissions thereafter.

CARB approved the First Update to the AB 32 Scoping Plan on May 22, 2014 (CARB 2014). This update defines climate change priorities for the next 5 years and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The update also highlights California's progress toward meeting the near-term 2020 GHG emission reduction goals and evaluates how to align the state's longer term GHG reduction strategies with other state policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released and adopted a 2017 Scoping Plan Update (CARB 2019a) to reflect the 2030 target set by EO B-30-15 and codified by SB 32 (CARB 2017a, CARB 2017b, CARB 2019a).

Local Laws, Regulations, and Policies

The 2008 Napa County General Plan includes policies aimed at reducing local contributions to global climate change. These policies include supporting efforts to reduce GHG emissions, participating in programs related to global climate change, promoting sustainable practices and green technology in development, promoting the research and development of renewable energy technology, and providing incentives for energy-efficient forms of transportation, among others. The County has not yet adopted a climate action plan, but has prepared a Second Revised Draft Climate Action Plan (Napa County 2019) that identifies measures to quantify and reduce GHG emissions in unincorporated Napa County, and adapt for climate change.

The BAAQMD doesn't have a GHG threshold for construction, but does have an operational GHG threshold of 1,100 metric tons of carbon dioxide equivalents per year ($MTCO_2e/yr$) (BAAQMD 2017). For the purposes of this analysis, emissions below the 1,100 metric tons CO2e/year level were considered to not have a significant cumulative impact on climate change from GHG emissions. **Table 3.8-1** provides the BAAQMD's recommended significance criteria for analysis of GHG impacts, including cumulative impacts.

Table 3.8-1. Applicable BAAQMD CEQA Thresholds of Significance for GHGs

Pollutant	Operational Significance Thresholds
GHGs—projects other than stationary sources	a) Compliance with qualified GHG reduction strategy **OR** b) 1,100 metric tons (MT) of carbon dioxide equivalent (CO_2e) per year **OR** c) 4.6 MT CO_2e/service population (residents and employees) per year

Source: BAAQMD 2017

3.8.2 Environmental Setting

Anthropogenic emissions of GHGs are widely accepted in the scientific community as contributing to global climate change. Temperature rises associated with climate change are

expected to negatively impact plant and animal species, cause ocean acidification and sea level rise, affect water supplies, impact agriculture, and harm public health. California has contributed to GHG emissions and was estimated in 2018 by the CEC to be responsible for approximately 1 percent of the world's total GHG emissions (CEC 2018). California's total GHG emissions were estimated as 429 million $MTCO_2e$ in 2016 by CARB in its Greenhouse Gas Inventory Data document (CARB 2019b).

Due to Napa County's rural character, the amount of GHGs emitted is small compared to other counties in the Bay Area and in statewide terms. The Napa County Second Revised Draft Climate Action Plan (2019) contains a baseline GHG emissions inventory stating that approximately 484,000 $MTCO_2e$ were emitted by community-wide sources in the unincorporated county in 2014 (Napa County 2019). The largest sources of emissions were from building energy use (31 percent), followed by on-road vehicles (26 percent), solid waste (17 percent), and off-road vehicles (9 percent).

3.8.3 Discussion of Checklist Responses

a. Generate a net increase in greenhouse gas emissions which may have a significant impact on the environment—Less than significant

The Proposed Project would generate GHG emissions during weed management activities. GHG emissions would result from the combustion of fossil fuels associated with construction equipment operation, material hauling, and worker trips. Estimated emissions associated with the Project's activities would be 12.1 $MTCO_2e$. Emissions were estimated using the California Emission Estimator Model (CalEEMod) version 2016.3.2, which uses estimates from CARB's models for off-road vehicles and EMFAC2014. Project assumptions, including equipment usage and schedule, used for this analysis are based on input from the Project design team and Chapter 2, *Project Description*. Appendix A contains compiled construction assumptions and the Proposed Project's GHG emissions estimates for construction activities.

The BAAQMD does not have a recommended threshold for construction-related GHG emissions but does have an operational GHG threshold of 1,100 $MTCO_2e$/yr (BAAQMD 2017). Weed management emissions would be substantially below the operational threshold. Therefore, the Proposed Project would not generate substantial GHG emissions. This impact would be **less than significant**.

b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?—Less than significant

The State of California has implemented Assembly Bill 32, Senate Bill 32, and multiple Executive Orders to reduce GHG emissions. The Proposed Project does not pose any conflict with the most recent list of CARB's early action strategies, nor is it one of the sectors at which measures are targeted. The First Update to the Assembly Bill 32 Scoping Plan and the Final 2017 Scoping Plan Update (CARB 2017b) do not mention similar projects as a specific target for additional strategies and the Proposed Project would not be required to report emissions to CARB. Therefore, emissions generated by the Proposed Project would not be expected to have a substantial contribution to the ongoing impact on global climate change. The Project does not involve a change in land use and is consistent with local general plan policies regarding land use and air quality planning goals. Napa County has not identified thresholds of significance for GHGs and has not formally adopted a climate action plan. For these reasons, the Proposed Project would not conflict with Assembly Bill 32 or Senate Bill 32, the local general plans, or any climate action plans. Therefore, this impact would be **less than significant**.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, it creates a significant hazard to the public or the environment?	☐	☐	☒	☐
e. Be within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport and result in a safety hazard or excessive noise for people residing or working in the Project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

3.9.1 Regulatory Setting

Hazardous substances and contaminated sites are regulated under federal and state laws, including the Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Superfund Amendment and Reauthorization Act (SARA). The majority of these laws are administered and enforced by state agencies such as the California Department of Toxic Substances Control and the SWRCB.

3.9.2 Environmental Setting

The following section describes the environmental setting and impact analysis regarding hazards and hazardous materials. For detailed discussion about potential wildland fire hazards in the Project area, see Section 3.20, "Wildfire."

Contaminated Sites

According to the EnviroStor and GeoTracker databases maintained by the California Department of Toxic Substances Control and SWRCB, respectively, there are no known and monitored sites where hazardous substances have contaminated the soil or groundwater within 2 miles of the Project area (California Department of Toxic Substances Control 2019 and SWRCB 2019). The closest cleanup site is a leaking underground storage tank located downstream (east) of the Project area, at Lake Berryessa (Putah Creek Park T0605500304) (SWRCB 2018). According to EnviroStor the closest cleanup site is located more than 11 miles southwest in the city of St. Helena (Klass Cleaners 60002699) (California Department of Toxic Substances Control 2019).

Airports

There are two public use airports in the county: the Napa County Airport located south of the City of Napa, and the Angwin-Parrett Field Airport located in Angwin east of St. Helena. A private use airport (Pope Valley Airport 05CL) is located approximately 3 miles southwest of the Project area.

3.9.3 Discussion of Checklist Responses

a, b. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment—Less than significant

Proposed Project activities (e.g. chemical and mechanical vegetation removal and temporary rock import for access road ramps) are not expected to create a hazard to the public through the use of hazardous materials. Hazardous materials present at the construction site would include substances such as fuels, oils, and lubricants needed to operate equipment. As described in Chapter 2, Table 2-2, BMPs to reduce the likelihood of exposing the public or environment to hazards will be implemented. BMP GEN-8: *On-Site Hazardous Materials Management* and GEN-9: *Existing Hazardous Materials* include specific provisions that would manage on-site hazardous materials brought in for construction and those found on site. BMP GEN-10: *Spill Prevention and Response* describes a spill prevention and response plan to prevent accidental release of chemicals into waterways. With these procedures in place, potential impacts related to the transport, use, and disposal of hazardous materials associated with Proposed Project construction and maintenance are expected to be **less than significant**, and no mitigation is required.

c. Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school—No impact

The nearest school is located approximately 3.3 miles northwest of the Project area, the Pope Valley Union Elementary School. This school lies outside of primary access routes to the Project. The Hardin School is also located on Pope Canyon Road, about 3.5 miles southwest of the Project, however, it closed in 1971 (Napa County Historical Society 2015). As described above, hazardous materials present at the Project site would include substances such as fuels, oils, and lubricants needed to operate construction equipment. Because Proposed Project activities would comply with all applicable regulations regarding the hazardous waste transport, handling, and use, impacts related to emissions and use of hazardous materials would not occur within 1/4 mile of schools. Therefore, there would be **no impact** related to hazardous materials in proximity to schools.

d. Located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, create a significant hazard to the public or the environment—Less than significant

No hazardous waste or hazardous substance sites are known to occur within the Proposed Project area. However, the Proposed Project area may have areas of previously unknown contamination; thus, Project activities could encounter unknown contamination. As described in BMP GEN-9 (Table 2-2), in the event that contamination or hazardous materials are encountered during Project activities, RCD will stop work and carefully remove and dispose of the materials accordingly. If cleanup or remediation is required, the RCD will ensure that any hazardous waste materials removed during Project activities are handled, transported, and disposed of according to federal, state, and local requirements. With these procedures in place, impacts related to the discovery of unknown hazardous waste or hazardous substance sites within the Project area are expected to be **less than significant**.

e. Located within an airport land use plan area or, where such a plan has not been adopted, be within 2 miles of a private airport or public airport and result in a safety hazard or excessive noise for people residing or working in the study area—No impact

The Proposed Project area is not located within 2 miles of any public or private airport or airstrip. The closest airport, the Angwin Airport, is located approximately 6 miles from the Proposed Project area. Consequently, the Proposed Project would not conflict with any airport land use plan or operation of nearby airports, and would not pose any airport-related safety hazard to people working in the Proposed Project area. Therefore, there would be **no impact**.

f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan—Less than significant

There are no designated evacuation routes in the Proposed Project area. It is possible that recreators from the Lake Berryessa shoreline may use Pope Canyon Road to evacuate in response to an emergency in the area. However, there are other roads available for alternative

routes. The Proposed Project would maintain two-way traffic flow on Pope Canyon Road and work would be coordinated with local emergency service providers as necessary. A traffic control plan is outlined in BMP GEN-14 (Table 2-2), which describes planning for pedestrians, traffic flow and safety measures. With this BMP, the Proposed Project would not significantly hinder evacuation efforts or conflict with an emergency evacuation plan; therefore, impacts are **less than significant**.

g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires—Less than significant

The Proposed Project area is located in a region identified as having a very high fire risk hazard (CAL FIRE 2007). The use of some types of construction equipment, including equipment with internal combustion engine and gasoline-powered hand tools, could pose a risk of wildfire ignition. The RCD would be required to comply with existing legal requirements under the California PRC to minimize wildfire risk during Project activities. With these measures in place, impacts related to increased wildfire risks associated with Proposed Project activities are expected to be **less than significant**.

For detailed discussion about potential wildland fire hazards in Napa County, see Section 3.20, “Wildfire.”

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Proposed Project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv. impede or redirect flood flows?	☐	☐	☐	☒
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	☐	☐	☒	☐
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

3.10.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Clean Water Act

The CWA is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands. The key sections pertaining to water quality regulation for the Proposed Project are CWA Section 303 and Section 402.

Section 303(d)—Listing of Impaired Water Bodies

Under CWA Section 303(d), states are required to identify "impaired water bodies" (those not meeting established water quality standards); identify the pollutants causing the impairment; establish priority rankings for waters on the list, and develop a schedule for the development of control plans to improve water quality. USEPA then approves the State's recommended list of impaired waters or adds and/or removes waterbodies.

As a result of historical mining, Lake Berryessa has been listed as impaired for excessive mercury on the 303(d) list (SWRCB 2019b). Pope Creek has been listed as Category 2, as there is insufficient water quality information to make any recommendations (SWRCB 2019c). James Creek, which feeds into Pope Creek in the northwestern portion of the watershed is also listed for nickel and mercury (SWRCB 2019a).

Section 401

CWA Section 401 requires an evaluation of water quality when a proposed activity could result in a discharge to waters of the U.S. In California, the SWRCB and its nine RWQCBs issue water quality certifications. Each RWQCB is responsible for implementing Section 401 in compliance with the CWA and its water quality control plan (also known as a basin plan), as discussed below under the heading "Porter-Cologne Water Quality Control Act." Activities that might result in discharge to waters of the U.S. must obtain a Section 401 water quality certification to ensure that any such discharge would comply with the applicable provisions of the CWA. Section 401 water quality certifications for discharges in the project area are issued by the Central Valley RWQCB.

State Laws, Regulations, and Policies

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (known as the Porter–Cologne Act), passed in 1969, dovetails with CWA (see discussion of the CWA above). It established SWRCB and divided the state into nine regions, each overseen by an RWQCB. SWRCB is the primary State agency responsible for protecting the quality of the state's surface water and groundwater supplies; however, much of the SWRCB's daily implementation authority is delegated to the nine RWQCBs, which are responsible for implementing CWA Section 401, 402, and 303[d]. In general, SWRCB manages water rights and regulates statewide water quality, whereas RWQCBs focus on water quality within their respective regions. The northern portion of Napa County and the Lake Berryessa area is under the jurisdiction of the Central Valley RWQCB.

The Porter–Cologne Act requires RWQCBs to develop water quality control plans (also known as basin plans) that designate beneficial uses of California's major surface-water bodies and groundwater basins and establish specific narrative and numerical water quality objectives for those waters. Beneficial uses represent the services and qualities of a waterbody (i.e. the reasons that the waterbody is considered valuable). Water quality objectives reflect the standards necessary to protect and support those beneficial uses. Basin plan standards are primarily implemented by regulating waste discharges so that water quality objectives are met.

Local Laws, Regulations, and Policies

The Napa County General Plan (2008) also contains a number of goals, policies, and action items for water resources protection and management. The Conservation Element contains the following goals and policies applicable to the Proposed Project:

Goal CON-8: Reduce or eliminate groundwater and surface water contamination from known sources (e.g., underground tanks, chemical spills, landfills, livestock grazing, and other dispersed sources such as septic systems).

Goal CON-9: Control urban and rural storm water runoff and related non-point source pollutants, reducing to acceptable levels pollutant discharges from land-based activities throughout the county.

Policy CON-43: Pursuant to the Open Space and Conservation goals and policies that conserve open space and recreational resources, the County shall protect and enhance watershed lands, including the downstream delivery of essential watershed resources and benefits from headwater channels. The County's efforts shall include:

a) Preserving and where economically feasible restoring the density and diversity of water dependent species and continuous riparian habitats based on sound ecological principles; and

b) Supporting the acquisition, development, maintenance and restoration of habitat lands for wildlife and watershed enhancement where clearly consistent with General Plan policies.

Policy CON-45: Protect the County's domestic supply drainages through vegetation preservation and protective buffers to ensure clean and reliable drinking water consistent with state regulations and guidelines. Continue implementation of current Conservation Regulations relevant to these areas, such as vegetation retention requirements, consultation with water purveyors/system owners, implementation of erosion controls to minimize water pollution, and prohibition of detrimental recreational uses. [Implemented by Action Item CON WR-3]

Policy CON-50: The County will take appropriate steps to protect surface water quality and quantity, including the following:

a) Preserve riparian areas through adequate buffering and pursue retention, maintenance, and enhancement of existing native vegetation along all intermittent and perennial streams through existing stream setbacks in the County's

Conservation Regulations (also see Policy CON-27 which retains existing stream setback requirements).

b) Encourage flood control reduction projects to give full consideration to scenic, fish, wildlife, and other environmental benefits when computing costs of alternative methods of flood control.

c) Require replanting and/or restoration of riparian vegetation to the extent feasible as part of any discretionary permit or erosion control plan approved by the County, understanding that replanting or restoration that enhances the potential for Pierce's Disease or other vectors is considered infeasible.

3.10.2 Environmental Setting

Watershed

The Putah Creek watershed is bounded by Howell Mountain and Atlas Peak to the west and the Blue Ridge and Vaca Mountains to the east, and spans four counties, including Napa County, Lake County, Solano County and Yolo County, and eventually empties into the Sacramento River. Pope Creek is a 17-mile tributary to Putah Creek, originating just northeast of the town of Aetna Springs. The creek merges with Maxwell Creek just before it empties into Lake Berryessa, which is formed by the Monticello Dam and has a capacity of 1,602,000 acre-feet of water (NCPCWG 2004).

The Putah Creek watershed supports a variety of biotic communities, including serpentine chaparral, grasslands, oak savanna, oak and mixed oak/coniferous woodlands, riparian, freshwater lake, and cliff habitats. Pope Creek drains a total of 78.3 square miles of land in Napa County into Lake Berryessa along at the mid-point in the watershed (USGS 2019). Most of the lands in the Napa County Putah Creek drainage are brushlands, rangelands, and include lands used in the past for quicksilver and gold mining. A small percentage of land is used for irrigated agriculture, predominantly wine grapes.

Climate and Precipitation

Similar to other areas of Napa County, the Proposed Project area has a Mediterranean climate with distinct wet and dry seasons. Approximately 90 percent of the precipitation occurs between November and April and can vary significantly from year to year. Precipitation in the vicinity of Lake Berryessa is approximately 22.6 inches per year, which is on the low end of the range for Napa County (Napa County 2005a).

Surface Water Hydrology and Quality

Pope Creek begins at the confluence with James Creek, approximately 1.3 miles north from the unincorporated community of Aetna Springs. Pope Creek flows southeast approximately 11 miles before emptying into the Pope Creek arm of Lake Berryessa, 1.3 miles west of the Pope Day Use Area (USGS 2015). Swartz Creek and Maxwell Creek are tributaries of Pope Creek. Swartz Creek flows 6 miles northeast to its confluence with the upstream portion of Pope Creek just west of the Butts Canyon Road and James Creek Road intersection (USGS 2015). Maxwell Creek flows 9 miles north to its confluence with the downstream portion of Pope Creek just

southeast of the Pope Canyon Road and Dollarhide Road intersection (USGS 2015). Within the Proposed Project, Pope Creek maintains intermittent flows, with surface runoff from tributaries likely contributing most of the flow within the downstream portion during the dry season. Towards the end of the dry season, surface water in Pope Creek is limited to isolated pools.

Water quality within the Proposed Project area is influence by irrigated agriculture, even though agriculture production represents a small percentage of land use in the Putah Creek watershed. Within the Napa County portion of the Putah Creek watershed, wine grape lands contribute to 80 percent of irrigated runoff via Pope Creek to Lake Berryessa (NCPCWG 2004). To minimize agricultural runoff impacts to water quality, the Napa County Putah Creek Watershed Group has maintained BMPs with landowners in response to the Irrigated Lands Regulatory Program (ILRP) (NCPCWG 2004).

As discussed in Section 3.10.1, "Regulatory Setting," Pope Creek is not listed on the CWA 303(d) List of Impaired Water Bodies (SWRCB 2019c). However, pollutants can be carried downstream from listed water bodies and affect receiving waterbodies. Pope Creek flows from its confluence with James Creek, which is listed for mercury and nickel from resource extraction from abandoned mines. Pope Creek drains to Lake Berryessa, which is listed for mercury from unknown sources.

Floodplains

The Federal Emergency Management Administration (FEMA) produces flood insurance rate maps that identify special flood hazard areas. The maps further classify these areas into zones that broadly characterize the potential risk of an area being inundated by a 100- or 500-year flood in any given year. The expressions "100-year flood" and "500-year flood" are shorthand for a flood that has either a 1-in-100 probability (a 1 percent annual chance) or a 1-in-500 probability (a 0.2 percent annual chance) of occurring in any given year. According to the applicable FEMA flood insurance rate maps (06055C0175E), all of the Proposed Project area is located within the 100-year floodplain (FEMA 2019).

3.10.3 Discussion of Checklist Responses

a. Violate any water quality standards, waste discharge requirements or otherwise substantially degrade water quality—Less than significant

Proposed Project activities include the use of mechanized equipment adjacent to and within the channel for Management Units A and D and may disturb channel bank and bed material and increase the potential for erosion and sediment transport downstream. If erosion did occur, increased suspended sediment load could impair turbidity, water temperature, and dissolved oxygen. The use of mechanized equipment could also lead to the unintentional release of fuels, lubricants, solvents, or other pollutants into the channel.

In addition, invasive plant management techniques for Management Units A through F would involve chemical control for targeted species. Uncontrolled application of chemicals or accidental spills has the potential to adversely affect water quality.

As described in Section 3.7 above, invasive vegetation removal would result in a decrease in channel roughness and increase in stream velocity during the immediate post-vegetation removal phase (approximately three years following in-channel invasive vegetation removal). This is likely to result in increased sediment transport during this period, until native riparian vegetation recovers. Active revegetation (planting willow poles) is proposed in Management Units C, D, and F. Native vegetation would increase channel roughness, which would reduce stream velocity, and reduce the risk of channel erosion/sediment transport in the Proposed Project. In the long term, the Proposed Project would restore hydro-geomorphic function to Pope Creek to a more natural regime, compared to the altered regime caused by tamarisk invasion.

Implementation of Proposed Project BMPs would avoid and reduce potential impacts to water quality. For example, BMP GEN-3 requires that only herbicides and surfactants that have been approved for aquatic use by the USEPA and registered for use by the California Department of Pesticide Regulation will be used for aquatic vegetation control work. These herbicides and surfactants will not be applied to plants whose base is submerged in the channel, and application of upland areas will not be made within 48 hours of predicted rainfall. Project BMPs are described in detail in Chapter 2. Applicable BMPs include the following:

GEN-1: Work Windows

GEN-2: Minimize the Area of Disturbances

GEN-3: Standard Herbicide Use Requirements

GEN-4: Erosion and Sediment Control Measures

GEN-6: Staging and Stockpiling of Materials

GEN-7: Stream Access

GEN-8: On-Site Hazardous Materials Management

GEN-9: Existing Hazardous Materials

GEN-10: Spill Prevention and Response

GEN-12: Vehicle and Equipment Maintenance

GEN-13: Vehicle and Equipment Fueling

GEN-17: Work Site Housekeeping

BIO-2: Applicator Qualifications

Following implementation of applicable BMPs and compliance with federal and state regulatory authorizations, conditions, and agreements, potential impacts to water quality or waste discharge requirements would be **less than significant.**

b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge, such that the project may impede sustainable groundwater management of the basin—No impact

The Proposed Project is not located in a designated groundwater basin. Project activities that involve heavy equipment for vegetation removal adjacent to and within the channel (i.e. Management Units A and D) would be temporary and take place during the dry season (June 15 and October 15). Controlling invasive tamarisk (i.e., Management Units A through E) may also lead to increased water yield by reducing evapotranspiration, as well as increasing groundwater recharge in the Proposed Project area. Given that all ground-disturbing activities would be temporary in nature, be confined to small areas, and occur only during dry-season months, **no impacts** would occur.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

result in substantial erosion or siltation on- or off-site—*Less than significant*

As discussed in criterion 3.2.3, a. above, Project activities include the use of mechanized equipment in Management Units A and D that may disturb channel bank and bed material and increase the potential for erosion and sediment transport downstream. As described in 3.10.3(a) above, reduced channel roughness caused by invasive plant removal is anticipated to result in increased sediment transport/erosion in the channel in the three years following vegetation removal. Following native plant recovery, this rate of sediment transport is anticipated to be reduced by the channel roughness provided by native vegetation. Additionally, restoring hydro-geomorphic function is one goal of the Proposed Project.

The Proposed Project would implement BMPs to control soil erosion. BMP GEN-1 restricts ground-disturbing activities (i.e., mechanized vegetation management) to the dry season (June 15 and October 15). BMPs GEN-2 and GEN-7 limit the area of disturbance to the minimum footprint necessary to complete the Proposed Project. In addition, BMPs GEN-4 provides a host of erosion and sediment control measures. Applicable BMPs, as provided in Chapter 2, include the following:

GEN-1: Work Windows

GEN-2: Minimize the Area of Disturbances

GEN-4: Erosion and Sediment Control Measures

GEN-6: Staging and Stockpiling of Materials

GEN-7: Stream Access

GEN-12: Vehicle and Equipment Maintenance

GEN-17: Work Site Housekeeping

In conjunction with Project BMPs, the Proposed Project would comply with federal and state regulatory conditions. For these reasons, the Proposed Project would not substantially result in on- or off-site erosion and siltation, and this impact would be considered **less than significant.**

substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite—*Less than significant*

The Proposed Project would not create new impervious surfaces nor compact soils to a level that would significantly alter infiltration rates. Ground disturbance is limited to mechanical removal of invasive plant species in Management Units A and D. When necessary, upland soils exposed due to Proposed Project activities will be seeded and stabilized using erosion control fabric or hydroseeding. For these reasons, the Proposed Project would not substantially increase the rate or amount of surface runoff in a manner which would result in on- or off-site flooding. This impact would be **less than significant.**

create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff—*Less than significant*

The Proposed Project is within a natural creek channel and would not create impervious surfaces nor compact soils to a level that would increase runoff. Storage, use, and the accidental release of herbicides, fuels, and lubricants associated with Project-related activities has the potential to contribute to additional sources of polluted runoff during project implementation.

As discussed in criterion 3.2.3, a. above, implementation of Project BMPs would contain and treat stormwater runoff generated from material storage or staging areas, thereby reducing the likelihood of polluted runoff draining to Pope Creek. The potential for the Proposed Project to create or contribute runoff or additional sources of polluted runoff would be **less than significant.**

impede or redirect flood flows—No impact

Project activities involve vegetation management and would not substantially alter existing drainage patterns. The Proposed Project does not include the construction of buildings, structures, or other instream features that may impede or redirect flood flows. As a result, **no impact** would occur.

d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?—Less than significant

The Proposed Project is located more than 44 miles from the Pacific Coast and approximately 1.8 river miles from Lake Berryessa. There are no major reservoirs or dams upstream of the Proposed Project. Consequently, there is no risk of tsunami or seiche zones.

Pope Creek is designated as a special flood hazard area, Zone A, from Lake Berryessa to its confluence with James Creek (FEMA 2009). However, Project activities would be temporary and instream activities would generally occur during the dry season (June 15 and October 15). As a result, impacts would be **less than significant.**

e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan—No impact

The Putah Creek watershed is subject to the ILRP, which is designed to protect water quality through long-term BMPs. As Pope Creek is part of the Putah Creek watershed, it is also subject to the ILRP. However, the Putah Creek watershed is considered a low priority source regarding water quality. In addition, the Proposed Project is not located in a designated groundwater basin. Therefore, The Proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan. As a result, **no impacts** would occur.

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3.11 Land Use and Planning

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
Physically divide an established community?	☐	☐	☐	☒
Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

3.11.1 Regulatory Setting

Federal Laws, Regulations, and Policies

Northern California Coastal Wild Heritage Wilderness Act of 2006

Enacted in 2006, the Northern California Coastal Wild Heritage Wilderness Act designated new wilderness areas and enlarged existing boundaries under the National Wilderness Preservation System (U.S. Senate 2006). The 6,287-acre area, designated as the Cedar Roughs Wilderness, is managed by the Bureau of Land Management (BLM). The use of equipment for mechanical transport, motorized equipment, and other modes of transportation are regulated in the Cedar Roughs Wilderness (U.S. Senate 2006).

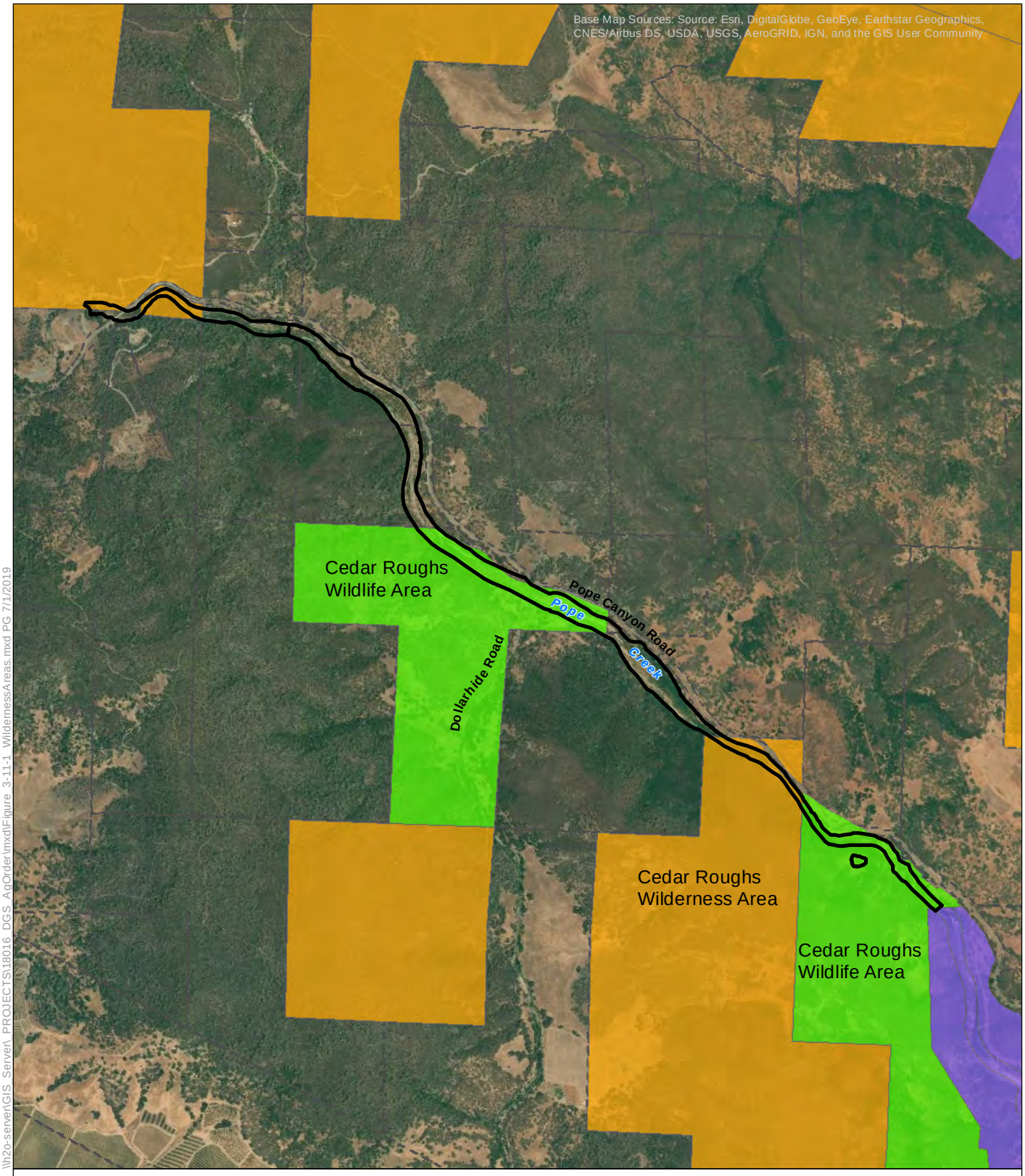
Ukiah Resource Management Plan

The Ukiah BLM Field Office manages public lands under the direction of The Ukiah Resource Management Plan (2006) (BLM 2006). There are approximately 270,000 acres of land in northern California managed by the Ukiah Field Office, of which 12,000 acres includes the Cedar Roughs area (BLM 2006). The Cedar Roughs area includes the Cedar Roughs Wilderness, shown in **Figure 3.11-1** (BLM 2006).

State Laws, Regulations, and Policies

Cedar Roughs Wildlife Area Management Plan

The Cedar Roughs Wildlife Area Management Plan was developed by the CDFW in 2006 to protect and restore habitats that were historically impacted due to farming and grazing (CDFW 2005). The plan provides specific management goals focused on removal of invasive, non-native species, fuel management, and developing property use dedicated to recreational opportunities (CDFW 2005).



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N

0 0.125 0.25 0.5

Miles

Project Area

Parcel Boundary

Government Landowner

California Department of Fish and Game

United States Bureau of Land Management

United States Bureau of Reclamation

Figure 3.11-1
Government Landownership

Pope Creek
Weed Management Project

Horizon WATER and ENVIRONMENT

3.11.2 Environmental Setting

Land use planning in unincorporated areas of Napa County is governed by the Napa County General Plan (Napa County 2008). The General Plan envisions agriculture as the "primary land use" in the County "well into the future" (Napa County 2008 p. AG/LU-11), and includes a number of goals specific to agricultural preservation and related land issues. The General Plan also includes many goals that indirectly guide and constrain land use planning through protections for the County's aesthetic values, agricultural uses, riparian and wetland areas, and sensitive plant and wildlife species.

The Proposed Project runs parallel to Pope Canyon Road, located southeast of the unincorporated community of Walter Springs. Land use in the Pope Creek watershed is largely open space and agricultural land uses. Within the Proposed Project, there are parcels owned by CDFW, BLM, and private landowners. The parcels owned by CDFW and BLM are managed for wildlife conservation and wilderness preservation. In unincorporated areas, the Napa County General Plan provides goals and policies to guide development while protecting sensitive and valued County resources.

The Proposed Project is bounded by private land and public land administered by the BLM. Management Unit F of the Proposed Project is bordered by the Cedar Roughs Wilderness Area, owned by the BLM. In addition, Management Units D and F are within the Cedar Roughs Wildlife Area, owned by CDFW (Figure 3.11-1).

3.11.3 Discussion of Checklist Responses

a. Divide an established community—No impact

Land uses in proximity to the Proposed Project include open space and agriculture. Proposed Project activities would not permanently affect access to any of the surrounding land uses, nor create any new permanent, physical barriers between developed areas. However, when necessary, temporary access restrictions of existing trails and roadways may be required to conduct Proposed Project activities. These activities would include mechanized equipment adjacent to and within the channel for Management Units A and D. These potential disturbances are further addressed in Section 3.16, "Recreation," and Section 3.17, "Transportation." Once activities are completed, related access disruptions to existing land uses would cease. Activities related to the Proposed Project would be short-term and access disruptions would be temporary. The Proposed Project would have no impact with respect to physically dividing an established community. As a result, **no impact** would occur.

b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?—Less than significant

The Ukiah Resource Management Plan governs the principle plans and regulations for land use in land owned by the BLM in the Proposed Project area. Management Unit E of the Proposed Project is located within the Cedar Roughs Wilderness Area, which is managed by BLM. Although Proposed Project activities would include chemical and mechanical vegetation removal to improve habitat and restore hydro-geomorphic features along the immediate Pope Creek

corridor, the Project would not materially alter the way Pope Creek functions in its societal context. Furthermore, the Proposed Project would not use mechanized equipment in the Cedar Roughs Wilderness Area and, therefore, would not conflict with provisions of the Ukiah Resource Management Plan. Because the Proposed Project actions would improve and restore the natural resources within the wilderness area and implement the below-listed BMPs, environmental impacts would be **less than significant.**

Applicable BMPs, as provided in Chapter 2, include the following:

GEN-2: Minimize the Area of Disturbance

GEN-14: Planning for Pedestrians, Traffic Flow, and Safety Measures

GEN-15: Public Safety Measures

3.12 Mineral Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

3.12.1 Regulatory Setting

Federal Laws, Regulations, and Policies

There are no federal or state laws, regulations, or policies regarding mineral resources that are applicable to the Proposed Project.

3.12.2 Environmental Setting

State mineral resource zone maps do not exist for most of Napa County, according to the Napa County General Plan (Napa County 2008). However, the Pope Creek Quarry was an active mine located in Pope Valley, as identified by the State Department of Conservation, Office of Mine Reclamation. The Pope Creek Quarry was first opened in the 1940s and was mined for sandstone processed from drain rock, riprap, and base rock (Napa County 2005b). According to the County, the Pope Creek Quarry mined approximately 15 to 20 thousand tons of rock per year and had only two years of reserve left as of 2005 (Napa County 2005b).

3.12.3 Discussion of Checklist Responses

a, b. Loss of Availability of Mineral Resources—No impact

The Pope Creek Quarry is located outside of the channel where the Proposed Project activities will take place. Although mines or mineral resource areas may be located in proximity to vegetation management activity areas, the Proposed Project would not involve any activities that could directly affect mineral production sites. As a result, **no impact** would occur.

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3.13 Noise

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a Project located within the vicinity of a private airstrip or an airport land use plan area, or, where such a plan has not been adopted, within 2 miles of a public airport or public-use airport, would the Project expose people residing or working in the Project site to excessive noise levels?	☐	☐	☒	☐

3.13.1 Overview of Noise and Vibration Concepts and Terminology

Noise

In the CEQA context, noise can be defined as unwanted sound. Sound is characterized by various parameters, including the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). In particular, the sound pressure level is the most common descriptor used to characterize the loudness of an ambient sound level, or sound intensity. The decibel (dB) scale is used to quantify sound intensity. Because sound pressure can vary enormously within the range of human hearing, a logarithmic scale is used to keep sound intensity numbers at a convenient and manageable level. The human ear is not equally sensitive to all frequencies in the spectrum, so noise measurements are weighted more heavily for frequencies to which humans are sensitive, creating the A-weighted decibel (dBA) scale.

Different types of measurements are used to characterize the time-varying nature of sound. Below are brief definitions of these measurements and other terminology used in this chapter.

- **Decibel (dB)** is a measure of sound on a logarithmic scale that indicates the squared ratio of sound pressure amplitude to a reference sound pressure amplitude. The reference pressure is 20 micro-pascals.

- **A-weighted decibel (dBA)** is an overall frequency-weighted sound level in decibels that approximates the frequency response of the human ear.
- **Maximum sound level (Lmax)** is the maximum sound level measured during a given measurement period.
- **Minimum sound level (Lmin)** is the minimum sound level measured during a given measurement period.
- **Equivalent sound level (Leq)** is the equivalent steady-state sound level that, in a given period, would contain the same acoustical energy as a time-varying sound level during that same period.
- **Percentile-exceeded sound level (Lxx)** is the sound level exceeded during *x* percent of a given measurement period. For example, L_{10} is the sound level exceeded 10 percent of the measurement period.
- **Day-night sound level (Ldn)** is the energy average of the A-weighted sound levels occurring during a 24-hour period, with 10 dB added to the A-weighted sound levels during the period from 10:00 p.m. to 7:00 a.m. (typical sleeping hours). This weighting adjustment reflects the elevated sensitivity of individuals to ambient sound during nighttime hours.
- **Community noise equivalent level (CNEL)** is the energy average of the A-weighted sound levels during a 24-hour period, with 5 dB added to the A-weighted sound levels between 7:00 p.m. and 10:00 p.m. and 10 dB added to the A-weighted sound levels between 10:00 p.m. and 7:00 a.m.

In general, human sound perception is such that a change in sound level of 3 dB is barely noticeable, a change of 5 dB is clearly noticeable, and a change of 10 dB is perceived as doubling or halving the sound level. **Table 3.13-1** presents approximate noise levels for common noise sources, measured adjacent to the source.

Table 3.13-1. Examples of Common Noise Levels

Common Outdoor Activities	Noise Level (dBA)
Jet flyover at 1,000 feet	110
Gas lawnmower at 3 feet	100
Diesel truck at 50 feet traveling 50 miles per hour	90
Noisy urban area, daytime	80
Gas lawnmower at 100 feet, commercial area	70
Heavy traffic at 300 feet	60
Quiet urban area, daytime	50
Quiet urban area, nighttime	40
Quiet suburban area, nighttime	30

Common Outdoor Activities	Noise Level (dBA)
Quiet rural area, nighttime	20

Source: California Department of Transportation 2009

Vibration

Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hertz (Hz). Most environmental vibrations consist of a composite, or "spectrum," of many frequencies. The normal frequency range of most ground-borne vibrations that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz. Vibration information for this analysis has been described in terms of the peak particle velocity (PPV), measured in inches per second, or of the vibration level measured with respect to root-mean-square vibration velocity in decibels (VdB), with a reference quantity of 1 micro-inch per second.

Vibration energy dissipates as it travels through the ground, causing the vibration amplitude to decrease with distance away from the source. High-frequency vibrations reduce much more rapidly than do those characterized by low frequencies, so that in a far-field zone distant from a source, the vibrations with lower frequency amplitudes tend to dominate. Soil properties also affect the propagation of vibration. When ground-borne vibration interacts with a building, a ground-to-foundation coupling loss usually results but the vibration also can be amplified by the structural resonances of the walls and floors. Vibration in buildings is typically perceived as rattling of windows, shaking of loose items, or the motion of building surfaces. In some cases, the vibration of building surfaces also can be radiated as sound and heard as a low-frequency rumbling noise, known as ground-borne noise.

Ground-borne vibration is generally limited to areas within a few hundred feet of certain types of industrial operations and construction/demolition activities, such as pile driving. Road vehicles rarely create enough ground-borne vibration amplitude to be perceptible to humans unless the receiver is in immediate proximity to the source or the road surface is poorly maintained and has potholes or bumps. Human sensitivity to vibration varies by frequency and by receiver. Generally, people are more sensitive to low-frequency vibration. Human annoyance also is related to the number and duration of events; the more events or the greater the duration, the more annoying it becomes.

3.13.2 Regulatory Setting

Acceptable noise levels in unincorporated areas of Napa County are established in Title 8 of the County Code of Ordinances. The standards as applicable to construction activities are described below in **Table 3.13-2**. While weed management activities are not construction activities per se, they often involve similar types of equipment and are very similar in terms of their potential for noise generation.

Table 3.13-2. Napa County Noise Limits for Construction Activities

Time Period	Residential	Commercial	Industrial
Day (7 a.m. - 7 p.m.)	75 dBA	80 dBA	85 dBA
Night (7 p.m. - 7 a.m.) *	60 dBA	65 dBA	70 dBA

* Construction generally not permitted at night.

The County Noise Ordinance also prohibits the loading or unloading of building materials or other similar objects between the hours of 10 p.m. and 6 a.m.

3.13.3 Environmental Setting

The Proposed Project Area is located in a rural part of the county with few major sources of noise nearby. Agricultural equipment operating at nearby vineyards are one potential source of noise in the area. Nearby sensitive receptors include a few residences along Pope Canyon Road, the closest of which are roughly 400 feet from the Proposed Project area. There are no other sensitive receptor types (i.e., schools, daycares, assisted living centers, places of worship, libraries, or medical facilities) in the Proposed Project vicinity. The nearest airstrips or airports are Pope Valley Airport 05CL and Angwin-Parrett Field which are roughly 3 and 6 miles to the southwest, respectively.

3.13.4 Discussion of Checklist Reponses

a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies—Less than significant

The Proposed Project would generate noises associated with weed management activities, which would be temporary and cease once work is complete.

As described in Chapter 2, *Project Description,* Proposed Project activities would involve the use of hand tools and heavy equipment. The number and type of heavy equipment needed would vary by management unit based on site conditions and maintenance needs. With the exception of Management Unit C, which involves the use of a helicopter, this noise analysis assumes that noise from weed management activities would be similar to construction noise generation described in the 2005 Napa County Baseline Data Report (Napa County BDR or BDR).

Noise levels associated with a variety of equipment types are described in the Napa BDR. Data for the equipment types proposed for weed management activities in the Project area are listed in **Table 3.13-3**.

Table 3.13-3. Noise Levels for Equipment Types Applicable to the Proposed Project

Equipment	L_{max} at 50 feet (dBA)
Bulldozer	85
Chainsaw	86
Excavator	85
Loader	85
Wood chipper	89

Source: Napa County 2005

The duration of equipment use can vary from intermittent to fairly continuous. As described in the Napa BDR, specific noise levels depend on a number of conditions including the type and number of pieces of equipment in use, the noise level generated by the various pieces of equipment, distance to the receiver, and possible shielding effects from topography, vegetation, or buildings. A reasonable worst-case scenario using four different types of heavy equipment (three of which emit the loudest noise levels) is presented in the Napa BDR. Under this scenario, the use of a bulldozer (85 dBA), backhoe (80 dBA), grader (85 dBA), and loader (85 dBA) operating concurrently in the same area would result in peak construction noise as high as 90 dBA at 50 feet from a construction site. Assuming normal geometric and ground attenuation, the estimated noise contours from a 90-dBA sound level at 50 feet would be as shown in **Table 3.13-4**.

Table 3.13-4. Noise Contours

Noise Level	Distance from source (feet)
90 dBA	50
75 dBA	180
70 dBA	300
65 dBA	450
60 dBA	700
50 dBA	1,700

Source: Napa County 2005

Under the worst-case scenario, exterior noise levels could exceed the County's construction noise limit at sites in areas where construction occurs within 180 feet of residences or commercial areas. However, the modeled construction noise levels reflect a conservative condition where the loudest pieces of equipment are used simultaneously and for a fairly constant duration. In practice, noise would be intermittent and temporary. The Proposed Project area is fairly long and linear, so work in proximity to a given sensitive receptor would be brief in duration. Once activities cease, noise levels in the vicinity of the Proposed Project sites would return to ambient.

A helicopter would be used for aerial spraying of Management Unit C. This helicopter may produce noise levels of 100 dB at 100 feet, which could exceed the County's construction noise

limit at residential sites within 1,774 feet (Purdue 2019, Federal Transit Administration [FTA] 2018). There is one possible residence located within this distance of Management Unit C. However, the total helicopter use would be only for on-half of a work day (4 hours), with only a fraction of that spent within 1,774 feet of the possible residence. Given this temporary use of a helicopter on one day over the Proposed Project's entire duration, this would not be considered a significant impact.

Furthermore, the implementation of BMP GEN-16, *Minimize Noise Disturbances to Residential Areas*, would prevent maintenance activities from substantially disrupting surrounding land uses. This BMP includes measures that would ensure work is only conducted on weekdays during daytime hours, that equipment is adequately muffled and not permitted to excessively idle, and that advance notification is provided to landowners within 180 feet of a site where heavy equipment would be used or 2,000 feet of where the helicopter would be used.

Because activities related to the Proposed Project would be short-term and noise disruptions would be temporary, this impact would be **less than significant**. No mitigation is required.

b. Generation of excessive groundborne vibration or groundborne noise levels—Less than significant

Vibration thresholds for buildings occur at a PPV of 0.12 in/sec for buildings extremely susceptible to vibration damage; the human perception threshold is at 65 VdB (FTA 2018). Vibration and ground-borne noise levels for the Proposed Project were estimated following methods described in the FTA's Noise and Vibration Impact Assessment (2018) to determine the PPV that would potentially impact buildings and the vibration velocity in VdB for annoyance. It was assumed that the equipment would have similar vibration sound levels as a large bulldozer. **Table 3.13-5** below shows relevant parameters for the construction equipment used for the Proposed Project and distance to sensitive receptors to be below vibration thresholds.

Table 3.13-5. Construction Equipment and Vibration Distance

Equipment	PPV at 25 feet	Distance to PPV of 0.12 in/sec	Noise Vibration Level at 25 ft	Distance to Noise Vibration of 65VdB
Large Bulldozer	0.089 in/sec	20.5 feet	87 VdB	135 feet

In the Proposed Project area, no noise-sensitive receptors are located closer than the building vibration or noise vibration annoyance threshold distances. In addition, the Proposed Project's vibration-causing activities would be barely perceptible due to the temporary duration of these activities and their limited occurrence near the Proposed Project site boundary. Therefore, the impact of ground-borne vibration or ground-borne noise vibration would be **less than significant**.

c. For a project located within the vicinity of a private airstrip or an airport land use plan area, or, within 2 miles of a public airport or public-use airport, would the project expose people residing or working in the project site to excessive noise levels—Less than significant

There are no public airports or private airstrips within 2 miles of the Proposed Project. The Proposed Project would not involve the construction of any residential structures. Therefore, the Proposed Project would only have workers at the Proposed Project site and would not expose those workers to excessive noise levels from public airports or private airstrips. In addition, the Proposed Project would involve the use of a helicopter for less than one day; however, impacts associated with the helicopter use on existing residences are analyzed in Impact 3.9.4a above. Therefore, this impact would be **less than significant**.

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3.14 Population and Housing

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.14.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to population and housing in relation to the Proposed Project.

State Laws, Regulations, and Policies

No state regulations are applicable to population and housing in relation to the Proposed Project.

3.14.2 Environmental Setting

Land use in the Pope Creek watershed is largely open space and agricultural land-uses. Within the Proposed Project reach, there are parcels owned by CDFW, BLM, and private landowners. The parcels owned by CDFW and BLM are managed for wildlife conservation and wilderness preservation. As of 2018, the population in Napa County (including all cities and towns) is approximately 139,417 (U.S. Census Bureau 2018). While there may be existing housing units in the vicinity of the riparian corridor, none are located within the Project boundaries.

3.14.3 Discussion of Checklist Responses

a. Induce unplanned population growth—No impact

The Project is not expected to induce population growth in the Proposed Project area, either directly or indirectly: it focuses entirely on invasive plant control, does not include a residential component, nor would the Project alter existing residential zoning or development policies. Although the Project would employ a small number of persons for the duration of construction, it would not offer sufficient short-term employment opportunities to attract a temporary

worker population into the Napa County area, nor would it create long-term employment opportunities as only a few workers would be required to carry out the proposed on-going maintenance activities of the Project. Consequently, the Proposed Project is not expected to have any impact relative to population growth, and no mitigation is required.

b. Displace a substantial number of existing people or housing—No impact

As described above, the Proposed Project would not involve the construction or development of additional infrastructure. Furthermore, no housing units exist within the Proposed Project limits where construction or maintenance would occur. Consequently, no housing units or population would be displaced, and there would be no need for housing construction as a result of the Proposed Project. No mitigation is required.

3.15 Public Services

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police protection?	☐	☐	☒	☐
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

3.15.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to public services in relation to the Proposed Project.

State Laws, Regulations, and Policies

California Fire Code

The California Fire Code (Title 24 CCR, Part 9) establishes minimum requirements to safeguard public health, safety, and general welfare from the hazards of fire, explosion, or dangerous conditions in new and existing buildings. Chapter 33 of the CCR contains requirements for fire safety during construction and demolition as follows:

3304.1 Smoking. Smoking shall be prohibited except in approved areas. Signs shall be posted in accordance with Section 310. In approved areas where smoking is permitted, approved ashtrays shall be provided in accordance with Section 310.

3304.2 Combustible debris, rubbish and waste. Combustible debris, rubbish and waste material shall comply with the requirements of Sections 3304.2.1 through 3304.2.4.

3304.2.1 Combustible waste material accumulation. Combustible debris, rubbish and waste material shall not be accumulated within buildings.

3304.2.2 Combustible waste material removal. Combustible debris, rubbish and waste material shall be removed from buildings at the end of each shift of work.

3304.2.3 Rubbish containers. Where rubbish containers with a capacity exceeding 5.33 cubic feet (40 gallons) (0.15 m^3) are used for temporary storage of combustible debris, rubbish and waste material, they shall have tight-fitting or self-closing lids. Such rubbish containers shall be constructed entirely of materials that comply with either of the following:

1. Noncombustible materials.

2. Materials that meet a peak rate of heat release not exceeding 300 kilowatt per square meter (kW/m^2) when tested in accordance with ASTM E1354 at an incident heat flux of $50kW/m^2$ in the horizontal orientation.

3304.2.4 Spontaneous ignition. Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.

3304.6 Cutting and welding. Operations involving the use of cutting and welding shall be done in accordance with Chapter 35.

3304.7 Electrical. Temporary wiring for electrical power and lighting installations used in connection with the construction, alteration or demolition of buildings, structures, equipment or similar activities shall comply with the California Electrical Code.

3308.1 Program superintendent. The owner shall designate a person to be the fire prevention program superintendent who shall be responsible for the fire prevention program and ensure that it is carried out through completion of the Project. The fire prevention program superintendent shall have the authority to enforce the provisions of this chapter and other provisions as necessary to secure the intent of this chapter. Where guard service is provided, the superintendent shall be responsible for the guard service.

3308.2 Prefire plans. The fire prevention program superintendent shall develop and maintain an approved prefire plan in cooperation with the fire chief. The fire chief and the fire code official shall be notified of changes affecting the utilization of information contained in such prefire plans.

3310.1 Required access. Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of support vehicle loading under all weather conditions. Vehicle access shall be maintained until permanent fire apparatus access roads are available.

3316.1 Conditions of use. Internal combustion–powered construction equipment shall be used in accordance with all of the following conditions:

1. Equipment shall be located so that exhausts do not discharge against combustible material.

2. Exhausts shall be piped to the outside of the building.

3. Equipment shall not be refueled while in operation.

4. Fuel for equipment shall be stored in an approved area outside of the building.

3.15.2 Environmental Setting

The Proposed Project is located in unincorporated Napa County. Law enforcement, public safety, recreation, and education services in the Proposed Project area are provided by the County of Napa, as detailed in the Public Services and Utilities chapter of the Napa County BDR (Napa County 2005) and the Napa County website.

The Napa County Sheriff's Department provides law enforcement to the Project area; currently sufficient capacity exists to meet the public's demand for law enforcement (Napa County 2005). Fire protection and emergency response are provided by the California Department of Forestry and Fire Protection (CAL FIRE) and the Napa County Fire Department. While Napa County owns its stations and equipment, it contracts with CAL FIRE for staffing and management (Napa County 2005). Angwin Community Ambulance is the medical provider responsible for services in the Project area. The St. Helena Unified and Pope Valley Elementary School Districts cover the Project area. BLM-managed federal recreation areas are located within the Project area and are discussed in Section 3.16, "Recreation." No existing public service facilities are located within the boundaries of Project activities.

3.15.3 Discussion of Checklist Responses

a. Result in adverse physical impacts associated with the provision of new or physically altered governmental facilities or a need for new or physically altered governmental facilities

i-ii. Fire protection, police protection and emergency services—*Less than significant*

The Proposed Project would not increase population in the Project area (see related discussion in Section 3.14, "Population and Housing") nor would it alter the existing population distribution temporarily or permanently. As such, the Proposed Project would not increase demand for fire, police, or emergency services as a result of population growth.

The Proposed Project focuses on weed control along Pope Creek; it would not construct buildings or other structures and thus would not add to the existing urban fire protection need or responsibilities in the County. Since the Project Area is already a natural riparian corridor, the Project would not materially alter the need for wildland fire protection, and may reduce the

wildfire risk. However, construction vehicle access activities could affect the provision of emergency services in the vicinity of the work site. Two-way traffic flow on all roadways would be maintained, and complete road closures are not anticipated during maintenance activities. As described in BMP GEN-14, *Planning for Pedestrians, Traffic Flow, and Safety Measures*, the Napa RCD would coordinate with the appropriate local emergency service providers, as needed, to ensure that emergency vehicle response is not impeded by Project activities. Further details of traffic effects during construction can be found in Section 3.17, "Transportation."

The Proposed Project's effect on police, fire, and emergency services response times and access would be minimal during maintenance, and would be further minimized with implementation of BMP GEN-14. This impact is **less than significant**.

iii-v. Schools, Parks and Other Public Facilities—No impact

The Proposed Project is located in a BLM-managed federal recreation area; therefore, impacts related to park services are discussed in in Section 3.16, "Recreation." The Project would have limited to no additional impact on other parks, government services or facilities, or the provision or availability of schools or other public services. Therefore, the Proposed Project would have **no impact** on these resources.

3.16 Recreation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
b. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.16.1 Regulatory Setting

Federal and State Laws, Regulations, and Policies

There are no federal or state laws, regulations, or policies regarding recreation that are applicable to the Proposed Project.

Local Laws, Regulations, and Policies

The Napa County General Plan (2008) also contains a number of goals, policies, and action items for water resources protection and management. The Recreation and Open Space Element contains the following goals and policies applicable to the Proposed Project:

Goal ROS-1: To ensure an extensive landscape of open spaces in which recreation, the protection of natural, cultural, and archaeological resources, agricultural production, and private property are mutually supportive and complementary.

Goal ROS-2: To create and maintain a high-quality system of parks, trails, and recreational, interpretive, and environmental education facilities.

> **Policy ROS-4:** The public's right to access and enjoy publicly owned open space lands in a responsible manner should be supported where appropriate and consistent with other Recreation and Open Space Element policies and adopted resource management plans.

3.16.2 Environmental Setting

Existing accessible open spaces with recreational opportunities near the Proposed Project are limited, yet there are recreational resources surrounding the Proposed Project in the form of wildlife areas and trails. The Cedar Roughs Wildlife Area is located within the Proposed Project (i.e., Management Unit D and F) in addition to the Cedar Roughs Wilderness area (i.e. Management Unit F). Issues related to Cedar Roughs Wilderness are further described in Section

3.11, "Land Use and Planning." Trails run adjacent to the Proposed Project and are discussed in more detail below. At the mouth of Pope Creek to Lake Berryessa, approximately 2.6 miles east from the Proposed Project, there are two recreational areas. The Putah Canyon Campground is privately owned by Royal Elk Park Management, Inc. Public areas in and around Lake Berryessa are maintained by the U.S. Bureau of Reclamation (USBR), but are located outside the Proposed Project.

Trails

There are three publicly accessible non-motorized trails located in proximity to the Project reach. The trails include Cedar Roughs Trail, Pope Canyon Trail, and Pope-to-Putah Trail. Information on the trails are as follows (Tuleyome 2016):

Cedar Roughs Trail: the trail provides access to the Cedar Roughs Wildlife Area. The trail starts at the turnout located at the "Napa 6.75" mile marker on Pope Canyon Road and continues south for 2 miles into the Wildlife Area. The trail is managed by the BLM and is located within the Proposed Project.

Pope Canyon Trail: the trail follows Pope Creek for 2.1 miles from the intersection of Pope Canyon Road and Knoxville Road to the West Gate, a yellow and brown striped gate located on the south side of Pope Canyon Road. The trail is managed by the USBR and is located within the Proposed Project area.

Pope-to-Putah Trail: access to the trail is located at the small Pope Creek Bridge. The trail runs approximately 3 miles northeast to the Putah Creek arm of Lake Berryessa. The trail is managed by the BLM.

3.16.3 Discussion of Checklist Responses

a. Increase use of existing parks or recreational facilities—Less than significant

As described in Chapter 2, *Project Description,* the Proposed Project would involve invasive plant species removal and revegetation. Such activities would require temporary closure of the Pope Canyon Trail and Cedar Roughs Trail and may temporarily increase use of other nearby recreational facilities. Given the number of other recreational facilities within the Lake Berryessa area (e.g. the Berryessa Creek Trail) and the fact that the Pope Canyon and Cedar Roughs Trails are moderately used, potential impacts related to increased use of other nearby recreational facilities would not be substantial and would not result in physical deterioration of these other recreational facilities. Temporary disruption of access to trails would not conflict with Policy ROS-4, and the Proposed Project would be beneficial as one objective is to preserve and enhance the quality of native plant and wildlife habitat. Additionally, implementing the below-listed BMPs would be short-term, and long-term effects on recreational facilities would be **less than significant.**

Applicable BMPs, as provided in Chapter 2, include the following:

GEN-15: Public Safety Measures

GEN-17: Work Site Housekeeping

b. Creation of new or altered recreational facilities—No impact

The Proposed Project would not create or alter any recreational facilities. Likewise, the Proposed Project would not introduce substantial numbers of people to the area or otherwise cause the need to construct new or altered recreational facilities. As a result, **no impact** would occur.

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3.17 Transportation

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b. Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☒	☐

3.17.1 Regulatory Setting

The Napa County General Plan includes countywide goals for traffic and transportation planning and provides standards for roadways and intersections in Napa County.

3.17.2 Environmental Setting

The County road system provides access to unincorporated areas of the county, including the Proposed Project. Pope Canyon Road is considered a collector street, a street that serves as a principle traffic artery within commercial and residential areas (Napa County General Plan 2007). In this rural area of the county, Pope Canyon Road provides access between rural destinations and the regional roadway network. Relatively long distances between cities and the dominant rural nature of the county make walking and inter-city bike travel uncommon outside of urban areas.

3.17.3 Discussion of Checklist Responses

a. Conflict with applicable circulation plans, ordinances, or policies and applicable congestion management programs—Less than significant

The Project activities would generate four types of vehicle traffic: mobilization and demobilization of heavy construction equipment; construction worker commuting; delivery of materials and supplies; and inspections and maintenance by the RCD and their contractors.

Heavy Equipment Deliveries and Material Hauling

Construction equipment would be staged on site, meaning that once delivered, equipment would remain on site until vegetation removal has been completed at each management unit. Transportation of equipment to (mobilization) and from (demobilization) the Proposed Project area and movement of equipment between designated work sites would add a small number of additional trips. Additional trips would be generated by delivery of materials and supplies which would likely occur infrequently.

Construction Worker Trip Generation

As described in Chapter 2, Proposed Project activities are anticipated to occur over several years. Initial invasive species treatment activities would occur in Year 1. In Years 2 and 3, follow-up maintenance would occur. This would be followed by a 10-year maintenance and monitoring period. It is estimated that five workers, on average, would be on site during construction. Over the construction period, it is estimated that construction worker vehicles would add no more than five round trips, or 10 individual trips, to area roadways each day.

Inspection and Maintenance

Proposed Project inspection and maintenance activities would generate limited amounts of traffic, and most activities would not require the mobilization and demobilization of supplies or equipment. Thus, the added volume of traffic generated on area roadways by routine inspection and maintenance is expected to be very small relative to roadway capacity and existing traffic volume.

Summary

Up to approximately 11 individual daily trips would be generated during construction; these trips would be generated from a combination of construction worker commute vehicles, mobilization and demobilization of heavy construction equipment, and delivery of materials and supplies. This number represents a small proportion of daily traffic volume capacity on roadway segments in the Proposed Project vicinity. Thus, the impact to the effectiveness of the circulation system would be **less than significant**, and there would be no conflicts with any plan, ordinance or policy. No mitigation is required.

b. Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)—Less than significant

The vehicle miles traveled for the Project were estimated based on a combination of construction worker commute vehicles, mobilization and demobilization of heavy construction equipment, and delivery of materials and supplies. Total vehicle miles traveled for the Project is anticipated to be approximately 6,130, with an estimated 11 trips per day. Projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than significant transportation impact (Office of Planning and Research 2017). Based on this analysis there is a **less-than significant** impact on transportation as it relates to vehicle miles traveled.

c. Increased hazards resulting from geometric design features—No impact

The Proposed Project would not introduce unsafe design features or incompatible uses into the area. The Proposed Project would be confined to the channel bed and bank and would not change design features of adjacent roadways. Therefore, there would be no long-term impacts on roadway or intersection safety as a result of the Proposed Project.

e. Inadequate emergency access—Less than significant

Although there may be a small, temporary increase in local traffic due to the Proposed Project, this is anticipated to have less than significant impacts on emergency access within the Project vicinity. Impacts to emergency access are further discussed in Section 3.9, "Hazards and Hazardous Materials," and Section 3.15, "Public Services." There would be no permanent impacts to emergency access due to the Proposed Project. Therefore, there would be a less-than-significant impact on emergency access.

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3.18 Tribal Cultural Resources

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Proposed Project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)	☐	☒	☐	☐
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.18.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to tribal cultural resources (TCRs) in relation to the Proposed Project.

State Laws, Regulations, and Policies

CEQA and CEQA Guidelines

California Assembly Bill 52, which was approved in September 2014 and which went into effect on January 1, 2015, requires that state lead agencies consult with any California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. The bill, chaptered in PRC Section 21084.2, also

specifies that a project with an effect that may cause a substantial adverse change in the significance of a TCR is a project that may have a significant effect on the environment.

Defined in PRC Section 21074(a)Public Resources, TCRs are:

(1) Sites, features, places, cultural landscapes, sacred places and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the California Register of Historical Resources; or

(B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

TCRs are further defined under PRC Section 21074 as follows:

(b) A cultural landscape that meets the criteria of subdivision (a) is a TCR to the extent that the landscape is geographically defined in terms of the size and scope of the landscape; and

(c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a tribal cultural resource if it conforms with the criteria of subdivision (a).

Mitigation measures for TCRs must be developed in consultation with the affected California Native American tribe pursuant to newly chaptered Section 21080.3.2, or according to Section 21084.3. Section 21084.3 identifies mitigation measures than include avoidance and preservation of TCRs and treating TCRs with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource.

3.18.2 Environmental Setting

As discussed in Section 3.5, "Cultural Resources," the Proposed Project area is in the traditional ancestral territory of the Lake Miwok, with the Wappo and Hill Patwin as their close neighbors. One tribe with a traditional and cultural affiliation to the Project area, the Yocha Dehe Wintun Nation, requested consultation with the RCD on district projects pursuant to PRC Section 21080.3.1 in a letter dated October 29, 2015. As a result,, the RCD notified the Yocha Dehe Wintun Nation and other local tribes who were identified by the NAHC as having a traditional and cultural association with the Project area about the Project via letters dated March 5, 2019.

The RCD received one response from the Yocha Dehe Wintun Nation. In a letter dated March 26, 2019, the tribe stated that the Project is in their ancestral territory and that they have a cultural interest in the Project area. They also requested more detailed information about the Proposed Project. The requested information was forwarded to the tribe on April 9, 2019. A follow-up email was sent to the tribe on May 31, 2019 to ascertain if they had any concerns about the Proposed Project after reviewing the information provided. Yocha Dehe responded with a request for consultation on the project in a letter dated June 7, 2019. The RCD subsequently scheduled a meeting with the tribe on September 16, 2019. Revisions to cultural resources mitigation measures were made based on feedback provided in the September 16, 2019 meeting.

Table 3.18-1 lists all those contacted and summarizes the results of the consultation. All correspondence between the Native American Heritage Commission, Native American Tribes, and the RCD is provided in Appendix D.

Table 3.18-1. Native American Correspondence

Tribe	Name	Address	Notification Letter Mailed	Comments
Mishewal-Wappo Tribe of Alexander Valley	Scott Gabaldon, Chairperson	2275 Silk Road Windsor, CA 95492	March 5, 2019	No reply
Yocha Dehe Wintun Nation	Anthony Roberts, Chairperson	P.O. Box 18 Brooks, CA 95606	March 5, 2019	Letter requesting additional information received March 26, 2019. Materials sent April 9, 2019. Subsequent letter requesting consultation sent on June 7, 2019. Meeting with the RCD on September 16, 2019.
Middletown Rancheria	Jose Simon III, Chairperson	P.O. Box 1035 Middletown, CA 95461	March 5, 2019	No reply
Cortina Indian Rancheria of Wintun Indians	Charlie Wright, Chairperson	P.O. Box 1630 Williams, CA 95987	March 5, 2019	No reply

The NAHC letter, dated February 20, 2019, stated that no sacred sites were identified in the Project area.

3.18.3 Discussion of Checklist Responses

a, b. Cause a Substantial Adverse Change to Tribal Cultural Resources Listed, or Eligible for Listing in the California Register of Historical Resources or a Local Register of Historical Resources, or Determined by the Lead Agency to be Significant—Less than significant with mitigation

No TCRs that are listed or eligible for listing in the CRHR or a local register of historical resources have been identified within the Project area. Therefore, there would be no impact to TCRs that are listed or eligible for listing in the CRHR or a local register.

As mentioned above, the RCD notified tribes with a traditional and cultural affiliation with the area about the Proposed Project, none of the tribes contacted identified TCRs in the Project area. Furthermore, no TCRs determined by the lead agency, in its discretion and supported by substantial evidence, to be significant are known to be located in the Project vicinity. As a result, it appears that there would be no impact to TCRs. However, it is possible that Native American archaeological remains or Native American human remains that could be determined to be TCRs could be discovered during the course of construction. If such resources are identified, they would be treated according to Mitigation Measure CR-2 or Mitigation Measure CR-3, respectively, as described in Section 3.5, "Cultural Resources." Implementation of these mitigation measures would result in a less-than-significant impact with regard to TCRs. As a result, this impact would be **less than significant with mitigation**.

3.19 Utilities and Service Systems

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the Project:				
a. Require or result in the relocation or construction of new or expanded water, or wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

3.19.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to utilities and service systems in relation to the Proposed Project.

State Laws, Regulations, and Policies

The California Integrated Waste Management Act of 1989 (PRC, Division 30) requires all California cities and counties to implement programs to reduce, recycle, and compost wastes by at least 50 percent by 2000 (PRC Section 41780). The State, acting through the California Integrated Waste Management Board (now California Department of Resources Recycling and

Recovery [CalRecycle]) determines compliance with this mandate based on jurisdiction's per-capita disposal rates.

As described in the County General Plan, the following plans related to solid waste are currently in place:

- Summary Plan and Siting Element (Countywide)
- Source Reduction and Recycling Elements
- Household Hazardous Waste Elements
- Non-Disposal Facility Elements

In addition, the County adopted the "Waste Source Reduction and Recycled Product Content Procurement Policy" intended to reduce the amount of waste generated by the County's operations and encourage waste disposal firms serving the County to use recycled materials.

Policies contained in the Conservation Element of the County's General Plan are also intended to promote waste reduction and recycling.

3.19.2 Environmental Setting

Water Supply, Wastewater Disposal, and Sanitary Sewers

Unincorporated areas of Napa County are primarily reliant upon groundwater resources and surface water collection for potable water (Napa County 2008). Based on current and future water demands, the County has adopted polices supporting the use of recycled water as a means to meet future water supply demands.

The Proposed Project would not affect water or wastewater demands or capacity needs. As such, these public utilities are not discussed in this setting section.

Solid Waste Disposal

Napa County is served by five solid waste service providers and two joint power agencies/authorities (Napa County 2008). Trash debris that may potentially be removed from Pope Creek may be taken to the Napa County Waste Transfer Station at 889 Devlin Road in American Canyon. Items brought to the Devlin Road Facility are first assessed for recycling, reuse, or composting before being sent to the Potrero Hills Landfill for disposal (Napa Recycling and Waste Services 2013).

Potrero Hills Landfill, located in Solano County, approximately 2 miles southeast of Suisun City, accepts residual, nonhazardous solid wastes. It also houses a materials processing center where materials are diverted from landfilling through composting, wood recycling, concrete and asphalt rubble crushing and screening, metal salvage recovery, and other recycling services (Solano County 2009). The landfill is permitted to accept up to 4,330 tons of waste per day and has 13,872,000 cubic yards of remaining capacity (CalRecycle 2019).

Stormwater

The Proposed Project area is not served by city or county storm drain infrastructure. Information on stormwater drainage in the Project area is provided in Section 3.10, "Hydrology and Water Quality," of this checklist.

Electricity, Natural Gas and Communications

The Proposed Project area is not served by city or county electricity, natural gas or communications infrastructure.

3.19.3 Discussion of Checklist Responses

a. Require the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities or expansion of existing facilities, the construction or relocation of which could cause significant environmental effects?—No impact

The Proposed Project would not increase population in the Project area (see related discussion in Section 3.14, "Population and Housing," of this checklist), nor would it alter the distribution of population in the Project area, either temporarily or permanently. The Proposed Project would not alter land use in a way that would increase wastewater generation. As identified above, the Proposed Project area is not served by city or county storm drain facilities. The Proposed Project would not modify existing stormwater drainage facilities, nor would it construct new areas of impervious surface requiring storm drainage.

The Proposed Project would primarily involve above-ground biomass removal and foliar application of herbicide, with willow pole cutting revegetation and use of heavy machinery being the most ground disturbing aspects of the Project. No electric power, wastewater treatment, or telecommunications facilities utilities would be disrupted through the construction or maintenance activities of the Project. Access routes will be planned such that no existing utility infrastructure will be disturbed. Additionally, Project construction and maintenance activities would not wastefully, inefficiently, or unnecessarily consume energy. The Proposed Project would not increase population or alter the distribution of population in the Project area, either temporarily or permanently, so the Proposed Project would not increase demand for power generation nor would is it expected to result in a need for expansion of existing utilities. Thus, there would be **no impact**.

b. Have sufficient water supplies available to serve the Project and reasonably foreseeable future development during normal, dry and multiple dry years—No impact

As discussed above, the Proposed Project would not increase population or alter the distribution of population in the Project area, either temporarily or permanently, so it would not increase the need for potable water supply. The Project would not expand agriculture, and thus would not increase the demand for agricultural supply.

No groundwater wells or waters supply lines would be impacted by the Proposed Project. Therefore, there would be **no impact** related to water supply availability.

c. Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?—No impact

No sewer lines would be impacted by the Proposed Project. Therefore, the Proposed Project would not alter the need for wastewater treatment in the county, and there would be no impact related to potential exceedance of wastewater treatment standards or requirements. It would not increase the need for wastewater treatment in the county, and there would be no impact related to the need for construction or expansion of wastewater treatment facilities. There would be **no impact** related to wastewater treatment capacity.

d, e. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals and comply with federal, state, and local management and reduction statutes and regulations related to solid waste?—Less than significant

As discussed above, the Proposed Project would not increase area population, relocate residential uses, or otherwise alter land use in a way that would increase residential or commercial solid waste generation. Vegetation removed during Proposed Project activities would generally be chipped or otherwise remain on site; however, some vegetation material may be removed from the site. Disposal will be determined annually and may vary for each management unit, but any vegetation removed from the site is anticipated to be composted.

Following restoration, small volumes of greenwaste would continue to be generated periodically as a result of vegetation maintenance activities, including the removal of invasive nonnative species. Most or all of this material would be chipped or otherwise left on site, but some may be off-hauled for composting. The volumes involved would be quite small, well within the capacity of local receiving facilities.

Overall, the Proposed Project's potential to increase waste generation would be very small. Proposed Project-related waste volumes could easily be accommodated as part of the Proposed Project area's existing waste stream. Furthermore, wastes (primarily greenwaste) generated by the Proposed Project would be handled and disposed in accordance with all applicable federal, state, and local regulations and policies. The Proposed Project is not expected to exceed landfill capacity or result in impacts related to violation of solid waste regulations. The proposed Project would result in a **less-than-significant** impact on solid waste generation and would comply with statutes and regulations related to solid waste.

3.20 Wildfire

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

3.20.1 Regulatory Setting

Federal Laws, Regulations, and Policies

No federal regulations are applicable to wildfire in relation to the Proposed Project.

State Laws, Regulations, and Policies

The Office of the State Fire Marshal and the California Department of Forestry and Fire Protection (CAL FIRE) administer state policies regarding wildland fire safety.

State Laws, Regulations, and Policies

RCD staff and contractors must comply with applicable requirements in the PRC during Project activities. Additionally, Napa County has established a Fire Hazard Abatement Ordinance, while both the County General Plan and Operational Area Hazard Mitigation Plan contain goals and policies to protect Napa County from wildfires.

3.20.2 Environmental Setting

Wildland Fire Hazards

Napa County has a high wildland fire potential with its long, dry summers, narrow valleys and steep, hilly terrain, and fire-adapted vegetation. Winds during the dry season can also influence the spread of wildfire, potentially carrying burning embers to adjacent exposed areas (Napa County 2013). The hillslopes surrounding the Proposed Project are ranked as very high fire hazard risk (CAL FIRE 2007).

3.20.3 Discussion of Checklist Responses

a. Substantially impair an adopted emergency response plan or emergency evacuation plan?—Less than significant

As described in Section 3.9, "Hazards and Hazardous Materials," road closures are not anticipated to be necessary for implementation of the Proposed Project. This impact would be less than significant. No mitigation is required.

b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?—Less than significant

The primary fire season in Napa County extends from late summer through fall, when conditions are driest and air temperatures are high. The Proposed Project and surrounding hillslopes are ranked as high to very high fire hazard risk.

The Proposed Project would not involve placement of people or habitable structures in areas without adequate fire protection. Additionally, the Proposed Project would not result in the creation of new wildland areas which could increase fire dangers. In the long term, management of riparian vegetation in Pope Creek would reduce the risk of fires by removing tamarisk, a species associated with increased fire risk (Sher et al. 2010). However, because the Proposed Project would be conducted during the dry season when fire danger is the highest, there is a potential for an accidental ignition of a wildland fire. The RCD will implement BMP GEN-11: *Fire Prevention*, which requires on-site fire suppression equipment, spark arrestors on all equipment with internal combustion engines, and restricts activities on high fire danger days. Therefore, this impact would be **less than significant**. No mitigation is required.

c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?—Less than significant

The Proposed Project will not require the installation or maintenance of infrastructure that would increase fire risk. As described above in (b), the Proposed Project is anticipated to reduce fire risk.

d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?—Less than significant

The Proposed Project will not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, impacts would be **less than significant**.

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3.21 Mandatory Findings of Significance

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less-than-Significant Impact	No Impact
a.	Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self- sustaining levels, threaten to eliminate a plan or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b.	Does the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)?	☐	☒	☐	☐
c.	Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

3.21.1 Discussion of Checklist Responses

a. Effects on environmental quality, fish or wildlife, and historic resources— Less than significant with mitigation

Please refer to the impact discussions presented in Sections 3.1 through 3.20, in particular the impact analysis for Biological Resources (Section 3.4), Cultural Resources (Section 3.5), and Tribal Cultural Resources (Section 3.18). The Proposed Project would not have potential for significant impacts related to any of the factors described in the checklist question above with implementation of the mitigation measures outlined in Sections 3.4, 3.5, and 3.18. Impacts would be reduced to **less than significant with mitigation**.

b. Cumulative Impacts

A cumulative impact refers to the combined effect of "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts reflect "the

change in the environment which results from the incremental impact of the Project when added to other closely related past, present, and reasonably foreseeable probable future Projects. Cumulative impacts can result from individually minor but collectively significant Projects taking place over a period of time" (CEQA Guidelines Section 15355[b]).

Lead agencies may use a "list" approach to identify related projects or may base the identification of cumulative impacts on a summary of projections in an adopted general plan or related planning document (CEQA Guidelines Section 15130[b]), also known as the "projection" approach. This IS/MND for the Proposed Project uses a combination of the list and projection approaches. Project contributions to localized cumulative impacts (air quality, biological resources, noise, and vibrations) are evaluated using the list approach, while Project contributions to regional cumulative impacts (GHG emissions and traffic) are evaluated using the projection approach.

Projects with the potential to contribute to the same cumulative impacts as the Proposed Project are to a large extent within close geographic proximity to the Project area, except for certain resources (e.g., air quality, GHG emissions). **Table 3.21-1** defines the geographic scope that will be used in the impact analysis for applicable resource areas.

Table 3.21-1. Geographic Scope for Resources with Potential Cumulative Impacts

Resource	Scope
Air Quality	The San Francisco Bay Area Air Basin.
Biological Resources	Migratory nesting sites and habitat in the Project site and surrounding Pope Creek watershed.
Greenhouse Gas Emissions	The geographic scope for GHG emissions is the state of California where GHG policies and regulations have been established. However, the true impact of GHG emissions is global in nature.
Hydrology and Water Quality	Pope Creek watershed.
Noise and Vibrations	Project site and surrounding area exposed to noise and vibration generated in the Project site.
Traffic and Transportation	Roadways in the vicinity of the Proposed Project that may be impacted by activity associated with the Project, including Pope Canyon Road.

The list approach is applied by developing a list of past, present, and reasonably foreseeable projects. Projects considered in this analysis are listed in **Table 3.21-2**. The list of projects used for this analysis was developed by identifying projects listed in the CEQANet database. Several of these projects may have construction activities occurring at the same time as the Proposed Project. While not every possible cumulative project is likely listed, the list of cumulative projects is believed to be comprehensive and representative of the types of impacts that would be generated by other projects related to the Proposed Project. The cumulative impact evaluation assumes that the impacts of past and present projects are represented by baseline

conditions, and cumulative impacts are considered in the context of baseline conditions alongside reasonably foreseeable future projects.

Table 3.21-2. List of Reasonably Foreseeable Future Projects that May Cumulatively Affect Resources of Concern for the Proposed Project

Project Number	Project Title	Brief Project Description	Distance from Project
1	Napa County Stream Maintenance Program Update	The Napa County Flood Control and Water Conservation District has updated its Stream Maintenance Program Manual to include additional District maintenance responsibilities, revised maintenance approaches, maintenance activities conducted by both the Napa County Resource Conservation District and the County Public Works Department's Roads Division. The manual provides the organizational framework to oversee routine stream maintenance activities, including vegetation management, erosion protection/bank stabilization, sediment removal, culvert repair/replacement, and other activities. These maintenance activities occur mainly in engineered channels, modified channels, and natural channels throughout Napa County on an as-needed basis.	Variable
2	Rios Farming Reservoir – Chiles Reservoir #1	Grading and earthmoving activities associated with the construction of a 48-acre-foot water volume capacity water storage reservoir on gently sloping land within a ±2.5-acre area of annual grassland.	4.5 miles
3	Hardin, Wallace Ranch Vineyard Conversion #P13-00208-ECPA	The project includes maintenance of erosion control measures associated with development of 95 acres of new vineyard (81.9 net vine acres). The site plan designates development on topography that ranges from gentle to moderately sloping lands (typical slopes from 8% to 16%), at elevation between approximately 600 and 725 feet above mean sea level.	4 miles
4	Lake Berryessa North End Trail	The project will reconstruct and realign approx. 7.3 miles of an existing North End Recreation Trail along the North Shore of Lake Berryessa. Project activities include construction of 18 clear span bridge crossings. The project is located where the North End Trail crosses unnamed tributaries within the north shore of Lake Berryessa Recreation Area in Napa County, California. The trail runs northeast from Putah Creek to the K-6 trailhead on Berryessa-Knoxville Road.	2 miles

Source: CEQANet 2019.

Detailed analysis of a project's contribution to cumulative impacts is required when (1) a cumulative impact to which a project may contribute is expected to be significant, and (2) the project's contribution to the cumulative impact is expected to be cumulatively considerable or significant in the context of the overall (cumulative) level of effect. **Table 3.21-3** summarizes cumulatively significant impacts and identifies the Proposed Project's contribution. Additional analysis follows for those impacts to which the Proposed Project would contribute.

Table 3.21-3. Summary of Cumulative Significant Impacts and Proposed Project's Contribution

Resource Topic	Cumulatively Significant Impacts	Proposed Project's Contribution
Aesthetics	None identified.	No analysis required.
Agricultural Resources	None identified.	No analysis required.
Air Quality	The San Francisco Bay Area Air Basin (SFBAAB) has been designated by the Bay Area Air Quality Management District (BAAQMD) as being in non-attainment under both federal and state standards for ozone and fine particulate matter ($PM_{2.5}$); particulate matter (PM_{10}) is also designated as in non-attainment under state standards. These impacts would be considered cumulatively significant.	Use of vehicles, other equipment, and herbicides would result in emissions of criteria air pollutants. However, because such emissions would be below BAAQMD thresholds, in accordance with BAAQMD guidance, the Proposed Project would not make a considerable contribution to cumulative impacts related to air quality. *Further analysis is provided below.*
Biological Resources	Past and present projects could have temporary adverse effects on special-status species and habitat during the construction phase. These impacts would be considered potentially significant.	Proposed Project activities have the potential to impact special-status species, and would result in temporary impacts to sensitive natural communities. However, with the implementation of BMPs and mitigation measures, the Proposed Project would not make a considerable contribution to cumulative impacts related to biological resources. *Further analysis is provided below.*
Cultural Resources	While the general plans of the County and various jurisdictions contain policies regarding preservation of important cultural resources, ongoing development could lead to the cumulative loss of significant historic, archeological, or paleontological resources. This impact would be considered cumulatively significant.	Ground disturbances under the Proposed Project could impact historic, archeological, or paleontological resources. However, with the implementation of BMPs, the Proposed Project would not make a considerable contribution to cumulative impacts related to cultural resources. *Further analysis is provided below.*
Energy	None identified	No analysis required.

Resource Topic	Cumulatively Significant Impacts	Proposed Project's Contribution
Geology and Soils	None identified.	No analysis required.
Greenhouse Gas Emissions	Anthropogenic emissions of GHGs are widely accepted in the scientific community as contributing to global warming. This impact is considered cumulatively significant.	Vehicle and equipment use would result in emissions of GHGs. However, because such emissions would be below BAAQMD thresholds, in accordance with BAAQMD guidance, the Proposed Project would not make a considerable contribution to cumulative impacts related to GHG emissions. *Further analysis is provided below.*
Hazards and Hazardous Materials	None identified.	No analysis required.
Hydrology and Water Quality	Increased development in Napa County may lead to a variety of impacts on water resources, including increased demand for water supplies, new sources of point source and non-point source pollution, increased area of impervious surface and volume of stormwater runoff, and potential flooding impacts.	The Proposed Project could potentially impair water quality from ground disturbances resulting in discharges of sediment to streams, and heavy equipment and herbicide use resulting in release of hazardous materials into streams. With the implementation of BMPs, the Proposed Project would not make a considerable contribution to cumulative impacts related to water quality. *Further analysis is provided below.*
Land Use and Planning	None identified.	No analysis required.
Mineral Resources	None identified.	No analysis required.
Noise	Traffic-related noise associated with reasonably foreseeable future increased growth in traffic volumes in Napa County is considered a significant cumulative impact.	Vehicle use during Proposed Project implementation would contribute to traffic-related noise. However, the Proposed Project would not make a considerable contribution to cumulative impacts related to traffic-related noise. *Further analysis is provided below.*
Population and Housing	None identified.	No analysis required.
Public Services	None identified.	No analysis required.
Recreation	None identified.	No analysis required.

Resource Topic	Cumulatively Significant Impacts	Proposed Project's Contribution
Transportation and Traffic	Reasonably foreseeable future increased growth in traffic volumes in Napa County could affect load and capacity of the street system to the extent that level of service and emergency access is affected. This is considered a significant cumulative impact.	Vehicle use during Proposed Project implementation would temporarily add to traffic volumes. However, the Proposed Project would not make a considerable contribution to cumulative impacts related to effects on level of service or emergency access from traffic generation. *Further analysis is provided below.*
Utilities and Service Systems	None identified.	No analysis required.
Wildfire	None identified.	No analysis required.

The following sections provide a detailed analysis of the Proposed Project's contribution to existing significant cumulative impacts. As identified in Table 3.21-3, the following resource issues are discussed: air quality, biological resources, cultural resources, global climate change, hydrology and water quality, noise, and traffic and transportation.

Air Quality: Emissions of Criteria Air Pollutants—*Less than significant*

The use of vehicles, other equipment, and herbicides involved with the Proposed Project would result in daily and annual emissions of criteria air pollutants. As discussed in Section 3.3, "Air Quality," daily emissions of all criteria air pollutants are not considered to have the potential to be significant/substantial, and annual emissions would be below annual BAAQMD significance thresholds. The BAAQMD thresholds utilized also represent cumulative thresholds. Therefore, the Proposed Project would not make a considerable contribution to cumulative impacts related to air quality. No mitigation is required.

Biological Resources: Impacts to Special-Status Species and Sensitive Natural Communities—*Less than significant with mitigation incorporated*

Special-Status Species

Some special-status species that have the potential to occur in the Proposed Project area could be impacted by the Proposed Project. The following special-status species have the potential to occur in the Project area:

- Several special-status plant species (refer to Table B-1 in Appendix B);
- Two special-status amphibian and reptile species (foothill yellow-legged frog and western pond turtle); and
- Several special-status bird species (refer to Table B-2 in Appendix B).

These species have the potential to be impacted by Proposed Project activities. It is the RCD's intent to avoid impacts to special-status species to the greatest extent feasible. The RCD would implement the following BMPs to avoid or minimize impacts to special-status species:

BMP GEN-1: Work Windows

BMP GEN-2: Minimize the Area of Disturbance

BMP GEN-3: Standard Herbicide Use Requirements

BMP GEN-4: Erosion and Sediment Control Measures

BMP GEN-6: Staging and Stockpiling of Materials

BMP GEN-7: Stream Access

BMP GEN-10: Spill Prevention and Response

BMP BIO-1: Minimize Impacts to Nesting Birds via Site Assessments and Avoidance Measures

BMP BIO-2: Protection of Sensitive Fauna Species from Herbicide Use

BMP BIO-4: Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities

BMP BIO-6: Protection of Dusky-Footed Woodrats

The RCD would also implement Mitigation Measure BIO-1 (Conduct Pre-construction Surveys for Nesting Eagles and Implement No-Work Buffer Areas if Necessary) to minimize the potential for impacts to nesting eagles.

Sensitive Natural Communities

Temporary impacts to sensitive natural communities would likely occur during Proposed Project activities, but long-term benefits to riparian habitat are anticipated from the Proposed Project. As discussed in Section 3.4, "Biological Resources," as a part of the Proposed Project the RCD would implement the following BMPs specifically to protect and minimize disturbances to sensitive natural communities:

BMP GEN-2: Minimize the Area of Disturbance

BMP GEN-6: Staging and Stockpiling of Materials

BMP GEN-7: Stream Access

BMP BIO-4: Avoid and Minimize Impacts to Special-Status Plant Species and Sensitive Natural Vegetation Communities

With implementation of the BMPs identified above, the Proposed Project would not make a considerable contribution to potential cumulative impacts related to biological resources. This impact would be **less than significant with mitigation** incorporated.

Cultural Resources: Preservation of Cultural Resources—*Less than significant with mitigation incorporated*

Impacts on cultural resources, including historic, archeological, and paleontological resources, could occur primarily through ground disturbances associated with the Proposed Project activities. As discussed in Section 3.5, "Cultural Resources," as a part of the Proposed Project the RCD would implement the following mitigation measures:

MM CR-1 Conduct Cultural Resources Awareness Training

MM CR-2 Immediately Halt Project Activities If Cultural Resources Are Discovered, Evaluate All Identified Cultural Resources for Eligibility for Inclusion in the NRHP/CRHR, and Implement Appropriate Mitigation Measures for Eligible Resources

MM CR-3 (Immediately Halt Project Activities if Human Remains Are Discovered and Implement Applicable Provisions of the California Health and Safety Code

With implementation of Mitigation Measures CR-1, CR-2, and CR-3, the Proposed Project would not make a considerable contribution to potential cumulative impacts related to cultural resources. This impact would be **less than significant with mitigation** incorporated.

Greenhouse Gas Emissions: Emissions of GHGs—*Less than significant*

Use of vehicles and equipment involved with the Proposed Project would result in daily and annual emissions of GHGs. As discussed in Section 3.8, "Greenhouse Gas Emissions," daily emissions of GHGs from Project activities are not considered to have the potential to be significant/substantial, and annual emissions would be below annual BAAQMD significance thresholds. The BAAQMD thresholds utilized also represent cumulative thresholds. Therefore, the Proposed Project would not make a considerable contribution to cumulative impacts related to GHG emissions. No mitigation is required.

Hydrology and Water Quality: Water Quality Impacts—*Less than significant*

Proposed Project activities have the potential to contribute to significant cumulative effects related to water quality; activities, include ground disturbance, use of heavy equipment, and use of herbicides. Ground-disturbing or sediment-disturbing activities could potentially result in discharges of sediment or sediment-adsorbed contaminants. The use, storage, and refueling of equipment and vehicles could release hazardous materials, such as petroleum products. Herbicides could be accidentally released adjacent to the channel.

As discussed in Section 3.10, "Hydrology and Water Quality," as a part of the Proposed Project the RCD would implement the following BMPs specifically to avoid and prevent contamination of water quality:

BMP GEN-1: Work Windows

BMP GEN 3: Standard Herbicide Use Requirements

BMP GEN-4: Erosion and Sediment Control Measures

BMP GEN-6: Staging and Stockpiling of Materials

BMP GEN-8: On-Site Hazardous Materials Management

BMP GEN-9: Existing Hazardous Materials

BMP GEN-10: Spill Prevention and Response

BMP GEN-12: Vehicle and Equipment Maintenance

BMP GEN-13: Vehicle and Equipment Fueling

BMP BIO-5: Protection of Special-status Amphibian and Reptile Species

With implementation of these BMPs, the Proposed Project would not make a considerable contribution to potential cumulative impacts related to water quality. No mitigation is required.

Noise: Traffic-Related Noise Generation—*Less than significant*

Proposed Project activities involve vehicle use that would contribute to traffic-related noise. However, Section 3.17, Transportation*,"* determined that the temporary added volume of traffic generated on Project area roadways would be very small relative to roadway capacity and existing traffic volumes. Based on this conclusion it is anticipated the Proposed Project would not generate a noticeable increase in traffic noise. The Proposed Project would not make a considerable contribution to cumulative impacts related to traffic-related noise. No mitigation is required.

Traffic and Transportation: Effects to Level of Service and Emergency Access from Traffic Generation—*Less than significant*

Proposed Project activities include vehicle use that would add to traffic volumes. As discussed in Section 3.17, Transportation*,"* the volume of traffic generated on roadways throughout Napa County by the Proposed Project would be very small relative to roadway capacity and existing traffic volumes. The Proposed Project would not be anticipated to generate a noticeable degradation in level of service or emergency access on more than an extremely temporary basis. As a result, the Proposed Project would not make a considerable contribution to cumulative impacts related to level of service or emergency access from traffic generation. No mitigation is required.

Conclusion for Cumulative Impacts

Overall, the Proposed Project would be largely beneficial for environmental resources in the Pope Creek watershed. The Proposed Project would remove invasive plant species; therefore, the Project is anticipated to have beneficial impacts on biological resources which is an existing cumulative impact.

Project construction activities could result in adverse effects on several resource categories as operation of equipment could temporarily impact habitat and other sensitive biological resources, and potentially encounter buried cultural resources. Construction activities also could result in impacts on water quality. Implementation of BMPs would avoid or minimize many of these effects. Potential adverse effects would be further avoided or minimized through implementation of mitigation measures identified in Section 3.4, "Biological Resources," and Section 3.5, "Cultural Resources." With implementation of BMPs and mitigation measures

identified in this IS/MND, the Project's contribution to cumulative impacts for these resources would not be considerable and would be **less than significant with mitigation**.

c. Effects on Human Beings—Less than significant

Please refer to the impact discussions presented in Sections 3.1 through 3.20. The Project would not have potential for substantial direct or indirect adverse effects on human beings. Impacts would be **less than significant**. No mitigation is required.

Chapter 4
REPORT PREPARATION

Napa County Resource Conservation District
804 First Street
Napa, CA 94559
707/259- 8600

Frances Knapczyk	Program Director

Horizon Water and Environment, LLC
266 Grand Ave, Suite 210
Oakland, CA 94610
(510) 986-1850

Ken Schwarz	Principal-in-Charge
Robin Hunter	Project Manager
Janis Offermann	Cultural Resources Practice Leader
Megan Giglini	Senior Associate
Eric Christensen	Senior Associate
Brian Piontek	Senior Associate
Dean Martorana	Associate
Johnnie Chamberlin	Analyst
Viktoria Kuehn	Analyst
Ryan Johnson	Analyst
Linda Littleton	Editor
Lorrie Jo Williams	Editor

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Chapter 5
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