KJS AND SORRENTO VINEYARD CONVERSION EROSION CONTROL PLAN APPLICATION #P17-00432-ECPA

Draft Environmental Impact Report

State Clearinghouse #2018092042

Lead Agency
Napa County Department of Planning,
Building and Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
AES	Analytical Environmental Services
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
APN	Assessor's Parcel Number
Applicant	KJS Investment Properties and Sorrento Inc.
AW	Agricultural Watershed
AWOS	Agricultural, Watershed and Open Space
BAAQMD	Bay Area Air Quality Management District
BAAQMD CEQA Guidelines	Bay Area Air Quality Management District *CEQA Air Quality Guidelines*
BDR	Baseline Data Report
BMP	best management practice
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
County	Napa County
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
dbh	diameter at breast height
development area	proposed vineyard conversion areas

DPM	diesel particulate matter
DWR	California Department of Water Resources
ECPA	erosion control plan application
ECP	erosion control plan
EIR	Environmental Impact Report
EPA	U.S. Environmental Protection Agency
ESA	Environmental Science Associates
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
g	gravity
General Plan	Napa County General Plan
GHG	greenhouse gas
GIS	Geographic Information System
HMBP	hazardous materials business plan
Hz	hertz
in/sec	inches per second
IPM	integrated pest management
IS	Initial Study
L_{dn}	24-hour, day and night, A-weighted noise exposure level that accounts for the greater sensitivity of most people to nighttime noise
L_{eq}	energy-equivalent sound level, used to describe noise over a specified period of time—typically one hour—in terms of a single numerical value
LiDAR	Light Detection and Ranging
L_{max}	instantaneous maximum noise level for a specified period of time
LOS	level of service
MDB&M	Mount Diablo Base and Meridian
MT	metric ton(s)
Mw	Moment Magnitude
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NCC	Napa County Code
NFD	No Formal Description
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
NWIC	Northwest Information Center
OSHA	Occupational Safety and Health Administration
Peak	Peak & Associates, Inc.

PM	particulate matter
$PM_{2.5}$	particulate matter measuring 2.5 microns or less in diameter
PM_{10}	particulate matter measuring 10 microns or less in diameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPV	peak particle velocity
PRC	Public Resources Code
project site	KJS Investment Properties and Sorrento Inc. Ranch
property	See *project site.*
proposed project	KJS Investment Properties LLC and Sorrento Inc. Vineyard Conversion Erosion Control Plan Application Project (#P17-00432-ECPA)
R4W	Range 4 West
Regional Water Board	Regional Water Quality Control Board
ROG	reactive organic gases
SB	Senate Bill
Scoping Plan	Climate Change Scoping Plan
SFBAAB	San Francisco Bay Area Air Basin
SR	State Route
State Water Board	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
T8N	Township 8 North
Tc	time-of-concentration
TAC	toxic air contaminant
Technical Guidelines	*Technical Advisory on Evaluating Transportation Impacts in CEQA*
TMDL	total maximum daily load
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USLE	Universal Soil Loss Equation
VdB	vibration decibel(s)
VMT	vehicle miles traveled

EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Napa County (County) Planning, Building and Environmental Services Department prepared this Environmental Impact Report (EIR) to evaluate impacts of implementing the Hyperion Vineyard Holdings LLC (a.k.a. KJS Investment Properties LLC and Sorrento Inc.) Vineyard Conversion Erosion Control Plan Application (ECPA) Project (#P17-00432-ECPA) (proposed project). The Napa County Planning, Building and Environmental Services Department is the California Environmental Quality Act (CEQA) lead agency.

This Draft EIR has been prepared in conformance with CEQA (California Public Resources Code Section 21000 et seq.), the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.), and *Napa County's Local Procedures for Implementing CEQA* (Napa County 2015).

Consistent with Section 15121(a) of the State CEQA Guidelines, this Draft EIR is a public information document that objectively assesses and discloses the potential environmental impacts of the proposed project. This Draft EIR identifies feasible mitigation measures and alternatives that would avoid those impacts or reduce them to a less-than-significant level.

ES.2 PROJECT OBJECTIVES

The overall objectives of the proposed project are as follows:

- Develop up to 111.5 net planted acres of vineyards within approximately a 156.8-acre conversion area on those portions of the project site that are suitable for the cultivation of high-quality wine grapes, while ensuring the economic viability of the project.
- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- Maximize the beneficial use of surface water that has already been authorized by the State Water Resources Control Board, Division of Water Rights (State Water Board) via Water Right License 9125 (Application 13943) and Permit 18459 (Application 26165).
- Minimize impacts on riparian and aquatic resources and other environmental impacts by modifying Permit 18459 to allow construction of the storage reservoir at an offstream location rather than onstream.

- Develop new vineyards configured in such a way to maximize the use of existing infrastructure such as roads, pipelines, pump stations, and buildings that serve the existing vineyard and thereby minimize the need for additional infrastructure.
- Maximize the use of current vineyard employees' skills and create efficiencies.
- Provide opportunities for additional vineyard employment and economic development in Napa County.
- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices, participation in the Napa Green Program, and animal grazing to control weeds within the proposed vineyard blocks and to minimize fire hazards outside of the vineyard.
- Use water from the existing and proposed reservoirs efficiently.
- Preserve approximately 70 percent of the property as grasslands, oak woodlands, and other open space that has the greatest value as wildlife habitat.
- Minimize soil erosion from vineyard development and operation through vineyard design that avoids erosion-prone areas and controls erosion within the vineyard rather than capturing soil after it has been displaced.
- Design the vineyard to minimize the reduction of wildlife movement to the maximum extent feasible, in accordance with General Plan Policy CON-18(e).
- Protect water quality by protecting wetlands, seeps, springs, and streams to the maximum extent feasible through avoidance, incorporation of appropriate setbacks, and implementation of various erosion control features.
- Minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible, while providing for avoidance, preservation, and replacement in accordance with accepted protocols, including but not limited to the Napa County General Plan.

ES.3 SUMMARY OF PROPOSED PROJECT

The project proposes vegetation removal and earthmoving activities on slopes greater than 5 percent in connection with the development of up to 111.5 net planted acres of vineyard within 156.8 gross acres on a 950.9-acre[1] project site.

Proposed activities associated with vineyard development include removing vegetation within the proposed clearing limits, ripping, rock removal, soil cultivation, seeding a cover crop, mulching, trenching for irrigation pipelines, installing a trellis system and wildlife exclusion fence (i.e., deer fence), laying out vine rows, and installing temporary and permanent erosion control measures.

Vineyard development would take place between April 1 and September 15 over three years or phases. The project area would be winterized by September 15. Temporary erosion control

[1] Acreages are based on GIS data; Napa County Assessor's Office lists the acreage for Assessor's Parcel Number 025-270-022 as 729.4 acres and Assessor's Parcel Number 025-270-025 as 243.4 acres.

measures could include installing water bars, straw wattles, straw bale dikes, and other practices as needed. Permanent erosion control measures include:

- Seeding of a permanent cover crop with vegetative cover maintained according to the erosion control plan.
- Drainage pipelines installed to collect surface runoff at low points throughout the development area and transport it to protected outlets.
- Cutoff collars installed on all solid pipelines with slopes greater than 5 percent.
- Standard drop inlets, non-standard drop inlets, and infield drop inlets installed at designated locations within the development area.
- Standard and non-standard diversion ditches[2] to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet or other stormwater conveyance infrastructure.
- Infield ditches and insloped avenues constructed in designated blocks to reduce the slope run length and intercept surface runoff.
- Grading in designated locations to form outsloped roads to provide a safe and stable road for travel by vehicles and equipment.
- Culverts, rolling dips, and two rocked water crossings[3] installed in designated locations in Block 33.
- Pipe level spreaders installed in designated locations at the outfall of conveyance infrastructure to return concentrated flows within the pipe to sheet flow.
- Rock level spreaders installed in designated locations at the outfall of conveyance infrastructure to uniformly spread water onto the ground surface.
- Rock aprons installed at the outlets of pipes and ditches to help disperse concentrated flow and to minimize erosion downstream of the outlet.
- Rock energy dissipaters installed to dissipate and reduce flow velocities at the outlet of diversion ditches.
- Junction boxes installed on the west side of proposed vineyard Block 8 and the west side of proposed Block 33E to transfer water from proposed drainage pipelines to proposed pipe level spreaders, and a junction box installed on the east side of proposed Block 8 to transfer water from a proposed drainage pipeline to an existing culvert.
- Outsloped benches constructed in designated locations to allow safe access for equipment.
- Repair of existing headcutting in proposed vineyard Blocks 23A, 23B, 24A, 24E, and 33A.
- Riprap berms constructed on the downhill sides of proposed drainage line outlets into existing swales in proposed Blocks 24A and 24E, and repair of erosion in the swale in proposed Block 24E.

2 Non-standard diversion ditches have a larger cross section than standard diversions and therefore have an increased water conveyance capacity (see Appendix A).

3 Rocked water crossings in this ECPA are to be placed within existing ditches that are proposed to be repaired and maintained as part of the project; they are not new crossings that would cross a stream pursuant to NCC Section 18.108.025.

- Riprap berm constructed on the downhill side of a proposed drainage line outlet into an existing natural basin in proposed Block 24E.
- Spillway berm and overflow structure constructed in an existing pond near proposed Block 29.

The proposed project also includes Petitions for Change on Water Right License 9125 (Application 13943) and Permit 18459 (Application 26165), which are pending review and processing with the State Water Board. The petitions request an expansion of the place of use to 280 acres (which includes the existing vineyards on the project site as well as the proposed vineyards). The existing offstream PITA Pond, located just south of Matheson Reservoir, would be added as a point of rediversion to License 9125. Approval by the State Water Board of the petition on License 9125 would allow the Licensee/Petitioner[4] to release water diverted and stored at Matheson Reservoir to the PITA Pond, where it could store the water principally for frost protection operations. Approval of the petition on Permit 18459 would allow for development of a 48-acre-foot capacity offstream reservoir instead of construction of the permitted 48-acre-foot capacity onstream reservoir authorized by Permit 18459 and the construction of a diversion structure at Point of Diversion 1 in Elder Creek. The petition also identifies Matheson Dam as a point of diversion to offstream storage at the proposed offstream reservoir.

Water diverted under Permit 18459 would be limited to the quantity that could be beneficially used and would not exceed 48 acre-feet per year by storage collected from December 15 of each year to March 31 of the succeeding year. The Licensee/Petitioner has agreed to a shortened diversion season of December 15 to March 31 to lessen the potential for adverse effects to fish and aquatic resources. Diversions under Permit 18459 would not occur unless the February median bypass flows of 0.6 cubic feet per second (cfs) at Point of Diversion 1 on Elder Creek and 0.9 cfs at Point of Diversion 2 at Matheson Reservoir were met, and the maximum rate of diversion to offstream storage would not exceed 0.29 cfs at Point of Diversion 1 or 0.41 cfs at Point of Diversion 2 (Wagner & Bonsignore 2020; **Appendix J**, discussed in **Section 3.7, *Hydrology and Water Quality***). These proposed State Water Board permit provisions are included in the proposed project that is disclosed and assessed in this EIR.

The Petition for the Extension of Time filed in 2005 and amended on June 20, 2018, and pending with the State Water Board on Permit 18459, requests that the full beneficial use date for the permit be extended to the year 2025.

The project also includes the ongoing maintenance of erosion control measures and operation of approximately 4.3 acres of existing vineyard that were converted from grassland/hay pasture in 2015 without an approved agricultural ECPA. This area has been historically and was actively cultivated for hay and straw production before being converted to vineyard. These vineyard areas are located within two larger vineyard blocks totaling 17.4 acres. The slope on these lands within the 17.4 acres of existing vineyard is 5 percent or less (except for the 4.3 acres

[4] KJS Investment Properties and Sorrento Inc. is the "Applicant" of the Napa County ECPA, and they are a "Licensee/Petitioner" for the water rights petitions pending with the State Water Board.

located on slopes steeper than 5 percent). Therefore, the portions of this existing vineyard area occurring on slopes less than or equal to 5 percent are not subject to an ECPA pursuant to Napa County Code Section 18.108.070(B). As such, the project includes the vineyard development area that requires coverage by an ECPA under Section 18.108.070(B) will be included in this project.

ES.4 ALTERNATIVES TO THE PROPOSED PROJECT

This Draft EIR evaluates the following alternatives:

- **No Project Alternative.** Under this alternative, no new vineyard would be planted, operated, or maintained on the project site and no changes to the existing network of undeveloped areas, dirt roads, and hand-cut trails would occur. The approximately 104 acres of existing vineyard would continue to be operated on the project site and surface water would continue to be diverted and used pursuant to existing water rights.
- **Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative.** The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative includes the areas from the mitigated proposed project, which reduces the project acreage by 21.73 gross acres (and avoids development of vineyard Blocks 5D, 16, 24G, 25, and 27) through avoidance of biological resources and mapped landslides through implementation of Mitigation Measures 3.3-1a, 3.3-1j, 3.3-2a, and 3.5-2, as described in **Section 3.3, *Biological Resources*** and **Section 3.5*, Geology and Soils***. The alternative also includes setbacks from all streams based on slope (pursuant to current Napa County Code Section 18.108.025) and 50-foot setbacks from wetlands pursuant to current Napa County Code Section 18.108.026. The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would develop approximately 94.89 net acres of vineyard within an approximately 134.16-acre development area.
- **Reduced Vegetation Removal/Grading and Road Use Alternative.** The Reduced Vegetation Removal/Grading and Road Use Alternative also includes the areas from the mitigated proposed project, which reduces the project acreage by 21.73 gross acres (and avoids development of vineyard Blocks 5D, 16, 24G, 25, and 27). The alternative also reduces vineyard blocks and block configurations as compared to the proposed project to limit vegetation removal/grading and road use, development, maintenance, and upgrades for areas that contain minimal vineyard development. The Reduced Vegetation Removal/Grading and Road Use Alternative would develop approximately 80.15 net acres of vineyard within an approximately 111.82-acre development area.

As discussed in **Chapter 5, *Alternatives***, and shown in **Tables 5-1, 5-2, 5-3, and 5-4**, both the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative and the Reduced Vegetation Removal/Grading and Road Use Alternative would reduce the severity of some environmental impacts relative to the proposed project. Neither alternative would fully achieve the project objectives. However, the Reduced Vegetation Removal/Grading

and Road Use Alternative would increase avoidance areas from purple needlegrass grassland and blue wildrye grassland, mapped oak trees greater than 30 inches diameter at breast height, and areas generally containing high biological diversity; increase the distance from mapped the wetland swale and possible waters of the United States; and increase potential wildlife habitat areas compared to the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative and the proposed project. Therefore, the Reduced Vegetation Removal/Grading and Road Use Alternative is identified as the environmentally superior alternative.

ES.5 ISSUES TO BE RESOLVED AND AREAS OF CONTROVERSY

ES.5.1 NOTICE OF PREPARATION AND SCOPING

Napa County issued a Notice of Preparation (NOP) and an Initial Study (IS) for this EIR on September 18, 2018 (State Clearinghouse #2018092042), which was circulated for 30 days ending on October 18, 2018. The NOP/IS presented a project background, project objectives, description of the proposed project, and summary of the potential environmental impacts to be evaluated in the Draft EIR. The NOP/IS is included in **Appendix B** of this Draft EIR.

Comment letters received in response to the NOP were considered during preparation of this DEIR and are included in Appendix B.

ES.5.2 AREAS OF CONTROVERSY AND CONCERN

Three written comment letters were submitted in response to the NOP/IS (see Appendix B). Letters were received from the California Department of Transportation, the State of California's Native American Heritage Commission, and the City of Napa Utilities Department.

Table ES-1 summaries the comments received on the NOP/IS.

TABLE ES-1
WRITTEN COMMENTS RECEIVED IN RESPONSE TO THE NOTICE OF PREPARATION/INITIAL STUDY

Agency	Name	Title	Summary of Comments
California Department of Transportation	Patricia Maurice	District Branch Chief, Local Development–Intergovernmental Review	Clarify impacts on SR 128 during construction and operation. Provide project-related trip generation, distribution, and assignment estimates. A cultural resource technical study may be required if an encroachment permit is needed for work within a Caltrans right-of-way. If there is an inadvertent archaeological or burial discovery within a Caltrans right-of-way, all construction within 60 feet of the find shall cease and the Caltrans District 4 Office of Cultural Studies shall be contacted immediately. Identify and mitigate any impacts that increased project traffic may have on bicyclists using the SR 128 corridor. Project work that requires movement of oversized or excessive load vehicles on state roadways requires a Caltrans transportation permit.

TABLE ES-1
WRITTEN COMMENTS RECEIVED IN RESPONSE TO THE NOTICE OF PREPARATION/INITIAL STUDY

Agency	Name	Title	Summary of Comments
Native American Heritage Commission	Sharaya Souza	Staff Services Analyst	Information is provided regarding requirements for consultation with California Native American tribes and NAHC's recommendations for conducting cultural resources assessments.
City of Napa Utilities Department	M. J. Hether, P.E.	Senior Civil Engineer	All erosion control measures should be maintained to prevent exceedance of baseline natural runoff levels of sediment and nutrients. The City will continue to monitor the reservoir's water quality and consider the 10 percent cumulative impacts amidst continual data collection, analysis, and reporting.

NOTES:

Caltrans = California Department of Transportation; City = City of Napa; NAHC = Native American Heritage Commission; SR = State Route

SOURCE: Data compiled by Environmental Science Associates in 2020

ES.5.3 PUBLIC REVIEW OF THE DRAFT EIR

This Draft EIR will be published and made available to local, State, and federal agencies and to interested organizations and individuals who may want to review and comment on the adequacy of the analysis included herein. Public notice of this Draft EIR will be sent directly to all responsible and trustee agencies, and agencies and other stakeholders that commented on the NOP/IS.

The Draft EIR is available for review online on the following websites:

Napa County:
https://www.pbes.cloud/index.php/s/aTDiM7q7QFwKDK2

California State Clearinghouse CEQAnet Web Portal (search by project name or State Clearinghouse #2018092042):
https://ceqanet.opr.ca.gov/

Copies of the Draft EIR are available during normal business hours at:

Napa County
Department of Planning, Building and Environmental Services
1195 Third Street, 2nd Floor
Napa, CA 94559

The Draft EIR is also available for review at the following location:

Napa County Main Library
580 Coombs Street
Napa, CA 94559

Monday through Saturday: 10 a.m. to 5:30 p.m.
Sunday: 1 p.m. to 4:30 p.m.

Please visit Napa County's Library website for current information on walk-in hours and other Library service COVID-19 updates:

https://www.countyofnapa.org/2782/Library-COVID-19-Updates

The public review period for the Draft EIR will be April 26, 2021, through June 9, 2021. During the public comment period, written comments should be mailed or emailed to:

Donald Barrella
Napa County Department of Planning, Building and Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559

Email: Donald.Barrella@countyofnapa.org

If comments are provided via email, please include the project title in the subject line, attach comments in Microsoft Word format, and include the commenter's U.S. Postal Service mailing address.

ES.6 SUMMARY OF ENVIRONMENTAL IMPACTS

Table ES-2 presents a summary of the impacts and mitigation measures identified for the proposed project. The complete impact statements and mitigation measures are presented in **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures***. The level of significance for each impact was determined using standards of significance presented in each technical section of **Chapter 3**. *Significant impacts* are those adverse environmental impacts that meet or exceed the standards of significance; *less-than-significant impacts* would not exceed the standards of significance.

For each impact identified, Table ES-2 presents: (1) the environmental impact; (2) the level of significance before mitigation measures for the proposed project and the alternatives; (3) recommended mitigation measures for the proposed project and the alternatives; and (4) the level of significance after mitigation for the proposed project and the alternatives.

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.2 Air Quality and Greenhouse Gas Emissions									
3.2-1: Construction and operation of the proposed project could conflict with or obstruct implementation of BAAQMD's 2017 Clean Air Plan.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.2-1a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** All construction equipment used in project construction shall meet Tier 3 Final standards to reduce emissions of NO_X. Before initiation of vegetation removal, grading and earth-disturbing activities associated with any project phase, the owner/permittee shall submit to Napa County a construction equipment list that includes equipment Tier level to demonstrate and document that all construction equipment meets or exceed Tier 3 standards. **Mitigation Measure 3.2-1b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Construction contractors shall be required to implement the following measures consistent with the BAAQMD-recommended basic control measures during construction: 1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. 2. All haul trucks transporting soil, sand, or other loose material offsite shall be covered. 3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. 4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour. 5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. 6. Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, 13 CCR Section 2485). Clear signage shall be provided for construction workers at all access points. 7. All construction 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 before operation. 8. A publicly visible sign shall be posted with the telephone number and person to contact at Napa County regarding dust complaints. This person shall respond and take corrective action within 48 hours. To ensure compliance with applicable regulations, BAAQMD's phone number shall also be visible.	LS	NI	LS-	LS-
3.2-2: Construction and operation of the proposed project could result in a cumulatively considerable net increase of a criteria air pollutant for which the Bay Area is nonattainment under an applicable federal or state air quality standard.	LSM	NI	LSM-	LSM-	Implement Mitigation Measures 3.2-1a and 3.2-1b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative)	LS	NI	LS-	LS-
3.2-3: Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.2-4: Construction and operation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.2-5: Construction and operation of the proposed project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.3 Biological Resources									
3.3-1: Construction and operation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.3-1a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to reduce the footprint of the proposed vineyard blocks surrounding Elder Creek and the unnamed pond by increasing the upland nesting and overland movement buffer from 50 feet to 100 feet in portions of proposed vineyard Blocks 6, 17, 23A, 23B, 23E, 23G, 24B, 24C, 24E, 24G, 29B, 33A, and 33E. The blue dotted lines in Figure 3.3-5 show where the buffer shall be a minimum of 100 feet and Figure 3.3-6 shows the mitigated proposed project. The location of wildlife exclusion fencing in these areas shall also be revised in the ECPA according this mitigation measure and Mitigation Measure 3.3-4 before approval, and shall generally be limited to the outside edge of the vineyard avenues. No barbed wire shall be permitted. **Mitigation Measure 3.3-1b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** A qualified biologist shall provide a worker education and awareness program to all on-site personnel before the start of materials staging or ground-disturbing activities within 492 feet of Elder Creek or the unnamed pond. (The term "qualified" refers to a biologist or biological monitor who is knowledgeable and experienced in the biology and natural history of local herpetology, mammalian, and avian resources with potential to occur at the project site.) The qualified biologist shall explain to construction workers how best to avoid impacts on western pond turtle and California red-legged frog. This education program shall include topics related to species identification, life history descriptions, and habitat requirements during various life stages. The program should include handouts, illustrations, photographs, and project maps showing areas where minimization and avoidance measures are in place, and where these species would most likely occur if present. Crew members shall sign a sign-in sheet documenting that they received the training. Documentation that the worker education and awareness program has occurred, including any education program handouts, illustrations, photographs, or project maps shall be submitted to Napa County before Project vegetation removal or earth-disturbing activities begin. **Mitigation Measure 3.3-1c (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** i. A qualified biologist shall conduct a preconstruction survey within 24 hours before the removal of vegetation and initial Project grading within 492 feet of suitable aquatic habitat for western pond turtle and California red-legged frog. During the preconstruction survey, the qualified biologist shall relocate any western pond turtles found within the proposed development area to suitable habitat away from the construction zone, but outside the development area. Should any active western pond turtle nests be observed within the development area, a minimum 50-foot avoidance buffer shall be established. No work shall occur within the buffer. ii. Should any California red-legged frogs be present within the development area during the preconstruction survey, no work shall begin. The qualified biologist shall contact Napa County, USFWS, and CDFW within 24 hours of the observation. Work shall not begin until USFWS has provided authorization and the frog has left on its own accord. iii. A copy of the preconstruction survey results, that includes any find and relocation efforts shall be provided to Napa County and CDFW before Project vegetation removal or earth-disturbing activities begin.	LS	NI	LS-	LS-

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
					Mitigation Measure 3.3-1d (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative): i. A qualified biological monitor shall directly supervise all vegetation removal, initial grading activities, and pipe installation occurring within 492 feet of suitable aquatic habitat for western pond turtle and California red-legged frog. Before Project vegetation removal or earth-disturbing activities begin, the owner/permittee shall provide documentation to Napa County that a qualified biologist (or biological monitor) is under contract to conduct the supervision, monitoring and reporting specified by this measure. ii. Should any western pond turtles be detected near the development area during construction, the biological monitor shall relocate any western pond turtles found within the development area to suitable habitat outside the development area, but within the project site. iii. Should any California red-legged frog be present within the development area during construction, work shall halt. The biological monitor shall contact Napa County, USFWS, and CDFW within 24 hours of the observation. Work shall not resume until the County and USFWS have provided authorization and the frog has left on its own accord. Within 14 days after the final monitoring event, the qualified biological monitor shall submit a letter report to the County summarizing the results of the biological monitoring. **Mitigation Measure 3.3-1e (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Before tree removal and other earth-disturbing activities begin during the Swainson's hawk nesting season (March 1 through September 15, coinciding with the grading season of April 1 through September 1 [Napa County Code Section 18.108.070.L]), a qualified biologist shall conduct at least one protocol-level preconstruction survey. (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The protocol-level preconstruction survey shall be conducted during the recommended survey periods for the nesting season that coincides with the start of construction activities by phase, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Appendix E; Swainson's Hawk Technical Advisory Committee 2000). For example, if construction will begin on or around April 1, the preconstruction survey shall occur during Survey Period I, which extends from January to March 20. If construction will begin on or around April 15, the preconstruction survey shall occur during Survey Period II, which extends from March 20 to April 5. The qualified biologist shall conduct surveys for nesting Swainson's hawk within 0.25 mile of all project development areas applicable to the proposed phased construction, where legally permitted. If access to adjacent properties is denied, the biologist shall use binoculars to visually determine whether Swainson's hawk nests are present within 0.25 mile of the project development areas slated for that year/phase. If no active Swainson's hawk nests are identified on or within 0.25 mile of the project development areas, the qualified biologist shall submit a report summarizing the survey results to Napa County within five days after the final survey. In this case, no further avoidance and minimization measures for nesting habitat are required for that phase. The same survey protocol shall be conducted before implementation of each Project phase. **Mitigation Measure 3.3-1f (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** If any active Swainson's hawk nests are found within 0.25 mile of the development areas proposed during that phase of construction, the qualified biologist shall contact Napa County and CDFW via phone call or email within one day after the preconstruction survey to report the findings. For this avoidance and minimization requirement, "construction activities" are defined to include operation of heavy equipment for construction (use of bulldozers or excavators, haul trucks, loaders, and tractors) or other project-related activities that could cause nest or fledging abandonment within 0.25 mile of a nest site between March 1 and September 15. Should active nest(s) be present within 0.25 mile of development areas, the County and CDFW shall be consulted to develop take avoidance measures including but not limited to the following: • Establishing appropriate noise buffers. • Installing high-visibility construction fencing around the buffer zone.				

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
					• Implementing a monitoring and reporting program before any construction activities occur within 0.25 mile of the nest. The monitoring and reporting program shall include, at minimum, the presence of a full-time qualified biological monitor to monitor the nest during all construction activities. After take avoidance measures are implemented and construction activities begin, if the qualified biological monitor determines that the construction activities are disturbing the nest, construction activities shall cease until the County and CDFW are consulted. The construction activities shall not resume until the County, in cooperation with CDFW, has determined that construction activities would not result in abandonment of the nest site. Once the qualified biologist confirms that the nest is no longer active or that the nest would not be disturbed during construction activities within the buffer zone, the biologist shall submit a report summarizing the monitoring results to the County and CDFW within 30 days after the final monitoring event. In this case, no further avoidance and minimization measures for nesting habitat are required for that phase of construction. **Mitigation Measure 3.3-1g (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** A qualified biologist shall conduct a take-avoidance survey for burrowing owl between 14 and 30 days before the start of construction for each Project phase, in accordance with Appendix D of the 2012 *Staff Report on Burrowing Owl Mitigation* (Appendix E; CDFG 2012). (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The survey area shall include a 500-foot radius around the annual grasslands within applicable development areas (i.e., annual grassland habitat). If the survey is negative, the biologist shall provide a report to Napa County for its records documenting the results of the survey, and no additional measures are required for that phase as long as construction begins within 30 days of the take avoidance survey or does not halt for more than 30 days once construction begins. If either of these conditions occur, an additional take-avoidance survey shall be conducted between 14 and 30 days before the start or resumption of construction activities. If active burrowing owl burrows or nests are observed in applicable development areas or within a 500-foot radius around the development areas containing grassland habitats, the qualified biologist shall prepare an impact assessment and take avoidance measures, in accordance with the 2012 *Staff Report on Burrowing Owl Mitigation*. The impact assessment and take avoidance measures shall be submitted to the County for review and approval in cooperation with CDFW. The take avoidance measures shall include but not be limited to establishing appropriate disturbance/noise buffers, installing high-visibility construction fencing around the buffer zones, and implementing a monitoring and reporting program before any construction activities occur within 500 feet of the nest/borrow. If the qualified biologist determines that certain work would not disturb an active burrow/nest, a reduced avoidance buffer may be established through coordination with the County and CDFW. If the qualified biologist determines that project activities may result in impacts on nesting, occupied, and satellite burrows and/or burrowing owl habitat, the owner/permittee shall delay the start of construction until the qualified biologist determines that the burrowing owls have fledged and/or the burrow is no longer occupied. **Mitigation Measure 3.3-1h (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Before tree removal and other earth-disturbing activities begin during the nesting season (February 1 through August 31, coinciding with the grading season of April 1 through September 1 [Napa County Code Section 18.108.070.L]) for each Project construction phase, a qualified biologist shall conduct a preconstruction survey within seven days before the tree removal and other earth-disturbing activities are to occur. (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The nesting-bird preconstruction survey shall cover the development areas plus an approximately 500-foot radius around the development areas. If the preconstruction survey shows no evidence of active nests, a copy of the survey results shall be provided to Napa County and CDFW before the start of work, and no additional measures are required for that phase. If construction does not begin within seven days of the preconstruction survey or halts for more than seven days, an additional preconstruction survey shall be conducted. If any active nests are located within development areas or within 500 feet of the development areas, an appropriate buffer zone shall be established around the nest(s), as determined by the qualified biologist in consultation and cooperation with the County and CDFW; the minimum buffer zones pursuant to this				

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
					measure shall be 100 feet for migratory bird nests and 250 feet for raptor nests. Before the start of vegetation removal and earth-disturbing activities, the biologist shall mark the buffer zone(s) with temporary construction fencing. The fencing shall be inspected and approved by the County before any earthmoving and/or development activities begin and shall be maintained until the end of the breeding season or the young have fledged. If active migratory-bird nests are found between 100 and 500 feet of construction activities (i.e., development areas), or if raptor nests are found between 250 and 500 feet of construction activities (i.e., development areas), a qualified biologist shall monitor the nests weekly during construction to evaluate potential nesting disturbance by construction activities. Alternatively, work may be phased to avoid these areas and continue in other vineyard blocks (development areas) until the nest is no longer occupied. The qualified biologist shall provide monitoring reports weekly to Napa County to document monitoring activities and evaluate effects on nesting birds as prescribed by this measure. Alternative methods of flushing out nesting birds before preconstruction surveys shall be prohibited, whether those methods are physical (removing or disturbing nests by physically disturbing trees with construction equipment), audible (using sirens or bird cannons), or chemical (spraying nesting birds or their habitats). **Mitigation Measure 3.3-1i (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to avoid all potential bat habitat/roost trees in proposed vineyard Blocks 5D, 5F, 5H, 5J, 6, 8, 17, 23C, 23F, 23G, 24G, 25, 27, and 29B. These trees are identified in Figure 3.3-5. A minimum 50-foot avoidance buffer shall be established around the driplines of the habitat/roost trees, under the direct supervision of a qualified biologist, to protect the trees' canopies and root protection zones with high-visibility fencing. (The term "qualified" refers to a biologist who is knowledgeable and experienced in the botany, biology, and natural history of local mammalian and avian resources with potential to occur at the project site.) The fencing shall be inspected and approved by Napa County before the start any earthmoving and/or development activities. Exclusion buffers shall remain in effect until vineyard development and planting activities are complete. **Mitigation Measure 3.3-1j (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to provide for the installation of one bat roost box for every 5 acres of oak woodland habitat removed (a total of six bat roost boxes). The type of bat roost box shall be identified and box locations shall be mapped on the ECPA site plan near the habitat trees proposed for removal, and under the direction of a qualified biologist in consultation with Napa County. The owner/permittee/biologist shall provide adequate documentation to the County, including photographs showing that the bat roost boxes have been installed properly, before the start of any vegetation removal and earth-disturbing activities associated with the project. **Mitigation Measure 3.3-1k (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Within 14 days before the start of tree removal associated with Phases 1 and 2 of project construction, a qualified biologist shall conduct a preconstruction survey for special-status bats. If no special-status bats are observed roosting, the biologist shall provide a letter report to Napa County for its records, documenting the results of the survey, and no additional measures are required. If tree removal does not begin within 14 days of the preconstruction survey, or if removal halts for more than 14 days, a new survey shall be conducted. If bats are found in any trees proposed for removal, a minimum 10-foot avoidance buffer shall be established around the roost until it is no longer occupied. High-visibility construction fencing shall be installed around the buffer and shall remain in place until the tree is no longer occupied by bats. The fencing shall be inspected and approved by the County before the start of any earthmoving and/or development activities. The trees shall not be removed until a qualified biologist has determined that the roost is no longer occupied by the bats and documentation has been provided to the County that the roost(s) are no longer occupied.				

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.3-2: Construction and operation of the proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.3-2a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** To avoid impacts on beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland, Erosion Control Plan #P17-00432-ECPA shall be revised before approval to exclude these sensitive natural grassland communities/habitats and plant populations and provide them with a minimum 50-foot buffer from development areas. Figure 3.3-5 shows the areas that would be excluded from development as a result of implementation of this mitigation measure. Before vegetation clearing, the 50-foot buffer shall be established around these grasslands under the direct supervision of a biologist, using high-visibility construction fencing. The fencing shall be inspected and approved by Napa County before the start of any earthmoving and/or development activities. The protective constructive fencing shall be replaced with a permanent means of demarcation and protection around the grassland habitats (such as permanent fence or rock barrier) so that grassland avoidance areas are not encroached upon or disturbed as part of ongoing vineyard operations. **Mitigation Measure 3.3-2b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** A qualified biologist shall provide a worker education and awareness program to all on-site personnel before the start of materials staging or ground-disturbing activities. The biologist shall explain to construction workers how to avoid impacts on beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland and shall include topics on species identification and descriptions. The education program should include handouts, illustrations, photographs, and project maps that show showing areas where avoidance measures are in place. The crew members shall sign a sign-in sheet documenting that they received the training. Proof that the education and awareness program has been conducted shall be submitted to Napa County before the start of vegetation removal and earth-disturbing activities associated with Phases 1 and 2 of project construction.	LS	NI	LS-	LS-
3.3-3: Construction and operation of the proposed project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.3-3a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** All necessary federal, state and local permits shall be obtained and provided to the County before the construction of the water intake device on Elder Creek and the spillway berm and overflow structure at the unnamed pond. The owner/permittee shall comply with all permit minimization and mitigation measures. Impacts on waters of the United States would require a minimum mitigation ratio of 1:1 (mitigated:affected) to comply with USACE's no-net-loss policy. In addition, the owner/permittee shall comply with the state's NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity, issued by the Regional Water Quality Control Board. **Mitigation Measure 3.3-3b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** For project activities that are anticipated to occur within 50 feet of potential jurisdictional features and riparian areas that are proposed for avoidance, high-visibility construction fencing and silt fencing shall be erected at the edge of the construction/maintenance footprint (i.e., development area) before the commencement of construction. The fencing shall be inspected and approved by Napa County before the start of any earthmoving and/or construction activities in these areas. A qualified biological monitor shall be present during fence installation and during any initial grading or vegetation-clearing activities within 50 feet of potential jurisdictional features and riparian habitat, which are proposed for avoidance. The biological monitor shall submit letter reports to the County summarizing the results of fencing installation and construction monitoring to document these provisions. **Mitigation Measure 3.3-3c (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** All areas with temporary impacts on potential waters of the United States shall be restored immediately after construction. The biological monitor shall submit letter reports to the County summarizing the results of restoration activities to document this provision and compliance with Mitigation Measures 3.3-3a and 3.3-3b.	LS	NI	LS-	LS-

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.3-4: Construction and operation of the proposed project could interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or could impede the use of native wildlife nursery sites.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.3-4 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to fence clusters of vineyard blocks as shown in Figure 3.3-6 and as described below. The revised fencing plan (i.e., Figure 4 of #P17-00432-ECPA) shall be subject to review and approval by Napa County before its incorporation into #P17-00432-ECPA, and shall include and show the fencing design features describe in 3.3-4iii below. i. The following vineyard blocks shall be fenced individually (not together): Vineyard Blocks 4 and 5, 19 and 20A, 21 and 22, 23C and 23D, 23G and 23F, 23E and 33A, and 29B, 30, and 31. The location of new wildlife exclusion fencing shall generally be limited to the outside edge of vineyard avenues and development areas. ii. Fencing around vineyard Blocks 9, 19, 20, 29, 30, 31, and 33 shall be revised to place the fencing along the outside the edge of vineyard avenues. iii. New fencing shall use a design that has 6-inch-square gaps at the base (instead of the typical 3-inch by 6-inch rectangular openings) to allow small mammals to move through the fence. Exit gates shall be installed at the corners of wildlife exclusion fencing to allow trapped wildlife to escape. Smooth wire instead of barbed wire shall be used on top of the fencing to keep wildlife from becoming entangled.	LS	NI	LS-	LS-
3.3-5: Construction and operation of the proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.3-5a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** The owner/permittee shall preserve a minimum of 60 acres of oak woodland (29.88 x 2, for a 2:1 preservation ratio) in similar habitat in the west-central or northwest portion of the project site. This acreage shall be preserved in an 'enforceable restriction', such as deed restriction, open space/conservation easement with an organization such as the Land Trust of Napa County as the grantee, or other means of permanent protection acceptable to Napa County. Land placed in protection shall be restricted from development and other uses that would potentially degrade the quality of the habitat (e.g., conversion to other land uses such as agriculture or urban development, and excessive off-road-vehicle use that increases erosion), and should otherwise be restricted by the existing goals and policies of Napa County. The areas to be covered by the enforceable restriction shall be determined by a qualified botanist or biologist, and the determination shall be submitted to Napa County for review and approval. The owner/permittee shall record the enforceable restriction within 60 days of the County's approval of #P17-00432-ECPA. In no case shall the erosion control plan be initiated until said enforceable restriction is recorded. **Mitigation Measure 3.3-5b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** The owner/permittee shall locate and construct the point of diversion and associated infrastructure in an area along Elder Creek that does not contain valley oak trees. The location shall avoid removal and damage to valley oaks by providing a minimum protective buffer that extends to the tree's dripline. "Removal and damage" also means trimming of the tree and/or work occurring within the tree's buffer area. The tree protective buffer fencing shall be inspected and approved by Napa County before construction of the point of diversion begins.	LS	NI	LS-	LS-

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
					If avoiding valley oak is infeasible during construction of the point of diversion, the owner/permittee shall provide justification of the infeasibility, and a removal and replacement plan prepared by a qualified biologist or restoration ecologist, for review and approval by Napa County before construction of the point of diversion commences. If a valley oak or other oaks are removed (which includes substantial trimming of the tree and/or work within the buffer area), they shall be replaced on-site with 15-gallon oak trees at the following ratios: 4:1 removal between 5 and 10 inches dbh, 5:1 removal between 10 and 15 inches dbh, and 10:1 for removal greater than 15 inches dbh. Replacement trees shall be installed and their good health shall be documented before completion and finalization of the erosion control plan. Replacement trees shall be monitored and maintained as necessary for a minimum of five years to ensure that they achieve a minimum 80 percent survival. If valley oak plantings are not achieving this success criterion during the monitoring years, the owner/permittee shall replace the plantings and monitor them for an additional five years until they achieve a minimum 80 percent survival rate. If avoidance of valley oaks is infeasible for construction of the point of diversion, the owner/permittee also shall preserve a minimum of 0.06 acre of riparian woodland in similar habitat in the west-central or northwest portion of the project site. This acreage shall be preserved in a deed restriction, an open space easement with an organization such as the Land Trust of Napa County as the grantee, or other means of permanent protection acceptable to the County as described in Mitigation Measure 3.3-5a.				
3.4 Cultural and Tribal Resources									
3.4-1: Construction and operation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.	LSM	NI	LSM	LSM	**Mitigation Measure 3.4-1a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Before the start of construction, an Archaeological Resources Worker Environmental Awareness Program shall be implemented. A qualified archaeologist, or designee, shall conduct training for project personnel regarding the appearance of archaeological resources and the procedures for notifying archaeological staff should materials be discovered. The owner/permittee shall ensure that project personnel are made available for and attend the training and retain documentation demonstrating attendance. **Mitigation Measure 3.4-1b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** If indigenous or historic-era archaeological resources are encountered during project development or operation, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. The County and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the County of their initial assessment. Indigenous archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse. If the County determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in State CEQA Guidelines Section 15064.5) or a tribal cultural resource (as defined in PRC Section 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones. If avoidance is not feasible, the County shall consult with appropriate Native American tribes (if the resource is indigenous) and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2, State CEQA Guidelines Section 15126.4, and County General Plan Policy CC-23. This shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.	LS	NI	LS	LS

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.4-2: Construction and operation of the proposed project could disturb human remains, including those interred outside of formal cemeteries**.**	LSM	NI	LSM	LSM	**Mitigation Measure 3.4-2 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** If human remains are uncovered during project construction, all work shall immediately halt within 100 feet and the Napa County Coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set forth in State CEQA Guidelines Section 15064.5(e)(1) and County General Plan Policy CC-23. If the County Coroner determines that the remains are Native American, the County shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5(c) and PRC Section 5097.98. Per PRC Section 5097.98, the County shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the County has discussed and conferred, as prescribed in PRC Section 5097.98, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.	LS	NI	LS	LS
3.4-3: Construction and operation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.	LSM	NI	LSM	LSM	**Mitigation Measure 3.4-3 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Before the start of vegetation removal and earth-moving activities under #P17-04320-ECPA, the owner/permittee shall provide documentation to the Napa County Planning Department that a Monitoring Agreement has been entered into with the Yocha Dehe Wintun Nation. Should a Monitoring Agreement not be entered into with the Yocha Dehe Wintun Nation, the owner/permittee shall provide, for review and approval by Napa County, a Cultural Monitoring Plan prepared by a professional archaeologist certified by the Registry of Professional Archeologists, that incorporates the Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation. The following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts on a tribal cultural resource or alternatives that would avoid significant impacts on the resource that will need to be included in the Monitoring Agreement or Cultural Monitoring Plan. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less than significant may be reached: • Implement monitoring requirements including but not limited to sensitivity training for site workers, identification of project activities and project site areas requiring an on-site monitor, procedures that are implemented in the event of a find, and monitoring documentation and reporting. • Avoid and preserve resources in place, including but not limited to planning construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria. • Treat the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including but not limited to the following: o Protect the cultural character and integrity of the resource. o Protect the traditional use of the resource. o Protect the confidentiality of the resource. o Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places. o Protect the resource.	LS	NI	LS	LS
3.5 Geology and Soils									
3.5-1: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.5-2: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.	LSM	NI	LSM	LSM	**Mitigation Measure 3.5-2 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative)**: Erosion Control Plan #P17-00432-ECPA shall be revised before approval to avoid the mapped landslide deposits in proposed vineyard Blocks 16, 24G, 25, and 27, and provide them with a 50-foot buffer.	LS	NI	LS	LS

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.5-3: Construction and operation of the proposed project could result in substantial soil erosion or the loss of topsoil.	LS	NI	LS+	LS+	None required.	LS	NI	LS+	LS+
3.5-4: Construction and operation of the proposed project could occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.	LSM	NI	LSM-	LSM-	Implement Mitigation Measure 3.5-2 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative)	LS	NI	LS-	LS-
3.5-5: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSM	NI	LSM-	LSM-	**Mitigation Measure 3.5-5a (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** A Paleontological Resources Worker Environmental Awareness Program shall be implemented before the start of construction. A qualified paleontologist shall train construction personnel regarding the appearance of fossils and procedures for notifying paleontological staff if fossils are discovered during construction work. The owner/permittee shall provide Napa County documentation demonstrating that construction personnel have attend the training before the commencement of vegetation removal and earth-disturbing activities associated with Phase 1 and 2 of project . **Mitigation Measure 3.5-5b (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative):** Initial earth-disturbing, grading and/or construction activities as defined by the County Conservation Regulations (NCC Chapter 18.108) in previously undisturbed sediments more than 2 feet deep in areas that are mapped as Great Valley Sequence (KJgvl or Jk), or that exceed 5 feet deep in areas mapped as Quaternary alluvial fan deposits (Qf), shall be monitored on a 'full time' basis during Phases 1 and 2 of ECPA development, in accordance with a Paleontological Monitoring Plan prepared and implemented by a qualified paleontologist. A qualified paleontologist is defined as an individual who has experience collecting and salvaging paleontological resources and meets the minimum standards of the SVP (2010). The Plan shall be submitted to Napa County for review and approval before commencement of any vegetation removal or earth-disturbing activities associated with the project. Within the Plan, the extent, and duration and timing of the monitoring shall be determined by the qualified paleontologist based on the location and extent of proposed ground disturbance within the Great Valley Sequence (KJgvl or Jk) or Quaternary alluvial fan (Qf) deposits. If the qualified paleontologist determines during project monitoring that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, the paleontologist may recommend (subject to review and approval by Napa County) that monitoring be reduced to periodic spot-checking or cease entirely. Monitoring shall not be required in any artificial fill or for activities that do not reach the above-stated depths and mapping areas. Should fossils be encountered, construction work shall halt within the Great Valley Sequence or Quaternary alluvial fan deposits until a qualified paleontologist can assess the significance of the find and develop, for Napa County review and approval, additional Plan measures to avoid impacts to paleontological resources. Significant fossils shall be salvaged, following the standards of the SVP (2010) and curated at an accredited repository, such as the University of California Museum of Paleontology or Los Angeles County Museum of Natural History.	LS	NI	LS-	LS-
3.6 Hazards and Hazardous Materials									
3.6-1: Construction and operation of the proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.7 Hydrology and Water Quality									
3.7-1: Construction and operation of the proposed project could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.7-2: Construction and operation of the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.7-3: Construction and operation of the proposed project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.7-4: Operation of the proposed project could change the water volume and pattern of seasonal flows in the affected watercourse, resulting in a significant cumulative reduction in the water supply downstream of the diversion or a significant reduction in water supply to downstream senior water right holders.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.8 Land Use and Planning									
3.8-1: Construction and operation of the proposed project could 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.	LSM	NI	LSM-	LSM-	Implement Mitigation Measures 3.2-1a, 3.2-1b, 3.3-1a through 3.3-5b, and 3.5-2 (proposed project, Reduced Intensity and Increased Stream and Wetland [Aquatic Resource] Setbacks Alternative, and Reduced Vegetation Removal/Grading and Road Use Alternative)	LS	NI	LS-	LS-
3.9 Noise									
3.9-1: Construction of the proposed project could generate a substantial temporary 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.	LS	NI	LS	LS	None required.	LS	NI	LS	LS

TABLE ES-2
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance After Mitigation: Reduced Vegetation Removal/Grading and Road Use Alternative
3.9-2: Operation of the proposed project could generate a substantial 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.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.9-3: Construction and operation of the proposed project could result in the generation of excessive groundborne vibration or groundborne noise levels.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.10 Transportation									
3.10-1: Construction and operation of the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, such as General Plan Policy CIR-38, which seeks to maintain an adequate level of service at signalized and unsignalized intersections.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.10-2: Construction and operation of the proposed project could conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b).	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.10-3: Construction and operation of the proposed project could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.10-4: Construction and operation of the proposed project could result in inadequate emergency access.	LS	NI	LS	LS	None required.	LS	NI	LS	LS

NOTES:

NI=No Impact; LS=Less than significant; LSM=Less than significant after application of feasible mitigation measure(s); - = Impact is less severe than under the proposed project; + = Impact is more severe than under the proposed project

SOURCE: Data compiled by Environmental Science Associates in 2021.

CHAPTER 1
INTRODUCTION

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The Napa County (County) Planning, Building and Environmental Services Department prepared this Environmental Impact Report (EIR) to evaluate the impacts of implementing the Hyperion Vineyard Holdings LLC (a.k.a. KJS Investment Properties LLC and Sorrento Inc.) Vineyard Conversion Erosion Control Plan Application Project (#P17-00432-ECPA) (proposed project). The Planning, Building and Environmental Services Department is the California Environmental Quality Act (CEQA) lead agency.

This Draft EIR has been prepared in conformance with CEQA (Public Resources Code Section 21000 et seq.), the State CEQA Guidelines (California Code of Regulations Title 14, Section 15000 et seq.), and *Napa County's Local Procedures for Implementing CEQA* (Napa County 2015).

Consistent with Section 15121(a) of the State CEQA Guidelines, this Draft EIR is a public information document that objectively assesses and discloses the potential environmental impacts of the proposed project. This Draft EIR identifies feasible mitigation measures and alternatives that would avoid those impacts or reduce them to a less-than-significant level.

1.2 BACKGROUND

Section 18.108.080 of the Napa County Code requires approval of an erosion control plan for agricultural earthmoving on lands where slopes exceed 5 percent and establishes grading deadlines (a winter shutdown period) for these areas. Also, uses permitted in erosion hazard areas, or on lands with slopes exceeding 5 percent, must include erosion control measures that conform to the County's National Pollutant Discharge Elimination System General Permit on file with the state. (These measures compose a suite of best management practices—temporary or permanent, or both—to eliminate, control, and/or minimize the detachment and transport of sediment and soil particles.)

In accordance with County Code Section 18.108.080, KJS Investment Properties LLC and Sorrento Inc. filed an agricultural erosion control plan application (#P17-00432-ECPA) for vineyard development on the 972.8-acre property at 3370 and 3380 Sage Canyon Road, east of the city of St. Helena in unincorporated Napa County (**Appendix A**).

The property includes Assessor's Parcel Numbers 025-270-022 and 025-270-025 (approximately 729.4 and 243.4 acres, respectively). See **Section 2.1, *Project Location***, and **Section 2.2, *Project Site and Vicinity***, for a more detailed discussion of the project setting.

The original submittal (December 14, 2017) contained the application materials that were required by the County's Erosion Control Plan Application Checklist at that time. As a result, the application was determined to be a "substantially conforming and qualified permit application'' pursuant to the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective on May 9, 2019. Therefore, continued processing and review of this application will not be subject to the County Conservation Regulations (Napa County Code Chapter 18.108), as amended by the Water Quality and Tree Protection Ordinance. This application is subject to the County Conservation Regulations that were in effect before May 2019.

1.3 ENVIRONMENTAL REVIEW AND APPROVAL PROCESS

Preparation of an EIR involves multiple steps during which the public can review and comment on the scope of the analysis, EIR content, results and conclusions presented, and the document's adequacy to meet the substantive requirements of CEQA. The following sections describe the steps in the environmental review process for the proposed project.

1.3.1 NOTICE OF PREPARATION AND INITIAL STUDY

In accordance with Sections 15063 and 15082 of the State CEQA Guidelines, the Napa County Planning, Building and Environmental Services Department issued a Notice of Preparation (NOP) of an EIR and circulated an Initial Study (IS) (State Clearinghouse #2018092042). The County provided the NOP/IS to federal, state, and local agencies. The NOP/IS was published on September 18, 2018, and circulated for 30 days ending on October 18, 2018. The NOP/IS presented a project background, project objectives, description of the proposed project, and summary of potential environmental impacts to be evaluated in the Draft EIR. **Appendix B** of this Draft EIR provides the NOP/IS and the list of agencies that received the NOP/IS.

Three written comment letters were submitted in response to the NOP/IS (see **Appendix B**). These letters were considered during preparation of the Draft EIR. **Table 1-1** lists the commenting agencies and summarizes their comments.

TABLE 1-1
WRITTEN COMMENTS RECEIVED IN RESPONSE TO THE NOTICE OF PREPARATION/INITIAL STUDY

Agency	Name	Title	Summary of Comments
California Department of Transportation	Patricia Maurice	District Branch Chief, Local Development–Intergovernmental Review	Clarify impacts on SR 128 during construction and operation. Provide project-related trip generation, distribution, and assignment estimates. A cultural resource technical study may be required if an encroachment permit is needed for work within a Caltrans right-of-way. If there is an inadvertent archaeological or burial discovery within a Caltrans right-of-way, all construction within 60 feet of the find shall cease and the Caltrans District 4 Office of Cultural Studies shall be contacted immediately. Identify and mitigate any impacts that increased project traffic may have on bicyclists using the SR 128 corridor. Project work that requires movement of oversized or excessive load vehicles on state roadways requires a Caltrans transportation permit.
Native American Heritage Commission	Sharaya Souza	Staff Services Analyst	Information is provided regarding requirements for consultation with California Native American tribes and the NAHC's recommendations for conducting cultural resources assessments.
City of Napa Utilities Department	M. J. Hether, P.E.	Senior Civil Engineer	All erosion control measures should be maintained to prevent exceedance of baseline natural runoff levels of sediment and nutrients. The City will continue to monitor the reservoir's water quality and consider the 10 percent cumulative impacts amidst continual data collection, analysis, and reporting.

NOTES:
Caltrans = California Department of Transportation; City = City of Napa; NAHC = Native American Heritage Commission; SR = State Route

SOURCE: Data compiled by Environmental Science Associates in 2019

1.3.2 CONSULTATION

The County consulted with the U.S. Fish and Wildlife Service on February 12 and 14, 2019, regarding focused surveys for California red-legged frog that were conducted for the proposed project.

The County consulted with the State Water Resources Control Board, Division of Water Rights, in 2019, 2020, and 2021 regarding the pending water rights petitions for the project site.

As required by Assembly Bill 52 (California Public Resources Code Sections 21074, 21080.3.1, 21080.3.2, 21082.3, and 21083.09), the County, as part of the CEQA review for the proposed project, sent project notification letters to Middletown Rancheria and the Mishewal Wappo Tribe of Alexander Valley on December 26, 2017, and to the Yocha Dehe Wintun Nation on April 9, 2018. The letters provided information on the proposed project and requested that the tribes notify the County within 30 days should the tribe wish to consult on the project. On April 9, 2018, the County sent letters to Middletown Rancheria and the Mishewal Wappo Tribe of Alexander Valley, indicating that the Planning Division concluded that consultation proceedings with the tribes would not be initiated for the proposed project because no written response was received with a request for consultation.

On April 27, 2018, Yocha Dehe Wintun Nation Director of Cultural Resources Marilyn Delgado replied to the County by letter, stating that the tribe would like to formally consult on the proposed project in accordance with California Public Resources Code Section 21080.3.1. Following up on these communications with the Yocha Dehe Wintun Nation in May through July 2018 (Reimann Rouse and Larry Longee), Napa County provided a list of project contacts by email to the Yocha Dehe Wintun Nation on July 24, 2018, and sent a follow-up email on October 12, 2018. In a letter received by Napa County on January 7, 2019, the Yocha Dehe Wintun Nation provided the name of a contact for further consultation. Napa County left a voice mail message and emailed the Yocha Dehe Wintun Nation on March 12, 2019, to follow up on the consultation. On that same day, Katie Solorio (Cultural Resources Department administrative assistant) provided an email response indicating that the project's Cultural Resources Report had been forwarded to the Yocha Dehe management team for review, and that the County would be contacted when a response was received regarding the report and the next steps for consultation. Napa County emailed and spoke with Yocha Dehe Wintun Nation (Laverne Bill) on March 3 and March 8, 2021, respectively, to discuss the environmental review, anticipated tribal cultural mitigation measures, and consultation for the proposed project.

In subsequent communications with Yocha Dehe Wintun Nation (Laverne Bill) on March 18, 2021, the County's understanding is that the Tribe is comfortable and satisfied (or otherwise in agreement) with proposed Tribal Cultural Mitigation Measures, and that the County and the Tribe are in a position to satisfactorily conclude consultation. It was also reiterated that the DEIR would be circulated to the Tribe for additional review and comment if necessary.

1.3.3 DRAFT ENVIRONMENTAL IMPACT REPORT

This Draft EIR will be published and made available to federal, state, and local agencies and to interested organizations and individuals who may want to review and comment on the adequacy of the impact analysis. Public notice of this Draft EIR will be sent to all responsible and trustee agencies, and to agencies and other stakeholders that commented on the NOP. The 45-day public review period for this Draft EIR will be April 26, 2021 through June 9, 2021. During the public comment period, written comments should be mailed or emailed to:

Donald Barrella
Napa County Department of Planning, Building and Environmental Services
1195 Third Street, Suite 210
Napa, CA 94559
Email: Donald.Barrella@countyofnapa.org
Fax: (707) 229-4491

If comments are provided via email, please include the project title in the subject line, attach comments in Microsoft Word format, and include the commenter's U.S. Postal Service mailing address.

The Draft EIR is available for review online on the following websites:

Napa County:
https://www.pbes.cloud/index.php/s/aTDiM7q7QFwKDK2

California State Clearinghouse CEQAnet Web Portal (search by project name or State Clearinghouse #2018092042):
https://ceqanet.opr.ca.gov/

Copies of the Draft EIR are available during normal business hours at:

Napa County
Department of Planning, Building and Environmental Services
1195 Third Street, 2nd Floor
Napa, CA 94559

The Draft EIR is also available for review at the following location:

Napa County Main Library
580 Coombs Street
Napa, CA 94559

Monday through Saturday: 10 a.m. to 5:30 p.m.
Sunday: 1 p.m. to 4:30 p.m.

Please visit Napa County's Library website for current information on walk-in hours and other Library service COVID-19 updates:

https://www.countyofnapa.org/2782/Library-COVID-19-Updates

1.3.4 FINAL ENVIRONMENTAL IMPACT REPORT

A response to comments document will address written comments on the Draft EIR received during the public review period. Together, the response to comments document, the Draft EIR, and any changes to the Draft EIR made in response to comments received will constitute the Final EIR. The Draft EIR and Final EIR together will compose the EIR for the proposed project.

1.3.5 MITIGATION MONITORING AND REPORTING PROGRAM

As required by California Public Resources Code Section 21081.6(a), the Napa County Planning, Building and Environmental Services Department will prepare and adopt a Mitigation Monitoring and Reporting Program as part of the approval process for the mitigation measures listed in this Draft EIR.

1.3.6 APPROVAL PROCESS

Before the Napa County Planning, Building and Environmental Services Department can act the proposed project application, it must certify that the EIR has been completed in compliance with

CEQA; that the County has reviewed and considered the information in the EIR; and that the EIR reflects the County's independent judgment.

The County also will prepare and adopt a findings of fact document and the Mitigation Monitoring and Reporting Program. If any impacts are determined to be significant and unavoidable, and if the proposed project is approved despite those impacts, the County will prepare and adopt a Statement of Overriding Considerations. The County will file a Notice of Determination with the State Clearinghouse.

1.4 SCOPE OF THIS ENVIRONMENTAL IMPACT REPORT

The NOP/IS for the proposed project identified potentially significant impacts of implementing the proposed project. As stated in the NOP/IS (**Appendix B**), the Napa County Planning, Building and Environmental Services Department determined that this Draft EIR will address the following resource topics:

- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Cultural and Tribal Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation
- Cumulative Impacts

The following resource topics were evaluated and were determined to result in either no impact or a less-than-significant impact; therefore, this Draft EIR does not evaluate these topics further. The analysis of these topics (with the exception of Energy, which was not a resource topic in State CEQA Guidelines Appendix G at the time the NOP/IS was circulated) is provided in the Initial Study Environmental Checklist in **Appendix B** of this Draft EIR.

- **Aesthetics:** The proposed project is not located near any designated state scenic highways. Also, the project is consistent with the land use designation for the project site, Agricultural, Watershed and Open Space (AWOS), and with adjacent land uses, which include other vineyards. Therefore, the proposed project would have a less-than-significant impact on scenic viewsheds, scenic highways, and the existing visual character or quality of the site and its surroundings. The proposed project would involve some nighttime activity for limited periods, but it would not introduce a new source of substantial light or glare. Therefore, the proposed project would have a less-than-significant impact on daytime or nighttime views in the area.

- **Agriculture and Forestry Resources:** The proposed project would not convert the project site to nonagricultural use, and the project parcels are zoned Agricultural Watershed (AW). Therefore, the establishment of a vineyard is consistent with the property's land use and zoning designations. The project site does not contain forest land, and the proposed project would not convert any forest land to nonforest use. Therefore, the proposed project would have a less-than-significant impact on agriculture and forestry resources.
- **Energy:** Construction activities and corresponding fuel energy consumption associated with the proposed project would be temporary and localized. In addition, the proposed project has no unusual characteristics that would cause equipment or haul vehicles to be less energy efficient than when used at other similar agricultural construction sites in Napa County. Once construction is complete, equipment and energy use would be slightly higher than existing levels. The proposed project would not include any unusual maintenance activities that would cause a significant difference in energy efficiency compared to the surrounding developed land uses. Thus, the project would not result in wasteful, inefficient, or unnecessary use of energy. The proposed project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency or impede progress toward achieving goals and targets. Impacts would be less than significant.
- **Mineral Resources:** The project site does not contain mineral resources and is not located in an area identified in the Napa County General Plan as containing mineral resources. Therefore, no impact would occur.
- **Population and Housing:** The proposed project would not directly or indirectly induce substantial unplanned population growth or displace housing or people, necessitating the construction of replacement housing elsewhere. Therefore, the proposed project would have a less-than-significant impact on population and housing.
- **Public Services:** The proposed project would not result in the need for new governmental facilities or altered government facilities. Therefore, no impact would occur.
- **Recreation:** The proposed project would not involve construction or expansion of recreational facilities, nor would the project result in substantial population growth that would lead to increased use of existing recreational facilities. Therefore, no impact would occur.
- **Utilities and Service Systems:** The proposed project would not generate wastewater; exceed water treatment requirements; result in construction of new water or wastewater treatment facilities; or require or result in construction of new stormwater drainage facilities or expansion of existing facilities. The proposed project would be served entirely by surface water, and the proposed vineyard would not use groundwater. The proposed project includes petitions for change on Water Right License 9125 and Permit 18459, which are pending review and processing with the State Water Resources Control Board. No new or expanded water entitlements are being requested. See **Section 3.3, *Biological Resources***; **Section 3.5, *Geology and Soils***; and **Section 3.7, *Hydrology and Water Quality***, for an analysis of the effects of installing on-site stormwater drainage features. See **Section 3.7** for an analysis of water availability and water use.

Construction and operation of the proposed project would produce minimal amounts of solid waste; the amount of waste produced is not anticipated to adversely affect the capacity of the nearest landfill. Therefore, no impact would occur.

1.5 ORGANIZATION OF THIS ENVIRONMENTAL IMPACT REPORT

This Draft EIR is organized as follows:

- The ***Executive Summary*** summarizes the project description, describes issues to be resolved, and presents a summary table listing the impacts of the proposed project and their levels of significance.
- **Chapter 1, *Introduction*,** describes the intended uses of this EIR, the environmental review and approval process, and document organization.
- **Chapter 2, *Project Description*,** presents an overview of the proposed project, outlines the project objectives, provides background setting information about the project vicinity, and summarizes proposed construction-related and operational activities.
- **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*,** describes the existing environmental setting and discusses the environmental impacts of the proposed project.
- **Chapter 4, *Other CEQA Considerations*,** addresses other CEQA issues: growth-inducing impacts, a summary of cumulative impacts (full analyses appear in the individual sections of Chapter 3), significant unavoidable impacts on the environment, and significant irreversible environmental changes.
- **Chapter 5, *Alternatives Analysis*,** describes potential alternatives to the proposed project and presents analyses of the alternatives' ability to meet the proposed project's objectives and differences in environmental impact levels.
- **Chapter 6, *List of Preparers***, identifies the Draft EIR authors and consultants and the agencies or individuals consulted during preparation of the Draft EIR.
- **Chapter 7, *References*,** lists all references cited in the Draft EIR.
- The **appendices** present materials that support the findings of and conclusions in the text of the Draft EIR.

1.6 DEFINITIONS USED IN THIS ENVIRONMENTAL IMPACT REPORT

This EIR uses several terms to refer to areas that could be directly or indirectly affected by the proposed project, or areas where existing and/or project conditions were evaluated for this analysis. As used throughout the Draft EIR, these and other frequently used terms are defined as follows:

- *Development area.* An area occupying approximately 156.8 acres that includes the 111.5 net acres of proposed vineyard blocks (referred to here as the "vineyard area")

and 45.3 acres of associated ground disturbance. The development area includes all of the proposed clearing limits.

- *Survey area.* An area occupying approximately 822.5 acres that includes the 156.8-acre development area plus an approximately 500-foot radius around the development area.
- *Project site.* A total of 950.9 acres that includes Assessor's Parcel Numbers 025-270-022 and 025-270-025 (approximately 705.1 and 245.8 acres, respectively[1]).
- *Evaluation area.* A 1-mile radius around the 950.9-acre project site.
- *Qualified Biologist.* A biologist or biological monitor who is knowledgeable and experienced in the biology and natural history of local herpetology, mammalian, and avian resources with potential to occur at the project site.
- *Napa County.* For the purposes of this EIR and mitigation measures identified herein, *Napa County* shall mean the Planning Division of Napa County Planning, Building and Environmental Service Department (PBES).

1 Acreages are based on GIS data; Napa County Assessor's Office lists the acreage for Assessor's Parcel Number 025-270-022 as 729.4 acres and Assessor's Parcel Number 025-270-025 as 243.4 acres.

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CHAPTER 2
PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The 950.9-acre KJS Investment Properties and Sorrento Inc. Ranch (referred to in this EIR as the "project site" or "property") is located at 3370 and 3380 Sage Canyon Road, approximately 10 miles east of the city of St. Helena in unincorporated Napa County, California. The property lies within Sections 22, 26, 27, 34 and 35 of Township 8 North (T8N), Range 4 West (R4W), Mount Diablo Base and Meridian (MDB&M), of the Chiles Valley U.S. Geological Survey 7.5-minute topographic quadrangle. The property includes Assessor's Parcel Numbers 025-270-022 and 025-270-025 (approximately 705.1 and 245.8 acres, respectively[1]). **Figure 2-1** shows the regional location of the project site. **Figure 2-2** identifies the project site and vicinity. **Figure 2-3** is an aerial photograph of the project site.

2.2 PROJECT SITE AND VICINITY

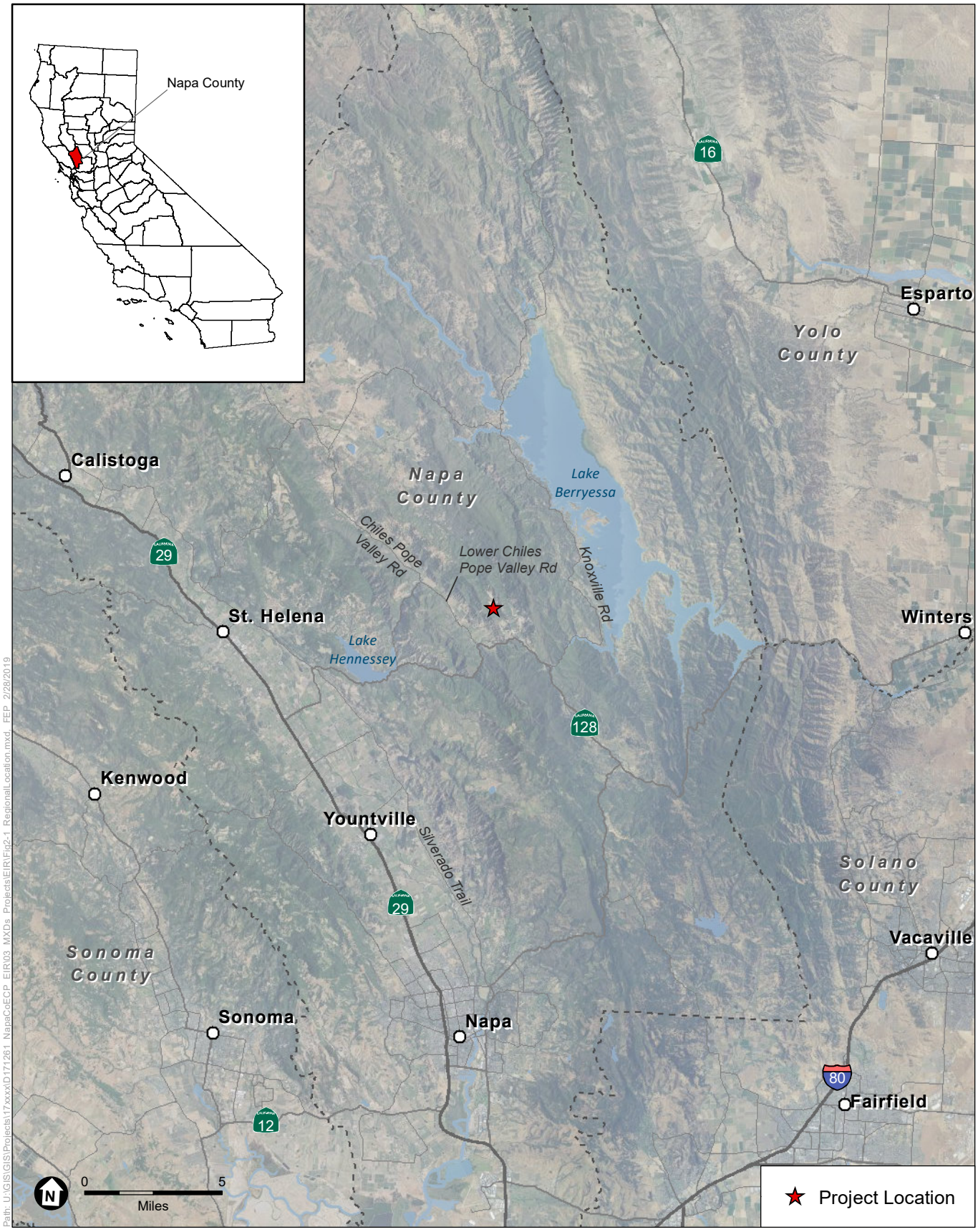
Approximately 104 acres of vineyard exist on the project site. The current vineyard on the project site is managed together with the vineyard on two adjacent parcels (owned by Sage Canyon, LLC; Assessor's Parcel Numbers 025-270-023 and 025-270-026). This area is surrounded by a wildlife exclusion fence (i.e., deer fence) (**Figure 2-4**).

2.2.1 PHYSICAL CONDITIONS ON THE PROJECT SITE

The proposed vineyard conversion areas (referred to in this EIR as the "project area" or "development area," and in the EIR figures as the "clearing limits") range in elevation from approximately 940 feet to 1,680 feet above mean sea level. Ground slopes in the development area range from approximately 3 percent to 28 percent, averaging 19 percent. Small areas of the proposed vineyard blocks have ground slopes of at least 30 percent; approximately 7.3 acres would be developed on slopes 30 percent or steeper. Soils in the development area include Bressa-Dibble Complex, Los Gatos Loam, Maymen-Millsholm-Lodo Association, Millsholm Loam, and Pleasant Loam.

Two residences exist on the project site, one of which is inhabited full time and the other part time. The dominant land cover types in the development area are oak woodlands, chaparral, grassland, riparian, and vineyards. The entire project site is grazed for fire protection purposes.

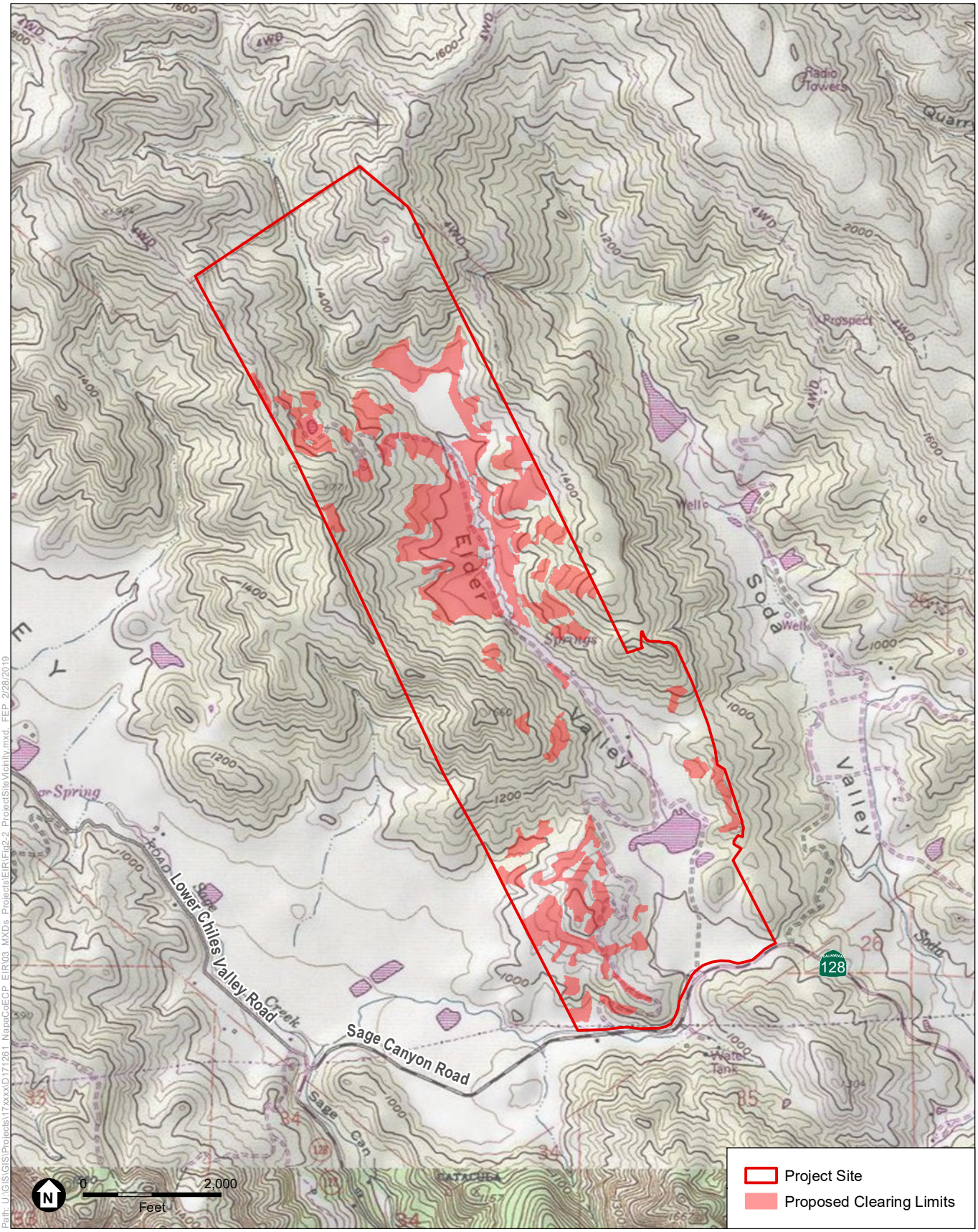
[1] Acreages are based on GIS data; Napa County Assessor's Office lists the acreage for Assessor's Parcel Number 025-270-022 as 729.4 acres and Assessor's Parcel Number 025-270-025 as 243.4 acres.



SOURCE: NAIP, 2016; ESRI, 2012; Napa County, 2018; ESA, 2018

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

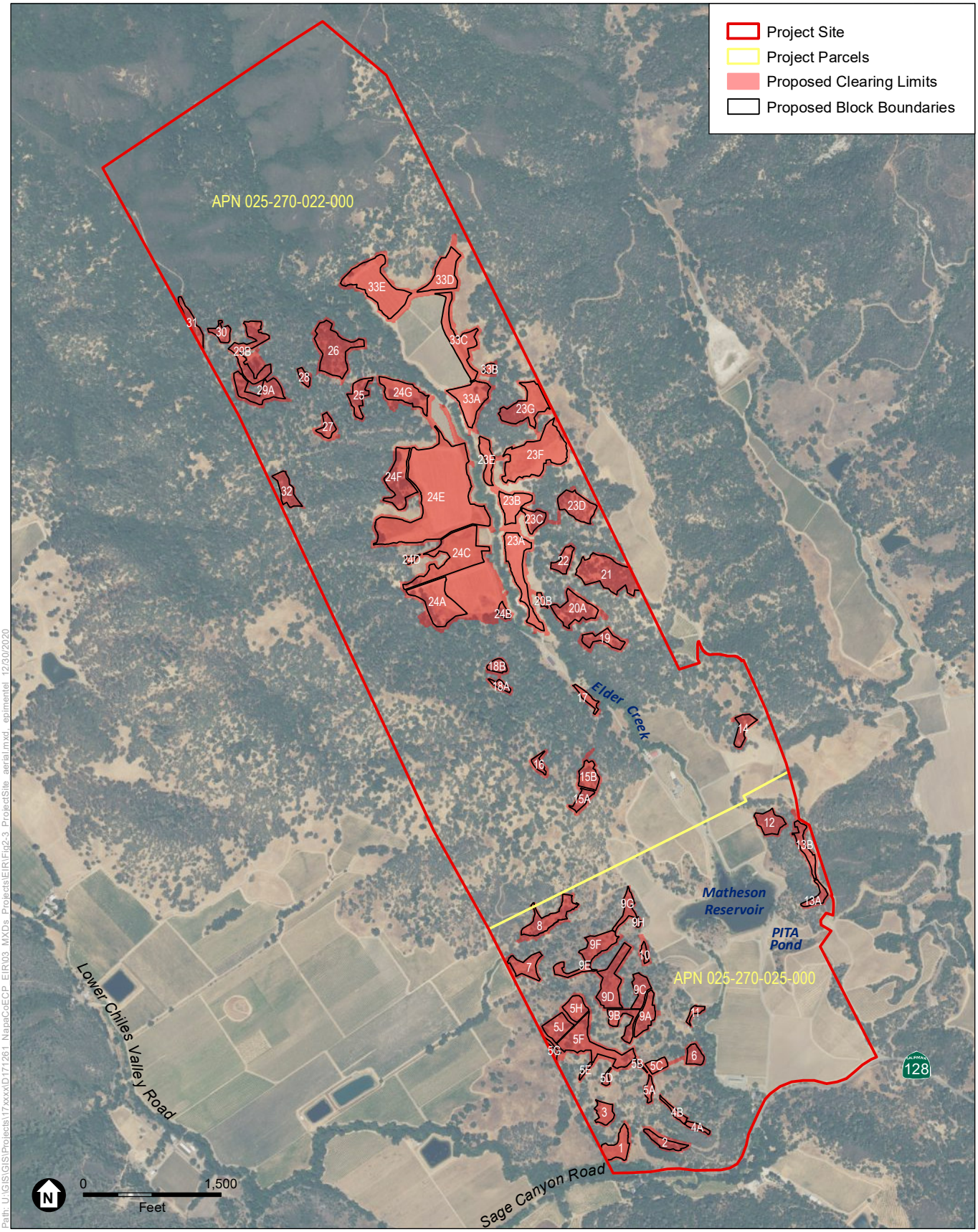
Figure 2-1
Regional Location



SOURCE: USGS 7.5' Topo Quad (Chiles Valley, 1958); PPI Engineering, 2018; ESA, 2018

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

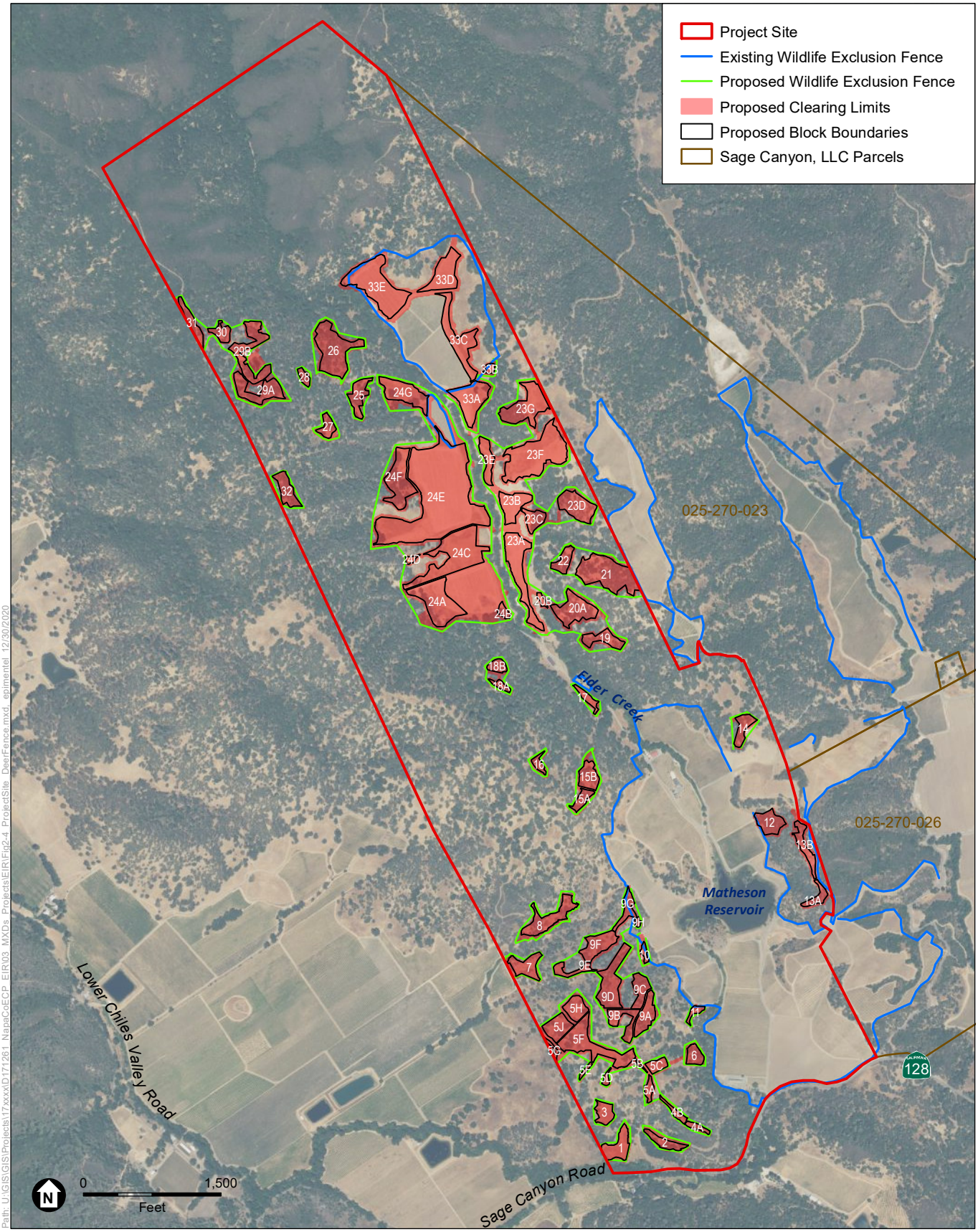
Figure 2-2
Project Site and Vicinity



SOURCE: USDA, 2016; Napa County, 2018; PPI Engineering, 2018; ESA, 2018

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

Figure 2-3
Project Site



SOURCE: USDA, 2018; Napa County, 2020; PPI Engineering, 2018; ESA, 2020

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

Figure 2-4
Wildlife Exclusion Fence

The majority of the project site is located in the Elder Valley Creek watershed; Elder Creek and numerous tributaries are located on the property. Elder Creek is tributary to Sage Creek, which flows into the City of Napa's Lake Hennessey (Conn Creek Dam) to the west. Spills and releases from Conn Creek Dam flow into Conn Creek, which is tributary to the Napa River, and from there, to San Pablo Bay.

The project site is located within the Napa County (County)–designated Lake Hennessey Sensitive Domestic Water Supply Drainage. Napa County Code (NCC) Chapter 18.108.027, Sensitive Domestic Water Supply Drainages, outlines provisions applicable to properties located within sensitive domestic water supply drainages, such as vegetation retention and removal limits and winter shutdown requirements.

2.2.2 GENERAL PLAN LAND USE DESIGNATION AND ZONING

The project site is zoned Agricultural Watershed (AW). As defined in NCC Chapter 18.20, the AW district classification is intended to be applied in areas of Napa County that meet the following criteria:

- The predominant use is agriculturally oriented.
- Watersheds, reservoirs, and floodplain tributaries are located in the area.
- Development would adversely affect all such uses.
- The protection of agriculture, watersheds, and floodplain tributaries from fire, pollution, and erosion is essential to the general health, safety, and welfare.

2.3 PROJECT OBJECTIVES

Specific project objectives associated with the installation and operation of the proposed vineyard include:

- Develop up to 111.5 net planted acres of vineyards within approximately a 156.8-acre conversion area on those portions of the project site that are suitable for the cultivation of high-quality wine grapes, while ensuring the economic viability of the project.
- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- Maximize the beneficial use of surface water that has already been authorized by the State Water Resources Control Board (State Water Board), Division of Water Rights, via Water Right License 9125 (Application 13943) and Permit 18459 (Application 26165).
- Minimize impacts on riparian and aquatic resources and other environmental impacts by modifying Permit 18459 to allow construction of the storage reservoir at an offstream location rather than onstream.
- Develop new vineyards configured in such a way to maximize the use of existing infrastructure such as roads, pipelines, pump stations, and buildings that serve the existing vineyard and thereby minimize the need for additional infrastructure.
- Maximize the use of current vineyard employees' skills and create efficiencies.

- Provide opportunities for additional vineyard employment and economic development in Napa County.
- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices, participation in the Napa Green Program, and animal grazing to control weeds within the proposed vineyard blocks and to minimize fire hazards outside of the vineyard.
- Use water from the existing and proposed reservoirs efficiently.
- Preserve approximately 70 percent of the property as grasslands, oak woodlands, and other open space that has the greatest value as wildlife habitat.
- Minimize soil erosion from vineyard development and operation through vineyard design that avoids erosion-prone areas and controls erosion within the vineyard rather than capturing soil after it has been displaced.
- Design the vineyard to minimize the reduction of wildlife movement to the maximum extent feasible, in accordance with General Plan Policy CON-18(e).
- Protect water quality by protecting wetlands, seeps, springs, and streams to the maximum extent feasible through avoidance, incorporation of appropriate setbacks, and implementation of various erosion control features.
- Minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible, while providing for avoidance, preservation, and replacement in accordance with accepted protocols, including but not limited to the Napa County General Plan.

2.4 DESCRIPTION OF THE PROPOSED PROJECT

KJS Investment Properties and Sorrento Inc. (Applicant) filed an erosion control plan (ECP) application (ECPA #P17-00432) with the County's Planning, Building and Environmental Services Department on December 14, 2017, for proposed vegetation removal and earthmoving activities on slopes greater than 5 percent in connection with the development of up to 111.5 net planted acres of vineyard within 156.8 gross acres on the project site (**Figure 2-2**). Vineyard avenues would be constructed around each proposed vineyard block, and their acreage is included in the proposed clearing-limits boundary.

The proposed project also includes Petitions for Change on Water Right License 9125 and Permit 18459 (as amended June 20, 2018) and a Petition for Extension of Time on Permit 18459. These petitions are pending review and processing with the State Water Board. The Petitions for Change were originally filed with the State Water Board on August 15, 2001, with several subsequent amendments filed after 2001. The Petition for Extension of Time on Permit 18459 was filed with the State Water Board on December 5, 2005[2].

[2] The petitioner filed the petition on December 5, 2005. The State Water Board received payment and officially accepted the petition on May 10, 2006.

2.4.1 FEATURES OF EROSION CONTROL PLAN APPLICATION #P17-00432-ECPA

In total, 33 vineyard blocks are proposed. **Table 2-1** identifies the acreages of the proposed vineyard blocks (i.e., net plated area) and their associated clearing limits (i.e., gross earth-disturbance area).

TABLE 2-1
ACRES OF PROPOSED VINEYARD BLOCKS

Block	Proposed Block Clearing Limits (gross acres)	Proposed Block Planting Boundaries (net acres)	Block	Proposed Block Clearing Limits (gross acres)	Proposed Block Planting Boundaries (net acres)
1	1.7	1.3	9H	0.1	0.1
2	1.3	0.8	10	0.6	0.2
3	1.0	0.8	11	0.4	0.3
4A	0.4	0.3	12	1.5	1.3
4B	0.6	0.4	13A	0.8	0.6
5A	0.5	0.4	13B	1.7	1.0
5B	0.2	0.06	14	1.1	0.9
5C	0.7	0.6	15A	1.0	0.6
5D	0.3	0.2	15B	1.6	1.1
5E	0.3	0.1	16	0.7	0.3
5F	4.4	3.2	17	0.7	0.4
5G	0.5	0.2	18A	0.6	0.3
5H	1.5	1.1	18B	0.8	0.5
5J	1.8	1.3	19	1.8	1.1
6	1.1	0.7	20A	3.1	2.3
7	1.7	1.3	20B	0.3	0.2
8	2.9	2.0	21	4.5	4.0
9A	1.5	1.3	22	1.1	0.8
9B	1.5	1.2	23A	4.5	3.0
9C	1.4	1.1	23B	2.5	1.6
9D	3.3	2.5	23C	1.3	0.9
9E	0.9	0.6	23D	2.4	2.1
9F	1.9	1.6	23E	1.5	1.0
9G	1.0	0.8	23F	6.7	5.4
23G	3.9	2.8	29A	2.9	1.9
24A	4.7	3.5	29B	3.7	2.3
24B	0.6	0.3	30	0.8	0.6
24C	6.3	4.9	31	1.0	0.8
24D	0.2	0.2	32	1.4	1.2
24E	19.3	16.4	33A	3.3	2.5

TABLE 2-1
ACRES OF PROPOSED VINEYARD BLOCKS

Block	Proposed Block Clearing Limits (gross acres)	Proposed Block Planting Boundaries (net acres)	Block	Proposed Block Clearing Limits (gross acres)	Proposed Block Planting Boundaries (net acres)
24F	3.6	2.7	33B	0.4	0.2
24G	3.4	2.2	33C	3.7	2.5
25	1.6	1.2	33D	3.2	2.2
26	4.6	3.6	33E	6.4	4.8
27	1.1	0.6	Reservoir Area	6.5	–
28	0.5	0.3			
			Total	**156.8**	**111.5**

SOURCE: PPI Engineering 2018

Proposed vineyard development activities include removing pasture, hayfield, grassland, brush/ shrubland, and trees and woodland within the proposed clearing limits. Other proposed activities include ripping, rock removal, soil cultivation, seeding of a cover crop, mulching, trenching for irrigation pipelines, installing a trellis system and wildlife exclusion fence (i.e., deer fence), and laying out vine rows. In addition, temporary and permanent erosion control measures would be installed.

Figure 2-4 shows the location of the proposed wildlife exclusion fence. The proposed fencing would match the existing wildlife exclusion fence and would be 7 feet tall, with smooth wire square mesh spacing of 4 inches by 4 inches. Irrigation pipelines would generally be located within existing roadways, vineyards and vineyard avenues, and proposed clearing limits.

Ongoing vineyard operations and maintenance and preexisting cattle operations (i.e., grazing) on the project site use approximately 12.6 miles of existing access roads: 6.5 miles of year-round (Level 1) roads that are surfaced with crushed rock and contain waterbars and rolling dips, and 6.1 miles of dirt (Level 2) roads.

Roads that would provide primary access to the proposed vineyard blocks would be surfaced with crushed rock. In addition, approximately 2.3 miles of the project site's existing Level 2 roads would be upgraded to Level 1. During vineyard development, a 3-inch minus aggregate base material would be applied to the existing road width at a depth of 3–6 inches to ensure that vehicular traffic would not degrade the road surface during wet periods. The proposed project would improve roads on the site to reproduce natural drainage patterns and promote sheet flow by using best management practices, such as outsloping, removal of berms, and construction of frequent rolling dips or waterbars. Level 2 roads would be used seasonally during dry periods to provide secondary access to some vineyard blocks. Level 2 roads would receive the same best management practices and road shaping as Level 1 roads, except that the road surface would not be surfaced with crushed rock.

Approximately 1.6 miles of existing dirt roads would be decommissioned and incorporated into the proposed vineyard blocks. Roads proposed for decommissioning would be decompacted by a bulldozer that would rip to a depth of at least 6 inches.

After implementation of the proposed project, there would be approximately 11 miles of roads on the project site—8.8 miles of Level 1 gravel roads and 2.2 miles of Level 2 dirt roads—compared to the existing 12.6 miles of roads (6.5 miles of Level 1 and 6.1 miles of Level 2 roads). An existing Level 1 road would provide access to all vineyard blocks from Sage Canyon Road/State Route (SR) 128.

In addition to the gravel and dirt roads, a network of vegetated vineyard avenues surrounds the project site's existing vineyard blocks, providing access for farming equipment and workers. These roads are used less frequently than the Level 1 and Level 2 roads and are reseeded as needed to ensure appropriate levels of vegetative cover, as required by the engineered ECPAs that cover proposed vineyard avenues.

A road plan that describes operational road use and use restrictions, maintenance practices, and improvements is included in the project and its ECP (see **Appendix A**).

The proposed project is anticipated to generate a minimal amount of rock. The rock generated would likely be used to construct erosion control features such as rock aprons and rock level spreaders. Rock staging areas would be located within the proposed clearing limits.

Elder Creek and tributaries on the project site that meet the County's definition of a stream have setbacks based on slope, as outlined in NCC Section 18.108.025. The proposed project would avoid all waters of the United States that do not require a County stream setback, and all wetlands. Each of these waters and wetlands would be afforded a 50-foot buffer: a 26-foot undisturbed area and a 24-foot vegetated vineyard avenue. The 24-foot vegetated vineyard avenues would serve as seasonal buffers: Primarily between April 1 and September 15, they would be used for vineyard development and operations; from September 15 through April 1, the vineyard avenues would be used only when necessary to maintain erosion control measures in the development area. The avenues would be subject to the same vegetative cover crop requirements as the adjacent vineyard block pursuant to the ECP.

The proposed vineyard would be irrigated entirely by surface water. No groundwater would be used for vineyard irrigation and ongoing operation.

2.4.2 WATER RIGHT LICENSE, PERMITS, AND STATEMENTS

Water rights on file with the State Water Board, and applicable to the project site, are described below.

WATER RIGHT LICENSE 9125 AND WATER RIGHT PERMIT 18459

Water Right License 9125 (Application 13943) and Water Right Permit 18459 (Application 26165), both presented in **Appendix C**, collectively authorize diverting a total of 138 acre-feet of water to storage on the property for various agricultural uses including irrigation, heat control, and frost protection of the existing vineyard, and for stockwatering. The existing vineyard is also irrigated with groundwater.

Water Right License 9125 allows diversion of 90 acre-feet of water per year from Elder Creek at Matheson Reservoir to storage in the reservoir from November 1 to May 1. The maximum authorized withdrawal in any one year is 85 acre-feet. The water can be used for irrigation and frost protection of 85 acres, and for stockwatering, recreational uses, and fire protection at the reservoir. A small pond (PITA Pond) just southeast of Matheson Reservoir serves as a regulatory water storage facility for water released from Matheson Reservoir during frost protection operations.

Water Right Permit 18459 allows the diversion of 48 acre-feet of water per year from Elder Creek at Point of Diversion 1 to storage in an onstream reservoir (which has not been constructed and is proposed for relocation to an offstream location as part of this application) from November 1 to April 30. The water can be used for irrigation, frost protection, and heat control of 97 acres, and for stockwatering uses at the reservoir.

WATER RIGHT PERMIT 18282

In addition to the above rights, Water Right Permit 18282 (Application 26179), presented in **Appendix C**, allows for the direct diversion of 3 cubic feet per second (cfs), not to exceed 120 acre-feet of water per year, from February 15 to May 30 of each year from Elder Creek for frost protection of 60 acres.

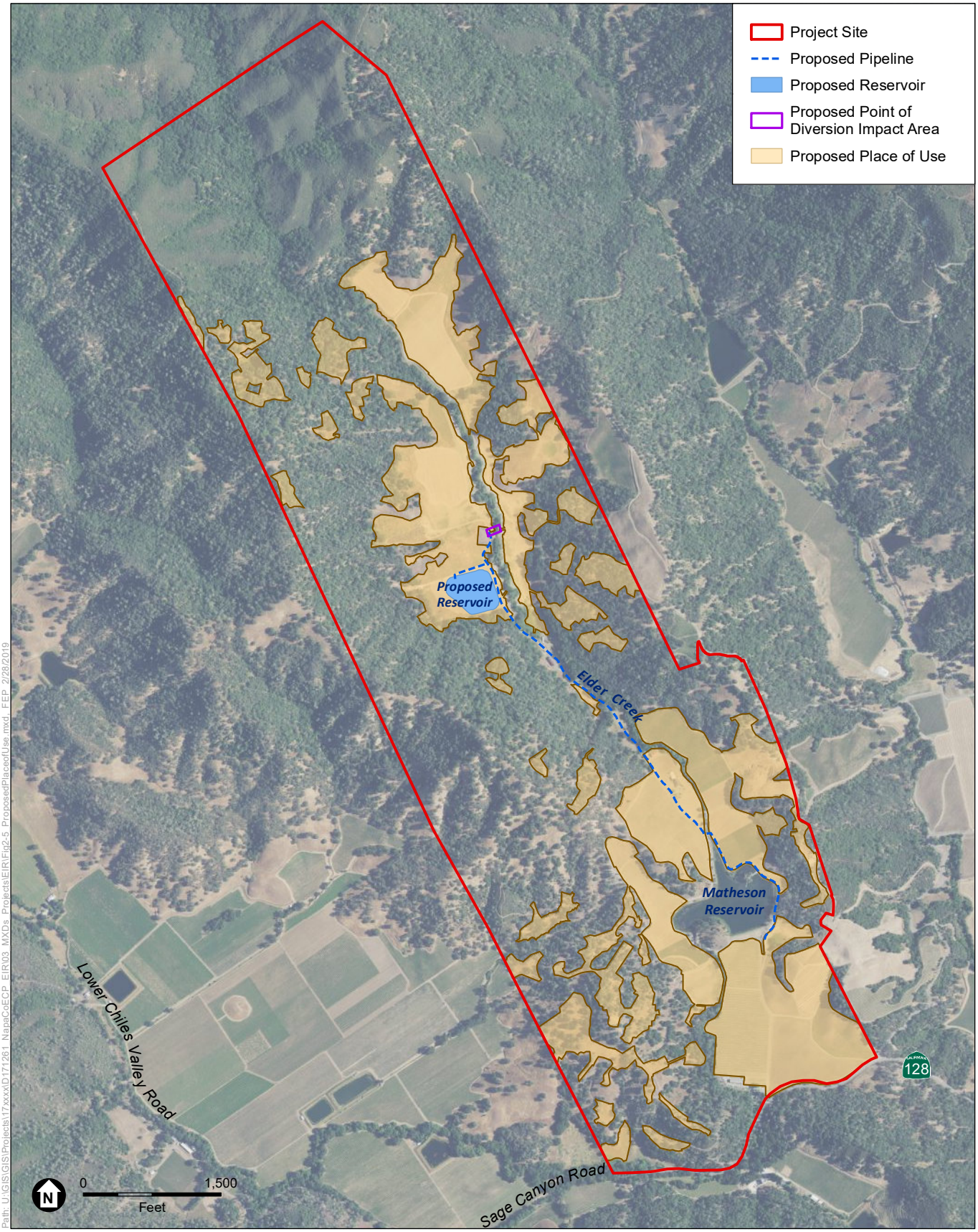
STATEMENTS OF WATER DIVERSION AND USE S015231 AND S015232

Statements of Water Diversion and Use S015231 and S015232 claim riparian rights to water from Elder Creek for frost protection and dust-control uses.

WATER RIGHTS PETITIONS

Petition for Change on Water Right License 9125

The Petition for Change on Water Right License 9125, which is pending with the State Water Board, requests an expansion of the place of use to 280 acres (**Table 2-2** and **Figure 2-5**). This 280-acre place of use includes both the existing vineyard on the project site and the proposed vineyard.



SOURCE: USDA, 2016; Napa County, 2018; PPI Engineering, 2018; ESA, 2018

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

Figure 2-5
Proposed Place of Use

TABLE 2-2
PROPOSED PLACE OF USE—LICENSE 9125 (APPLICATION 13943) AND PERMIT 18459 (APPLICATION 26165)

Use within	Section	Township	Range	B&M	Acres	Cultivated?
SW¼ of NW¼	22	8N	4W	Mount Diablo	2.0	No
SE¼ of NW¼	22	8N	4W	Mount Diablo	4.2	No
SW¼ of NE¼	22	8N	4W	Mount Diablo	14.6	No
NW¼ of SW¼	22	8N	4W	Mount Diablo	2.2	No
NE¼ of SW¼	22	8N	4W	Mount Diablo	9.1	No
SE¼ of SW¼	22	8N	4W	Mount Diablo	1.4	No
NW¼ of SE¼	22	8N	4W	Mount Diablo	19.2	No
NE¼ of SE¼	22	8N	4W	Mount Diablo	7.2	No
SW¼ of SE¼	22	8N	4W	Mount Diablo	26.2	No
SE¼ of SE¼	22	8N	4W	Mount Diablo	14.7	No
SW¼ of SW¼	23	8N	4W	Mount Diablo	0.2	No
NW¼ of NW¼	26	8N	4W	Mount Diablo	2.1	Yes
SW¼ of NW¼	26	8N	4W	Mount Diablo	25.1	Yes
SE¼ of NW¼	26	8N	4W	Mount Diablo	12.0	Yes
NW¼ of SW¼	26	8N	4W	Mount Diablo	21.2	Yes
NE¼ of SW¼	26	8N	4W	Mount Diablo	12.3	Yes
SW¼ of SW¼	26	8N	4W	Mount Diablo	16.4	Partially
SE¼ of SW¼	26	8N	4W	Mount Diablo	36.4	Yes
SW¼ of SE¼	26	8N	4W	Mount Diablo	4.9	Yes
NW¼ of NE¼	27	8N	4W	Mount Diablo	10.8	No
NE¼ of NE¼	27	8N	4W	Mount Diablo	11.8	No
SE¼ of NE¼	27	8N	4W	Mount Diablo	3.6	No
NE¼ of SE¼	27	8N	4W	Mount Diablo	5.0	Yes
SE¼ of SE¼	27	8N	4W	Mount Diablo	11.8	No
NE¼ of NE¼	34	8N	4W	Mount Diablo	1.4	No
NW¼ of NW¼	35	8N	4W	Mount Diablo	4.0	No
NE¼ of NW¼	35	8N	4W	Mount Diablo	0.2	Yes
				Total	**280.0**	

NOTES:
4W = (Range) 4 West; 8N = (Township) 8 North; B&M = base and meridian; NE = northeast; NW = northwest; SE = southeast; SW = southwest

SOURCE: Wagner & Bonsignore 2018

The water right petition pending with the State Water Board would add the existing offstream PITA Pond, located just south of Matheson Reservoir, as a point of rediversion in the water right

license.[3] Approval of the petition by the State Water Board would allow the Licensee/Petitioner[4] to release water diverted and stored at Matheson Reservoir to the PITA Pond, where it could store the water principally for frost protection operations.

Petition for Change on Water Right Permit 18459

The Petition for Change on Water Right Permit 18459, which is pending with the State Water Board (originally filed in August 2001 and amendments subsequently filed on April 26, 2002, June 12, 2007, and June 20, 2018), requests an expansion of the place of use to the same 280 acres detailed in **Table 2-2** and shown in **Figure 2-5**. The purposes of use would be irrigation, frost protection, and heat protection of the place of use. Stockwatering would remain a purpose of use.

The petition also proposes the development of a 48-acre-foot capacity, offstream reservoir, instead of construction of the permitted 48-acre-foot capacity onstream reservoir authorized by Permit 18459. The offstream pond would be located within the clearing limits of proposed Block 24 (within the southwest quarter of the southeast quarter of projected Section 22, T8N, R4W, MDB&M). This proposed offstream reservoir would store water diverted at Point of Diversion 1 in Elder Creek (authorized in Permit 18459 but not yet constructed). A new diversion structure at Point of Diversion 1 in Elder Creek would divert water to offstream storage in the new offstream reservoir and to the existing offstream PITA Pond as a point of rediversion.[5] The Petition for Change also identifies Matheson Dam as a point of diversion to offstream storage at the proposed offstream reservoir. The Petition for Change as filed with the State Water Board does not propose a change in the permitted season of diversion, from November 1 to April 30.

Water diverted under Permit 18459 would be limited to the quantity that could be beneficially used and would not exceed 48 acre-feet per year by storage collected from December 15 of each year to March 31 of the succeeding year. The Licensee/Petitioner has agreed to a shortened diversion season of December 15 to March 31 to lessen the potential for adverse effects to fish and aquatic resources. Diversions under Permit 18459 would not occur unless the February median bypass flows of 0.6 cfs at Point of Diversion 1 on Elder Creek and 0.9 cfs at Point of Diversion 2 at Matheson Reservoir were met, and the maximum rate of diversion to offstream storage would not exceed 0.29 cfs at Point of Diversion 1 or 0.41 cfs at Point of Diversion 2 (Wagner & Bonsignore 2020; **Appendix J**, discussed in **Section 3.7, *Hydrology and Water Quality***). These proposed State Water Board permit provisions are included in the proposed project that is disclosed and assessed in this EIR.

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3 Both Matheson Reservoir and the offstream PITA Pond are located within the southwest quarter of the southeast quarter of projected Section 22, T8N, R4W, MDB&M.

4 KJS Investment Properties and Sorrento Inc. is the “Applicant” of the Napa County ECPA, and they are a “Licensee/Petitioner” for the water rights petitions pending with the State Water Board.

5 The addition of the PITA Pond as a point of rediversion was done at the direction of State Water Board staff. Pursuant to Item 4 of an April 5, 2002, agreement with the State Water Board, the previous property owner agreed to operate the PITA Pond only as a regulatory offstream pond during the frost protection season. The current Permittee intends to comply with the agreement.

The Petition for the Extension of Time filed in 2005 and amended on June 20, 2018, and pending with the State Water Board on Permit 18459, requests that the full beneficial use date for the permit be extended to the year 2025.

2.4.3 PROJECT CONSTRUCTION

VINEYARD DEVELOPMENT

As described below, vineyard development would take place between April 1 and September 15 in three phases, and would be complete after three years.

Construction Phases

Phase 1

The first construction phase would include vegetation clearing, land preparation, installation of erosion control measures on approximately half of the vineyard (±78.4 gross acres), and construction of the proposed offstream reservoir and associated diversions. No vineyard installation would occur during the first year of construction.

During the first two weeks of this first phase, 10 truck trips would be required for delivery of heavy equipment; during the last two months, another 10 truck trips would be required for removal of the equipment. Throughout the first phase, the proposed project would generate approximately 12 passenger vehicle trips per day, six days per week from April 1 to September 15. The vehicles are anticipated to arrive via SR 128, half from the west and half from the east. All equipment would be staged within the proposed clearing limits or in existing vineyard areas.

Phase 2

The second phase of vineyard construction would include vegetation clearing, land preparation, and installation of erosion control measures on the remaining proposed vineyard acreage (±78.4 gross acres). In addition, vineyard infrastructure would be installed and vines would be planted in areas that were prepared during the previous year.

Similar to the first phase, approximately 10 truck trips would be required for delivery of heavy equipment and infrastructure materials during the first two weeks of the second phase. During the last two months of this phase, another 10 truck trips would be required for removal of the equipment. Throughout the second phase, the proposed project would generate approximately 12 passenger vehicle trips per day, six days per week, from April 1 to September 15.

Phase 3

The third phase of vineyard construction would include installation of vineyard infrastructure and planting of vines in areas prepared during the previous year and would not include any new ground disturbance. All vineyard areas in all phases would be planted by the end of the third phase. As described below, typical equipment would include up to four farm tractors with trailers. During the third phase, 10 truck trips would be required for delivery of infrastructure. In

addition, throughout this phase, the proposed project would generate approximately 12 passenger vehicle trips per day, six days per week, from April 1 to September 15.

Construction Procedures and Equipment

Construction work hours would typically be 7 a.m. to 5 p.m. **Table 2-3** lists typical construction equipment and the estimated quantity of equipment needed for the proposed project. Each piece of equipment would operate an average of seven hours per day during the construction season for vineyard development, and work would take place six days per week.

TABLE 2-3
ANTICIPATED CONSTRUCTION EQUIPMENT

Equipment	Estimated Quantity
Large excavator	2
Medium excavator	1
D9 bulldozer	1
D8 bulldozer	1
Haul truck	2
Loader	2
Water truck	1
Farm tractor with trailer	4

SOURCE: Data compiled by PPI Engineering in 2018

A maximum of 3 acres per day would be disturbed during any construction phase. Removed vegetation would be burned on-site, following Bay Area Air Quality Management District regulations. No soil would be imported for the proposed project. The reservoir would be designed to have balanced cut and fill. Any spoils from vineyard development would be disposed of on-site within the approved clearing limits.

The average depth of ripping would be 2 feet, with maximum ripping depths ranging up to 4 feet depending on site conditions. Vine and row spacing would be 4 feet by 6 feet for tractor-farmed blocks and 4 feet by 5 feet for hand-farmed blocks. Spacing between rows would be increased as necessary in tractor-farmed blocks where the cross-slope is 15 percent or steeper.

Irrigation pipelines would be located within existing roadways, vineyard blocks and vineyard avenues, and/or within proposed clearing limits.

By September 15, the vineyard development area would be winterized, which would involve seeding and installation of straw mulch and straw wattles. All disturbed areas (including vineyard avenues) would be seeded with a permanent cover crop according to the ECPA.

Erosion Control Measures

Temporary erosion control measures could include installing water bars, straw wattles, and straw bale dikes and following other practices as needed.

Permanent erosion control measures include:

- Seeding of a permanent cover crop with vegetative cover maintained according to the ECP.
- Drainage pipelines installed to collect surface runoff at low points throughout the development area and transport it to protected outlets.
- Cutoff collars installed on all solid pipelines with slopes steeper than 5 percent.
- Standard drop inlets, non-standard drop inlets, and infield drop inlets installed at designated locations in the development area.
- Standard and non-standard diversion ditches[6] to convey surface water through or around proposed vineyard areas and direct it to a stable outlet or other stormwater conveyance infrastructure.
- Infield ditches and insloped avenues constructed in designated blocks to reduce the slope run length and intercept surface runoff.
- Grading in designated locations to form outsloped roads to provide a safe and stable road for travel by vehicles and equipment.
- Culverts, rolling dips, and two rocked water crossing[7] installed in designated locations in Block 33.
- Pipe level spreaders installed in designated locations at the outfall of conveyance infrastructure to return concentrated flows within the pipe to sheet flow.
- Rock level spreaders installed in designated locations at the outfall of conveyance infrastructure to uniformly spread water onto the ground surface.
- Rock aprons installed at the outlets of pipes and ditches to help disperse concentrated flow and minimize erosion downstream of the outlet.
- Rock energy dissipaters installed to dissipate and reduce flow velocities at the outlet of diversion ditches.
- Junction boxes installed on the west side of proposed Block 8 and the west side of proposed Block 33E to transfer water from the proposed drainage pipelines to the proposed pipe level spreaders; and a junction box installed on the east side of proposed Block 8 to transfer water from a proposed drainage pipeline to an existing culvert.
- Outsloped benches constructed in designated locations to allow safe access for equipment.
- Repair of existing headcutting in proposed Blocks 23A, 23B, 24A, 24E, and 33A.
- Riprap berms constructed at the downhill outlets from the proposed drainage lines into existing swales in proposed Blocks 24A and 24E, and repair of erosion in the swale in proposed Block 24E.
- A riprap berm constructed at the downhill outlet from a proposed drainage line into an existing natural basin in proposed Block 24E.

6 Non-standard diversion ditches have a larger cross section than standard diversions and therefore have an increased water conveyance capacity (see Appendix A).

7 Rocked water crossings in this ECPA are to be placed within existing ditches that are proposed to be repaired and maintained as part of the project; they are not new crossings that would cross a stream pursuant to NCC Section 18.108.025.

- A spillway berm and overflow structure constructed in an existing stockpond near proposed Block 29.

RESERVOIR AND POINT OF DIVERSION DEVELOPMENT

The proposed offstream reservoir would have a surface area of approximately 4.5 acres, an average depth of about 10.7 feet, and a capacity of 48 acre-feet. The reservoir would be designed to have balanced cut and fill on-site. The diversion structure in Elder Creek would have a construction footprint of approximately 0.02 acre. Pipelines would run within existing roads from the proposed diversion structure in Elder Creek to the proposed offstream reservoir and from Matheson Reservoir to the proposed offstream reservoir.

2.4.4 VINEYARD OPERATIONS AND MAINTENANCE

Table 2-4 summarizes the operations and maintenance activities that would take place after construction of the vineyard.

TABLE 2-4
ANNUAL OPERATIONS SCHEDULE

Months	Activity	Workers
January–March	Annual pruning of vines	Approximately 25
April–August	Chemical, mechanical, and manual weed control Applications of sulfur to protect against mildew	Approximately 5
September–October	Harvest Winterizing of vineyard, vineyard avenues, and vineyard roads	Approximately 30
November–April	Monitoring and maintenance of erosion control measures	Approximately 5

SOURCE: PPI Engineering 2018

Nighttime activities would include:

- *Frost protection*, using sprinklers and wind machines that would operate approximately eight times per year between 10 p.m. and 8 a.m.
- *Late pruning*
- *Sulfur applications* approximately 12 times per year between 2 a.m. and 6 a.m.

Permanent erosion control measures would be maintained regularly. These measures would be monitored throughout the rainy season and repairs and maintenance would be performed immediately. The permanent cover crop would be mowed only and not disked.

An integrated pest management program would be implemented as part of the property's sustainable farming practices. No pre-emergent herbicides would be used for weed management. Contact or systemic herbicides may be applied in the spring (no earlier than February 15). Chemicals would be stored and mixed at an existing barn southeast of proposed Block 6, as shown in Figure 5 of the KJS Investment Properties and Sorrento Inc. ECP (**Appendix A**).

An estimated 10 additional truck trips (20 tons each) and 25 one-way worker trips would occur during harvest. Grape-hauling trucks may travel approximately 1 mile internally on the property and approximately 35 miles off-site. The trucks are anticipated to arrive via SR 128, half from the west and half from the east.

The proposed project would also involve ongoing maintenance of erosion control measures and operation of approximately 4.3 acres of existing vineyard that were converted from grassland/hay pasture in 2015 without an approved agricultural ECP application. This area has been historically and was actively cultivated for hay and straw production before being converted to vineyard. These vineyard areas are located within two larger vineyard blocks that total 17.4 acres. The slope on these lands within the 17.4 acres of existing vineyard is 5 percent or less (except for the 4.3 acres located on slopes steeper than 5 percent). Therefore, the portions of this existing vineyard area occurring on slopes less than or equal to 5 percent are not subject to an ECP application pursuant to NCC Section 18.108.070(B).

Accordingly, this vineyard development conforms to the slope limitations established by NCC Section 18.108.070(B), except for the aforementioned 4.3 acres located on slopes steeper than 5 percent. As such, this project includes the vineyard development area that requires coverage by an ECP application under Section 18.108.070(B).

2.4.5 ANTICIPATED REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

As the lead agency, the County's Planning, Building and Environmental Services Department has principal responsibility for approving and carrying out the proposed project and for ensuring that the requirements of the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and other applicable regulations are met. **Table 2-5** identifies the regulatory agencies that may have permitting approval or review authority over portions of the proposed project.

TABLE 2-5
ANTICIPATED REGULATORY REQUIREMENTS, PERMITS, AND CONSULTATION FOR PROJECT IMPLEMENTATION

Agency	Type of Permit or Approval
Federal Agencies	
U.S. Army Corps of Engineers	Clean Water Act Section 404 permit
U.S. Fish and Wildlife Service	Compliance with the federal Endangered Species Act (Section 7)
State Agencies	
California Department of Fish and Wildlife	Section 1602 Lake or Streambed Alteration Agreement
State Water Resources Control Board, Division of Water Rights	Approval of Petitions for Change on Water Right License 9125 and Permit 18459 and a Petition for Extension of Time on Permit 18459
San Francisco Bay Regional Water Quality Control Board (Region 2)	Clean Water Act Section 401 Water Quality Certification
	General Waste Discharge Requirements for Vineyard Properties in the Napa River and Sonoma Creek Watersheds
State Historic Preservation Office	Consultation under Section 106 of the National Historic Preservation Act

SOURCE: Data compiled by Environmental Science Associates in 2019

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CHAPTER 3

ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

3.1 INTRODUCTION TO THE ANALYSIS

3.1.1 SCOPE OF THE ENVIRONMENTAL IMPACT REPORT ANALYSIS

This chapter of the Draft EIR presents the environmental and regulatory setting, impacts, and mitigation measures for each of the following resource topics, listed according to their respective sections in the Draft EIR:

3.2 Air Quality and Greenhouse Gas Emissions

3.3 Biological Resources

3.4 Cultural and Tribal Cultural Resources

3.5 Geology and Soils

3.6 Hazards and Hazardous Materials

3.7 Hydrology and Water Quality

3.8 Land Use and Planning

3.9 Noise

3.10 Transportation

The proposed project was determined to result in either no impact or a less-than-significant impact relative to other resource topics; therefore, those other resource topics are not evaluated further in this Draft EIR. A summary of the analysis regarding these other resource topics is provided in **Chapter 1, *Introduction*,** and in the Initial Study Environmental Checklist included in **Appendix B** of this Draft EIR.

3.1.2 SECTION FORMAT

Each section of this chapter contains the following elements:

- Introduction to the analysis in the section
- Environmental setting
- Regulatory setting

- Standards of significance used to evaluate the significance of proposed project impacts and methods of analysis
- Impacts and mitigation measures

The environmental and regulatory setting descriptions provide a point of reference for assessing the environmental impacts of the proposed project. The setting discussion is followed by a discussion of impacts and mitigation measures.

A summary table precedes each impact/mitigation measure discussion. The summary table lists the potential short-term (construction-related) and long-term (operational) impacts of the proposed project and the significance conclusions for those impacts with implementation of mitigation measures, as applicable. Impact analyses with significance conclusions of no impact or less-than-significant impact, after consideration of the standards of significance, were addressed in the Initial Study Environmental Checklist (**Appendix B**).

3.1.3 IMPACTS AND MITIGATION MEASURES

Each impact discussion includes the following elements:

- An impact statement (in bold text)
- An explanation of the impact as it relates to the proposed project
- An analysis of the significance of the impact
- Identification of relevant mitigation measures, if appropriate
- An evaluation of whether the identified mitigation measures would reduce the magnitude of identified impacts

Cumulative impacts for each technical issue area are discussed in **Chapter 4, *Other CEQA Considerations*, Section 4.1, *Cumulative Impacts***.

The project site as it existed at the time of the Notice of Preparation (September 18, 2018) is considered the baseline for analyzing the effects of the proposed project.

3.1.4 TERMINOLOGY

This Draft EIR uses the following terminology:

- **Standards of Significance:** The standards of significance are the set of criteria used by Napa County to determine at what level or “threshold” an impact would be considered significant. Standards of significance used in this EIR include those discussed in Appendix G of the State CEQA Guidelines; criteria based on factual or scientific information; criteria based on regulatory standards of federal, state, and local agencies; and criteria adopted by Napa County. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, state, and local regulations.

- **Less-than-Significant Impact:** An impact is considered less than significant if it does not reach the standard of significance and would therefore cause no substantial change in the environment (no mitigation required).
- **Significant Impact:** An impact is considered significant if it would result in a substantial adverse change in the physical conditions of the environment. Significant impacts are identified by evaluating the effects of the proposed project in the context of specified significance criteria. Mitigation measures and/or project alternatives are identified to reduce these effects on the environment where feasible.
- **Significant and Unavoidable Impact:** An impact is considered significant and unavoidable if it would result in a substantial adverse change in the environment that cannot be feasibly avoided or mitigated to a less-than-significant level if the proposed project is implemented. Findings of Fact and a Statement of Overriding Considerations would be adopted for impacts that cannot be mitigated.
- **Cumulative Impacts:** Cumulative impacts refer to two or more individual effects that, when considered together, are considerable or that compound or increase other environmental impacts (State CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the “project's incremental effect is cumulatively considerable” (State CEQA Guidelines, Section 15130[a]).
- **Mitigation Measures:** The State CEQA Guidelines (Section 15370) define mitigation as all of the following actions:

  - Avoiding the impact altogether by not taking a certain action or parts of an action.
  - Minimizing impacts by limiting the degree of magnitude of the action and its implementation.
  - Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
  - Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
  - Compensating for the impact by replacing or providing substitute resources or environments.

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3.2 AIR QUALITY AND GREENHOUSE GAS EMISSIONS

This section describes the air quality and greenhouse gas (GHG) emissions setting of the region and project vicinity; summarizes the regulatory setting for the proposed project; and evaluates the potential for project construction and operation to result in impacts on air quality and GHG emissions. This section also analyzes the change in annual carbon sequestration and soil carbon storage that would result from woodland conversion for the proposed project.

No comment letters regarding air quality and GHG emissions were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation comment letters.

3.2.1 ENVIRONMENTAL SETTING

TOPOGRAPHY AND METEOROLOGY

The primary factors that determine air quality are the locations of air pollutant sources and the amounts of pollutants emitted. Meteorological and topographical conditions are also important. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants.

The project site is located approximately 10 miles east of the city of St. Helena in unincorporated Napa County. The elevation of the area ranges from approximately 810 feet to 2,100 feet above mean sea level. The long, narrow Napa Valley runs north to south between two ridges formed within the coastal mountains that have an average ridgeline height of 2,000 feet. Some peaks approach 3,000–4,000 feet in height. The surrounding terrain results in up-valley and down-valley winds (blowing from the south during the day and from the north during the night, respectively).

The Napa Valley has a high potential for natural air pollution because the terrain reduces ventilation. Prevailing winds can transport locally and regionally generated pollutants northward into the valley, where the pollutants often become trapped and concentrated when conditions are stable. The local up-valley and down-valley flows set up by the surrounding mountains may also recirculate pollutants, contributing to the buildup of pollutants.

Despite this high natural potential for air pollution, the Napa Valley has generally good air quality because much of the valley is relatively lightly developed.

CRITERIA AIR POLLUTANTS

As required by the federal Clean Air Act of 1970, the U.S. Environmental Protection Agency (EPA) identified several pollutants that are pervasive in urban environments: ozone, carbon monoxide (CO), nitrogen dioxide, sulfur dioxide, particulate matter (PM), and lead. Federal and state health-based ambient air quality standards have been established for these pollutants,

which are called “criteria air pollutants.” EPA has developed specific public health and welfare–based criteria as the basis for setting permissible levels of the criteria air pollutants.

Ozone

Short-term exposure to ozone can irritate the eyes and cause constriction of the airways and shortness of breath. Ozone can also aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

Ozone is not emitted directly into the atmosphere. Rather, it is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen (NO_X). ROG and NO_X are known as precursor compounds for ozone.

Generally, to produce substantial amounts of ozone, ozone precursors must be present in a stable atmosphere with strong sunlight for approximately three hours. Ozone is a regional air pollutant because it is formed downwind of ROG and NO_X sources under the influence of wind and sunlight.

Ozone concentrations tend to be higher in the late spring, summer, and fall, when long sunny days combine with regional subsidence inversions to create conditions conducive to the formation and accumulation of secondary photochemical compounds, like ozone.

Carbon Monoxide

CO is a nonreactive pollutant that is a product of incomplete combustion and is mostly associated with motor vehicle traffic. High CO concentrations develop primarily in the winter when light winds combine with the formation of ground-level temperature inversions (typically from the evening through the early morning). These conditions reduce the dispersion of vehicle emissions. Motor vehicles also exhibit increased CO emissions rates at low air temperatures.

When inhaled at high concentrations, CO combines with hemoglobin in the blood and reduces the blood’s oxygen-carrying capacity, which reduces the amount of oxygen that reaches the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, and for fetuses.

CO concentrations have declined dramatically in California as a result of existing controls and programs. Most of the state, including the project area, has no problem meeting federal and state standards for CO. CO measurements and modeling were important in the early 1980s when CO levels were regularly exceeded throughout California. In more recent years, CO measurements and modeling have not been a priority in most California air districts as older polluting vehicles have been retired, new vehicles have generated fewer emissions, and fuels have improved.

Nitrogen Dioxide

Nitrogen dioxide is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of this gas. Nitrogen dioxide may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

Nitrogen dioxide is an air quality concern because it is a respiratory irritant and a precursor of ozone. Nitrogen dioxide is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_X. NO_X are produced by fuel combustion in motor vehicles, industrial stationary sources, ships, aircraft, and rail transit. Typically, fuel combustion emits NO_X in the form of nitric oxide and nitrogen dioxide. Nitric oxide is often converted to nitrogen dioxide when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, nitrogen dioxide emissions from combustion sources are typically evaluated based on the amount of NO_X emitted from the source.

Sulfur Dioxide

Sulfur dioxide is a colorless, acidic gas with a strong odor and a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. This gas is also a precursor to the formation of atmospheric sulfate and PM, and it contributes to the potential formation of atmospheric sulfuric acid that could precipitate downwind as acid rain. Sulfur dioxide can irritate lung tissue and increase the risk of acute and chronic respiratory disease.

Particulate Matter

PM_{10} and $PM_{2.5}$ consist of PM measuring 10 microns or less in diameter and 2.5 microns or less in diameter, respectively (a micron is one-millionth of a meter). PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Some sources of PM are local, such as wood burning in fireplaces, demolition, and construction activities; other sources, such as vehicular traffic, have a more regional effect. Very small particles of certain substances (e.g., sulfates and nitrates) can cause lung damage directly, or can contain adsorbed gases (e.g., chlorides or ammonium) that may harm human health.

Particulates also can damage materials and reduce visibility. Large dust particles (those with a diameter greater than 10 microns) settle out rapidly and are easily filtered by human breathing passages. The large dust particles are more of a soiling nuisance than a health hazard. The smaller particles, PM_{10} and $PM_{2.5}$, are a health concern, particularly when present at levels exceeding the federal and state ambient air quality standards. $PM_{2.5}$ (which includes diesel exhaust particles) is thought to have more substantial health effects because these particles are so small and thus can penetrate to the deepest parts of the lungs. Scientific studies have suggested links between fine PM and numerous health problems: asthma, bronchitis, and acute and chronic respiratory symptoms, such as shortness of breath and painful breathing. Recent studies have shown an association between morbidity (disease) and mortality (premature death)

and daily concentrations of PM in the air. Children are more susceptible to the health risks of PM_{10} and $PM_{2.5}$ because their immune and respiratory systems are still developing.

Despite important gaps in scientific knowledge, a comprehensive evaluation of the research findings provides persuasive evidence that exposure to fine particulate air pollution has adverse effects on cardiopulmonary health (Dockery and Pope 2006).

Lead

The primary sources of lead released into the atmosphere have been leaded gasoline, paint (on older houses and cars), smelters (at metal refineries), and manufacturers of lead storage batteries. Lead has a range of adverse neurotoxin health effects, and was formerly released into the atmosphere primarily via leaded gasoline products. Atmospheric lead levels decreased as California phased out the use of leaded gasoline.

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs) are airborne substances that can cause short-term (acute) or long-term (chronic or carcinogenic, i.e., cancer-causing) adverse human health effects, even when present in relatively low concentrations. The potential human health effects of TACs include birth defects, neurological damage, cancer, and death.

TACs include both organic and inorganic chemical substances. They may be emitted by common sources such as gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. California's current list of TACs includes approximately 200 compounds, including diesel particulate matter (DPM) emissions from diesel-fueled engines, which the California Air Resources Board (CARB) identified as a TAC in 1998 (CARB 2011).

TACs do not have ambient air quality standards, but are regulated by local air districts using a risk-based approach. This approach uses a health risk assessment to determine which sources and pollutants to control and the degree of control. The Bay Area Air Quality Management District (BAAQMD) recommends that a health risk assessment be conducted when sensitive receptors are located within 1,000 feet of project sources (BAAQMD 2017a). Common sources of toxic emissions that would typically necessitate the preparation of a health risk assessment include: freeways and high traffic volume roads, goods distribution centers, rail yards, ports, refineries, chrome platers, dry cleaners using perchloroethylene, and gasoline dispensing facilities.

GREENHOUSE GASES AND CLIMATE CHANGE

Gases that trap heat in the atmosphere are called GHGs. The process by which these gases hold heat in the atmosphere is similar to the effect of greenhouses in raising the internal temperature, hence the name "greenhouse gases." If not sufficiently curtailed, GHG emissions are likely to contribute further to increases in global temperatures.

According to EPA, the term “climate change” refers to any significant change in measures of climate (such as temperature, precipitation, or wind) that lasts for an extended period, defined as several decades or longer. There is scientific consensus that climate change is occurring and that human activity contributes in some measure—perhaps substantially—to that change. Changes in the global climate that have already been measured include rising air and ocean temperatures, increased ocean salinity, rising global sea levels, changes in precipitation patterns, and increased intensity and frequency of extreme events such as storms, droughts, and wildfires (IPCC 2014). The potential effects of climate change in California include sea level rise and reductions in snowpack, and an increased number of extreme-heat or high-ozone days per year, large forest fires, and drought years (CARB 2014).

Many secondary effects are also projected to result from climate change, including impacts on agriculture, changes in disease vectors, and changes in habitat and biodiversity. The possible outcomes and feedback mechanisms involved are not fully understood, and much research remains to be done; however, the potential exists for substantial environmental, social, and economic consequences in the long term.

GHG emissions are a global concern; GHG emissions contribute cumulatively to planet-wide atmospheric accumulations. Consequently, there are no regional “hot spots” of elevated concentrations of carbon dioxide (CO_2) or any other GHG. Therefore, existing and future GHG emissions are not a localized phenomenon, and there are no localized geographical constraints in the project area for GHG emissions.

GREENHOUSE GAS EMISSIONS

CO_2 is the primary GHG emitted by human activities. Other GHGs emitted, in much smaller amounts, include nitrous oxide; methane, often from unburned natural gas; sulfur hexafluoride, from high-voltage power equipment; and hydrofluorocarbons and perfluorocarbons, from refrigeration and chiller equipment. Each GHG has a different warming potential, defined as the amount of heat trapped in the atmosphere by a certain mass of the gas.

CO_2 is the most common reference gas for climate change; thus, GHG emissions are often quantified and reported as CO_2-equivalent (CO_2e) emissions. For example, sulfur hexafluoride represents a small fraction of the total GHGs emitted worldwide each year, but this gas is very potent, with 23,900 times the global warming potential of CO_2. Therefore, an emission of 1 metric ton (MT) of sulfur hexafluoride would be reported as 23,900 MT CO_2e. The global warming potentials of methane and nitrous oxide are 25 times and 298 times that of CO_2, respectively (CARB 2018a).

The principal GHGs resulting from human activity that enter and accumulate in the atmosphere are described below.

Carbon Dioxide

CO_2 is a naturally occurring gas that enters the atmosphere through both natural and anthropogenic (human) sources. Key anthropogenic sources are the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, and industrially relevant chemical reactions, such as those from manufacturing cement. CO_2 is removed from the atmosphere when it is absorbed by plants as part of the biological carbon cycle.

Methane

Like CO_2, methane is emitted by both natural and anthropogenic sources. Key anthropogenic sources of methane are gaseous emissions from landfills, releases during mining and materials extraction (particularly coal mining), and fugitive releases during the extraction and transport of natural gas and crude oil. Livestock and agricultural practices also emit methane, and fossil fuel combustion releases methane in small quantities.

Nitrous Oxide

Both natural and anthropogenic sources emit nitrous oxide. Important anthropogenic sources include industrial activities, agricultural activities (primarily the application of nitrogen fertilizer), the use of explosives, combustion of fossil fuels, and decay of solid waste.

Fluorinated Gases

Hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride are synthetic gases emitted during a variety of industrial processes. On a pound-for-pound basis, these fluorinated gases contribute substantially more to the greenhouse effect than the other GHGs described in this section. Fluorinated gases are often used as substitutes for ozone-depleting substances (chlorofluorocarbons, hydrofluorocarbons, and halons). These gases are typically emitted in small quantities, but because of their potency, they are sometimes referred to as “high global warming potential gases.”

EXISTING AIR QUALITY

The project site is located within the San Francisco Bay Area Air Basin (SFBAAB) and is under the jurisdiction of the BAAQMD. BAAQMD operates a regional monitoring network that measures ambient concentrations of criteria air pollutants. Existing and probable future levels of air quality in the project area can be generally inferred from ambient air quality measurements at BAAQMD’s nearby monitoring stations. The Jefferson Avenue monitoring station, almost 14 miles south of the project site, is the only station in Napa County and monitors ozone, PM_{10}, $PM_{2.5}$, and nitrogen dioxide.

Because the major pollutants of concern in the SFBAAB are ozone, PM_{10}, and $PM_{2.5}$ (as discussed in **Section 3.2.2, *Regulatory Setting***), **Table 3.2-1** shows a five-year summary of monitoring data (2013 through 2017) collected at the Jefferson Avenue monitoring station for these pollutants and the ozone precursor nitrogen dioxide. **Table 3.2-1** also compares

measured pollutant concentrations with the national and California ambient air quality standards (see **Section 3.2.2**).

TABLE 3.2-1
AIR QUALITY DATA SUMMARY (2013–2017) FOR THE PROJECT AREA

Pollutant	State Standard	National Standard	Monitoring Data by Year				
			2013	2014	2015	2016	2017
Ozone, Hourly							
Highest one-hour average, ppm	0.09	NA	0.089	0.074	0.079	0.080	0.098
Days over state standard			0	0	0	0	1
Ozone, Eight-Hour							
Highest eight-hour average, ppm	0.070	0.070	0.076	0.066	0.069	0.067	0.084
Days over national standard			1	0	0	0	2
Days over state standard			2	0	0	0	2
Nitrogen Dioxide							
Highest 24-hour average, ppm	0.18	0.100	0.043	0.046	0.043	0.039	0.053
Estimated days over national standard			0	0	0	0	0
Estimated days over state standard			0	0	0	0	0
Annual average, ppm	0.03	0.053	0.009	0.007	0.007	0.007	0.007
Fine Particulate Matter ($PM_{2.5}$)							
Highest 24-hour average, µg/m^3	NA	35	35.8	29.9	38.2	24.3	199.1
Estimated days over national standard			1	0	1	0	13
Annual average, µg/m^3	12	12	11.7	12.0	10.6	8.5	13.7
Respirable Particulate Matter (PM_{10})							
State/national highest 24-hour average, µg/m^3	50	150	39.6/ 37.6	39.3/ 37.7	50.0/ 51.5	33.0/ 32.2	NA
Estimated days over national standard			0	0	0	0	NA
Estimated days over state standard			0	0	0	0	NA
Annual average, µg/m^3	20	NA	18.7	15.8	18.7	NA	NA

NOTES:
µg/m^3 = micrograms per cubic meter; NA = not available or not applicable; $PM_{2.5}$ = particulate matter measuring 2.5 microns or less in diameter; PM_{10} = particulate matter measuring 10 microns or less in diameter; ppm = parts per million
Generally, national and state standards are not to be exceeded more than once per year.

SOURCE: CARB 2018b

Overall, air quality in the project area is better than the national and California ambient air quality standards, with occasional violations of the ozone and $PM_{2.5}$ standards. The area experienced more air quality violations in 2017 as a result of the deadly Northern California fires of October 2017.

GREENHOUSE GAS SOURCES

Human activities are responsible for almost all of the increase in GHGs in the atmosphere in the last 150 years. The largest source of GHG emissions from human activities in the United States is the burning of fossil fuels for electricity, heat, and transportation (EPA 2018a).

The primary sources of GHG emissions in the United States are transportation (nearly 28.5 percent of GHG emissions in 2016), electricity production (28.3 percent), industry (21.6 percent), commercial and residential (11.5 percent), agriculture (9.4 percent), and emissions from U.S. territories (0.7 percent). Land use (trees in urban areas, agricultural uses, coastal wetlands) and forestry offset 11 percent of the total emissions by acting as a sink that absorbs CO_2 from the atmosphere. Since 1990, managed forests and other lands in the United States have absorbed more CO_2 from the atmosphere than they have emitted (EPA 2018a).

In 2016, California produced approximately 430 million MT CO_2e emissions. Transportation was the source of 39 percent of the state's GHG emissions, followed by industrial at 21 percent, electricity generation at 16 percent, and commercial and residential sources at 9 percent. Recycling and waste, high global warming potential gases, and agriculture sources represent the remaining 15 percent (CARB 2018c).

Table 3.2-2 lists California's GHG emissions by category from 2010 through 2016.

TABLE 3.2-2
CALIFORNIA GREENHOUSE GAS EMISSIONS (MILLION METRIC TONS CO_2E)

Emission Inventory Category	2010	2011	2012	2013	2014	2015	2016	
Transportation	163.01	159.68	159.44	158.14	160.03	164.63	169.38	39%
Electric Power	90.34	88.06	95.09	89.65	88.24	83.67	68.58	16%
Commercial and Residential	45.05	45.50	42.89	43.54	37.37	37.92	39.36	9%
Industrial	91.01	90.65	90.90	93.48	93.77	91.71	89.61	21%
Recycling and Waste	8.37	8.47	8.49	8.52	8.59	8.73	8.81	15%
High-GWP Gases	13.64	14.74	15.74	16.82	17.82	19.05	19.78	
Agriculture	34.64	35.28	36.42	34.93	36.03	34.65	33.84	
Total Gross Emissions	**446.06**	**442.38**	**448.97**	**445.08**	**441.85**	**440.36**	**429.36**	**100%**

NOTES: CO_2e = carbon dioxide equivalents; GWP = global warming potential

SOURCE: CARB 2018c

For the SFBAAB, the most recent GHG emissions inventory available is for the base year 2011. The transportation sector represents the largest source of the SFBAAB's GHG emissions, accounting for 39.6 percent of the 86.6 million MT CO_2e emitted in 2011. The industrial and commercial sector was the second largest contributor, with 35.8 percent of total GHG emissions. Electricity/cogeneration sources account for about 14 percent of the SFBAAB's GHG emissions, followed by residential fuel usage at about 7.6 percent. Off-road equipment and

agricultural/farming sources currently account for approximately 1.5 percent each of the total SFBAAB GHG emissions (BAAQMD 2015).

In 2014, communitywide activities in Napa County accounted for 484,283 MT CO_2e. Most emissions were from building energy use and on-road vehicle activity. Thirty-one percent of these emissions from the use of energy in buildings for heating, cooling, powering devices, other equipment, and other energy loads. Emissions from gasoline and diesel consumption by vehicles and trucks on local and regional roads accounted for another 26 percent of the county's emissions in 2014 (Napa County 2018).

ODORS

Although offensive odors from stationary sources rarely cause any physical harm, they remain unpleasant and can lead to public distress, generating complaints to local governments by residents. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of those experiencing the odors (the odor "receptors").

The State CEQA Guidelines recommend considering the odor impacts of any proposed new odor sources located near existing receptors, and for any new sensitive receptors located near existing odor sources. Generally, increasing the distance between the receptor and the source would mitigate odor impacts.

BAAQMD provides examples of odor sources that include wastewater treatment plants, landfills, confined-animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. None of these odor sources exist in the project vicinity.

SENSITIVE LAND USES

Some receptors are more sensitive than others to air pollutants. Reasons for greater than average sensitivity include preexisting health problems, proximity to emissions sources, or duration of exposure to air pollutants.

Land uses such as schools, day care centers, hospitals, and convalescent homes are considered more sensitive than the general public to poor air quality, because the population groups associated with these uses are more susceptible to respiratory distress and other health problems related to air quality. Persons engaged in strenuous work or exercise are also more sensitive to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions.

The project site is located in an unincorporated and rural area of Napa County. The predominant land use in the vicinity of the project site is agricultural, with scattered residences present. Sensitive receptors in the project vicinity consist of single-family residences approximately 300 feet south of proposed vineyard Block 1, 560 feet southeast of proposed

vineyard Block 6, and 680 feet west of proposed vineyard Block 14. **Figure 2-3** shows the locations of the proposed vineyard blocks. Additional residences are located east of the project site, but are more than 2,000 feet from the nearest proposed vineyard block where construction activities could take place. The closest residential community that may contain schools, hospitals, and/or convalescent homes is the town of Yountville, located more than 8 miles to the southwest.

3.2.2 REGULATORY SETTING

FEDERAL AND STATE REGULATIONS

U.S. Environmental Protection Agency and California Air Resources Board

Federal, state, and regional regulations provide the framework for analyzing and controlling air pollutant emissions, and thus, general air quality. EPA is responsible for implementing the programs established by the federal Clean Air Act, such as establishing and reviewing the national ambient air quality standards and reviewing state implementation plans. EPA has delegated authority for implementing many of these programs to the states, while retaining an oversight role to ensure that the programs continue to be implemented.

In California, CARB establishes and reviews the California ambient air quality standards, develops and manages California's state implementation plan, secures approval of this plan from EPA, and identifies TACs. CARB also regulates mobile emissions sources in California, such as construction equipment, trucks, and automobiles, and oversees the activities of air quality management districts, which are organized at the county or regional level.

Regionally, BAAQMD is primarily responsible for regulating stationary emissions sources at facilities within the SFBAAB. BAAQMD prepares the air quality plans that are required by the federal Clean Air Act and the California Clean Air Act.

Clean Air Act

The federal Clean Air Act Amendments of 1977 established the national ambient air quality standards. Individual states retained the option to adopt more stringent standards and include other pollution sources. California had already established its own air quality standards when the federal standards were established, and because of California's unique meteorological problems, there are considerable differences between some of the federal and state standards.

The federal Clean Air Act also requires regional planning and air resources agencies to prepare regional air quality plans outlining the agencies' measures to control stationary and mobile pollutant sources to achieve all standards within the specified deadlines.

National ambient air quality standards exist for seven criteria air pollutants: ozone, CO, nitrogen dioxide, sulfur dioxide, PM_{10}, $PM_{2.5}$, and lead. In addition, California has established state standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The ambient air quality standards are intended to protect public health and welfare, and they specify

the concentration of pollutants (with an adequate margin of safety) to which the public can be exposed without adverse health effects. The standards are designed to protect the segments of the public most susceptible to respiratory distress ("sensitive receptors"), including people with asthma, the very young, elderly, people weak from other illness or disease, or people engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollution levels somewhat in excess of the ambient air quality standards before adverse health effects are observed.

Under amendments to the federal Clean Air Act, EPA has classified air basins or portions of the basins as either "attainment" or "nonattainment" for each criteria air pollutant, based on whether or not they have achieved the national standards for that pollutant. The California Clean Air Act, which is patterned after the federal Clean Air Act, requires that areas be designated as attainment or nonattainment for the state standards. Thus, areas in California have two sets of attainment/nonattainment designations: one set relative to the national standards and the other relative to the state standards. EPA makes designations relative to the national standards and CARB makes designations relative to the state standards.

The national air quality designations are updated either when the standards change or when an area requests redesignation because its air quality has changed; the state designations are updated annually. A nonattainment designation is of most concern because it indicates that unhealthy levels of the pollutant exist in the area, which typically triggers a need to develop a plan to achieve the applicable standards.

Table 3.2-3 presents both sets of ambient air quality standards and the SFBAAB's attainment status for each standard.

On April 2, 2007, in *Massachusetts v. USEPA* (549 U.S. 497), the U.S. Supreme Court found that GHGs are air pollutants covered by the Clean Air Act. The Court held that EPA must determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making such decisions, EPA must follow the language of Section 202(a) of the Clean Air Act, which obligates it to prescribe (and, from time to time, revise) standards applicable to emissions of any air pollutant from any classes of new motor vehicles or new motor vehicle engines. The Supreme Court decision resulted from a petition for rulemaking under Section 202(a) filed by more than a dozen environmental, renewable energy, and other organizations.

On April 17, 2009, the EPA Administrator signed proposed "endangerment" and "cause or contribute" findings for GHGs under Section 202(a) of the Clean Air Act. EPA found that six GHGs, taken in combination, endanger both the public health and the public welfare of current and future generations. EPA also found that the combined emissions of these GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse effect as air pollution that endangers public health and welfare under Clean Air Act Section 202(a).

TABLE 3.2-3
AMBIENT AIR QUALITY STANDARDS AND SAN FRANCISCO BAY AREA AIR BASIN ATTAINMENT STATUS

Pollutant	Averaging Time	National Standard[a]		State Standard[b]	
		Concentration	Attainment Status	Concentration	Attainment Status
Ozone	One-Hour Eight-Hour	– 0.070 ppm	– Nonattainment	0.09 ppm 0.070 ppm	Nonattainment Nonattainment
Carbon Monoxide	One-Hour Eight-Hour	35 ppm 9 ppm	Attainment Attainment	20 ppm 9.0 ppm	Attainment Attainment
Nitrogen Dioxide	One-Hour Annual	0.100 ppm 0.053 ppm	Unclassified Attainment	0.18 ppm 0.030 ppm	Attainment –
Sulfur Dioxide	One-Hour 24-Hour Annual	0.075 ppm 0.14 ppm 0.030 ppm	Attainment Attainment Attainment	0.25 ppm 0.04 ppm –	Attainment Attainment
Respirable Particulate Matter (PM_{10})	24-Hour Annual	150 µg/m^3 –	Unclassified –	50 µg/m^3 20 µg/m^3	Nonattainment Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	24-Hour Annual	35 µg/m^3 12 µg/m^3	Nonattainment Unclassified/Attainment	– 12 µg/m^3	Nonattainment
Lead	Monthly Quarterly	– 1.5 µg/m^3	Attainment	1.5 µg/m^3 –	Attainment

NOTES:
µg/m^3 = micrograms per cubic meter; $PM_{2.5}$ = particulate matter measuring 2.5 microns or less in diameter; PM_{10} = particulate matter measuring 10 microns or less in diameter; ppm = parts per million

[a] National standards, other than ozone and particulates, and those based on annual averages or annual arithmetic means, are not to be exceeded more than once a year. The eight-hour ozone standard is attained when the three-year average of the fourth highest daily concentration is 0.08 ppm or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than the standard. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of the 98th percentile is less than the standard.

[b] State standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (one-hour and 24-hour), nitrogen dioxide, and respirable and fine particulate matter are values that are not to be exceeded. All other state standards shown are values not to be equaled or exceeded.

SOURCE: BAAQMD 2017a

In accordance with Title 40, Part 52 of the Code of Federal Regulations*, Proposed Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule*, EPA has mandated that Prevention of Significant Deterioration and Title V requirements apply to facilities whose stationary-source CO_2e emissions exceed 100,000 tons per year (EPA 2018b). The proposed project would not trigger permitting under this regulation because it would not include any stationary sources and would generate substantially less than 100,000 tons of CO_2e emissions per year.

On June 23, 2014, in *Utility Air Regulatory Group v. EPA*, the U.S. Supreme Court found that EPA cannot regulate a power plant solely because of its GHG emissions. However, a separate ruling found that EPA has the authority under the Clean Air Act to regulate GHG emissions from new power plants, provided that the emissions source is also regulated for other air pollutants. The case marked the third major decision by the Supreme Court confirming EPA's authority to regulate GHGs.

Regulations for Mobile Sources of Air Pollutants

The following air quality regulations apply to mobile sources and are directly relevant to the project. On-road vehicles with a gross vehicular weight rating of 10,000 pounds or greater are prohibited from idling for longer than five minutes at any location (California Code of Regulations Title 13, Section 2485 [13 CCR Section 2485]). This restriction does not apply when vehicles remain motionless during traffic or are queuing. Off-road equipment engines are not allowed to idle for longer than five minutes (13 CCR Section 2449[d][3]).

The following exceptions to this rule exist: idling when queuing; idling to verify that the vehicle is in safe operating condition; idling for testing, servicing, repairing, or diagnostic purposes; idling necessary to accomplish work for which the vehicle was designed (such as operating a crane); and idling required to bring the machine to operating temperature as specified by the manufacturer.

Executive Order S-3-05

Executive Order S-3-05, issued by Governor Arnold Schwarzenegger in June 2006, established the following statewide emission reduction targets through the year 2050:

(1) By 2010, reduce GHG emissions to 2000 levels.
(2) By 2020, reduce GHG emissions to 1990 levels.
(3) By 2050, reduce GHG emissions to 80 percent below 1990 levels.

This executive order established GHG emissions goals only; it does not include any requirements pertinent to the proposed project. However, future actions taken by the state to implement these goals may affect the proposed project, depending on the specific implementation measures developed.

Assembly Bill 32

Assembly Bill (AB) 32 (California Health and Safety Code Section 38500 et seq.), the Global Warming Solutions Act of 2006, is the cornerstone of state efforts to reduce GHG emissions. The law required CARB to establish a statewide GHG emissions cap for 2020 based on 1990 emissions levels; develop a mandatory reporting program for GHG emissions; adopt regulations for discrete early actions to reduce GHG emissions; prepare a scoping plan to identify how emissions reductions will be achieved; and adopt a regulation that establishes a market-based compliance mechanism (also referred to as “Cap and Trade”).

Statewide Greenhouse Gas Emissions Cap

In 2007, CARB established the statewide GHG emissions limit that must be achieved by 2020, equivalent to statewide GHG emissions levels in 1990, at 427 million MT CO_2e. This figure is approximately 30 percent below projected “business-as-usual” emissions of 596 million MT CO_2e for 2020, and about 10 percent below average annual GHG emissions during the period

of 2002 through 2004 (CARB 2009). The state has already met this reduction goal based on the 2016 inventory.

Climate Change Scoping Plan

In compliance with AB 32, CARB adopted the Climate Change Scoping Plan (Scoping Plan) in December 2008 (CARB 2009). CARB reapproved the plan on August 24, 2011. The Scoping Plan outlines measures to meet the GHG reduction goals for 2020 by reducing the state's GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels, or about 15 percent from 2008 levels.

The Scoping Plan identifies recommended measures for further study and possible state implementation, such as new fuel regulations. It estimated that GHG emissions from the transportation, energy, agriculture, and forestry sectors and other sources could be reduced by 174 million MT CO_2e (about 191 million U.S. tons) if the state were to implement all measures identified in the Scoping Plan. The Scoping Plan relies on the requirements of Senate Bill (SB) 375 (discussed below) to implement the carbon emissions reductions anticipated from land use decisions.

AB 32 requires that the Scoping Plan be updated at least every five years. CARB approved the first update to the AB 32 Scoping Plan on May 22, 2014 (CARB 2014). The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below, and establishes a proposed framework of action for California to reduce GHG emissions by 40 percent by 2030 compared to 1990 levels. Continuing the efforts made since 2006 under AB 32, the Scoping Plan focuses on programs including Cap-and-Trade Regulation; the Low Carbon Fuel Standard; cleaner cars, trucks, and freight movement; renewable energy; and reduced methane emissions from agriculture and waste (CARB 2017a).

Executive Order B-30-15 (described later in this section) and SB 32 extended the goals of AB 32 and set a goal of reducing emissions 40 percent from 2020 levels by 2030. The recently adopted 2017 Scoping Plan Update establishes a path that will get California to its 2030 target. The Scoping Plan Update includes economically viable and technologically feasible actions to not just keep California on track to achieve its 2030 target, but also to stay on track for a low- to zero-carbon economy by involving every part of the state. The Scoping Plan relies on a balanced mix of strategies to achieve the GHG target at a low cost while also improving public health, investing in disadvantaged and low-income communities, protecting consumers, and supporting economic growth, jobs, and energy diversity (CARB 2017b).

Senate Bill 97

In 2007, the California Legislature enacted SB 97, which required that the State CEQA Guidelines be amended to incorporate the analysis of, and mitigation for, GHG emissions from projects subject to CEQA. Effective March 18, 2010, Section 15064.4 was added to the State CEQA Guidelines, addressing the potential significance of GHG emissions.

Section 15064.4 neither requires nor recommends a specific analytical methodology or quantitative criteria for determining the significance of GHG emissions. Rather, it calls for a good-faith effort to describe, calculate, or estimate emissions. Section 15064.4 indicates that the GHG impact analysis should consider the extent to which the project would do any of the following:

- Increase or reduce GHG emissions.
- Exceed a locally applicable threshold of significance.
- Comply with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions.

The State CEQA Guidelines also state that a project may be found to have a less-than-significant impact if it complies with an adopted plan that includes specific measures to sufficiently reduce GHG emissions (Section 15064[h][3]).

Executive Order B-30-15

In April 2015, Governor Edmund G. Brown Jr. issued Executive Order B-30-15, which established a GHG emissions reduction target for California of 40 percent below 1990 levels by 2030. In 2016, the Legislature enacted SB 32, which codified the GHG emissions reduction target established by this executive order. Reaching this emissions reduction target will help enable California to reach its goal of reducing emissions to 80 percent below 1990 levels by 2050, as previously identified in Executive Order S-3-05.

Executive Order B-30-15 also addresses the need for climate adaptation and directs state government to take the following actions (Office of the Governor 2015):

- Incorporate climate change impacts into the state's 5-Year Infrastructure Plan.
- Update the Safeguarding California Plan, the state’s climate adaption strategy to identify the future effects of climate change on California infrastructure and industry and the actions the state can take to reduce the risks posed by climate change.
- Factor climate change into planning and investment decisions by state agencies.
- Implement measures under agencies’ and departments’ existing authority to reduce GHG emissions.

Executive Order B-30-15 requires CARB to update the Scoping Plan to incorporate the 2030 GHG emissions reduction target.

LOCAL REGULATIONS

Bay Area Air Quality Management District

BAAQMD is the regional agency with jurisdiction over air quality management in the nine counties located in the SFBAAB. The Association of Bay Area Governments and Metropolitan Transportation Commission, county transportation agencies, cities and counties, and nongovernmental organizations join in programs and other efforts to improve air quality. These

efforts include adopting regulations and policies and implementing extensive education and public outreach programs.

BAAQMD is also responsible for attaining and/or maintaining air quality in the SFBAAB within federal and state air quality standards. Specifically, BAAQMD monitors ambient air pollutant levels throughout the basin and develops and implements strategies for attaining the applicable federal and state standards.

Projects or facilities that seek to install, modify, or replace equipment that may cause, reduce, or control emissions of air contaminants must first secure written "Authority to Construct" authorization from BAAQMD, unless the emissions source is excluded or exempt from permit requirements. BAAQMD conducts a preconstruction review after the equipment is designed, but before it is installed. District approval is required as a condition of the permit. The proposed project would not include any pollutant sources that would require a BAAQMD permit.

BAAQMD CEQA Air Quality Guidelines

BAAQMD's *CEQA Air Quality Guidelines* (BAAQMD CEQA Guidelines) advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. BAAQMD adopted updated CEQA guidelines, including new thresholds of significance, in June 2010 and revised them in May 2011 (BAAQMD 2011). These thresholds were challenged in court.

On December 17, 2015, the California Supreme Court held that CEQA does not generally require an analysis of the impacts of locating development in areas subject to existing environmental hazards unless the project would exacerbate those hazards. The court's opinion also held that public agencies remain free to conduct this analysis regardless of whether it is required by CEQA.

A new version of the BAAQMD CEQA Guidelines was issued in May 2017 (BAAQMD 2017b), including revisions made to address the Supreme Court's opinion. The May 2017 update does not address outdated references, links, analytical methodologies, or other technical information that may be in the BAAQMD CEQA Guidelines. BAAQMD has advised local agencies that the thresholds are not mandatory and agencies should apply them only after determining that they reflect an appropriate measure of a project's impacts (BAAQMD 2019). The 2017 update also specifies that under CEQA, the receptor thresholds (the analysis of exposing new receptors to existing sources of toxic air pollution and odors) should not be applied to "routinely assess the effect of existing environmental conditions on future users or occupants of a project" (BAAQMD 2017b).

Bay Area 2017 Clean Air Plan

The federal and California Clean Air Acts require that plans be developed for areas designated as nonattainment (except for areas designated as nonattainment for the state PM_{10} standard). In April 2017, BAAQMD adopted the 2017 Clean Air Plan (BAAQMD 2017c). The plan's primary goals are to protect public health and protect the climate. The plan proposes actions to reduce

combustion-related activities and resultant fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. The 2017 Clean Air Plan updates the Bay Area 2010 Clean Air Plan and complies with air quality planning requirements listed in the California Health and Safety Code.

The SFBAAB is designated nonattainment for both the one- and eight-hour state ozone standards. In addition, emissions of ozone precursors in the SFBAAB contribute to air quality problems in neighboring air basins. Under these circumstances, state law requires that a clean-air plan include all feasible measures to reduce emissions of ozone precursors and reduce their transport to neighboring air basins.

BAAQMD's 2017 Clean Air Plan contains 85 measures to address reduction of ozone precursors, PM, air toxics, and GHGs. Other measures focus on a single type of pollutant, potent GHGs such as methane and black carbon, or harmful fine particles that affect public health. These control strategies are grouped into the following categories:

- Stationary Source Measures
- Transportation Control Measures
- Energy Control Measures
- Building Control Measures
- Agricultural Control Measures
- Natural and Working Lands Control Measures
- Waste Management Control Measures
- Water Control Measures
- Super GHG Control Measures

BAAQMD Rules and Regulations

BAAQMD regulates stationary sources of air pollution through rules and regulations developed based on measures in the Clean Air Plan intended to improve public health, air quality, and the global climate. The regulatory process involves technical research, public meetings to allow input by affected industries and communities, other stakeholder engagement, and preparation of CEQA and socioeconomic analyses. New rules are adopted by a vote of BAAQMD's Board of Directors, then enforced via BAAQMD permit and inspection programs.

BAAQMD also regulates fires from open burning throughout its jurisdiction. Smoke from open burning contains fine particles that can be inhaled deeply into the lungs and contribute to respiratory problems. To minimize effects on public health, BAAQMD's Regulation 5 prohibits open burning, except for 17 types of fires that are conditionally allowed on designated "burn days" during predetermined burn periods.

All open burning associated with the proposed project would be subject to the requirements of BAAQMD Regulation 5, which requires submittal of a notification form and fee to BAAQMD and imposes other restrictions on burning. For CEQA purposes, compliance with the requirements of BAAQMD Regulation 5 would reduce the impacts of open burning (Marquez, pers. comm., 2019).

Napa County General Plan

The Conservation Element of the Napa County General Plan (Napa County 2009) provides goals, policies, and action items that address climate change and sustainable practices for environmental health related to water, energy conservation, air pollutant, GHG emissions, generation of clean energy, and similar issues. The following goals, policies, and action items are applicable to the proposed project. (Note that for certain policies, only the applicable measures from the policy are listed here.)

Goal CON-15*:* Reduce emissions of local greenhouse gases that contribute to climate change.

Goal CON-17*:* Reduce air pollution and reduce local contributions to regional air quality problems, achieving and maintaining air quality in Napa County which meets or exceeds state and federal standards.

- **Policy CON-65:** The County shall support efforts to reduce and offset GHG emissions and strive to maintain and enhance the County's current level of carbon sequestration functions through the following measures:

  a) Preserve and enhance the values of Napa County's plant life as carbon sequestration systems to recycle greenhouse gases. …

  e) Consider GHG emissions in the review of discretionary projects. Consideration may include an inventory of GHG emissions produced by the traffic expected to be generated by the project, any changes in carbon sequestration capacities caused by the project, and anticipated fuel needs generated by building heating, cooling, lighting systems, manufacturing, or commercial activities on the premises. Projects shall consider methods to reduce GHG emissions and incorporate permanent and verifiable emission offsets.

- **Policy CON-66:** The County shall promote the implementation of sustainable practices and green technology in agriculture, commercial, industrial, and residential development through the following actions:

  a) Project Construction

     1) Utilize recycled, low-carbon, and otherwise climate-friendly building materials such as salvaged and recycled content materials for buildings, hard surfaces, and landscaping materials.

     2) Minimize, reuse, and recycle construction-related waste.

     3) Utilize alternative fuels in construction equipment and require construction equipment to utilize the best available technology to reduce emissions.

- **Policy CON-75:** The County shall work to implement all applicable local, state, and federal air pollution standards, including those related to reductions in GHG emissions.

- **Policy CON-77*:*** All new discretionary projects shall be evaluated to determine potential significant project-specific air quality impacts and shall be required to incorporate

appropriate design, construction, and operational features to reduce emissions of criteria pollutants regulated by the state and federal governments below the applicable significance standard(s) or implement alternate and equally effective mitigation strategies consistent with BAAQMD's air quality improvement programs to reduce emissions.

- **Policy CON-80*:*** The County shall seek to reduce particulate emissions and avoid exceedances of state particulate matter (PM) standards by: …

  d) Disseminating information regarding agricultural burn requirements established by the BAAQMD.

  e) Requiring implementation of dust control measures during construction and grading activities and enforcing winter grading deadlines.

- **Policy CON-81*:*** The County shall require dust control measures to be applied to construction projects consistent with measures recommended for use by the BAAQMD.

- **Policy CON-85:** The County shall utilize construction emission control measures required by CARB or BAAQMD that are appropriate for the specifics of the project (e.g., length of time of construction and distance from sensitive receptors). These measures shall be made conditions of approval and/or adopted as mitigation to ensure implementation.

Napa County Climate Action Plan

In the last decade-plus, Napa County has taken several steps to address climate change and reduce GHG emissions from County operations and in the broader community. Since 2007, the County has been involved in efforts to quantify GHG emissions sources and formulate reduction strategies on both the county and regional levels.

The Napa County General Plan and EIR called for development and adoption of a climate action plan (CAP). The County's Department of Planning, Building and Environmental Services has been working to develop a CAP for Napa County for several years. The Planning Commission recommended a proposed CAP for adoption in early 2012; the CAP was later considered by the Board of Supervisors, which sent the document back for further review. Among other things, the board requested that the CAP be revised to better address transportation emissions, and to "credit" past accomplishments and voluntary efforts. The Board of Supervisors also requested that the Planning Commission consider best management practices when reviewing projects until a revised CAP could be prepared and adopted.

A revised draft CAP was prepared in July 2018 but has not yet been adopted (Napa County 2018). This CAP builds upon the County's past efforts and fulfills the requirements of the Napa County General Plan and EIR. The Draft CAP includes the following key components:

- A baseline GHG emissions inventory, which estimated that communitywide sources in unincorporated Napa County emitted 484,283 MT CO_2e in 2014.

- GHG emissions forecasts and reduction targets and goals for 2020, 2030, and 2050, consistent with state targets under AB 32 and SB 32.
- Local GHG emissions reduction strategies and measures, to help Napa County achieve the 2020 and 2030 targets.
- A climate change vulnerability assessment and climate adaptation measures to improve community sustainability.
- Implementation and monitoring mechanisms that will help the County ensure that the measures and targets are achieved.

The Planning Commission's current list of best practices was developed with stakeholder input in 2013. Project applicants are asked to consider these best practices and submit the checklist along with their applications for discretionary approvals (e.g., use permits and use permit modifications).

The Napa Green Program is one of the practices included in this checklist that is recommended for adoption by vineyards. The Napa Green program is a comprehensive sustainability certification program for vineyards (Napa Green Land) and wineries (Napa Green Winery) in the Napa Valley. Participating vineyards and wineries are certified when they meet or exceed comprehensive and stringent environmental regulations that will preserve the Napa Valley's land and resources for generations to come. As of spring 2020, 239 participants with more than 36,000 acres of vineyard are under the Napa Green Land umbrella and 89 wineries are Napa Green Certified (Napa Green 2020). Napa Green Land practices protect soils, reduce harmful inputs, and restore natural habitats. Napa Green Winery participants monitor energy, water, and waste and conserve resources. Napa Green emphasizes social equity and sustainability, caring for workers, engaging with neighbors, and giving back to the community. Independent, third-party certification of farms and winemaking facilities makes Napa Green one of the most rigorous sustainability accreditations in the wine industry.

3.2.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

State CEQA Guidelines and Napa County Significance Thresholds

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to air quality or GHG emissions is considered significant if the proposed project would do any of the following:

- 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 nonattainment 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.
- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Appendix G of the State CEQA Guidelines further indicates that, where available, the thresholds of significance established by the applicable air district may be relied upon to make the significance determinations. The BAAQMD CEQA Guidelines identify BAAQMD's significance thresholds, which are used in the analysis below.

BAAQMD Significance Thresholds

To evaluate the impacts of project construction, estimated construction emissions are compared to the BAAQMD significance thresholds for construction: 54 pounds per day for ROG, NO_X, and $PM_{2.5}$, and 82 pounds per day for PM_{10}. Only the exhaust portion of $PM_{2.5}$ and PM_{10} emissions is compared to the construction thresholds. BAAQMD recommends that analyses focus on implementing dust control measures, rather than on comparing estimated levels of fugitive dust to a quantitative significance threshold. BAAQMD considers implementation of the BAAQMD-recommended mitigation measures for fugitive dust sufficient to reduce the impact of construction-related fugitive dust emissions to a less-than-significant level. The BAAQMD CEQA Guidelines provide feasible control measures for construction emissions of PM_{10}. With implementation of the appropriate construction controls, the impact of construction-related air pollutant emissions would be considered mitigated to a less-than-significant level.

For long-term operations, BAAQMD has two sets of significance thresholds: Daily thresholds, which are the same as the construction thresholds; and annual thresholds, which are 10 tons per year for ROG, NO_X, and $PM_{2.5}$, and 15 tons per year for PM_{10}.

Because the County has not yet adopted the Final Draft CAP and the CAP does not provide significance thresholds, this analysis uses the adopted GHG emissions thresholds from BAAQMD as the basis for determining the significance level of impacts during project operation.

Neither the Final Draft CAP nor BAAQMD provides numerical construction thresholds for GHG emissions. However, BAAQMD encourages the lead agency to do all of the following (BAAQMD 2017b):

- Quantify and disclose GHG emissions from construction.
- Determine the significance of emissions impacts relative to meeting AB 32 GHG reduction goals.
- Incorporate best management practices to reduce GHG emissions during construction, as feasible and applicable.

For operational impacts, the following analysis uses the BAAQMD CEQA significance threshold for land use development projects: 1,100 MT CO_2e per year.

METHODS OF ANALYSIS

The analysis of potential air quality impacts uses the project-level analysis methodology identified in the BAAQMD CEQA Guidelines. Based on the 2017 BAAQMD CEQA Guidelines, the project's construction emissions were quantified and compared to significance thresholds recommended by BAAQMD. Emissions from construction equipment were estimated using the California Emissions Estimator Model (CalEEMod, Version 2016.3.2; **Appendix D**) and considering construction-phase durations; equipment mixes and activities; and vehicle trips for worker commutes, material deliveries, and haul trips.

Operational emissions were also estimated using CalEEMod based on the number of workers and trucks expected to travel to the project site for operation and maintenance. CalEEMod default trip lengths were assumed.

Regarding the assessment of cumulative impacts, the BAAQMD CEQA Guidelines consider a project's contribution to cumulative impacts on regional air quality to be significant if the project's individual impact would be significant (i.e., would exceed BAAQMD's quantitative thresholds). For a project that would not result in a significant impact individually, the project's contribution to any cumulative impact would be considered less than significant if the project is consistent with the local general plan and the local general plan is consistent with the applicable regional air quality plan. In this case, the applicable regional air quality plan is BAAQMD's 2017 Clean Air Plan.

To quantify a project's GHG emissions, BAAQMD recommends estimating all GHG emissions from the project, including both the direct and indirect GHG emissions of project operations. "Direct emissions" refer to emissions produced from the on-site combustion of energy, such as the use of natural gas in furnaces and boilers, emissions from industrial processes, and fuel combustion from mobile sources. "Indirect emissions" refer to emissions produced off-site from energy production and water conveyance as a result of a project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects (BAAQMD 2017b).

Project GHG emissions were analyzed in the context of the goals of AB 32, SB 32, and the 2017 Scoping Plan Update, and BAAQMD's 2017 Clean Air Plan to determine whether the project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Both BAAQMD and the California Air Pollution Control Officers Association consider GHG impacts to be exclusively cumulative impacts: No single project could, by itself, result in a substantial change in climate (BAAQMD 2017b; CAPCOA 2008). Therefore, the evaluation of GHG impacts evaluates whether the proposed project would make a considerable contribution to cumulative climate change effects.

IMPACTS AND MITIGATION MEASURES

Table 3.2-4 summarizes the impact conclusions presented in this section.

TABLE 3.2-4
SUMMARY OF IMPACT CONCLUSIONS—AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Impact Statement	Impact Conclusion
3.2-1: Construction and operation of the proposed project could conflict with or obstruct implementation of BAAQMD's 2017 Clean Air Plan.	Less than Significant with Mitigation
3.2-2: Construction and operation of the proposed project could result in a cumulatively considerable net increase of a criteria air pollutant for which the Bay Area is nonattainment under an applicable federal or state air quality standard.	Less than Significant with Mitigation
3.2-3: Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.	Less than Significant
3.2-4: Construction and operation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	Less than Significant
3.2-5: Construction and operation of the proposed project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less than Significant

NOTE: BAAQMD = Bay Area Air Quality Management District; GHG = greenhouse gas

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.2-1: Construction and operation of the proposed project could conflict with or obstruct implementation of BAAQMD's 2017 Clean Air Plan.

The most recently adopted air quality plan in the SFBAAB is BAAQMD's 2017 Clean Air Plan, the primary goals of which are to protect public health and protect the climate. The 2017 Clean Air Plan proposes actions to reduce combustion-related activities and resultant fossil fuel combustion, improve energy efficiency, and decrease emissions of potent GHGs. Numerous measures address reduction of ozone precursors, PM, air toxics, and GHGs. Other measures focus on a single type of pollutant, super GHGs such as methane and black carbon, or harmful fine particles that affect public health.

The 2017 BAAQMD CEQA Guidelines recommend the following considerations when evaluating a project's consistency with the 2017 Clean Air Plan:

- Would the project support the primary goals of the Clean Air Plan, which include attaining air quality standards, reducing population exposure, protecting public health in the SFBAAB, reducing GHG emissions, and protecting the climate?
- Would the project include applicable control measures from the Clean Air Plan?
- Would the project disrupt or hinder implementation of any Clean Air Plan control measures?

Any project that supports these goals would be considered consistent with the Clean Air Plan.

The 2017 Clean Air Plan contains 85 measures to address reduction of ozone precursors, PM, air toxics, and GHGs. In addition to control measures for stationary, area, and mobile sources and transportation, the plan contains new measures to protect the climate and promote mixed-use and compact development to reduce vehicular emissions and exposure to pollutants from stationary and mobile sources. BAAQMD encourages project developers and lead agencies to incorporate these measures into project designs and plan elements. However, none of these measures directly apply to the proposed project.

As an amendment to Regulation 5: Open Burning, BAAQMD implemented Stationary Source Measure SSM7 from the 2010 Clean Air Plan, which considers further limitations on open burning. This measure would apply to the project. No additional measures in the 2017 Clean Air Plan address open burning. Because all open burning of vegetation cleared from the project site would be conducted in accordance with the requirements of Regulation 5, the proposed project would be consistent with all applicable measures in the 2017 Clean Air Plan.

BAAQMD-recommended guidance for determining whether a project supports the goals in the 2017 Clean Air Plan is to compare project-estimated emissions with BAAQMD thresholds of significance. If project emissions would not exceed the thresholds of significance after the application of all feasible mitigation measures, the project is consistent with the goals of the 2017 Clean Air Plan. Construction-related and operational impacts of the proposed project are discussed below, and are then used to evaluate consistency with the 2017 Clean Air Plan.

Construction

Construction activities are typically short term and result in emissions of ozone precursors and PM in the form of fugitive dust and exhaust (e.g., vehicle and equipment tailpipe) emissions. Project construction would take place over three years (phases), anticipated from 2021 to 2023. Each phase would involve vineyard development activities that would take place only between April 1 and September 15 of the year. The following activities would occur during the respective phases of vineyard development:

- *First construction phase:* Vegetation clearing, land preparation, and installation of erosion control measures on approximately half of the vineyard area; construction of the proposed off-stream reservoir and associated diversions.
- *Second phase of vineyard construction:* Vegetation clearing, land preparation, and installation of erosion control measures on the remaining proposed vineyard acreage; installation of vineyard infrastructure; and planting of vines in areas prepared during the previous year.
- *Final phase of vineyard construction:* Installation of vineyard infrastructure and planting of vines in areas prepared during the previous year.

The first year of full project operation is anticipated to be 2024.

Construction at the project site would occur during daytime hours, typically from 7 a.m. to 5 p.m., six days a week. Therefore, the number of workdays during each phase would be approximately 144 days. The maximum area disturbed during any phase would be 3 acres per day. Removed vegetation would be burned on-site, following BAAQMD regulations.

Project approval, if granted, would be subject to the following condition of approval that would ensure that impacts from open burning would be less than significant (Marquez, pers. comm., 2019).

> **Open Burning—Condition of Approval:**
>
> The owner/permittee shall conduct open burning of cleared vegetation in accordance with BAAQMD Regulation 5, which allows open burning only during specified burn periods. Prior notification shall be submitted to BAAQMD and documentation of compliance shall be submitted to Napa County.

No soil would be imported for the proposed project. The reservoir would be designed to have balanced cut and fill. Any spoils from vineyard development would be disposed on-site within the approved clearing limits, thereby reducing truck trips to haul materials.

The following project construction activities would emit pollutants:

- Ground disturbance during grading, excavation, and construction
- Vehicle trips from workers traveling to and from the construction areas
- Trips to deliver construction materials to and from the construction areas
- Fuel combustion by on-site construction equipment

These activities would temporarily create emissions of dust, fumes, equipment exhaust, and other air pollutants. Emissions of ozone precursors and exhaust PM are primarily a result of the combustion of fuel from on-road vehicles and off-road vehicles and equipment. The amount of emissions generated daily would vary, depending on the intensity and types of construction activities occurring simultaneously.

Although construction emissions are considered short term and temporary, they have the potential to represent a significant impact with respect to air quality, particularly when construction extends over a long period of time and/or when sensitive receptors are located close by. Converting the existing landscape to vineyard would require clearing of vegetation and earthmoving activities, which would result in the exposure of bare soil to wind erosion and could thus generate fugitive dust.

Particulate matter (PM_{10} and $PM_{2.5}$)[1] is among the construction-related pollutants of greatest concern on a local level. PM emitted by construction activities can lead to adverse health effects

[1] See the definition of particulate matter on page 3.2-3.

and nuisance concerns, such as reduced visibility and soiling of exposed surfaces. A variety of construction activities can emit PM: excavation, grading, open burning of removed vegetation, vehicle travel on either paved or unpaved surfaces, and generation of vehicle and equipment exhaust. Construction emissions of PM can vary greatly depending on the level of activity, the specific operations taking place, the number and types of equipment operated, local soil conditions, weather conditions, and the amount of earth disturbed. The highest potential for PM emissions would be during the dry season (June through September), which would coincide with project-related construction activities.

The ozone precursors ROG and NO_X are emitted primarily by construction equipment and mobile-source exhaust. Such emissions vary as a function of the types and number of heavy-duty off-road equipment used, as well as the intensity and frequency of their operation and the number and distance of daily vehicle trips, respectively. **Table 3.2-5** summarizes the proposed project's construction emissions of ROG, NO_X, PM_{10}, and $PM_{2.5,}$ as estimated using CalEEMod. Consistent with BAAQMD guidelines, only the exhaust portion of PM emissions have been quantified as disclosed in **Table 3.2-5**.

TABLE 3.2-5
AVERAGE DAILY CONSTRUCTION EMISSIONS

	Construction Emissions (pounds/day)			
	ROG	**NO_X**	**Exhaust PM_{10}**	**Exhaust $PM_{2.5}$**
Unmitigated Emissions				
Project Average	5.8	54	2.3	2.3
Mitigated Emissions				
Project Average	2.8	50.7	0.3	0.3
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

NOTES:
BAAQMD = Bay Area Air Quality Management District; NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter measuring 2.5 microns or less in diameter; PM_{10} = particulate matter measuring 10 microns or less in diameter; ROG = reactive organic gases

SOURCE: Data compiled by Environmental Science Associates in 2021 (see **Appendix D**)

The table shows daily emissions of criteria air pollutants as averaged over the entire duration of construction (approximately 432 workdays over three years), compared to the BAAQMD significance thresholds. As shown in **Table 3.2-5**, estimated project construction emissions would not exceed the BAAQMD significance threshold for any of the pollutants analyzed. As unmitigated NOx emissions would be equal to the BAAQMD threshold, **Mitigation Measure 3.2-1a** is identified to reduce NOx emissions below the significance threshold. Mitigated emissions, assuming use of Tier 3 construction equipment with diesel particulate filters, are also shown in **Table 3.2-5**. Diesel particulate filters verified by EPA and CARB are typically effective at reducing emissions of PM by 85–90 percent or more (EPA 2010). Using Tier 3 construction

equipment reduces NO_X emissions by up to 40 percent relative to emissions from Tier 2 equipment (John Deere 2019).

In addition, regardless of whether a project's emissions exceed the BAAQMD significance thresholds, BAAQMD recommends that all projects implement the Basic Construction Mitigation Measures in Table 8-2 of the BAAQMD CEQA Guidelines, which primarily address fugitive dust control. BAAQMD does not require quantifying fugitive dust emissions, but considers implementation of the BAAQMD-recommended mitigation measures sufficient to reduce construction-related fugitive dust impacts to a less-than-significant level. Noncompliance with this BAAQMD recommendation would result in a potentially significant impact.

Operation

Once operational, the proposed project would not include any new stationary sources of emissions on-site. Operational activities at the project site would generally consist of the annual pruning of vines, manual weed control, operation of wind machines, and harvesting of grapes. These activities would not require the use of additional off-road equipment (e.g., tractors, generators, plows). The primary source of emissions would be the additional worker trips required to operate and maintain the vineyards. The approximate number of workers needed would vary throughout the year (Table 2-4):

- Between January and March (annual pruning of vines), 25 workers
- Between April and August (chemical, mechanical, and manual weed control and application of sulfur to protect vines against mildew), 5 workers
- In September and October (harvest and to winterization of the vineyard, vineyard avenues, and roads), 30 workers
- Between November and April (monitoring and maintenance of erosion control measures), 5 workers

In addition, approximately 10 trucks would be needed over the harvest season to haul the harvested grapes from the vineyard. The trucks would travel approximately 40 miles to their destination.

Table 3.2-6 presents average daily emissions (as averaged over the year) from the proposed project's operational activities, as estimated using CalEEMod. Operational emissions would be well below the significance thresholds.

TABLE 3.2-6
AVERAGE DAILY OPERATIONAL EMISSIONS

	Operational Emissions (pounds/day)			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Worker and Truck Trips	<0.1	0.2	0.1	<0.1
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	No	No	No

NOTES:
BAAQMD = Bay Area Air Quality Management District; NO_X = oxides of nitrogen; $PM_{2.5}$ = particulate matter measuring 2.5 microns or less in diameter; PM_{10} = particulate matter measuring 10 microns or less in diameter; ROG = reactive organic gases

SOURCE: Data compiled by Environmental Science Associates in 2018/2019 (see **Appendix D**)

Impact Conclusion

All project construction emissions of NOx would be at the BAAQMD significance threshold (**Table 3.2-5**), this unmitigated impact would be considered significant. In addition, without implementation of the BAAQMD-required measures, fugitive dust (PM) emissions during project construction would be considered significant. Operational impacts would be less than significant because estimates of all operational emissions would be below BAAQMD significance thresholds for operation (**Table 3.2-6**). Because project construction emissions would be significant without mitigation, the project would not be consistent with the 2017 Clean Air Plan. This impact would be **significant**.

Mitigation Measure 3.2-1a: All construction equipment used in project construction shall meet Tier 3 standards to reduce emissions of NO_X. Before initiation of vegetation removal, grading and earth-disturbing activities associated with any project phase, the owner/permittee shall submit to Napa County a construction equipment list that includes equipment Tier level to demonstrate and document that all construction equipment meets or exceed Tier 3 standards.

Mitigation Measure 3.2-1b: Construction contractors shall be required to implement the following measures consistent with the BAAQMD-recommended basic control measures during construction:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, 13 CCR Section 2485). Clear signage shall be provided for construction workers at all access points.

7. All construction 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 before operation.

8. A publicly visible sign shall be posted with the telephone number and person to contact at Napa County regarding dust complaints. This person shall respond and take corrective action within 48 hours. To ensure compliance with applicable regulations, BAAQMD's phone number shall also be visible.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.2-1a** and **3.2-1b** would reduce this impact to a **less-than-significant** level because the use Tier 3 construction equipment with diesel particulate filters would reduce exhaust particulate emissions below BAAQMD's significance threshold, and BAAQMD's required basic control measures would be implemented during construction to minimize fugitive dust emissions. The open burning condition of approval also would ensure that burning of cleared vegetation is conducted in accordance with BAAQMD Regulation 5.

Based on BAAQMD guidance, if a project does not result in significant and unavoidable air quality impacts after the application of feasible mitigation, the project may be considered consistent with the 2017 Clean Air Plan. Therefore, the proposed project would be consistent with the goals of the 2017 Clean Air Plan and would not conflict with or obstruct its implementation. This impact would be **less than significant with mitigation**.

Additionally, implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2 would further reduce NO_X emissions during project construction and operational emissions because the project's acreage would be reduced by a total of approximately 21.73 acres.

Impact 3.2-2: Construction and operation of the proposed project could result in a cumulatively considerable net increase of a criteria air pollutant for which the Bay Area is nonattainment under an applicable federal or state air quality standard.

By definition, regional air pollution is largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project is sufficient, by itself, to result in nonattainment of air quality standards. Instead, a project's individual emissions are considered to contribute to existing cumulative air quality impacts (BAAQMD 2017b). The project-level thresholds for criteria air pollutants are based on levels that would result in a cumulatively considerable net increase in criteria air pollutants if they were exceeded. Projects that would result in criteria pollutant emissions below these significance thresholds would result in a less than cumulatively considerable increase in criteria air pollutants.

Impact Conclusion

As shown in **Table 3.2-6**, the proposed project's operational emissions would be below the BAAQMD significance thresholds. Project construction emissions would also be below the thresholds (**Table 3.2-5**) except for NOx, which would be at the significance threshold. Further, without implementation of BAAQMD's Basic Construction Mitigation Measures to address fugitive dust control, impacts from fugitive dust emissions would also be significant. Therefore, without mitigation, the proposed project's contribution to a significant cumulative air quality impact would be considered **significant**.

> **Impact Significance after Mitigation:** Implementing **Mitigation Measures 3.2-1a and 3.2-1b** would reduce this impact to a **less-than-significant** level. As discussed above in Impact 3.2-1, project construction emissions of NOx would be reduced to below the BAAQMD significance threshold with the use of Tier 3 construction equipment with diesel particulate filters, as required by **Mitigation Measure 3.2-1a**. Implementation of BAAQMD's required basic control measures during construction, included as part of **Mitigation Measure 3.2-1b**, would reduce fugitive dust emissions to less-than-significant levels. Therefore, with implementation of **Mitigation Measures 3.2-1a and 3.2-1b**, the proposed project would not result in a cumulatively considerable contribution to a regional air quality impact during construction or operation.

Impact 3.2-3: Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.

Toxic Air Contaminants

Construction

The proposed project would result in the short-term emission of diesel particulate matter from the exhaust of off-road diesel equipment used during construction, and from on-road trips by heavy-duty trucks to deliver construction materials. DPM is a complex mixture of chemicals and

particulate matter that the State of California has identified as a toxic air contaminant, with potential cancer and chronic noncancer effects.

Health risk assessments determine the exposure of sensitive receptors to TAC emissions. The dose to which the receptor is exposed is the primary factor in health risks from TACs. Dose is a function of the concentration of a substance in the environment and the duration of the receptor's exposure to the substance. The California Office of Environmental Health Hazard Assessment recommends using a 30-year exposure period as the basis for health risk assessments involving TACs (such as DPM) that have only cancer or chronic noncancer health effects (OEHHA 2015). However, such health risk assessments should limit the assumed exposure to the duration of the project's emissions-generating activities.

Construction activities for the proposed project would last for approximately 5.5 months each year, for 3 years. Therefore, DPM exposure from these activities would be intermittent and would vary spatially during development in different areas of the project site. A given receptor would not be exposed to emissions throughout the entire construction period. Average daily emissions of $PM_{2.5}$ during project construction would be less than 3 pounds per day (**Table 3.2-5**).

BAAQMD recommends evaluating health risks when sensitive receptors are located within 1,000 feet of the source (BAAQMD 2017b). The project site is bordered primarily by agricultural land uses; scattered sensitive receptors are present in the form of single-family homes. The closest receptor is a single-family residence approximately 300 feet south of proposed vineyard Block 1 at 3201, Sage Canyon Road. While this receptor would be exposed to construction emissions from the project, because project construction activities would be limited to less than six months a year, the exposure is not likely to result in significant impacts. In addition, this receptor is more likely to be affected by emissions from construction activities for vineyard Blocks 1, 2, 3, 4A, 4B, 5A, 5B, 5C and 5D, which are located within the BAAQMD's 1,000-foot zone of influence from the receptor. Together, these blocks constitute less than 5 percent of the total development area (and the percent would be less with implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2); hence, emissions associated with these blocks can also be assumed to be less than 5 percent of the emission levels shown in Table 3.2-5. Mitigated PM_{10} exhaust emissions (which is used as a surrogate for DPM emissions) of 0.015 pounds per day (or 0.3 pounds per day times .05) over a duration of less than 6 months a year, conservatively over 3 years is not likely to result in health risks that that exceed the BAAQMD thresholds at the receptor. Therefore, with implementation of Mitigation Measure 3.2-1a, construction activities associated with project would not lead to significant health risk impacts. Furthermore, because the project site is located more than 8 miles from the Town of Yountville, which contains a larger and denser residential population and other sensitive receptors such daycare centers, hospitals, and convalescent homes, the project is not anticipated to result in significant impacts to the nearest residential community; therefore, a health risk assessment is not warranted. Operation

Minor sources of TACs would be present at the project site during operation of the proposed project. Approximately 10 truck trips would occur during the harvest season to haul the harvested grapes from the vineyard. DPM emissions from these truck trips would be minor and would not result in significant health impacts on nearby receptors. Worker vehicles would be primarily gasoline-fueled; hence daily operational worker trips would not generate DPM emissions.

Criteria Air Pollutants

The proposed project would generate emissions of criteria pollutants (see Impact 3.2-1); however, the health risk impact of criteria pollutant emissions on sensitive receptors is harder to quantify than the more localized health risk from TACs.

The primary health concern from exposure to ROG and NO_X emissions is the secondary formation of ozone. Ozone is formed through a complex photochemical reaction between NO_X and ROG in the atmosphere and meteorology, presence of sunlight, seasonal impacts, and other complex chemical factors, which all combine to determine the ultimate concentration and location of ozone. Therefore, ozone impacts are typically considered on a basin-wide or regional basis instead of a localized basis. The health-based ambient air quality standards for ozone are expressed as ozone concentrations, not as tons of the ozone precursor pollutants NO_X and ROG. It is not necessarily the tonnage of precursor pollutants emitted that affects human health, but the concentration of the resulting ozone or PM.

Because of the complexity of ozone formation and the nonlinear relationship between ozone concentrations and ozone precursors, and given the current state of environmental science modeling, it is infeasible to convert specific levels of NO_X or ROG emitted in a particular area to a particular ozone concentration in that area. It is also infeasible to determine whether, or the extent to which, a single project's NO_X and ROG emissions could cause the formation of secondary ground-level ozone and the geographic and temporal distribution of such secondary emissions. (SCAQMD 2015; SJVAPCD 2015.)

As stated in briefs submitted for *Sierra Club et al. v. County of Fresno* (SCAQMD 2015; SJVAPCD 2015), the air district's CEQA significance thresholds for emissions of criteria pollutants were set at levels tied to the region's attainment status. These are emissions levels at which stationary pollution sources permitted by the air district must offset their emissions and the CEQA projects must use feasible mitigation measures for the region to attain the health-based ambient air quality standards.

The models available today are designed to determine regional, population-wide health impacts. The models cannot accurately quantify ozone-related health impacts caused by NO_X or ROG emissions at the local (project) level. In part because of these scientific constraints, the disconnect between project-level NO_X emissions and ozone-related health impacts cannot be bridged at this time, and a determination of the significance of the health risk impacts of criteria pollutants cannot be made.

However, as discussed in Impact 3.2-1, neither construction nor operation of the proposed project would exceed BAAQMD's mass emissions thresholds for ROG and NOX emissions with mitigation. Thus, the proposed project would not likely result in an increase in ground-level ozone concentrations near the project site or elsewhere in the air basin that would cause or contribute to the exposure of sensitive receptors to concentrations in excess of health-protective levels.

Impact Conclusion

Total DPM emissions would be relatively minor compared to the 30-year exposure used in health risk assessments, considering the level and duration of exposure; the spatial variability of emissions during construction phases; the seasonal aspects of ongoing operation of the proposed project; and the use of engines meeting the Tier 3 emission standards. Therefore, the health risk from exposure to TACs, particularly short-term DPM emissions from project construction, would be less than significant. DPM emissions from truck trips during project operation would be minor and would not result in significant health impacts on nearby receptors. The proposed project also would not likely result in an increase in ground-level ozone concentrations near the project site or elsewhere in the air basin that would cause or contribute to the exposure of sensitive receptors to concentrations exceeding health-protective levels. This impact would be **less than significant**.

Mitigation Measure: None required.

Impact 3.2-4: Construction and operation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Construction

Diesel exhaust from construction equipment operating at the project site would temporarily emit odors. These odors would be localized and temporary, would dissipate quickly, and would be unlikely to be objectionable to a substantial number of people, especially considering that receptors in the vicinity are far away and few.

Operation

The proposed project would not create major sources of odor during operation. To prevent mildew, sulfur would be applied to the vines approximately 12 times during the year, during the night. Sulfur can generate odors, but odor impacts from applying sulfur are expected to be localized, not carrying over to sensitive receptors. These odors would be seasonal and would occur at substantial distances from sensitive receptors, allowing for dilution of pollutants and odors.

Impact Conclusion

Construction and operation of the proposed project would not create emissions such as those leading to odors that would adversely affect a substantial number of people. This impact would be **less than significant**. Furthermore, because the project site is located more than 8 miles from the Town of Yountville, which contains a larger and denser residential population and other sensitive receptors such day care centers, hospitals, and convalescent homes, the project is not anticipated to result in significant emission impacts to the nearest residential community.

Mitigation Measure: None required.

Impact 3.2-5: Construction and operation of the proposed project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

Construction

Combustion of fossil fuels during construction of the proposed project would emit GHGs such as CO_2, methane, and nitrous oxide. The project would emit GHGs when construction equipment and materials are transported and delivered to the project site; during operation of construction equipment, including equipment used for planting and installation of the irrigation system; and during worker trips. The proposed project would also result in the loss of carbon sequestration as a result of tree removal, tillage of soil, and other such activities.

CO_2 emissions from construction equipment were estimated using emissions factors from the OFFROAD model. However, OFFROAD does not provide emissions factors for methane and nitrous oxide. These emissions were estimated using default emission factors for non-highway vehicles from The Climate Registry (TCR 2017).

Project construction is expected to last approximately 5.5 months each year for 3 years. Construction would require using off-road construction equipment, trucks to deliver and haul materials, and worker vehicles, all of which would use fossil fuels and emit GHGs. **Table 3.2-7** lists construction emissions for the proposed project for each construction year from both on-site and off-site emission sources. **Appendix D** presents worksheets showing the calculations.

Neither the County nor BAAQMD has adopted a methodology or quantitative threshold, such as those that exist for criteria pollutants, to evaluate the significance of an individual project's construction-related contribution to GHG emissions. The proposed project's total construction emissions, annualized over a project life of 30 years, would be approximately 71.6 MT CO_2e per year. This is combined with the operational emissions listed below for comparison with the GHG threshold.

TABLE 3.2-7
ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS FROM PROJECT CONSTRUCTION

Year	CO_2e (metric tons per year)
2021	986
2022	985
2023	177
Project Total	**2,148**

NOTE: CO_2e = carbon dioxide equivalents

SOURCE: Data compiled by Environmental Science Associates in 2021 (see **Appendix D**)

Operation

During operation of the proposed project, the primary sources of GHG emissions would be motor vehicle use (worker commute trips and truck trips hauling harvested grapes) and the use of water from existing and proposed reservoirs to irrigate the vineyard. Electricity-powered pumps would extract the water from the reservoirs, requiring energy generation that would increase indirect GHG emissions.

In addition, converting existing land uses into a vineyard would result in carbon storage and sequestration changes, both on a one-time basis and during the 30-year project lifetime. Carbon stocks and storage would be lost when vegetation is removed from the site. This would include both aboveground carbon, such as woody debris and downed wood, and belowground carbon, such as in the soil. Ripping soil in preparation for vineyard development and planting causes the release of soil carbon. This analysis assumes that all removed vegetation would be burned. Annual emissions associated with carbon sequestration would also be lost when site vegetation is removed.

This loss in carbon stocks and sequestration would be offset by the planting of new vineyards in the development area. Grapevines are photosynthetic plants; therefore, they have value for carbon capture. In addition, using cover crops, which are also photosynthetic plants, tends to reduce CO_2 loss from vineyard soils. Carbon sequestration loss would be somewhat offset by the proposed vineyard, which would likely act as a sink for atmospheric CO_2, depending on the longevity of the grapevine roots and the quantity of carbon stored in deep roots. In addition to vines, the soil between vine rows sequesters atmospheric carbon through cover-cropping.

Table 3.2-8 shows the overall project-related change in GHG emissions from carbon stocks and sequestration. This table shows the total one-time carbon storage loss from converting existing land uses into vineyard, along with the carbon sequestration loss of this conversion over the project's 30-year lifetime (15,148 MT CO_2e). **Table 3.2-8** also shows the total one-time carbon storage gain from the new vineyard, along with the carbon sequestration gain of the new vineyard over the project's 30-year lifetime (14,607 MT CO_2e).

The proposed project could result in a one-time emissions sink of up to 6,714 MT CO_2e (7,697 minus 14,411), and annual ongoing emissions associated with loss of sequestration are estimated to be 241 MT CO_{2e} per year (248 minus 7). Thus, the project's total 30-year lifetime emissions would be 541 MT CO_2e. In other words, the emissions from changes in carbon stock/ storage and sequestration as a result of project-related land use changes would be approximately 18 MT CO_2e per year (541 divided by 30).

TABLE 3.2-8
ESTIMATED CHANGE IN GREENHOUSE GAS EMISSIONS FROM CARBON STOCKS AND SEQUESTRATION

Vegetation/Land Use Type	Total MT CO_2e
Carbon Loss—Existing Land Use Removal	
Carbon Storage	7,697
Carbon Sequestration (annual)	248
30-Year Lifetime Emissions	15,148
Carbon Gains—New Land Use Types [a]	
Carbon Storage	-14,411
Carbon Sequestration (annual)	-7
30-Year Lifetime Emissions	-14,607
Total Project Lifetime Emissions	**541**
Total Project Annual Emissions	**18**

NOTES:
MT CO_2e = metric tons of carbon dioxide equivalents
[a] Emissions are reported as negative because they represent a greenhouse gas emissions sink.

SOURCE: Data compiled by Environmental Science Associates in 2018/2019

Table 3.2-9 summarizes the proposed project's operational emissions: emissions from vehicle trips and use of off-road equipment for project operations and maintenance, water pumping, and the change in CO_2e emissions from changes to carbon storage and sequestration associated with the conversion of existing land to vineyards.

TABLE 3.2-9
ESTIMATED ANNUAL GREENHOUSE GAS EMISSIONS FROM PROJECT OPERATION

Source	CO_2e (metric tons per year)
Mobile Sources	24
Water Pumping	6
Amortized Construction	72
Carbon Sequestration	18
Total	**120**

NOTE: CO_2e = carbon dioxide equivalents

SOURCE: Data compiled by Environmental Science Associates in 2021 (see **Appendix D**)

Water from nearby reservoirs would be used to irrigate the proposed vineyard, reducing the need to transport water for long distances and the associated energy use and GHG emissions.

Several other beneficial aspects of the project's design would also reduce impacts related to climate change. Construction equipment would be kept on-site during construction, which would minimize truck trips; engine idling would be minimized; equipment would be maintained properly; and a cover crop would be established in all disturbed areas. These project components, which would reduce GHG emissions, are not readily quantifiable.

As noted in **Section 2.3, *Project Objectives***, the proposed project would participate in the Napa Green Program, which aims to reduce solid waste generation, water use, and wastewater generation, and promotes sustainable agricultural practices. Napa Green is supported by both the Napa County General Plan and the County's Revised Draft CAP and is part of the checklist of best management practices that projects are encouraged to use.

Impact Conclusion

The County and BAAQMD do not have an adopted a methodology or quantitative threshold for evaluating the significance of an individual project's construction-related contribution to GHG emissions. However, the proposed project's construction emissions as annualized over the life of the project, and then considered with the project's operational emissions, would not exceed the operational threshold of 1,100 MT CO_2e per year for projects, not including stationary sources (**Table 3.2-9**). Annual emissions from changes in carbon stock/storage and sequestration as a result of project-related land use changes would be approximately 18 MT CO_2e per year (**Table 3.2-8**).

The project's construction-related and operational GHG emissions would be less than significant and the proposed project includes several components to reduce emissions consistent with the goals of the County's CAP. Therefore, the proposed project would not be considered to conflict with any plans, policies, or regulations adopted for the purpose of reducing GHG emissions. This impact would be **less than significant**.

Additionally, implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, which would reduce the project's acreage by approximately 21.73 gross acres, would further reduce emissions and this less-than-significant impact.

Mitigation Measure: None required.

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3.3 BIOLOGICAL RESOURCES

This section describes the biological resources setting in the project vicinity; summarizes the regulatory setting for the proposed project; and evaluates the potential for construction, operation, and maintenance of the proposed project to result in impacts on biological resources.

No comment letters regarding biological resources were received in response to the NOP. See **Appendix B** for NOP comment letters.

This section uses the following definitions:

- *Development area.* An area occupying approximately 156.8 acres that includes the 111.5 net acres of proposed vineyard blocks (referred to here as the "vineyard area") and 45.3 acres of associated ground disturbance. The development area includes all of the proposed clearing limits.
- *Survey area.* An area occupying approximately 822.5 acres that includes the 156.8-acre development area plus an approximately 500-foot radius around the development area (see **Figure 3.3-1**).
- *Project site.* An area of 950.9 acres that includes Assessor's Parcel Numbers 025-270-022 and 025-270-025 (approximately 705.1 and 245.8 acres, respectively).
- *Evaluation area.* A 1-mile radius around the 950.9-acre project site (5,824.3 acres within the 1-mile area outside the project site).
- *Qualified Biologist.* A biologist or biological monitor who is knowledgeable and experienced in the biology and natural history of local herpetology, mammalian, and avian resources with potential to occur at the project site.

Environmental Science Associates (ESA) biologists reviewed the following biological resources data and background information applicable to the project site before performing comprehensive botanical inventories and wildlife surveys:

- Chiles Valley U.S. Geological Survey 7.5-minute quadrangle map (USGS 1958)
- Historic and current aerial imagery dating from 1993 to 2018 (Google Earth 2018)
- Soil maps from the U.S. Department of Agriculture's National Resources Conservation Service (NRCS 2019)
- *Napa County Baseline Data Report* (Napa County 2005)
- Fine-scale vegetation map for Napa County (CDFW 2015)
- *Draft Biological Resources Assessment for KJS Investment Properties and Sorrento Inc., West Ranch, Napa County* (Vinnedge Environmental Consulting 2017)
- *Draft Aquatic Resources Delineation Additional Somerston Estate Acreage* (Madrone Ecological Consulting 2017)
- *Report on Surveys for the Threatened Valley Elderberry Longhorn Beetle at the Somerston Estate near Rutherford (Napa County), California* (Entomological Consulting Services 2016)

- *California Red-legged Frog Focused Surveys for the Somerston Estate Winery, Napa County, California* (Wildlife Research Associates 2015)
- *Draft Somerston Estate Stream Assessment Report* (Podlech 2014)
- *Special-Status Bryophytes and Lichen Survey, KJS Investment Properties and Sorrento Inc. 3370 Sage Canyon Road, Napa County* (Kjeldsen Biological Consulting 2018)
- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) list of plant and wildlife species documented on the Chiles Valley and eight surrounding quadrangles (Aetna Springs, Walter Springs, Brooks, St. Helena, Lake Berryessa, Rutherford, Yountville, and Capell Valley) (CDFW 2019a) (Appendix B in Draft EIR **Appendix E**)
- The California Native Plant Society (CNPS) online database of plant species documented on the Chiles Valley and eight surrounding quadrangles (CNPS 2019) (Appendix B in Draft EIR **Appendix E**)
- A U.S. Fish and Wildlife Service (USFWS) list of species that may occur in the vicinity of the development area (USFWS 2019) (Appendix B in Draft EIR **Appendix E**)
- *Biological Resources Reconnaissance Survey Report for the KJS and Sorrento Vineyard Conversion Erosion Control Plan Application* (ESA 2019) (**Appendix E**)

3.3.1 ENVIRONMENTAL SETTING

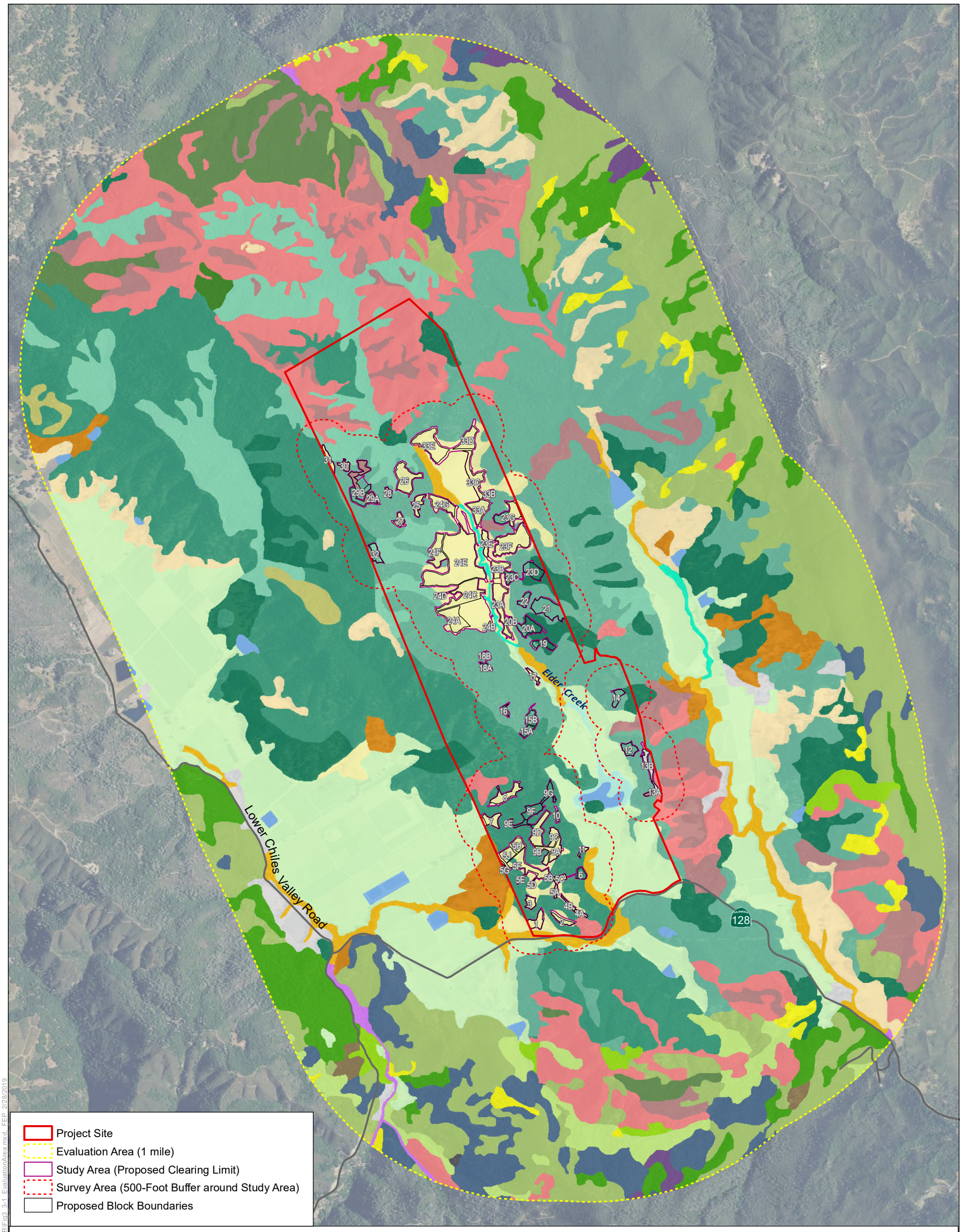
REGIONAL SETTING

Napa County is located within the Inner Northern Coast Ranges, a geographic subdivision of the larger California Floristic Province (Baldwin et al. 2012), which is strongly influenced by the Pacific Ocean. The region is in Climate Zone 14, “Ocean Influenced Northern and Central California,” an inland area with ocean or cold air influence.

The climate of Napa County is characterized by hot, dry summers and cool, wet winters. Average precipitation ranges from approximately 20 to 40 inches per year. The region’s average annual temperature ranges from 45 to 90 degrees Fahrenheit. The county extends from an elevation of zero feet above sea level on the west side of the county to approximately 4,200 feet above sea level on the east side. Napa County has a higher natural biodiversity level than the rest of California because of its dramatic variation in climate and topographic diversity.

EVALUATION AREA

The evaluation area includes natural habitats within 1 mile of the project site. Natural lands include oak woodland, shrubland (chaparral), annual grassland, and water. Valleys to the east and west of the project site have been developed with vineyards. Portions of the project site have been developed with vineyards, houses, barns and associated agricultural infrastructure, and paved and graded roads. Soils within the project site consist of the Bressa-Dibble-Sobrante, Fagan-Millsholm, and Tehama soil associations. The topography consists of flat to steeply rolling hills and elevation ranges from approximately 940 to 1,680 feet above mean sea level.



SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

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Figure 3.3-1
Biological Communities within the Evaluation Area

ESA

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Table 3.3-1 lists the natural community types and vegetation alliances (Sawyer et al. 2009) associated with the natural lands in the evaluation area. **Figure 3.3-1** depicts natural habitats in the evaluation area.

TABLE 3.3-1
NATURAL COMMUNITIES IN THE EVALUATION AREA

Community Type	Community Components
Oak woodland	Blue Oak Alliance
	California Bay–Leather Oak (*Rhamnus* spp.) Mesic Serpentine NFD Super Alliance
	California Bay–Madrone–Coast Live Oak–(Black Oak Big-Leaf Maple) NFD Super Alliance
	Coast Live Oak Alliance
	Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association
	Interior Live Oak Alliance
	Interior Live Oak–Blue Oak–(Foothill Pine) NFD Association
	Mixed Oak Alliance
	Valley Oak Alliance
	Valley Oak–(California Bay–Coast Live Oak–Walnut–Ash) Riparian Forest NFD Association
	Leather Oak–California Bay–*Rhamnus* ssp. Mesic Serpentine NFD Alliance
	Leather Oak–White Leaf Manzanita
	Chamise Xeric Serpentine NFD Super Alliance
	Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance
	White Leaf Manzanita–Leather Oak–(Chamise–*Ceanothus* spp.) Xeric Serpentine NFD Super Alliance
Annual grassland	California Annual Grasslands
	Serpentine Grasslands NFD Super Alliance
	Upland Annual Grasslands and Forbs Formation
Water	Wetlands
	Drainages (streams)
	Aquatic Habitat (reservoirs/lakes/marsh)
Other	Foothill Pine Alliance
	Sargent Cypress Alliance
	Douglas-Fir–Ponderosa Pine Alliance
	Brewer Willow Alliance
	Mixed Willow Super Alliance
	Chamise Alliance
	(Bulrush-Cattail) Fresh Water Marsh NFD Super Alliance
	Serpentine Barren
	Agriculture
	Vacant
	Urban or Built-Up

NOTE: NFD = No Formal Description

SOURCE: Data compiled by Environmental Science Associates in 2019

As shown in **Table 3.3-1**, oak woodland is the predominant vegetation in the evaluation area, while annual grassland occurs in scattered areas and several other vegetation alliances are present. In addition, the evaluation area contains water including wetlands, drainages (streams), and aquatic habitat (reservoirs/lakes/marsh). Freshwater marsh is found along the shore of the freshwater reservoirs and small ponds. Elder Creek, a seasonal intermittent stream, traverses the length of the project site from north to south. Elder Creek is tributary to Sage Creek, which is tributary to Conn Creek, which is tributary to the Napa River.

The Napa River watershed covers approximately 426 square miles and is bordered by mountains to the north, west, and east. The watershed is typical of the California Coast Ranges, with northwest-southeast trending topography. The Napa River runs through the center of the watershed on the valley floor for 55 miles to San Pablo Bay.

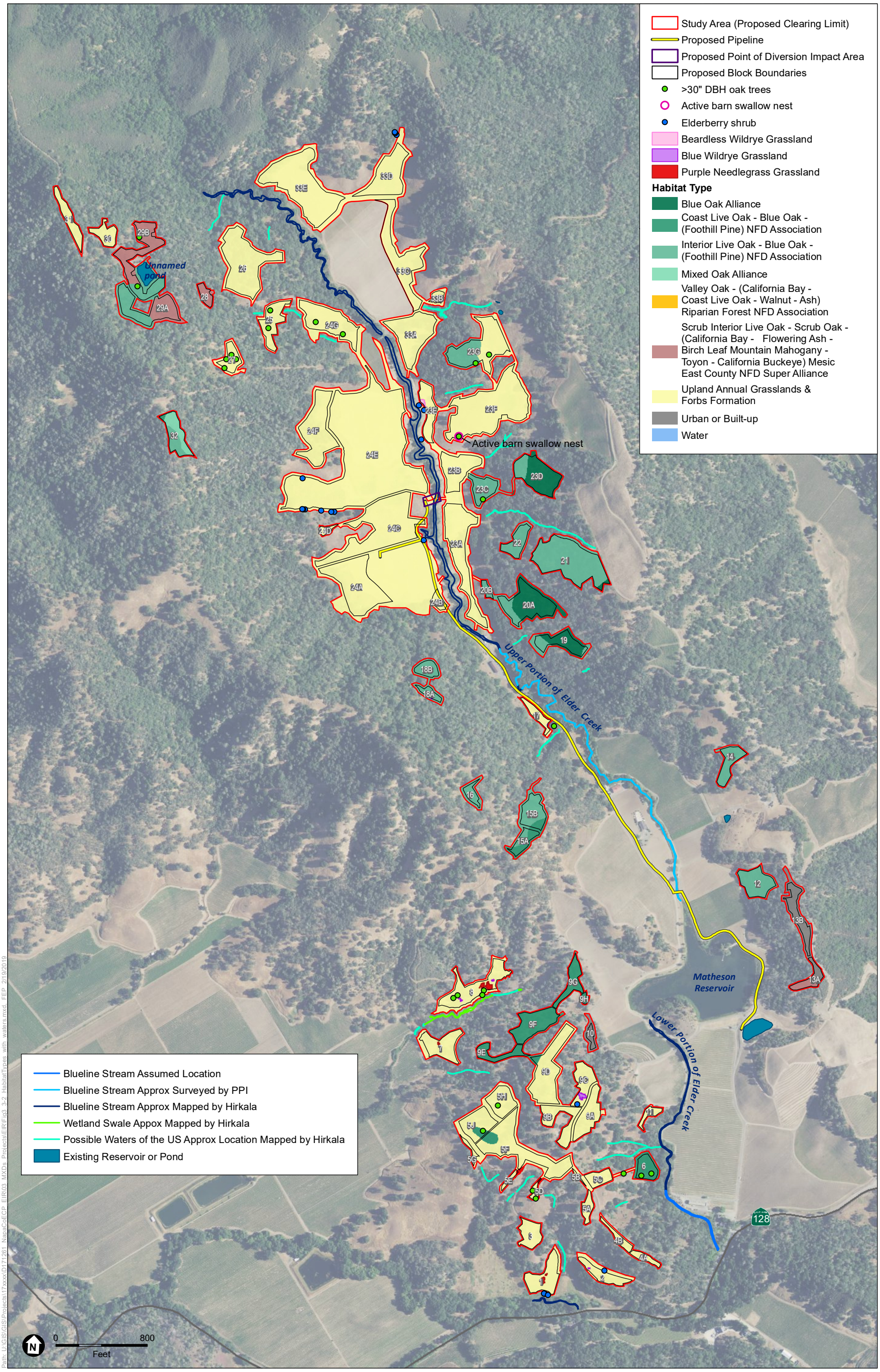
Elder Creek bisects the development area. Vineyards are located 25–50 feet from the creek on both sides. Elder Creek extends approximately 1,700 feet upstream from an access road crossing of the drainage at the inlet to Matheson Reservoir (**Figure 3.3-2**). Immediately upstream of the existing reservoir, the creek consists of a 4- to 6-foot channel with steep, 1- to 2-foot-high banks. The channel lacks any type of habitat complexity in the form of pools, woody debris, or instream cover. Farther upstream, channel widths increase to approximately 10 feet with bankfull widths of 12–15 feet. The banks of Elder Creek along the upper portion of the project site are surrounded by densely vegetated Himalayan blackberry (*Rubus armeniacus*) interspersed with willow (*Salix* sp.) until approximately 1,500 feet north of Matheson Reservoir, where riparian vegetation stops and the banks are sparsely vegetated.

Downstream of Matheson Reservoir, Elder Creek continues southward and drains to Sage Creek (Podlech 2014) (**Figure 3.3-2**). This lower portion of Elder Creek lacks riparian vegetation along the banks.

TERRESTRIAL BIOLOGICAL COMMUNITIES

Natural communities are assemblages of plant species that occur together in the same area and are defined by species composition and relative abundance. The natural community classification presented herein is based on field observations.

The following general terrestrial biological communities are present in the development area: grassland, mixed oak woodland, chaparral/scrub, and urban. The general biological communities are further characterized into vegetation alliances. Dominant vegetation observed within the vegetation alliances is described below. **Appendix E** presents a complete list of plant species identified during the botanical surveys and representative photographs of the biological communities. The *Potential Waters of the United States* discussion later in this section addresses aquatic biological communities. **Section 3.7, *Hydrology and Water Quality*,** presents an assessment of Elder Creek relative to the pending water right petition.



SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

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Figure 3.3-2
Biological Communities within the Study Area

ESA

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Figure 3.3-2 shows the biological communities in the development area, and **Table 3.3-2** summarizes the terrestrial biological communities by acreage within the development area, project site, and Napa County.

TABLE 3.3-2
TERRESTRIAL BIOLOGICAL COMMUNITIES BY ACREAGES IN THE DEVELOPMENT AREA, PROJECT SITE, AND NAPA COUNTY

Terrestrial Biological Community	Acreage[1] in the Development Area	Acreage[2] on the Project Site	Acreage in Napa County
Grassland			
Upland Annual Grasslands and Forbs Formation	116.22	153.20	12,153
Purple Needlegrass Grassland	0.19	Not quantified	Not quantified
Beardless Wildrye Grassland	0.05	Not quantified	Not quantified
Blue Wildrye Grassland	0.08	Not quantified	Not quantified
Grassland Total	***116.54***	***153.20***	***12,153***
Mixed Oak Woodland			
Blue Oak Alliance	5.56	35.27	44,104
Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association	6.54	165.37	26,374
Interior Live Oak–Blue Oak–(Foothill Pine) NFD Association	20.71	251.89	18,084
Mixed Oak Alliance	0.71	68.77	28,703
Valley Oak–(California Bay–Coast Live Oak–Walnut-Ash) Riparian Forest NFD Association	0.06	17.81	5,721
Mixed Oak Woodland Total	***33.58***	***539.11***	***122,986***
Chaparral/Scrub			
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon-California Buckeye) Mesic East County NFD Super Alliance	4.35	23.51	11,037
Chaparral Scrub Total	***4.35***	***23.51***	***11,037***
Urban			
Urban or Built-Up	2.64	Not quantified	26,461
Urban Total	***2.64***	***–***	***26,461***
Terrestrial Biological Community Total	**157.14**	**727.09**	**172,637**

NOTES:

NFD = No Formal Description

1 GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through County GIS mapping, the values disclosed herein are considered by the County to be adequate for CEQA review and disclosure purposes of the subject application.

2 Project site acreages for terrestrial biological communities that also occur in the development area are provided; the project site contains other terrestrial biological communities (i.e., agriculture, Chamise Alliance, Mixed Willow Super Alliance, and Valley Oak Alliance) that are not included in this table.

SOURCE: Napa County 2005; data compiled by Environmental Science Associates in 2021

Grassland

Upland *Annual Grasslands and Forbs Formation*
Upland Annual Grassland is the dominant biological community in the development area. Annual grassland is distinguished primarily by nonnative annual grasses and forbs. The following species were observed in this biological community during the April 2018 surveys: wild oat (*Avena fatua*), slender oat (*A. barbata*), soft chess (*Bromus hordeaceus*), ripgut grass (*B. diandrus*), red brome (*B. madritensis* ssp. *rubens*), harding grass (*Phalaris aquatica*), blue grass (*Poa bulbosa*), silver hair grass (*Aira caryophyllea*), brome fescue (*Festuca bromoides*), hare barley (*Hordeum murinum* ssp*. leporinum*), rattlesnake grass (*Briza maxima*), redstem filaree (*Erodium cicutarium*), blue-eyed grass (*Sisyrinchium bellum*), filaree (*Erodium botrys*), tall sock-destroyer (*Torilis arvensis*), geranium (*Geranium dissectum*), cranesbill (*G. molle*), rose clover (*Trifolium hirtum*), narrowleaf plantain (*Plantago lanceolata*), common burclover (*Medicago polymorpha*), yellow star thistle (*Centaurea solstitialis*), Italian thistle (*Carduus pycnocephalus*), California poppy (*Eschscholzia californica*), bicolored lupine (*Lupinus bicolor*), western buttercup (*Ranunculus occidentalis* var. *occidentalis*), blue dicks (*Dichelostemma capitatum*), soap plant (*Chlorogalum pomeridianum*), and narrow-leaved mule ears (*Wyethia angustifolia*).

Most of the upland annual grassland in the northern portion of the development area is densely vegetated and is cultivated. Because of the dense vegetation, very few small-mammal burrows are present in the annual grassland. The annual grassland provides low-quality foraging habitat for raptors, given the lack of suitable rodent habitat present. These areas in the northern portion of the development area and in portions of the southern development area had been mowed or grazed before the June 2018 surveys; as a result, the majority of the herbaceous species were unidentifiable.

Isolated mature oak (*Quercus* sp.) trees greater than 30 inches diameter at breast height (dbh) exist within the grassland. The oak trees provide high-quality nesting habitat for birds and raptors. In addition, proposed vineyard Block 5D contains granaries within a foothill pine (*Pinus sabiniana*) (**Figure 3.3-2**).

Purple Needlegrass Grassland
Approximately 0.19 acre of purple needlegrass (*Stipa pulchra*) grassland is present in the development area (**Figure 3.3-2**). The purple needlegrass grassland is discussed in further detail later in this section, under ***Sensitive Natural Communities***.

Beardless Wildrye Grassland
Approximately 0.05 acre of beardless wildrye (*Elymus triticoides*) grassland is present in the development area (**Figure 3.3-2**). The beardless wildrye grassland is discussed in further detail later in this section, under ***Sensitive Natural Communities***.

Blue Wildrye Grassland

Approximately 0.08 acre of blue wildrye (*Elymus glaucus*) grassland is present in the development area (**Figure 3.3-2**). The blue wildrye grassland is discussed in further detail later in this section, under ***Sensitive Natural Communities***.

Mixed Oak Woodland

Blue Oak Alliance

Blue Oak Alliance is present in the development area. This community consists primarily of blue oak (*Quercus douglasii*), with interior live oak (*Q. wislizeni*) scattered throughout. Understory shrubs include common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), western poison oak (*Toxicodendron diversilobum*), and honeysuckle (*Lonicera hispidula*). Dominant understory herbaceous vegetation includes those species identified for the Upland Annual Grassland habitat. Isolated mature oak trees greater than 30 inches dbh exist within the Blue Oak Alliance community (**Figure 3.3-2**). These oak trees provide high-quality habitat for wildlife species.

Coast Live Oak–Blue Oak NFD Association

Coast Live Oak–Blue Oak–(Foothill Pine) No Formal Description (NFD) Association is present in the development area. Dominant overstory vegetation includes coast live oak (*Quercus agrifolia*) interspersed with blue oak, madrone (*Arbutus menziesii*), and foothill pine. Understory shrubs include honeysuckle, common manzanita, and western poison oak. Dominant understory herbaceous vegetation includes those species identified for the Upland Annual Grassland habitat. This woodland provides high-quality habitat for wildlife species.

Interior Live Oak–Blue Oak NFD Association

Interior Live Oak–Blue Oak–(Foothill Pine) NFD Association is present in the development area. Dominant overstory vegetation includes interior live oak and blue oak intermixed with madrone, California bay (*Umbellularia californica*), buckeye (*Aesculus californica*), and foothill pine. Dominant understory shrubs include western poison oak and California yerba santa (*Eriodictyon californicum*). Dominant understory herbaceous vegetation includes those species identified for the Upland Annual Grassland habitat. Isolated mature oak trees greater than 30 inches dbh are present in this biological community (**Figure 3.3-2**). This woodland provides high-quality habitat for wildlife species.

Mixed Oak Alliance

Mixed Oak Alliance is present in the development area. Dominant overstory vegetation includes coast live oak, valley oak (*Quercus lobata*), blue oak, foothill pine, big-leaf maple (*Acer macrophyllum*), and black oak (*Q. kelloggii*). Understory shrubs include western poison oak, common manzanita, and coyote brush (*Baccharis pilularis*). Dominant understory herbaceous vegetation includes those species identified for the Upland Annual Grassland habitat.

Valley Oak–(California Bay–Coast Live Oak–Walnut-Ash) Riparian Forest NFD Association
A small portion (approximately 0.06 acre) of riparian habitat is present in the development area along the banks of Elder Creek. Dominant overstory vegetation includes willow (*Salix* sp.), California bay, and black oak. Dominant understory includes curly dock (*Rumex cripsus*) and annual beardgrass (*Polypogon monspeliensis*). This biological community is discussed in further detail later in this section, under ***Sensitive Natural Communities*****.**

Chaparral/Scrub

Scrub Interior Live Oak–Scrub Oak–Mesic East County NFD Super Alliance
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance is present in the development area. Areas of Scrub Interior Live Oak–Scrub Oak Mesic East County NFD Super Alliance are densely vegetated. Dominant overstory vegetation includes California bay, scrub oak (*Quercus berberidifolia*), toyon (*Heteromeles arbutifolia*), foothill pine, western poison oak, Jim bush (*Ceanothus oliganthus* var. *sorediatus*), and common manzanita. Dominant understory includes slender wild oat, California-broom (*Acmispon glaber* var. *glaber*), medusa head (*Elymus caput-medusae*), and shepherd's purse (*Capsella bursa-pastoris*). Although not a sensitive community, this biological community supports a diverse array of wildlife.

Urban or Built-Up

Approximately 2.64 acres of urban or built-up areas are present in the development area. Urban includes disturbed land that had been graded or used for storage for the existing vineyard and ranching operations. Materials piles, compost piles, and agricultural equipment are present on the disturbed land, and minimal herbaceous vegetation has established there.

SENSITIVE NATURAL COMMUNITIES

Sensitive habitats include those that are of special concern to resource agencies or those that are protected under CEQA, County regulations, Section 1600 of the California Fish and Game Code, or Section 404 of the Clean Water Act. Sensitive natural communities in the development area include potential waters of the United States, which include 0.02 acre of Elder Creek and less than an estimated 0.005 acre of the unnamed pond, oak trees within the mixed oak woodland and annual grassland, 0.06 acre of riparian woodland, 0.05 acre of beardless wildrye grassland, 0.08 acre of blue wildrye grassland, and 0.19 acre of purple needlegrass grassland (**Figure 3.3-2**). Napa County General Plan Policy CON-24 calls for protection of mixed oak woodland and Policy CON-28 calls for protection of riparian woodland (Napa County 2009).

POTENTIAL WATERS OF THE UNITED STATES

Two delineations encompassing the development area were previously prepared: one by Gibson & Skordal (2015) and one by Madrone Ecological Consulting (2017). The U.S. Army Corps of Engineers (USACE) issued a preliminary jurisdictional determination on June 19, 2016 (2015-00309N), and concurred with the presence of approximately 0.76 acre of potential waters

of the United States within 194 acres of the project site (Gibson & Skordal 2015; USACE 2016). The other delineation mapped 4.077 acres within an additional 312 acres of the project site (Madrone Ecological Consulting 2017). The delineations are considered preliminary until USACE verifies the findings.

The development area includes a total of approximately 0.025 acre of potential waters of the United States: the 0.02 acre associated with the proposed intake structure along Elder Creek and less than an estimated 0.005 acre associated with the unnamed pond surrounding proposed Blocks 29B and 29C (**Figure 3.3-2**).

WILDLIFE OBSERVED

The following wildlife species were observed during the 2018 surveys:

- **Foraging birds:** Red-winged blackbird (*Agelaius phoeniceus*), barn swallow (*Hirundo rustica*), mallard (*Anas platyrhynchos*), wood duck (*Aix sponsa*), great blue heron (*Ardea herodias*), California quail (*Callipepla californica*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*B. jamaicensis*), mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), Anna's hummingbird (*Calypte anna*), acorn woodpecker (*Melanerpes formicivorus*), northern flicker (*Colaptes auratus*), black phoebe (*Sayornis nigricans*), common raven (*Corvus corax*), steller's jay (*Cyanocitta stelleri*), western scrub jay (*Aphelocoma coerulescens*), northern mockingbird (*Mimus polyglottos*), song sparrow (*Melospiza melodia*), dark-eyed junco (*Junco hyemalis*), Brewer's blackbird (*Euphagus cyanocephalus*), oak titmouse (*Baeolophus inornatus*), house finch (*Haemorhous mexicanus*), American goldfinch (*Spinus tristis*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), ruby-crowned kinglet (*Regulus calendula*), swan (*Cygnini* sp.), western bluebird (*Sialia mexicana*), and Canada goose (*Branta canadensis*). An active barn swallow nest was observed in a cavity of a coast live oak in proposed Block 23F during the June 2018 surveys (**Figure 3.3-2**).
- **Mammals:** Western grey squirrel (*Sciurus griseus*), coyote (*Canis latrans*), wild boar (*Sus scrofa*), black-tailed deer (*Odocoileus hemionus*), and black-tailed jackrabbit (*Lepus californicus*).
- **Reptiles and amphibians:** Sierran tree frog (*Pseudacris sierra*), California newt (*Taricha torosa*), western fence lizard (*Sceloporus occidentalis*), and American bullfrog (*Lithobates catesbeianus*).

SPECIAL-STATUS SPECIES

Several species known to occur in or in the vicinity of the development area are protected under federal and/or state endangered species laws, or have been designated as Species of Special Concern by CDFW. In addition, Section 15380(b) of the State CEQA Guidelines provides a

definition of rare, endangered, or threatened species that are not included in any listing.[1] Species recognized under these terms are collectively referred to as "special-status species."

The special-status species considered for this analysis are based on the CNDDB, CNPS, and USFWS lists described above. **Appendix E** presents a comprehensive list of regionally occurring special-status plant and wildlife species that were considered in the analysis. The list includes the common and scientific names for each species, regulatory status (federal, state, local, CNPS), habitat descriptions, and a discussion of the potential for occurrence in the development area based on suitable habitat presence.

Some special-status species were determined to not have the potential to occur. These determinations were made when the development area lacks suitable habitat for the species or lies outside of the species' known extant geographical or elevational ranges. Those special-status species are not discussed further in this section, except for the following explanation of the reason valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) does not have the potential to occur in the development area.

The CDFW (2019a) and USFWS (2019) lists do not identify valley elderberry longhorn beetle as occurring or potentially occurring within the Chiles Valley U.S. Geological Survey quadrangle or surrounding eight quadrangles. No CNDDB occurrences of this species have been documented within 5 miles of the development area. The current range for valley elderberry longhorn beetle does not extend west of Lake Berryessa, the area in which the development area is located. The development area contains habitat in elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs but lies outside of the known geographical range for this species. Further, surveys of the elderberry shrubs in the development area, as shown in **Figure 3.3-2**, observed non-listed adult male California elderberry longhorn beetles, not valley elderberry longhorn beetle (Entomological Consulting Services 2016). Therefore, this species is not discussed further.

No potentially occurring special-status plants were observed during the botanical inventories conducted for the proposed project on April 4, 5, and 12, 2018, and June 19 and 20, 2018. Further, none were observed during the previous botanical surveys of the project site conducted on May 2, 2014; April 10, 2015; June 17, 2015; and April 7, 2016 (Vinnedge Environmental Consulting 2017). **Table 3.3-3** lists potentially occurring special-status plants that were not observed during these botanical inventories, which were conducted within the plants' evident and identifiable blooming periods; however, this section does not discuss those plant species individually.

Table 3.3-3 summarizes the special-status amphibian/reptile, bird, and mammal species that have the potential to occur in the development area; each of those species is discussed further below.

[1] For example, vascular plants listed as rare or endangered or as List 1 or 2 by CNPS are considered to meet Section 15380(b) requirements.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Plants				
Amorpha californica var. *napensis* Napa false indigo	–/–/1B.2	Perennial deciduous shrub found in broadleafed upland forest, occasionally in openings, chaparral, and cismontane woodland from 394 to 6,562 feet.	April–July	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Amsinckia lunaris Bent-flowered fiddleneck	–/–/1B.2	Annual herb found in coastal bluff scrub, cismontane woodland, and valley and foothill grassland from 10 to 1,640 feet.	March–June	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Antirrhinum virga Twig-like snapdragon	–/–/4.3	Perennial herb found on rocky, openings, which are often serpentinite, in chaparral and lower montane coniferous forest from 328 to 6,611 feet.	June–July	Although the chaparral-scrub provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Arctostaphylos stanfordiana var. *repens* Rincon Ridge manzanita	–/–/1B.1	Perennial evergreen shrub found occasionally in rhyolitic substrate in chaparral and cismontane woodland from 246 to 1,214 feet.	February–April (occasionally May)	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Astragalus breweri Brewer's milk-vetch	–/–/4.2	Annual herb often found on serpentinite, volcanic substrate in chaparral, cismontane woodland, meadows and seeps, and valley and foothill grassland, which is occasionally open, often gravelly), from 295 to 2,395 feet.	April–June	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Astragalus rattanii var. *jepsonianus* Jepson's milk-vetch	–/–/1B.2	Annual herb often found on serpentinite substrate in chaparral, cismontane woodland, and valley and foothill grassland from 968 to 2,297 feet.	March–June	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Calycadenia micrantha Small-flowered calycadenia	–/–/1B.2	Annual herb found on roadsides, rocky, talus, scree, sometimes serpentinite, and sparsely vegetated areas in chaparral, meadows and seeps, which are occasionally volcanic, and valley and foothill grassland from 16 to 4,921 feet.	June–September	Although the chaparral-scrub and annual grassland provide habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Castilleja ambigua ssp. *ambigua* Johnny-nip	–/–/4.2	Annual hemiparasitic herb found in coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, and vernal pool margins from 0 to 1,427 feet.	March–August	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Ceanothus divergens Calistoga ceanothus	–/–/1B.2	Perennial evergreen shrub found in chaparral, which occasionally occurs on serpentinite or volcanic, rocky substrate, from 558 to 3,117 feet.	February–April	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Ceanothus sonomensis Sonoma ceanothus	–/–/1B.2	Perennial evergreen shrub occasionally found on sandy, serpentinite, or volcanic substrate in chaparral from 705 to 2,625 feet.	February–April	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Centromadia parryi ssp. *parryi* Pappose tarplant	–/–/1B.2	Annual herb often found on alkaline soils in chaparral, coastal prairie, meadows and seeps, marshes and swamps that are occasionally of coastal salt, and valley and foothill grassland that are occasionally vernally mesic from 0 to 1,378 feet.	May–November	Although the chaparral-scrub and annual grassland provide habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period.
Clarkia gracilis ssp. *tracyi* Tracy's clarkia	–/–/4.2	Annual herb found in chaparral, occasionally in openings that are usually serpentinite, from 213 to 2,133 feet.	April–June	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Cryptantha clevelandii var. *dissita* Serpentine cryptantha	–/–/1B.2	Annual herb found in chaparral, which is occasionally serpentinite, from 1,296 feet to 1,903 feet.	April–June	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Cypripedium montanum Mountain lady's slipper	–/–/4.2	Perennial rhizomatous herb found in broadleafed upland forest, cismontane woodland, lower montane coniferous forest, and North Coast coniferous forest from 607 to 7,300 feet.	March–August	Although the mixed oak woodland provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Downingia pusilla Dwarf downingia	–/–/2B.2	Annual herb found occasionally in mesic areas within valley and foothill grassland and vernal pools from 3 to 1,460 feet.	March–May	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Erigeron bioletti Streamside daisy	–/–/3	Perennial herb found on rock, mesic substrate in broadleafed upland forest, cismontane woodland, and North Coast coniferous forest from 98 to 3,609 feet.	June–October	Although the mixed oak woodland provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Erigeron greenei Greene's narrow–leaved daisy	–/–/1B.2	Perennial herb found occasionally on serpentinite or volcanic substrate in chaparral from 263 to 3,297 feet.	May–September	Although the chaparral-scrub provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Eryngium jepsonii Jepson's coyote thistle	–/–/1B.2	Perennial herb found on clay substrate in valley and foothill grassland and vernal pools from 10 to 984 feet.	April–August	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Fritillaria purdyi Purdy's fritillary	–/–/4.3	Perennial bulbiferous herb usually found on serpentinite in chaparral, cismontane woodland, and lower montane coniferous forest from 574 to 7,398 feet.	March–June	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Harmonia hallii Hall's harmonia	–/–/1B.2	Annual herb found occasionally on serpentinite substrate in chaparral from 1,001 to 3,238 feet.	April–June	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Hesperolinon bicarpellatum Two–carpellate western flax	–/–/1B.2	Annual herb found in chaparral, which is usually on serpentinite substrate, from 1,001 to 3,297 feet.	May–July	Although the chaparral-scrub provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Hesperolinon brewerii Brewer's western flax	–/–/1B.2	Annual herb found usually on serpentinite soils in chaparral, cismontane woodland, and valley and foothill grassland from 98 to 3,100 feet.	May–July	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Lasthenia conjugens Contra Costa goldfields	FE, CH/–/1B.1	Annual herb found on mesic soils in cismontane woodland, playas that are occasionally alkaline, valley and foothill grassland, and vernal pools from 0 to 1,542 feet.	March–June	Although the mixed oak woodland and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Layia septentrionalis Colusa layia	–/–/1B.2	Annual herb found in chaparral, cismontane woodland, and valley and foothill grassland, which is occasionally on sandy, serpentine substrate, from 328 to 3,593 feet.	April–May	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Leptosiphon jepsonii Jepson's leptosiphon	–/–/1B.2	Annual herb found usually on volcanic substrate in chaparral, cismontane woodland, and valley and foothill grassland from 328 to 1,640 feet.	March–May	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Leptosiphon latisectus Broad-lobed leptosiphon	–/–/4.3	Annual herb found in broadleafed upland forest and cismontane woodland from 558 to 4,921 feet.	April–June	Although the mixed oak woodland provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Limnanthes vinculans Sebastopol meadowfoam	FE/CE/1B.1	Annual herb found in vernally mesic substrate in meadows and seeps, valley and foothill grassland, and vernal pools from 49 to 1001 feet.	April–May	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Lomatium repostum Napa lomatium	–/–/4.3	Perennial herb usually found on serpentinite substrate in chaparral and cismontane woodland from 295 to 2,723 feet.	March–June	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Lupinus sericatus Cobb Mountain lupine	–/–/1B.2	Perennial herb found in broadleafed upland forest, chaparral, cismontane woodland, and lower montane coniferous forest from 902 to 5,003 feet.	March–June	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Malacothamnus helleri Heller's bush-mallow	–/–/3.3	Perennial deciduous shrub found occasionally in sandstone in chaparral and occasionally in gravel in riparian woodland from 1,001 to 2,083 feet.	May–July	Although the chaparral-scrub and riparian woodland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Micropus amphibolus Mr. Diablo cottonweed	–/–/3.2	Annual herb found on rocky substrate in broadleafed upland forest, chaparral, cismontane woodland, and valley and foothill grassland from 148 to 2,707 feet.	March–May	Although the chaparral-scrub, mixed oak woodland, and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Monardella viridis Green monardella	–/–/4.3	Perennial rhizomatous herb found in broadleafed upland forest, chaparral, and cismontane woodland from 328 to 3,314 feet.	June–September	Although the chaparral-scrub and mixed oak woodland provide habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Navarretia heterandra Tehama navarretia	–/–/4.3	Annual herb found in valley and foothill grassland, which is occasionally mesic, and vernal pools from 98 to 3,314 feet.	April–June	Although the annual grassland provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	–/–/1B.1	Annual herb found in mesic areas of cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and vernal pools from 16 to 5,709 feet.	April–July	Although the mixed oak woodland and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Penstemon newberryi var. *sonomensis* Sonoma beardtongue	–/–/1B.3	Perennial herb found occasionally on rocky substrate in chaparral from 2,297 to 4,495 feet.	April–August	Although the chaparral-scrub provides habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Ranunculus lobbii Lobb's aquatic buttercup	–/–/4.2	Annual aquatic herb found on mesic substrate in cismontane woodland, North Coast coniferous forest, valley and foothill grassland, and vernal pools from 49 to 1,542 feet.	February–May	Although the mixed oak woodland and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Senecio clevelandii var. *clevelandii* Cleveland's ragwort	–/–/4.3	Perennial herb found occasionally in serpentinite seeps in chaparral from 1,198 to 2,953 feet.	June–July	Although the chaparral-scrub provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Sidalcea keckii Keck's checkerbloom	–/–/1B.1	Annual herb found on serpentinite and clay substrate in cismontane woodland and valley and foothill grassland from 246 to 2,133 feet.	April–May (occasionally June)	Although the chaparral-scrub and annual grassland provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Streptanthus morrisonii var. *elatus* Three Peaks jewelflower	–/–/1B.2	Perennial herb found occasionally on serpentinite substrate in chaparral from 295 to 2,674 feet.	June–September	Although the chaparral-scrub provides habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Toxicoscordion fontanum Marsh zigadenus	–/–/4.2	Perennial bulbiferous herb found in vernally mesic, often serpentinite substrate in chaparral, cismontane woodland, lower montane coniferous forest, meadows and seeps, and marshes and swamps from 49 to 3,281 feet.	April–July	Although the mixed oak woodland and chaparral-scrub provide habitat, this species was not observed during the April 4–6, 2018, and June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Trichostema ruygtii Napa bluecurls	–/–/1B.2	Annual herb found in chaparral, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and vernal pools from 98 to 2,231 feet.	June–October	Although the mixed oak woodland, annual grassland, and chaparral-scrub provide habitat, this species was not observed during the June 19–20, 2018, botanical inventories conducted within the evident and identifiable blooming period for this species.
Amphibians/Reptiles				
Emys marmorata Western pond turtle	–/CSC/–	Found in agricultural wetlands and other wetlands such as irrigation and drainage canals, low-gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	Active outside of dormancy period November–February	Elder Creek within the development area provides marginal habitat for this species. Matheson Reservoir and an unnamed pond near the development area provide aquatic habitat for this species. The annual grassland surrounding these aquatic features provide upland overland movement for this species.
Rana draytonii California red-legged frog	FT/–/–	Typically found in or within 91 meters (300 feet) of aquatic habitat. Breed in quiet, slow-moving streams, ponds, or marsh communities with emergent vegetation or dense riparian vegetation. May disperse up to 2 miles between suitable aquatic habitat.	Aquatic surveys of breeding sites between January and September	Elder Creek within the development area provides marginal habitat for this species, given the highly scoured banks that either lack vegetation or are densely vegetated with Himalayan blackberries. Wildlife Research Associates (2015) conducted modified protocol-level surveys that were approved by USFWS. The results were negative for this species. USFWS concurred with the findings and recommended that a biological monitor be present during construction activities.
Birds				
Agelaius tricolor Tricolored blackbird	–/CSC/– Candidate (nesting colony)	Nests in dense blackberry, cattail, tules, bulrushes, sedges, willow, or wild rose within freshwater marshes. Nests in large colonies (up to thousands of individuals).	Year round	The annual grassland provides foraging habitat. No suitable nesting habitat occurs within the development area.
Aquila chrysaetos Golden eagle	–/CFP/– (nesting and wintering)	Open and semi-open areas up to 12,000 feet in elevation. Builds stick nests on cliffs, in trees, or on man-made structures.	Year round	The oak woodland provides nesting habitat for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Athene cunicularia Burrowing owl	–/CSC/– (burrowing sites and some wintering sites)	Nests in burrows in the ground, often in old ground squirrel burrows or badger, within open dry grassland and desert habitat. The burrows are found in dry, level, open terrain, including prairie, plains, desert, and grassland with low-height vegetation for foraging and available perches, such as fences, utility poles, posts, or raised rodent mounds.	Year round Breeding season surveys between March and August	The annual grassland provides breeding and wintering habitat for this species.
Buteo swainsoni Swainson's hawk	–/CT/–	Nests peripherally to valley riparian systems and in lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees ranging in height from 41 to 82 feet are the most commonly used nest trees in the Central Valley. This species is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Napa, Placer, Plumas, Sacramento, San Bernardino, San Joaquin, San Luis Obispo, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba Counties.	March 1–September 15	The annual grassland provides foraging habitat and the isolated trees within the annual grassland and the trees in the oak woodland provide nesting habitat for this species.
Elanus leucurus White-tailed kite	–/CFP/– (nesting)	Nests in isolated trees or woodland areas with suitable open foraging habitat.	February 15–August 31	This species was observed foraging in the development area. The isolated trees within the annual grassland and the trees in the oak woodland provide nesting habitat for this species.
Haliaeetus leucocephalus Bald eagle	FD/CFP, CE/–	Breeding habitat most commonly includes areas within 2.5 miles of coastal areas, bays, rivers, lakes, and reservoirs. Nests usually are in tall trees or on pinnacles or cliffs near water.	Winter	The oak woodland provides nesting habitat for this species.
Progne subis Purple martin	–/CSC/–	Often nests in tall, old trees near water in woodland and conifer habitats. Feeds in open areas near water and nest in tree cavities.	Year round	The oak woodland provides nesting habitat for this species.
Riparia Bank swallow	–/CT/–	Nests in riverbanks and forages over riparian areas and adjacent uplands.	April–July	Elder Creek in and near the development area provides nesting habitat for this species.

TABLE 3.3-3
POTENTIALLY OCCURRING SPECIAL-STATUS SPECIES

Special-Status Species	Regulatory Status (Federal/State/ Local/CNPS)	Habitat Requirements	Identification/Survey Period	Potential for Occurrence
Mammals				
Antrozous pallidus Pallid bat	–/CSC/–	Inhabits oak woodland, savanna, and riparian habitats. Roosts in crevices and hollows in trees, rocks, cliffs, bridges, and buildings.	Year round	The isolated trees within the annual grassland and the trees in the oak woodland provide roosting habitat for this species.
Corynorhinus townsendii Townsend's big-eared bat	–/CSC/–	Uses caves, buildings, and tree cavities for day roosts. Maternity and hibernation colonies typically are in caves and mine tunnels.	Year round	The isolated trees within the annual grassland and the trees in the oak woodland provide roosting habitat for this species.
Lasiurus blossevillii Western red bat	–/CSC/–	Found in cismontane woodland, lower montane coniferous forest, riparian forest, and riparian woodland.	Year round	The isolated trees within the annual grassland and the trees in the oak woodland provide roosting habitat for this species.

SOURCES: Nature Serve 2019; CNPS 2019; USFWS 2019; CDFW 2019a

Amphibians and Reptiles

Western Pond Turtle

Western pond turtle (*Actinemys marmorata*) is a California species of special concern. Western pond turtles are found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with suitable basking sites (Californiaherps 2019). Western pond turtles nest and overwinter in sandy banks, if present, or in areas of sparse vegetation consisting of grassland and forbs with less than 10 percent slopes and located less than 492 feet from aquatic habitat (Rosenberg et al. 2009). Use of terrestrial nesting habitat by western pond turtles averages 92 feet on either side of creeks (Rathbun et al. 2002).

There is one CNDDB record for this species within 5 miles of the development area (**Figure 3.3-3**). Matheson Reservoir and an unnamed pond near the development area provide habitat for this species. Elder Creek in and near the development area provides aquatic habitat for this species. The annual grassland and grassy areas within the chaparral/scrub and mixed oak woodland on less than 10 percent slopes within 492 feet of Elder Creek, Matheson Reservoir, and the unnamed pond provide upland habitat. This species was not observed in the development area during the biological resources surveys.

California Red-Legged Frog

California red-legged frog (*Rana draytonii*) is federally listed as threatened and is a California species of special concern. This species inhabits ponds, slow-moving creeks, and streams with deep pools that are lined with dense emergent marsh or shrubby riparian vegetation. Submerged root masses and undercut banks are important habitat features for this species. Breeding sites include pools and backwaters within streams and creeks, ponds, marshes, springs, sag ponds, dune ponds, lagoons, and artificial impoundments, including stock ponds (USFWS 2011). California red-legged frogs breed between November and March. Embryos hatch 6–14 days after fertilization and larvae require 3.5 to 7 months to attain metamorphosis. This species may have been extirpated from the floor of the Central Valley before the 1960s (USFWS 2002).

Aquatic habitat that supports stronger populations of nonnative predators associated with warmwater habitats such as American bullfrog (*Lithobates catesbeiana*), Centrarchid fish (Jennings, pers. comm., 2013), bass (*Micropterus* sp.), and mosquitofish (*Gambusia affinis*) generally do not coexist with California red-legged frog (USFWS 2017). This species is mostly found in seasonal aquatic habitat rather than in permanent waters because predators (bass, bullfrogs, and mosquitofish) are unable to survive once the aquatic features dry up.

There are no CNDDB records for this species within 5 miles of the development area.[2] Matheson Reservoir, a lacustrine pond, and an unnamed pond near the development area provide marginal habitat; however, during the June 2018 surveys, American bullfrogs and

[2] Although observations of species are not required to be documented within the CNDDB, the CNDDB is a tool used by biologists to aid in determining presence or potential presence. In addition to the lack of CNDDB records for this species within 5 miles of the development area, there are no known species locations on file with Napa County or in its GIS.

mosquitofish—predators of California red-legged frog—were observed and heard in these aquatic features. In addition, focused protocol-level surveys, authorized by USFWS on May 11, 2015, were conducted at Matheson Reservoir between June 3 and 24, 2015, and on July 8, 2015 (Wildlife Research Associates 2015), following the *Revised Guidance on Site Assessments and Field Surveys for the California Red-Legged Frog* (USFWS 2005). No California red-legged frog tadpoles or adults were heard or seen during the daytime and nighttime visual encounter surveys, nor were any observed while dipnetting. USFWS concurred with the negative findings in an email dated September 9, 2015, and in a subsequent email dated February 14, 2019, and recommended that a biological monitor be present during construction activities (**Appendix E**).

The development area provides marginal habitat within Elder Creek, given the highly scoured banks that either lack vegetation or are densely vegetated with Himalayan blackberry. However, the development area lies outside of the known geographic range for this species and protocol-level surveys resulted in negative findings. This species is unlikely to be present in the development area.

Birds

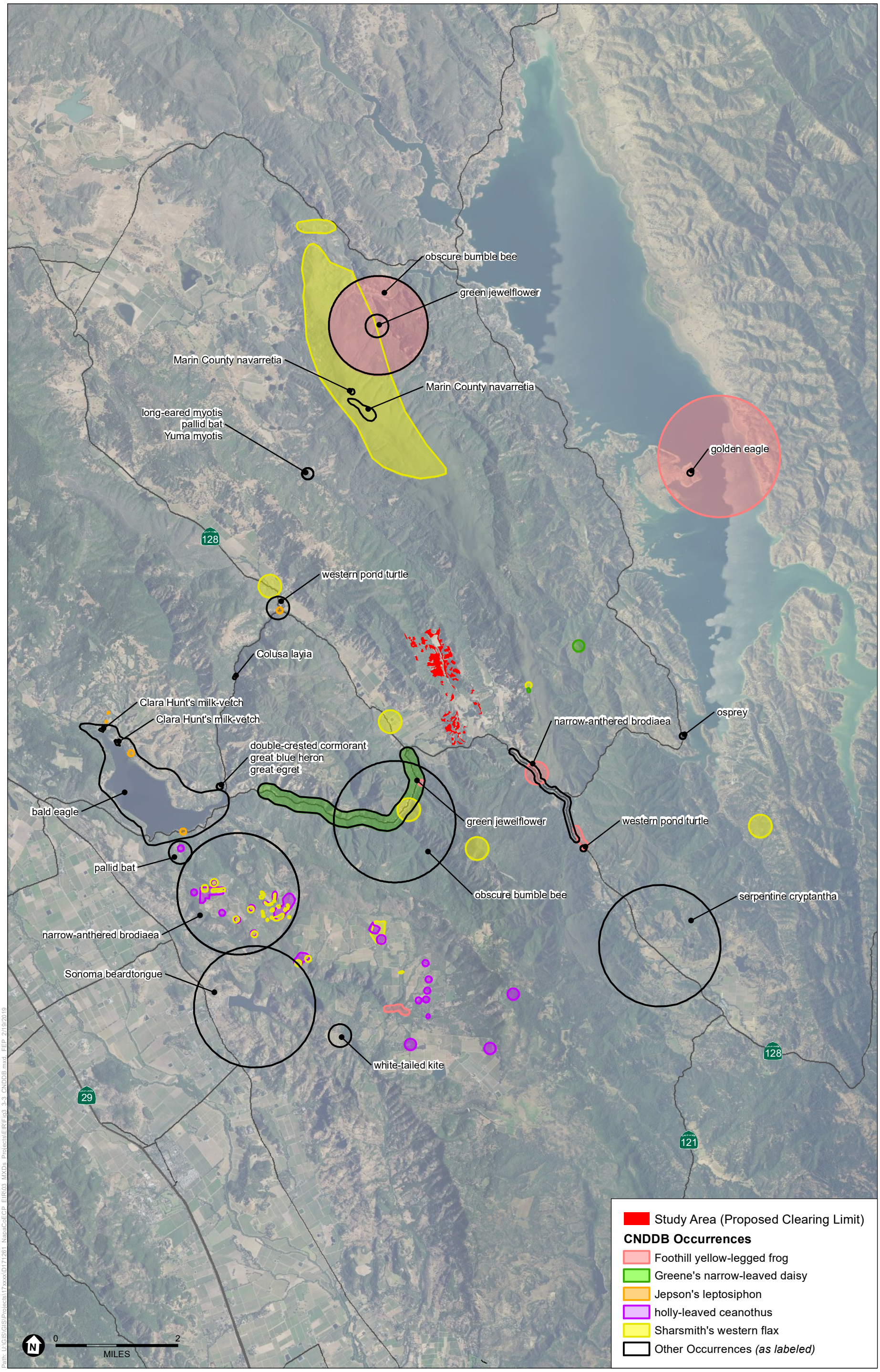
Tricolored Blackbird

Tricolored blackbird (*Agelaius tricolor*) is a state candidate for listing as threatened and is a California species of special concern. Tricolored blackbird is a colonial species that occurs in pastures, dry seasonal pools, and agricultural fields in the Central Valley and the surrounding foothills. This species usually nests within dense cattails (*Typha* sp.) or tules (*Scirpus* sp.) in emergent wetlands. Tricolored blackbird also nests in thickets of blackberry (*Rubus* sp.), wild rose (*Rosa* sp.), willows, and tall herbs. Nesting locations must be large enough to support a minimum colony of approximately 50 pairs (CDFW 2019b).

There are no CNDDB records for this species within 5 miles of the development area. No nesting habitat exists in the development area. The riparian habitat surrounding Elder Creek and the tules in the unnamed pond near the development area provide nesting habitat, although these areas are not large enough to support a nesting colony. The annual grassland provides foraging habitat for this species. This species was not observed during the biological resources surveys of the development area.

Golden Eagle

Golden eagle (*Aquila chrysaetos*) is a California fully protected species. Golden eagles nest primarily on cliffs near open habitats such as grassland, oak savanna, and open shrubland (Grinnell and Miller 1944). They build their nests on rock outcrops, cliff ledges, or in trees 10–100 feet above the ground. They often occupy remote mountain ranges and upland areas. Wintering habitats in the western United States tend to include available perches and native shrub-steppe vegetation types.



SOURCE: USDA, 2016; ESRI, 2012; Napa County, 2018; CDFW, 2019; ESA, 2019

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Figure 3.3-3
CNDDB Occurrences

ESA

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There is one CNDDB record for this species within 5 miles of the development area (**Figure 3.3-3**). The isolated trees in the annual grassland and the trees in the oak woodland provide nesting habitat for this species. No golden eagles were observed during the 2018 surveys of the development area.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a California species of special concern. Burrowing owl is a small ground-dwelling owl that occurs in western North America from Canada to Mexico and east to Texas and Louisiana. Although burrowing owls are migratory in certain areas of their range, these owls are predominantly nonmigratory in California. Burrowing owls generally inhabit gently sloping areas characterized by low, sparse vegetation (Poulin et al. 2011). The breeding season for burrowing owl extends from March to August, peaking in April and May (CDFW 2019b). Burrowing owls nest in burrows in the ground, often in old ground squirrel burrows. Burrowing owl also uses artificial burrows including pipes, culverts, and nest boxes.

There are no CNDDB records for this species within 5 miles of the development area. The annual grassland provides habitat for this species; however, very few potential burrow sites that could be used by burrowing owl are present in the development area. No burrowing owls or signs of burrowing owl were observed during the biological resources surveys.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is state-listed as threatened. The Swainson's hawk population that nests in the Central Valley winters primarily in Mexico, while the population that nests in the interior portions of North America winters in South America (Bradbury et al. in prep.). Swainson's hawks arrive in the Central Valley between March and early April to establish breeding territories. Breeding occurs from late March to late August, peaking in late May through July (CDFW 2019b).

In the Central Valley, Swainson's hawks nest in isolated trees, small groves, or large woodlands next to open grasslands or agricultural fields. This species typically nests near riparian areas; however, it has been known to nest in urban areas as well. Nest locations are usually close to suitable foraging habitats, which include fallow fields, annual grasslands, irrigated pastures, alfalfa and other hay crops, and low-growing row crops. Swainson's hawks leave their breeding grounds to return to their wintering grounds in September or October (Nature Serve 2019).

There are no CNDDB records for this species within 5 miles of the development area. There is one CNDDB record for the species between 5 and 10 miles from the development area. Occurrence number 2668, from 2012, is approximately 7.5 miles southwest of the development area. The record states that an active nest was observed along the east bank of the Napa River. The trees in the annual grassland and mixed oak woodland provide nesting habitat for this species. The annual grassland in the development area provides foraging habitat for this species. Swainson's hawk was not observed during the biological resources surveys.

White-Tailed Kite

Although it is not listed, the white-tailed kite (*Elanus leucurus*) is a state fully protected species under the California Fish and Game Code, meaning that this species "....may not be taken or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected" species. Take may be authorized for necessary scientific research.

White-tailed kite is a medium-sized raptor that is a yearlong resident in coastal and valley lowlands in California. White-tailed kites breed between February and October, peaking from May to August (CDFW 2019b). This species nests near the top of dense oaks, willows, or other large trees.

There is one CNDDB record for this species within 5 miles of the development area (**Figure 3.3-3**). The trees in the annual grassland and mixed oak woodland provide nesting habitat for this species. One white-tailed kite was observed foraging in the development area during the June 2018 biological surveys.

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*) is state listed as endangered and is a fully protected species. Bald eagles inhabit forested areas adjacent to large water bodies—lakes, reservoirs, rivers, and estuaries—and the coastline. They build nests in large trees on rocky outcrops. These species winter in temperate areas below 1,640 feet.

There is one CNDDB record for this species within 5 miles of the development area (**Figure 3.3-3**). The isolated trees in the annual grassland and the trees in the mixed oak woodland provide nesting habitat for this species. No bald eagles were observed during the 2018 surveys of the development area.

Purple Martin

Purple martin (*Progne subis*) is a California species of special concern. Purple martin nests in snags, tree cavities, crevices in rocks, and abandoned woodpecker holes near water. This species forages over fields, water, and marshes. There are no CNDDB records for this species within 5 miles of the development area. The trees in the annual grassland and mixed oak woodland provide nesting habitat for this species. No purple martins were observed during the biological resources surveys.

Bank Swallow

Bank swallow (*Riparia riparia*) is state listed as threatened. Bank swallows nest in riverbanks and forage over riparian areas and adjacent uplands. There are no CNDDB records for this species within 5 miles of the development area. Elder Creek in and near the development area provides nesting habitat for this species. No bank swallows were observed during the biological resources surveys.

Migratory Birds and Other Birds of Prey Nesting and Foraging Habitat
Nesting birds are protected under the Migratory Bird Treaty Act and Section 3503.5 of the California Fish and Game Code.

Migratory birds and other birds of prey are protected under the Migratory Bird Treaty Act in Code of Federal Regulations Title 50, Section 10 (50 CFR 10), and/or Section 3503.5 of the California Fish and Game Code. During the nesting season, migratory birds and other birds of prey have the potential to nest in the annual grassland and in the trees within the annual grassland and the mixed oak woodland. An active barn swallow nest was observed in an isolated coast live oak tree during the June 2018 biological resources surveys. The generally accepted nesting season is from February 15 through August 31. Migratory birds and other birds of prey have the potential to nest in the development area.

Annual grassland within proposed vineyard Blocks 25, 26, 27, 30, and 31 provides high-quality foraging habitat because these areas are not cultivated, are connected to contiguous natural land to the north and west, and are situated near the unnamed pond. Although the annual grassland to the south (within proposed vineyard Blocks 1, 2, 3, 4A, 4B, 5A–5H, 5J, 7, 8, 9A–9D, and 11) provides foraging habitat, the blocks are situated near existing vineyards, occur on steep slopes, and lack small-mammal burrows. The grassland in the northern portion of the development area (within proposed vineyard Blocks 23A, 23B, 23E, 23F, 23G, 24A–24G, and 33A–33E) is dense because it is cultivated, and dense vegetation reduces the ability of raptors to spot prey. Once the grassland is mowed, there is very little cover for small mammals to use for refuge and cover. The annual grassland provides higher quality foraging habitat during the period of the year when the vegetation is growing back after grazing and mowing, but before the vegetation becomes dense and thick.

Mammals

Pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), and western red bat (*Lasiurus blossevillii*) are California species of special concern. Bats exhibit a wide range of habitat usage depending on the species, season, time of day, resource availability, level of disturbance, and other factors; however, they often exhibit high site fidelity and specificity for roost selection. Roost sites consist of maternity (nursery colonies), bachelor, day, night, and feeding sites within caves, mines, cliffs, rock crevices, tree hollows, stumps, foliage, under exfoliating bark, and in man-made structures including buildings and bridges. Some species require a complex network of habitat characteristics that fulfill foraging, water intake, shelter, and thermoregulatory requirements that vary seasonally.

There are four CNDDB records of bats within 5 miles of the development area (**Figure 3.3-3**). The isolated trees in the annual grassland and the trees in the mixed oak woodland provide roosting habitat for these species. No bats were observed during the 2018 surveys of the development area.

WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or areas of human disturbance or urban development. Topography and other natural factors, combined with urbanization, can fragment or separate large open-space areas. The fragmentation of natural habitat can create isolated "islands" of vegetation and habitat that may not provide sufficient area to accommodate sustainable populations and can adversely affect genetic and species diversity. Retaining wildlife movement corridors ameliorates the effects of such fragmentation by allowing animals to move between remaining habitats, which in turn allows depleted populations to be replenished. Such movement may also promote genetic exchange between separated populations.

Native predators are more likely to use wide riparian corridors (greater than 100 feet wide and preferably at least 1,000 feet wide), and smaller native and non-native mammalian predators are more active in riparian corridors that are narrow (33–98 feet on each side of the creek) or denuded (Hilty and Merenlender 2002). Use of terrestrial nesting habitat by western pond turtles averages 92 feet on either side of creeks (Rathbun et al. 2002). Based on the wildlife corridor data, it is assumed that corridor widths should be at least 100 feet wide to provide adequate movement areas for some of the passage species and corridor dwellers present in the landscape.[3]

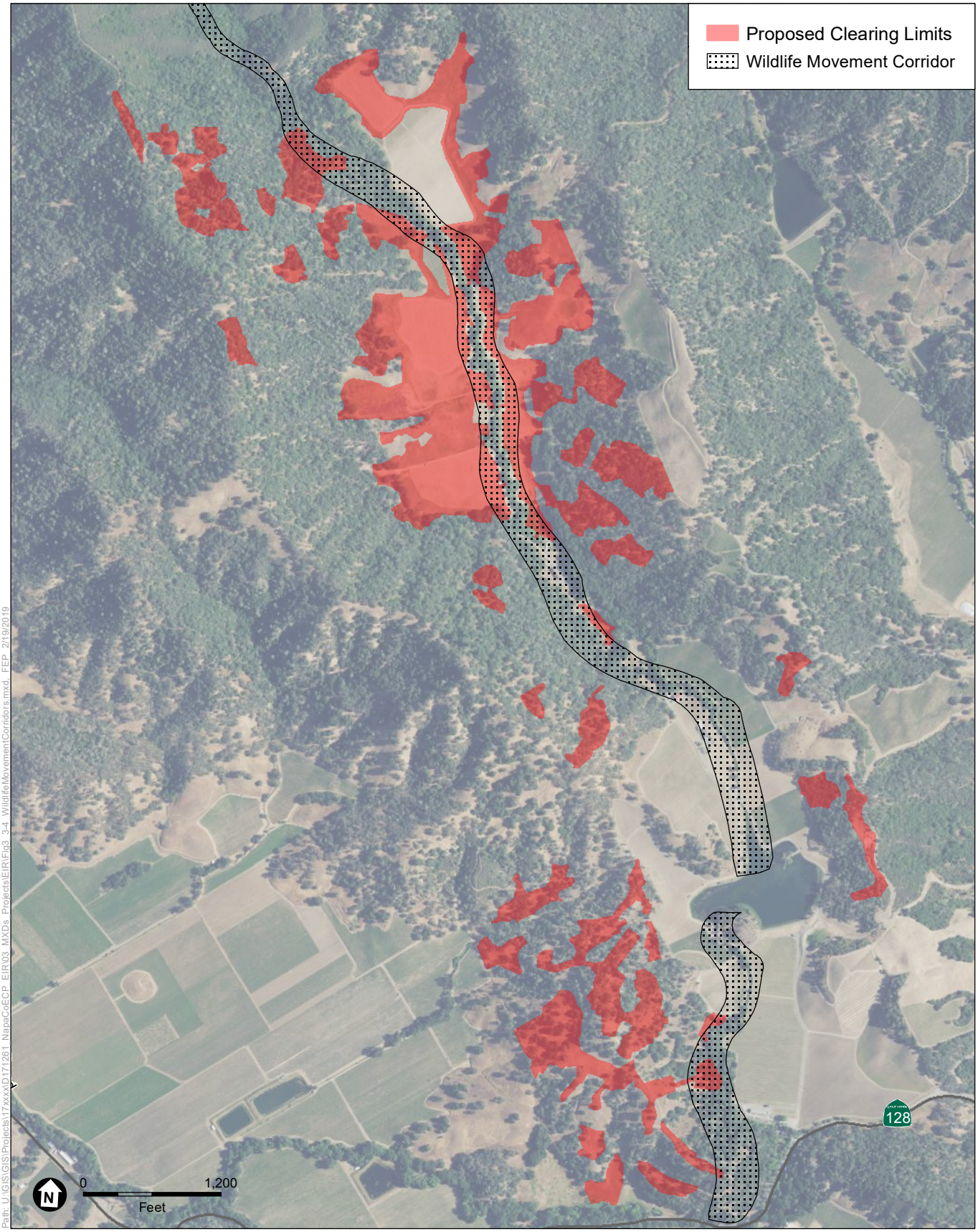
The entire project site surrounding the development area provides hundreds of acres of intact habitat that may be used for wildlife movement. Some locations in the development area are adjacent to wildlife exclusion fencing that surrounds existing vineyards on the project site and may impede movement. However, the development area does not contain any other barriers that would prevent wildlife from moving throughout the project site.

The riparian corridor that bisects the northern portion of the development area, starting from approximately 1,500 feet north of Matheson Reservoir and continuing northward, provides a natural north-to-south movement corridor through the developed footprint of the project site (**Figure 3.3-4**). Despite being narrow at times because of existing vineyards located as close as 25–50 feet from the corridor, this corridor provides cover and connectivity through vineyard areas to Matheson Reservoir and riparian habitat to the south, east, and west. This corridor may be used for species movement among habitat patches, allowing for gene flow and recolonization after local extirpation (Meffe and Carroll 1994).

CRITICAL HABITAT FOR LISTED FISH AND WILDLIFE SPECIES

USFWS defines the term "critical habitat" in the federal Endangered Species Act (FESA) as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The development area is not within designated critical habitat for any listed plant or wildlife species.

[3] CDFW does not have established standards for wildlife corridors but recommends a minimum width of 100 feet as a starting point for corridor establishment (D. Acomb, CDFW, 2006: Gallo Vineyard—Sun Lake Ranch #P04-0446-ECPA).



SOURCE: NAIP, 2016; ESRI, 2012; Napa County, 2018; ESA, 2019

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Figure 3.3-4
Wildlife Movement Corridor

3.3.2 REGULATORY SETTING

FEDERAL REGULATIONS

U.S. Fish and Wildlife Service

USFWS administers the federal Endangered Species Act (U.S. Code Title 16, Section 153 et seq. [16 USC 153 et seq.]), the Migratory Bird Treaty Act (16 USC 703–711), and the Bald and Golden Eagle Protection Act (16 USC 668). These regulations are described below.

Federal Endangered Species Act
Under the FESA, the Secretary of the Interior and the Secretary of Commerce have joint authority to list a species as threatened or endangered (16 USC 1533[c]). Two federal agencies oversee the FESA: USFWS has jurisdiction over plants, wildlife, and resident fish, while the National Marine Fisheries Service has jurisdiction over anadromous fish and marine fish and mammals.

Section 7 of the FESA requires federal agencies to consult with USFWS and the National Marine Fisheries Service to ensure that agency actions do not jeopardize the continued existence of a listed species or destroy or adversely modify critical habitat for listed species. The FESA prohibits the "take" of any fish or wildlife species listed as threatened or endangered, including the destruction of habitat that could hinder species recovery. Take is defined as harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, collecting, or attempting to engage in any such conduct.

Section 10 requires the issuance of an "incidental take" permit before any public or private action may occur that could take an endangered or threatened species. The permit requires preparing and implementing a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of a proposed project, by providing for the protection of the affected species.

Under the FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species may be present in the project area and whether the proposed project will have a potentially significant impact on such species. In addition, the agency must determine whether the proposed action is likely to jeopardize the continued existence of any species proposed to be listed under the FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC 1536[3] and 1536[4]).

Critical Habitat
USFWS designates "critical habitat" for listed species under the FESA. Critical habitat designations are specific areas within the geographic region that are occupied by a listed species that are determined to be critical to the species' survival and recovery in accordance with the FESA. A federal entity issuing a permit or acting as a lead agency must show that its actions do not negatively affect the critical habitat to the extent that they impede the recovery of the species.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (16 USC 703 Supp. I, 1989) generally prohibits the killing, possessing, or trading of migratory birds, bird parts, eggs, and nests, except as provided by the statute.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enforced by USFWS, makes it illegal to import, export, take (which includes molest or disturb), sell, purchase, or barter any bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) or parts thereof.

U.S. Army Corps of Engineers

USACE administers Section 404 of the Clean Water Act. Section 404 regulates activities in wetlands and "other waters of the United States." Wetlands are a subset of "waters of the United States" that are defined as follows in the Code of Federal Regulations (33 CFR 328.3[a], 40 CFR 230.3[s]):

(1) All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide.
(2) All interstate waters including interstate wetlands. (Wetlands are defined by the federal government [33 CFR 328.3(b), 1991] as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions.)
(3) All other waters—such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds—the use, degradation, or destruction of which could affect interstate or foreign commerce. This includes any waters with the following current or potential uses:
    - That are or could be used by interstate or foreign travelers for recreational or other purposes,
    - From which fish or shellfish are or could be taken and sold in interstate or foreign commerce, or
    - That are used or could be used for industrial purposes by industries in interstate commerce.
(4) All impoundments of waters otherwise defined as waters of the United States under the definition.
(5) Tributaries of waters identified in paragraphs (1) through (4).
(6) Territorial seas.
(7) Wetlands next to waters identified in paragraphs (1) through (6).
(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal

agency, for the purposes of the Clean Water Act, the final authority regarding the Clean Water Act jurisdiction remains with the U.S. Environmental Protection Agency (328.3[a][8] added 58 CFR 45035, August 25, 1993).

STATE REGULATIONS

California Department of Fish and Wildlife

California Fish and Game Code Section 3503

California Fish and Game Code Section 3503.5 provides that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds-of-prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the code or any regulation adopted pursuant thereto. Construction activities that result in the incidental loss of fertile eggs or nestlings, or that otherwise lead to nest abandonment and/or reproductive failure, are considered a "take" by CDFW. Any loss of eggs, nests, or young or any activities resulting in nest abandonment would constitute a significant project impact.

California Endangered Species Act

The California Endangered Species Act (CESA) prohibits the take of state-listed endangered and threatened species, although the state's definition of take does not include habitat destruction. Section 2090 requires state agencies to comply with endangered species protection and recovery and to promote conservation of these species. CDFW administers the act and authorizes take through California Fish and Game Code Section 2081 agreements (except for designated "fully protected species"; see below). Unlike its federal counterpart, the CESA protects candidate species that have been petitioned for listing.

The CESA defers to the California Native Plant Protection Act regarding listed rare and endangered plant species (see below).

Native Plant Protection Act

The Native Plant Protection Act (California Fish and Game Code Sections 1900–1913) is intended to preserve, protect, and enhance endangered or rare native plants in California. The act directs CDFW to establish criteria for determining what native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more cause. A species is rare when, though not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered. The act also directs the California Fish and Game Commission to adopt regulations governing the taking, possessing, propagation, or sale of any endangered or rare native plant.

Vascular plants that are identified as rare by CNPS, but that may have no designated status or protection under federal or state endangered species legislation, are defined as follows:

- **List 1A:** Plants Presumed Extinct.
- **List 1B:** Plants Rare, Threatened, or Endangered in California and Elsewhere.

- **List 2:** Plants Rare, Threatened, or Endangered in California, but More Numerous Elsewhere.
- **List 3:** Plants about Which More Information is Needed—A Review List.
- **List 4:** Plants of Limited Distribution—A Watch List.

In general, plants appearing on CNPS California Rare Plant Rank List 1A, 1B, or 2 are considered to meet the criteria of State CEQA Guidelines Section 15380, and effects on these species are considered "significant." In addition, plants listed on CNPS California Rare Plant Rank List 1A, 1B or 2 meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA) of the California Fish and Game Code.

Lake or Streambed Alteration Program

CDFW regulates activities that would 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 stream alteration activities. If, after notification is complete, CDFW determines that the activity may substantially adversely affect an existing fish or wildlife resource, CDFW has authority to issue a streambed alteration agreement under Section 1603 of the California Fish and Game Code. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. These requirements may include avoiding or minimizing the use of heavy equipment in stream zones, limiting work periods to avoid impacts on wildlife and fisheries resources, and restoring degraded sites or compensating for permanent habitat losses.

Species of Special Concern

CDFW maintains lists of "candidate-endangered" and "candidate-threatened" species. California candidate species are afforded the same level of protection as listed species. California also designates "species of special concern," which are species of limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. These species do not have the same legal protection as listed species or fully protected species, but may be added to official lists in the future. CDFW intends the list of species of special concern to be a management tool for consideration in future land use decisions.

State Water Resources Control Board

Porter-Cologne Water Quality Control Act

The State Water Resources Control Board, through its nine regional water quality control boards, regulates waters of the state through the California Clean Water Act (i.e., the Porter-Cologne Water Quality Control Act). If USACE determines wetlands or other waters to be isolated waters and not subject to regulation under the federal Clean Water Act, the regional water quality control board may choose to exert jurisdiction over these waters under the Porter-Cologne Water Quality Control Act as waters of the state.

State CEQA Guidelines Section 15380

Although specific federal and state statutes protect threatened and endangered species, Section 15380(b) of the State CEQA Guidelines provides that a species not on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition of the FESA and the section of the California Fish and Game Code that discusses rare or endangered plants or animals. This provision was included in the State CEQA Guidelines primarily for situations in which a public agency is reviewing a project that may have a significant effect on a candidate species that has not yet been listed by CDFW or USFWS. CEQA provides the ability to protect species from potential project impacts until the respective agencies have the opportunity to designate the species' protection.

CEQA also specifies the protection of other locally or regionally significant resources, including natural communities or habitats. Although natural communities do not presently have legal protection, CEQA requires an assessment of such communities and potential project impacts. Natural communities identified as sensitive in the CNDDB are considered by CDFW to be significant resources and fall under the State CEQA Guidelines for addressing impacts. Local planning documents such as general and area plans often identify natural communities.

LOCAL REGULATIONS

Napa County General Plan

The following goals and policies identified in the Conservation Element of the Napa County General Plan (Napa County 2009) pertaining to wetlands and biological resources are applicable to the proposed project. (Note that for certain policies, only the applicable measures from the policy are listed here.)

Open Space Conservation Policies:

- **Policy CON-1***:* The County will preserve land for greenbelts, forest, recreation, flood control, adequate water supply, air quality improvement, habitat for fish, wildlife and wildlife movement, native vegetation, and natural beauty. The County will encourage management of these areas in ways that promote wildlife habitat renewal, diversification, and protection.

- **Policy CON-2:** The County shall identify, improve, and conserve Napa County's agricultural land through the following measures: …

    c) Require that existing significant vegetation be retained and incorporated into agricultural projects to reduce soil erosion and to retain wildlife habitat. When retention is found to be infeasible, replanting of native or non-invasive vegetation shall be required. …

    f) Minimize pesticide and herbicide use and encourage research and use of integrated pest control methods such as cultural practices, biological control, host resistance, and other factors.

Natural Resource Goals and Policies:

Goal CON-2: Maintain and enhance the existing level of biodiversity.

Goal CON-3: Protect the continued presence of special-status species, including special-status plants, special-status wildlife, and their habitats, and comply with all applicable state, federal, or local laws or regulations.

Goal CON-4: Conserve, protect, and improve plant, wildlife, and fishery habitats for all native species in Napa County.

Goal CON-5: Protect connectivity and continuous habitat areas for wildlife movement.

- **Policy CON-10:** The County shall conserve and improve fisheries and wildlife habitat in cooperation with governmental agencies, private associations and individuals in Napa County.
- **Policy CON-11:** The County shall maintain and improve fisheries habitat through a variety of appropriate measures, including the following as well as best management practices developed over time (also see Water Resource Policies, below): …

  m) Control sediment production from mines, roads, development projects, agricultural activities, and other potential sediment sources.

  n) Implement road construction and maintenance practices to minimize bank failure and sediment delivery to streams.

- **Policy CON-13:** The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

  a) Maintain the following essentials for fish and wildlife resources:

     1) Sufficient dissolved oxygen in the water.

     2) Adequate amounts of proper food.

     3) Adequate amounts of feeding, escape, and nesting habitat.

     4) Proper temperature through maintenance and enhancement of streamside vegetation, volume of flows, and velocity of water. …

  c) Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife and special-status species and maintain the watersheds, especially stream side areas, in good condition.

  d) Provide protection for habitat supporting special-status species through buffering or other means.

e) Provide replacement habitat of like quantity and quality on- or off-site for special-status species to mitigate impacts to special-status species.

f) Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.

g) Require temporary or permanent buffers of adequate size (based on the requirements of the subject special-status species) to avoid nest abandonment by birds and raptors associated with construction and site development activities.

h) Demonstrate compliance with applicable provisions and regulations of recovery plans for federally listed species.

- **Policy CON-14:** To offset possible losses of fishery and riparian habitat due to discretionary development projects, developers shall be responsible for mitigation when avoidance of impacts is determined to be infeasible. Such mitigation measures may include providing and permanently maintaining similar quality and quantity habitat within Napa County, enhancing existing riparian habitat, or paying in-kind funds to an approved fishery and riparian habitat improvement and acquisition fund. Replacement habitat may occur either on- site or at approved off-site locations, but preference shall be given to on-site replacement.

- **Policy CON-16:** The County shall require a biological resources evaluation for discretionary projects in areas identified to contain or potentially contain special-status species based upon data provided in the Baseline Data Report (BDR), California Natural Diversity Database (CNDDB), or other technical materials. This evaluation shall be conducted prior to the approval of any earthmoving activities. The County shall also encourage the development of programs to protect special-status species and disseminate updated information to state and federal resource agencies.

- **Policy CON-17:** Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic communities and habitats of limited distribution. The County, in its discretion, shall require mitigation that results in the following standards:

  a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species.

  b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible.

  d) Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species.

  e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.

- **Policy CON-18:** To reduce impacts on habitat conservation and connectivity:

  a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity. …

  c) Preservation of habitat and connectivity of adequate size, quality, and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specific needs of the species.

  d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat.

  e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact caused by the new vineyard development. …

  h) Support public acquisition, conservation easements, in-lieu fees where on-site mitigation is infeasible, and/or other measures to ensure long-term protection of wildlife movement areas.

- **Policy CON-19:** The County shall encourage the preservation of critical habitat areas and habitat connectivity through the use of conservation easements or other methods as well as through continued implementation of the Napa County Conservation Regulations associated with vegetation retention and setbacks from waterways.

- **Policy CON-22:** The County shall encourage the protection and enhancement of natural habitats which provide ecological and other scientific purposes. As areas are identified, they should be delineated on environmental constraints maps so that appropriate steps can be taken to appropriately manage and protect them.

- **Policy CON-26:** Consistent with Napa County's Conservation Regulations, natural vegetation retention areas along perennial and intermittent streams shall vary in width with steepness of the terrain, the nature of the undercover, and type of soil. The design and management of natural vegetation areas shall consider habitat and water quality needs, including the needs of native fish and special-status species and flood protection where appropriate. Site-specific setbacks shall be established in coordination with Regional Water Quality Control Boards, California Department of Fish and Game [CDFW], U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration National Marine Fisheries Service, and other coordinating resource agencies that identify essential stream and stream reaches necessary for the health of populations of native fisheries and other sensitive aquatic organisms within the County's watersheds.

Where avoidance of impacts to riparian habitat is infeasible along stream reaches, appropriate measures will be undertaken to ensure that protection, restoration, and enhancement activities will occur within these identified stream reaches that support or could support native fisheries and other sensitive aquatic organisms to ensure a no net loss of aquatic habitat functions and values within the County's watersheds.

- **Policy CON-27:** The County shall enforce compliance and continued implementation of the intermittent and perennial stream setback requirements set forth in existing stream setback regulations, provide education and information regarding the importance of stream setbacks and the active management and enhancement/restoration of native vegetation within setbacks, and develop incentives to encourage greater stream setbacks where appropriate.

  Incentives shall include streamlined permitting for certain vineyard proposals on slopes between 5 and 30 percent and flexibility regarding yard and road setbacks for other proposals.

- **Policy CON-28:** To offset possible additional losses of riparian woodland due to discretionary development projects and conversions, developers shall provide and maintain similar quality and quantity of replacement habitat or in-kind funds to an approved riparian woodland habitat improvement and acquisition fund in Napa County. While on-site replacement is preferred where feasible, replacement habitat may be either on-site or off- site as approved by the County.

- **Policy CON-30:** All public and private projects shall avoid impacts to wetlands to the extent feasible. If avoidance is not feasible, projects shall mitigate impacts to wetlands consistent with state and federal policies providing for no net loss of wetland function.

Oak Woodlands Goals and Policies:

Goal CON-6: Preserve, sustain, and restore forests, woodlands, and commercial timberland for their economic, environmental, recreation, and open space values.

- **Policy CON-24:** Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following:

  a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects.

  b) Comply with the Oak Woodlands Preservation Act (PRC [Public Resources Code] Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals.

c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible.

d) Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil protection, and soil production be left standing.

e) Maintain, to the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub, and live oaks are common associations.

f) Encourage and support the County Agricultural Commission's enforcement of state and federal regulations concerning Sudden Oak Death and similar future threats to woodlands.

Water Resources Policies:

- **Policy CON-6:** The County shall impose conditions on discretionary projects which limit development in environmentally sensitive areas such as those adjacent to rivers or streamside areas and physically hazardous areas such as floodplains, steep slopes, high fire risk areas and geologically hazardous areas.
- **Policy CON-41:** The County will work to protect Napa County's watersheds and public and private water reservoirs to provide for the following purposes:

  a) Clean drinking water for public health and safety;

  b) Municipal uses, including commercial, industrial and domestic uses;

  c) Support of the eco-systems;

  d) Agricultural water supply;

  e) Recreation and open space; and

  f) Scenic beauty.

- **Policy CON-42:** The County shall work to improve and maintain the vitality and health of its watersheds. Specifically, the County shall: …

  d) Support environmentally sustainable agricultural techniques and best management practices (BMPs) that protect surface water and groundwater quality and quantity (e.g., cover crop management, integrated pest management, informed surface water withdrawals and groundwater use).

- **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.
- **Policy CON-48:** Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution

prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

Sensitive Habitats and Communities:
As noted above, General Plan Policy CON-17 calls for the preservation and protection of sensitive natural communities. In implementing Policy CON-17, the Napa County General Plan defines three overlapping types of special-status, biotic communities. These include:

- **Habitats/communities of limited distribution**: Natural communities in Napa County that are considered sensitive because of their limited local distribution. These communities encompass less than 500 acres of cover in the county, and by local biological experts consider them to be worthy of conservation. The following six communities are examples of the rarest biotic communities meeting the 500-acre threshold: native grassland (perennial grassland, bunch grass); Tanbark Oak Alliance; Brewer Willow Alliance; Ponderosa Pine Alliance; riverine, lacustrine, and tidal mudflats; and Wet Meadow Grasses Super Alliance.

- **Sensitive biotic communities**: Natural plant communities that are designated sensitive by CDFW and identified in the CNDDB and are significant because of their rarity, high biological diversity, and/or susceptibility to disturbance or destruction.

- **Sensitive natural communities**: Biotic communities in Napa County that are considered sensitive by CDFW and designated in the CNDDB because of their rarity, high biological diversity, and/or susceptibility to disturbance or destruction. Twenty-five sensitive natural communities are known to exist in Napa County.

Chapter 4, *Biological Resources*, of the Napa County Background Data Report identifies 25 sensitive natural communities in Napa County, although each community may exist in multiple locations. Of these, six are designated as priorities for conservation. Although they are not included as a protected resource under General Plan Policy CON-17, oak woodlands are designated as a sensitive natural community by the County under Policy CON-24.

Napa County Zoning Ordinance (Chapter 18.108)

Chapter 18.108 of the Napa County Code, the Napa County Zoning Ordinance, outlines conservation regulations to protect natural resources in the county:

- **Section 18.108.010** provides the purpose and intent of the Conservation Regulations, which include preserving natural resources, protecting lands from excessive soil loss, protecting water quality and quantity, providing greater environmental protection for natural environmental resources, and in part, accomplishing the following:

  - Minimize cut, fill, earthmoving, grading operations, and other such man-made effects in the natural terrain.
  - Preserve riparian and wetland areas and other natural habitat by controlling development near streams, rivers, and wetlands.
  - Encourage development that minimizes impacts on existing landforms, avoids steep slopes, and preserves existing vegetation and unique geologic features.

- **Section 18.108.025** applies setbacks for agricultural development adjacent to streams. Setbacks identified in the code range from 35 feet to 150 feet as measured from the top of bank, and increase with the slope of the terrain parallel to the top of bank. Grading, removal of vegetation, earthmoving activities, and clearing of land for new agricultural uses are prohibited in stream setback areas.
- **Section 18.108.030** defines a "stream" as any of the following:
  - A watercourse designated by a solid line or dash and three dots symbol on the largest scale of the U.S. Geological Survey maps most recently published, or any replacement to that symbol.
  - Any watercourse that has a well-defined channel with a depth greater than 4 feet and banks steeper than 3:1 (horizontal to vertical bank ratio) and contains hydrophilic (i.e., water-adapted) vegetation, riparian vegetation, or woody vegetation including tree species greater than 10 feet in height.
  - Watercourses listed in Napa County Resolution No. 94-19 (March 1, 1994), incorporated into County Code Section 108.030 by reference.

  Erosion gullies and ravines being repaired with the technical assistance and/or under the direction of the Napa County Resource Conservation District/U.S. Natural Resources Conservation Service, "scour-holes," and other nonlinear features are not considered streams.
- **Section 18.108.027** includes vegetation retention requirements in sensitive domestic water supply drainages. Any use involving earth-disturbing activity must maintain a minimum of 60 percent of the tree canopy cover on the parcel existing on June 16, 1993, along with any understory vegetation. When the vegetation consists of shrub and brush without a tree canopy, a minimum of 40 percent of the shrub, brush, and associated annual and perennial herbaceous vegetation must be maintained.[4] All earth-disturbing activities are limited to April 1 through September 1 of each year, except earth-disturbing activities that are in compliance with the National Pollutant Discharge Elimination System (NPDES) program administered by the Department of Public Works, which are limited to April 1 through October 1 of each year. All winterization measures must be in

[4] As noted in Draft EIR **Chapter 1, *Introduction***, the original Erosion Control Plan application submittal (December 14, 2017) contained the materials that were required by the County's Erosion Control Plan Application Checklist at that time. As a result, the application was determined to be a "substantially conforming and qualified permit application'' pursuant to the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective on May 9, 2019. Therefore, continued processing and review of the application will not be subject to the County Conservation Regulations (Napa County Code Chapter 18.108), as amended by the Water Quality and Tree Protection Ordinance. This application is subject to the County Conservation Regulations that were in effect before May 2019.

place by September 15 of any given year, or by October 15 for earth-disturbing activities that are in compliance with the NPDES program.

- **Section 18.108.060** requires that "no construction, improvement, grading, earthmoving activity or vegetation removal associated with the development or use of land shall take place on those parcels or portions thereof having a slope of thirty percent or greater unless exempt under Napa County Code Section 18.108.050 or 18.108.055."
- **Section 18.108.070** states that "no otherwise permitted agricultural earthmoving activity, grading, or improvement, shall commence on slopes over five percent until an erosion control plan which complies with the requirements of Napa County Code Section 18.108.080 of the Napa County Zoning Ordinance has been submitted to and approved by the director or designee."
- **Section 18.108.100** requires the following conditions when granting a discretionary permit for activities in an erosion hazard area (slopes greater than 5 percent):

  (a) Existing vegetation shall be preserved to the maximum extent consistent with the project. Vegetation shall not be removed if it is identified as being necessary for erosion control in the approved erosion control plan, or if necessary for the preservation of threatened or endangered plant or animal habitats, as designated by state or federal agencies with jurisdiction and identified on the County's environmental sensitivity maps.

  (b) Existing trees six inches in diameter or larger, measured at diameter breast height, (DBH), or tree stands of trees six inches DBH or larger located on a site for which either an administrative or discretionary permit is required shall not be removed until the required permits have been approved by the decision-making body and tree removal has been specifically authorized.

  (c) Trees to be retained or designated for retention shall be protected through the use of barricades or other appropriate methods to be placed and maintained at their outboard drip line during the construction phase. Where appropriate, the director may require an applicant to install and maintain construction fencing around the trees to ensure their protection during earthmoving activities.

  (d) Wherever removal of vegetation is necessitated or authorized, the director or designee may require the planting of replacement vegetation of an equivalent kind, quality and quantity.

3.3.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to biological resources is considered significant if the proposed project would do any of the following:

- 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 CDFW or USFWS.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.
- Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.
- 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.
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.
- Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan.

ISSUES NOT DISCUSSED IN IMPACTS

No habitat conservation plans, natural community conservation plans, or other similar plans are applicable to the project site; therefore, no conflicts with applicable habitat conservation plans or natural community conservation plans would occur, and this EIR does not evaluate this issue further. For a complete discussion, see the Initial Study Environmental Checklist in **Appendix B** of this EIR.

METHODS OF ANALYSIS

ESA biologists/botanists Kelly Bayne, Rachel Brownsey, and Joe Sanders conducted botanical inventories of and wildlife surveys in the development area and a 500-foot buffer around the development area, where feasible, on April 4, 5, and 12, 2018, and June 19 and 20, 2018.[5]

The botanical inventories and evaluations of vegetation communities were conducted in accordance with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). This work involved documenting habitat for special-status species with the potential to occur in the development

[5] County staff accompanied ESA biologists/botanists during the April 5, 2018, site inspection.

area, and comparing the species listed in the *Napa County Baseline Data Report* (Napa County 2005) with the species identified during the surveys.

The *Napa County Baseline Data Report* was also compared against the fine-scale vegetation map for Napa County (CDFW 2015). The vegetation classification system used conforms to *A Manual of California Vegetation* (Sawyer et al. 2009). Vegetation communities that did not match those in the *Napa County Baseline Data Report* (Napa County 2005) were revised to reflect the conditions that existed at the time of the visual inspection during the surveys conducted on April 4, 5, and 12, 2018, and June 19 and 20, 2018.

The focused rare-plant field surveys were conducted during the peak blooming periods for special-status species determined to have the potential to occur in the development area. CNDDB occurrences of listed plants with the potential to occur in the development area are on private land, in inaccessible areas, so reference sites could not be visited before the surveys. All plants observed were identified to species or subspecies/variety, as appropriate. Taxonomic nomenclature is in accordance with *The Jepson Manual: Vascular Plants of California*, Second Edition (Baldwin et al. 2012).

Animals were identified in the field by their sight, sign, or call during the site inspections indicated above. Field techniques consisted of surveying the survey area with binoculars and walking throughout the development area. Aerial photographs were reviewed to analyze the habitat surrounding the site and the potential for wildlife movement, or wildlife corridors.

Pedestrian-level surveys of the development area were conducted during the site inspections indicated above. Transects were walked in an east-to-west or north-to-south direction throughout the development area, depending on topography. Transect spacing ranged from 20 feet to 50 feet, depending on vegetation density and variability. A 500-foot radius was surveyed where accessible by driving or using binoculars.

Vegetation communities and aquatic features were characterized and mapped in the field using aerial photography and Trimble Geo XT devices. Sensitive habitats were mapped as polygons. At the request of Napa County (County) personnel, point data were taken for trees that provide high-quality wildlife habitat, including large oak (*Quercus* sp.) trees greater than 30 inches dbh and oaks and pines comprising granaries. The boundaries of vegetation communities mapped on aerial photography were digitized, and the polygon and point data were downloaded and projected using Geographic Information System (GIS) software in the California State Plane Coordinate System (North American Datum of 1983) with units as “survey feet.”

Mitigation measures with proposed avoidance areas that have overlapping buffers were prioritized as follows:

(1) Avoid biological communities within the 100-foot buffer around potential western pond turtle aquatic habitat.

(2) Establish buffers around purple needlegrass grassland, blue wildrye grassland, and beardless wildrye grassland to achieve complete avoidance.

(3) Establish minimum 50-foot avoidance buffers around oak trees with trunks greater than 30 inches dbh to protect their canopies from being damaged and root zones from being compacted.

IMPACTS AND MITIGATION MEASURES

Table 3.3-4 summarizes the impact conclusions presented in this section.

TABLE 3.3-4
SUMMARY OF IMPACT CONCLUSIONS—BIOLOGICAL RESOURCES

Impact Statement	Impact Conclusion
3.3-1: Construction and operation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.	Less than Significant with Mitigation
3.3-2: Construction and operation of the proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.	Less than Significant with Mitigation
3.3-3: Construction and operation of the proposed project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	Less than Significant with Mitigation
3.3-4: Construction and operation of the proposed project could interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or could impede the use of native wildlife nursery sites.	Less than Significant with Mitigation
3.3-5: Construction and operation of the proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	Less than Significant with Mitigation

SOURCE: Data compiled by Environmental Science Associates in 2019

The proposed project would affect approximately 157 acres in the development area. (Note that due to rounding, GIS calculations do not reflect the exact acreage of the development area.) **Table 3.3-5** summarizes the acreages of project impacts in the development area by biological community, identifies each biological community's total acreage on the project site and in Napa County, and lists the percentage of the community that would be removed as a result of the proposed project.

Impacts of the proposed project on biological communities, including those that are sensitive, are discussed further under **Impacts 3.3-1**, **3.3-2**, **3.3-3**, and **3.3-5**. **Table 3.3-5** also identifies the acreages in the development area that would be affected with implementation of the mitigation measures discussed in this section (i.e., the mitigated proposed project) and with avoidance of the mapped landslides discussed in **Section 3.5, *Geology and Soils***.

TABLE 3.3-5
PROJECT IMPACTS BY BIOLOGICAL COMMUNITY

Biological Communities	Direct Impact in the Development Area (acres[1])	Total Acreage on the Project Site[2]	Percent of Total Affected on the Project Site	Total Acreage in Napa County	Percent of Total Affected in Napa County	Direct Impact in the Development Area after Mitigation (acres[1])[3]
Upland Annual Grasslands and Forbs Formation	116.22	153.20	75.86	12,153	0.97	99.10
Purple Needlegrass Grassland	0.19	Not quantified	N/A	Not quantified	N/A	0
Beardless Wildrye Grassland	0.05	Not quantified	N/A	Not quantified	N/A	0
Blue Wildrye Grassland	0.08	Not quantified	N/A	Not quantified	N/A	0
Blue Oak Alliance	5.56	35.27	15.76	44,104	0.01	5.56
Coast Live Oak–Blue Oak (Foothill Pine) NFD Association	6.54	165.37	3.95	26,374	0.02	5.80
Interior Live Oak–Blue Oak (Foothill Pine) NFD Association	20.71	251.89	8.17	18,084	0.11	17.81
Mixed Oak Alliance	0.71	68.77	1.03	28,703	0.002	0.71
Scrub Interior Live Oak–Scrub Oak (California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon-California Buckeye) Mesic East County NFD Super Alliance	4.35	23.51	18.50	11,037	0.04	3.71
Valley Oak–(California Bay–Coast Live Oak–Walnut-Ash) Riparian Forest NFD Association	0.06	17.81	0.34	5,721	0.001	0.06
Urban or Built-Up	2.64	2.64	100	26,461	0.01	2.64
Riverine	0.02	0.02	100	389	0.01	0.02
Unnamed Pond	0.005	Not quantified	N/A	N/A	N/A	0
Total	**157.14**	**718.48**	**–**	**173,026**	**–**	**135.41**

NOTES:

N/A = not applicable; NFD = No Formal Description

1 GIS calculations do not reflect exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through Napa County GIS mapping, the County considers the values disclosed herein to be adequate for CEQA review and disclosure purposes of the subject application.

2 Project site acreages for biological communities that also occur in the development area are provided; the project site contains other biological communities (i.e., agriculture, Chamise Alliance, Mixed Willow Super Alliance, and Valley Oak Alliance, water, [Bulrush-Cattail] Fresh Water Marsh NFD Super Alliance) that are not included in this table.

3 Reflects implementation of the mitigated proposed project; see **Figure 3.3-6**.

SOURCES: Napa County 2005; data compiled by Environmental Science Associates in 2021

Impact 3.3-1: Construction and operation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.

Special-Status Plants

The proposed project would not affect any special-status plants because none are present in the development area.

Impact Conclusion

No impact on special-status plants would occur.

Mitigation Measure: None required.

Special-Status Amphibians and Reptiles

California Red-Legged Frog and Western Pond Turtle
The proposed project could affect western pond turtles and California red-legged frogs at the following times during construction:

- Installation of the water diversion structure, if the western pond turtles and California red-legged frogs are present in Elder Creek.
- Installation of the spillway berm and overflow structure, if the western pond turtles and California red-legged frogs are present in the unnamed pond.
- Vegetation clearing for the installation of the vineyard blocks and the irrigation pipelines in the annual grassland.
- Construction work near Matheson Reservoir.

Western pond turtles nest and overwinter in areas less than 492 feet from aquatic habitat (Rosenberg et al. 2009); thus, the use of equipment could cause take of the species, if any turtles are present within 492 feet of the suitable aquatic habitat. Large vehicles present on the site during daily operations would be limited to paved and graded roads and to speeds of less than 15 miles per hour. This analysis assumes that no western pond turtles would be nesting within the paved or graded roads. For this reason, and because the slow-traffic requirements would enable western pond turtles and California red-legged frogs to move out of the way, operational impacts are not considered significant.

Based on the 92-foot average distance of western pond turtles from aquatic features, the proposed project could result in the permanent loss of upland nesting habitat within 100 feet from either side/bank of Elder Creek and the unnamed pond. No permanent loss of habitat within Matheson Reservoir is anticipated. California red-legged frogs are also known to use similar upland habitat for overland movement and refuge.

Impact Conclusion

The permanent loss of upland nesting habitat within 100 feet from either side/bank of Elder Creek and the unnamed pond is considered significant. Impacts on California red-legged frogs that are known to use similar upland habitat for overland movement and refuge would be considered significant. Because the proposed project has the potential to affect western pond

turtles, California red-legged frogs, and their habitats, this impact would be **potentially significant**. Implementation of Mitigation Measure 3.3-1a would also reduce impacts on wildlife corridors, as discussed in further detail under Impact 3.3-4 below. Measures specific to wildlife exclusion fencing on the project site are discussed in Mitigation Measure 3.3-4, which includes requirements specific to wildlife exclusion fencing configuration, design, and other limitations.

> **Mitigation Measure 3.3-1a**: Erosion Control Plan #P17-00432-ECPA shall be revised before approval to reduce the footprint of the proposed vineyard blocks surrounding Elder Creek and the unnamed pond by increasing the upland nesting and overland movement buffer from 50 feet to 100 feet in portions of proposed vineyard Blocks 6, 17, 23A, 23B, 23E, 23G, 24B, 24C, 24E, 24G, 29B, 33A, and 33E. The blue dotted lines in **Figure 3.3-5** show where the buffer shall be a minimum of 100 feet and **Figure 3.3-6** shows the mitigated proposed project.
>
> The location of wildlife exclusion fencing in these areas shall also be revised in the ECPA according this mitigation measure and Mitigation Measure 3.3-4 before approval, and shall generally be limited to the outside edge of the vineyard avenues. No barbed wire shall be permitted.

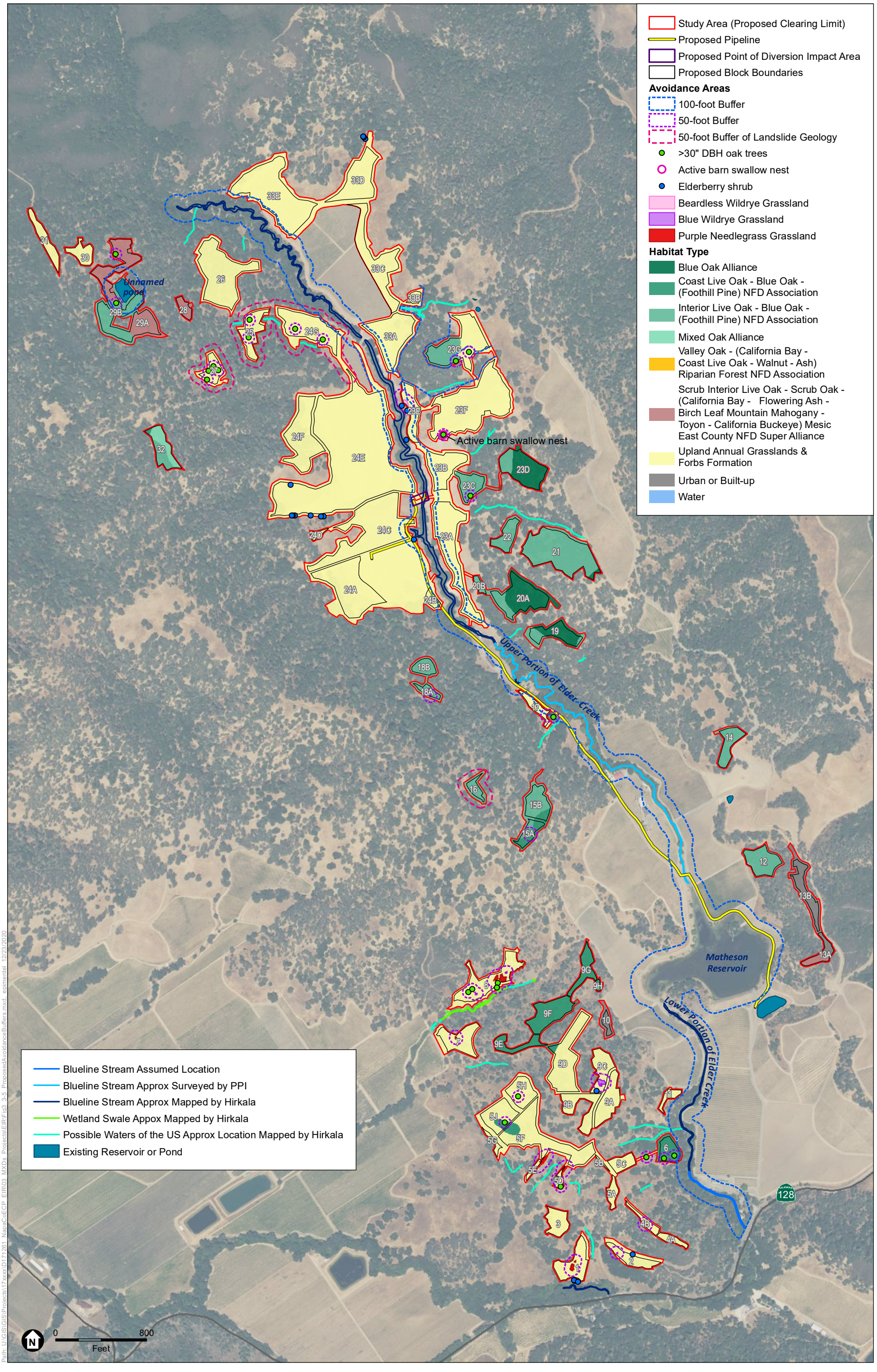
Table 3.3-6 summarizes the acreages of biological communities surrounding Elder Creek that shall be avoided by vineyard block with implementation of Mitigation Measure 3.3-1a. Mitigation Measures 3.3-1b through 3.3-1d (below) are also specific to western pond turtle and California red-legged frog.

TABLE 3.3-6
ACREAGES OF BIOLOGICAL COMMUNITIES THAT SHALL BE AVOIDED BY BLOCK TO INCREASE THE WILDLIFE BUFFER

Vineyard Block	Upland Annual Grasslands and Forbs Formation Acreage Retained with Mitigation	Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association Acreage Retained with Mitigation	Interior Live Oak–Blue Oak–(Foothill Pine) NFD Association Acreage Retained with Mitigation
6	–	0.06	
17	0.21	–	
23A	1.42	–	
23B	0.52	–	
23E	0.67	–	
23G	0.72	--	0.15
24B	0.33	–	
24C	0.68	–	
24E	1.38	–	
24G	0.10	–	
33A	0.63	–	
33E	0.47	–	
Total	**7.13**	**0.06**	**0.15**

NOTE: NFD = No Formal Description

SOURCE: Data compiled by Environmental Science Associates in 2021

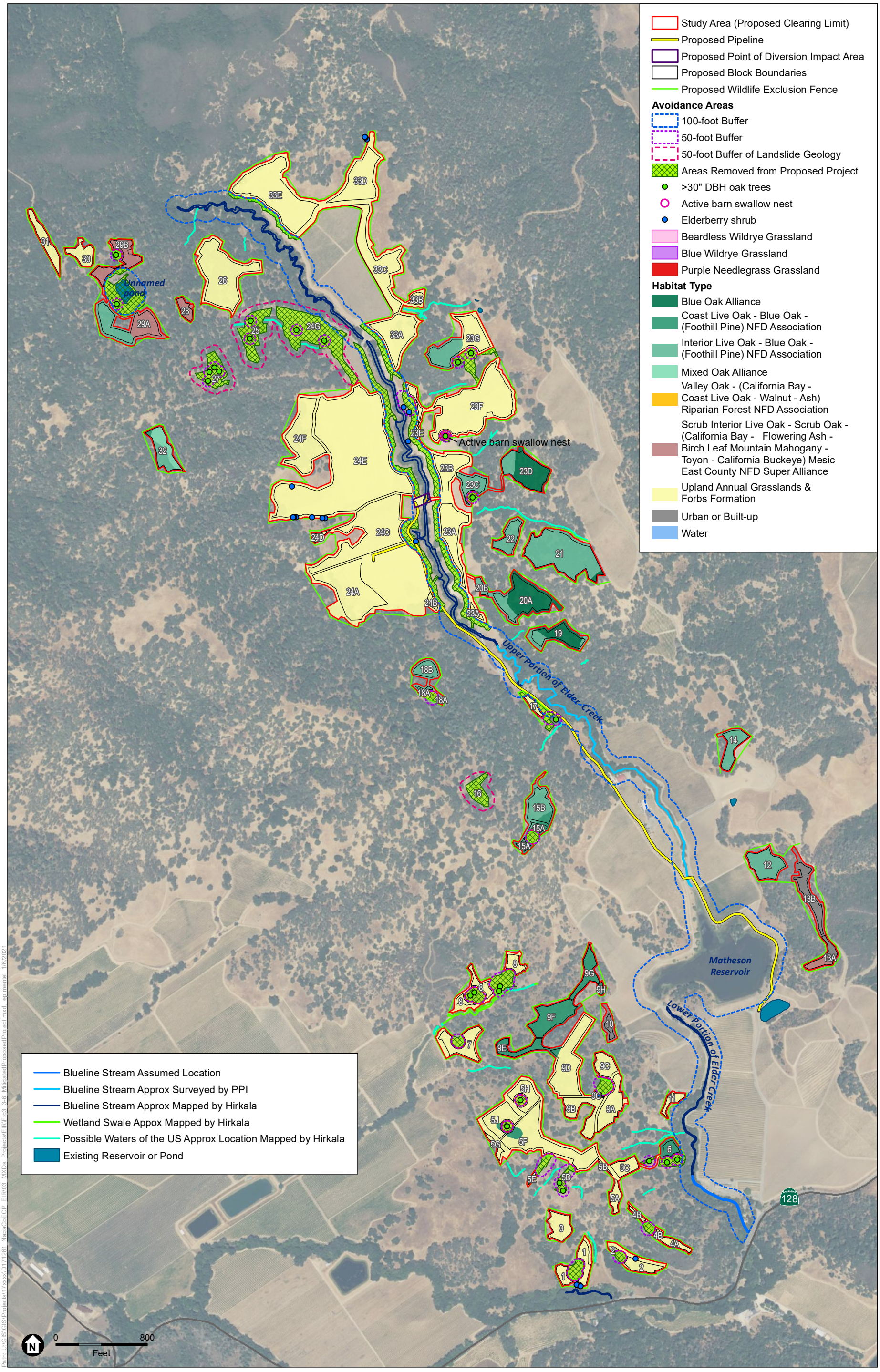


SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

KJS Investment Properties & Sorrento Inc. ECP Application

Figure 3.3-5
Proposed Avoidance Buffers

ESA



SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

KJS Investment Properties & Sorrento Inc. ECP Application

Figure 3.3-6
Mitigated Proposed Project

ESA

Mitigation Measure 3.3-1b: A qualified biologist shall provide a worker education and awareness program to all on-site personnel before the start of materials staging or ground-disturbing activities within 492 feet of Elder Creek or the unnamed pond. (The term "qualified" refers to a biologist or biological monitor who is knowledgeable and experienced in the biology and natural history of local herpetology, mammalian, and avian resources with potential to occur at the project site.) The qualified biologist shall explain to construction workers how best to avoid impacts on western pond turtle and California red-legged frog. This education program shall include topics related to species identification, life history descriptions, and habitat requirements during various life stages. The program should include handouts, illustrations, photographs, and project maps showing areas where minimization and avoidance measures are in place, and where these species would most likely occur if present. Crew members shall sign a sign-in sheet documenting that they received the training. Documentation that the worker education and awareness program has occurred, including any education program handouts, illustrations, photographs, or project maps shall be submitted to Napa County before Project vegetation removal or earth-disturbing activities begin.

Mitigation Measure 3.3-1c:

i. A qualified biologist shall conduct a preconstruction survey within 24 hours before the removal of vegetation and initial Project grading within 492 feet of suitable aquatic habitat for western pond turtle and California red-legged frog. During the preconstruction survey, the qualified biologist shall relocate any western pond turtles found within the proposed development area to suitable habitat away from the construction zone, but outside the development area. Should any active western pond turtle nests be observed within the development area, a minimum 50-foot avoidance buffer shall be established. No work shall occur within the buffer.

ii. Should any California red-legged frogs be present within the development area during the preconstruction survey, no work shall begin. The qualified biologist shall contact Napa County, USFWS, and CDFW within 24 hours of the observation. Work shall not begin until USFWS has provided authorization and the frog has left on its own accord.

iii. A copy of the preconstruction survey results, that includes any find and relocation efforts shall be provided to Napa County and CDFW before Project vegetation removal or earth-disturbing activities begin.

Mitigation Measure 3.3-1d:

i. A qualified biological monitor shall directly supervise all vegetation removal, initial grading activities, and pipe installation occurring within 492 feet of suitable aquatic habitat for western pond turtle and California red-legged frog. Before Project vegetation removal or earth-disturbing activities begin, the

owner/permittee shall provide documentation to Napa County that a qualified biologist (or biological monitor) is under contract to conduct the supervision, monitoring and reporting specified by this measure.

ii. Should any western pond turtles be detected near the development area during construction, the biological monitor shall relocate any western pond turtles found within the development area to suitable habitat outside the development area, but within the project site.

iii. Should any California red-legged frog be present within the development area during construction, work shall halt. The biological monitor shall contact Napa County, USFWS, and CDFW within 24 hours of the observation. Work shall not resume until the County and USFWS have provided authorization and the frog has left on its own accord. Within 14 days after the final monitoring event, the qualified biological monitor shall submit a letter report to the County summarizing the results of the biological monitoring.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.3-1a**, **3.3-1b**, **3.3-1c**, and **3.3-1d** would reduce potentially significant impacts on western pond turtle and California red-legged frog to a **less-than-significant** level because these measures would maximize upland habitat around Elder Creek and the unnamed pond and ensure that this upland habitat is not disturbed. These measures would reduce the impact of the proposed project by a total of 7.34 acres of habitat within the 100-foot buffer: 7.13 acres of annual grassland, 0.06 acre of coast live oak, and 0.15 acre of interior live oak, excluding the temporary installation of the proposed intake structure along Elder Creek and the proposed irrigation pipe. These measures also include conducting preconstruction surveys and requiring a biological monitor to be on-site during construction to ensure that no California red-legged frogs, western pond turtles, or western pond turtle nests are destroyed or disturbed by construction activities.

Special-Status Birds

Swainson's Hawk Foraging Habitat

CDFW considers 5 or more vacant acres within 10 miles of an active nest within the last five years to be significant foraging habitat for Swainson's hawk. The conversion of such habitat to urban uses is considered a significant indirect impact, in accordance with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawk in the Central Valley of California* (CDFG 1994). The staff report states that foraging habitat loss of 5 or more acres on projects located more than 5 miles but less than 10 miles from an active nest tree, documented within the last five years, shall be mitigated at a 0.5:1 ratio. Although a record has been documented within 10 miles of the development area, it was not documented within the last five years. In addition, the conversion of grassland to vineyards is not considered an urban use.

Impact Conclusion

No significant impact for loss of annual grassland for Swainson's hawk foraging habitat would occur. This impact would be **less than significant**. Nevertheless, the proposed project would reduce impacts on annual grassland and potential Swainson's hawk foraging habitat by implementing **Mitigation Measure 3.3-2a** (presented later in this section for protection of sensitive grassland habitat), which would preserve an additional 3.26 acres of grassland by avoiding beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland in the development area with a 50-foot buffer.

Mitigation Measure: None required.

Swainson's Hawk Nesting Habitat

The trees in the development area provide nesting habitat for Swainson's hawk, including trees that may be removed as a result of Phases 1 and 2 of project construction. In addition, trees within 0.25 mile of the development areas associated with project construction Phases 1–3 provide nesting habitat for Swainson's hawk.

Impact Conclusion

Impacts on Swainson's hawk nesting habitat would be considered significant. Phases 1 and 2 of construction of the proposed project could result in direct habitat impacts through the potential removal of nest trees. In addition, construction Phases 1–3 could disturb an active nest, resulting in potential nest or fledging abandonment, if the nest is present within 0.25 mile of construction activities occurring during the nesting season (March 1 through September 15). This impact would be **potentially significant**.

Mitigation Measure 3.3-1e: Before tree removal and other earth-disturbing activities begin during the Swainson's hawk nesting season (March 1 through September 15, coinciding with the grading season of April 1 through September 1 [Napa County Code Section 18.108.070.L]), a qualified biologist shall conduct at least one protocol-level preconstruction survey. (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The protocol-level preconstruction survey shall be conducted during the recommended survey periods for the nesting season that coincides with the start of construction activities by phase, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (**Appendix E**; Swainson's Hawk Technical Advisory Committee 2000). For example, if construction will begin on or around April 1, the preconstruction survey shall occur during Survey Period I, which extends from January to March 20. If construction will begin on or around April 15, the preconstruction survey shall occur during Survey Period II, which extends from March 20 to April 5.

The qualified biologist shall conduct surveys for nesting Swainson's hawk within 0.25 mile of all project development areas applicable to the proposed phased construction,

where legally permitted. If access to adjacent properties is denied, the biologist shall use binoculars to visually determine whether Swainson's hawk nests are present within 0.25 mile of the project development areas slated for that year/phase.

If no active Swainson's hawk nests are identified on or within 0.25 mile of the project development areas, the qualified biologist shall submit a report summarizing the survey results to Napa County within five days after the final survey. In this case, no further avoidance and minimization measures for nesting habitat are required for that phase. The same survey protocol shall be conducted before implementation of each Project phase.

Mitigation Measure 3.3-1f: If any active Swainson's hawk nests are found within 0.25 mile of the development areas proposed during that phase of construction, the qualified biologist shall contact Napa County and CDFW via phone call or email within one day after the preconstruction survey to report the findings. For this avoidance and minimization requirement, "construction activities" are defined to include operation of heavy equipment for construction (use of bulldozers or excavators, haul trucks, loaders, and tractors) or other project-related activities that could cause nest or fledging abandonment within 0.25 mile of a nest site between March 1 and September 15.

Should active nest(s) be present within 0.25 mile of development areas, the County and CDFW shall be consulted to develop take avoidance measures including but not limited to the following:

- Establishing appropriate noise buffers.
- Installing high-visibility construction fencing around the buffer zone.
- Implementing a monitoring and reporting program before any construction activities occur within 0.25 mile of the nest.

The monitoring and reporting program shall include, at minimum, the presence of a full-time qualified biological monitor to monitor the nest during all construction activities. After take avoidance measures are implemented and construction activities begin, if the qualified biological monitor determines that the construction activities are disturbing the nest, construction activities shall cease until the County and CDFW are consulted. The construction activities shall not resume until the County, in cooperation with CDFW, has determined that construction activities would not result in abandonment of the nest site.

Once the qualified biologist confirms that the nest is no longer active or that the nest would not be disturbed during construction activities within the buffer zone, the biologist shall submit a report summarizing the monitoring results to the County and CDFW within 30 days after the final monitoring event. In this case, no further avoidance and minimization measures for nesting habitat are required for that phase of construction.

Impact Significance after Mitigation: With implementation of **Mitigation Measures 3.3-1e** and **3.3-1f,** a preconstruction survey to identify any active Swainson's hawk nests would be conducted within the recommended survey period and within 0.25 mile of the development areas before the start of each construction phase. If nests are found, the project would avoid nests and observe no-disturbance buffer zones around nest sites, as identified within the take avoidance measures developed through consultation with the County and CDFW. Therefore, implementing **Mitigation Measures 3.3-1e** and **3.3-1f** would reduce potentially significant impacts on Swainson's hawk to a **less-than-significant** level.

Implementing **Mitigation Measure 3.3-1i** related to roosting bat habitat (presented later in this section) would further protect potential nesting habitat for Swainson's hawk.

Burrowing Owl

While no burrowing owl or sign of burrowing owl was observed during the biological resources surveys, and that suitable owl habitat is marginal given the limited presence of burrows within the grasslands that could be utilized by burrowing owl within applicable development areas, the proposed project could result in adverse impacts on burrowing owl if this species were to subsequently occupy and/or nest within the annual grassland proposed for removal.

Impact Conclusion

Because the proposed project has the potential to affect burrowing owl nesting habitat, this impact would be **potentially significant**.

Mitigation Measure 3.3-1g: A qualified biologist shall conduct a take-avoidance survey for burrowing owl between 14 and 30 days before the start of construction for each Project phase, in accordance with Appendix D of the 2012 *Staff Report on Burrowing Owl Mitigation* (**Appendix E**; CDFG 2012). (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The survey area shall include a 500-foot radius around the annual grasslands within applicable development areas (i.e., annual grassland habitat).

If the survey is negative, the biologist shall provide a report to Napa County for its records documenting the results of the survey, and no additional measures are required for that phase as long as construction begins within 30 days of the take avoidance survey or does not halt for more than 30 days once construction begins. If either of these conditions occur, an additional take-avoidance survey shall be conducted between 14 and 30 days before the start or resumption of construction activities.

If active burrowing owl burrows or nests are observed in applicable development areas or within a 500-foot radius around the development areas containing grassland habitats, the qualified biologist shall prepare an impact assessment and take avoidance

measures, in accordance with the 2012 *Staff Report on Burrowing Owl Mitigation.* The impact assessment and take avoidance measures shall be submitted to the County for review and approval in cooperation with CDFW. The take avoidance measures shall include but not be limited to establishing appropriate disturbance/noise buffers, installing high-visibility construction fencing around the buffer zones, and implementing a monitoring and reporting program before any construction activities occur within 500 feet of the nest/borrow.

If the qualified biologist determines that certain work would not disturb an active burrow/nest, a reduced avoidance buffer may be established through coordination with the County and CDFW. If the qualified biologist determines that project activities may result in impacts on nesting, occupied, and satellite burrows and/or burrowing owl habitat, the owner/permittee shall delay the start of construction until the qualified biologist determines that the burrowing owls have fledged and/or the burrow is no longer occupied.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-1g** would reduce potentially significant impacts on burrowing owl to a **less-than-significant** level by requiring take avoidance surveys that would identify any active burrows or nesting burrowing owls, and if found, requiring implementation of take avoidance measures that include no-disturbance zones around burrow/nest sites.

Implementing the following measures would further reduce impacts on annual grassland and potential burrowing owl habitat:

- **Mitigation Measure 3.3-1a**, which would increase wildlife corridor buffers to 100 feet around Elder Creek.
- **Mitigation Measure 3.3-2a** (presented later in this section), which would preserve an additional 3.26 acres of grassland by avoiding beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland within the development area and providing these plans/populations with a minimum 50-foot buffer.

Nesting Migratory Birds and Other Birds of Prey, and Foraging Habitat

Potential nesting habitat for migratory bird species and other birds of prey, including white-tailed kite, bald eagle, golden eagle, bank swallow, and purple martin, is present in and near the development area. If active nests are present in these areas, vegetation clearing and tree removal and planting could result in impacts on these species during Phases 1–3 of project construction.

Impact Conclusion

The nests and eggs of any bird are protected from take under Section 3503 of the California Fish and Game Code. Direct impacts on nesting birds would be considered significant. Because

the proposed project has the potential to affect nesting migratory birds and other birds of prey, and foraging habitat for these species, this impact would be **potentially significant**.

Mitigation Measure 3.3-1h: Before tree removal and other earth-disturbing activities begin during the nesting season (February 1 through August 31, coinciding with the grading season of April 1 through September 1 [Napa County Code Section 18.108.070.L]) for each Project construction phase, a qualified biologist shall conduct a preconstruction survey within seven days before the tree removal and other earth-disturbing activities are to occur. (A "qualified biologist" is defined as a person knowledgeable and experienced in the biology and natural history of local avian resources with potential to occur at the project site.) The nesting-bird preconstruction survey shall cover the development areas plus an approximately 500-foot radius around the development areas.

If the preconstruction survey shows no evidence of active nests, a copy of the survey results shall be provided to Napa County and CDFW before the start of work, and no additional measures are required for that phase. If construction does not begin within seven days of the preconstruction survey or halts for more than seven days, an additional preconstruction survey shall be conducted.

If any active nests are located within development areas or within 500 feet of the development areas, an appropriate buffer zone shall be established around the nest(s), as determined by the qualified biologist in consultation and cooperation with the County and CDFW; the minimum buffer zones pursuant to this measure shall be 100 feet for migratory bird nests and 250 feet for raptor nests. Before the start of vegetation removal and earth-disturbing activities, the biologist shall mark the buffer zone(s) with temporary construction fencing. The fencing shall be inspected and approved by the County before any earthmoving and/or development activities begin and shall be maintained until the end of the breeding season or the young have fledged.

If active migratory-bird nests are found between 100 and 500 feet of construction activities (i.e., development areas), or if raptor nests are found between 250 and 500 feet of construction activities (i.e., development areas), a qualified biologist shall monitor the nests weekly during construction to evaluate potential nesting disturbance by construction activities. Alternatively, work may be phased to avoid these areas and continue in other vineyard blocks (development areas) until the nest is no longer occupied. The qualified biologist shall provide monitoring reports weekly to Napa County to document monitoring activities and evaluate effects on nesting birds as prescribed by this measure.

Alternative methods of flushing out nesting birds before preconstruction surveys shall be prohibited, whether those methods are physical (removing or disturbing nests by

physically disturbing trees with construction equipment), audible (using sirens or bird cannons), or chemical (spraying nesting birds or their habitats).

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-1h** would reduce potentially significant impacts on protected migratory birds and raptors to a **less-than-significant** level by requiring preconstruction surveys that would identify any nesting birds, and if found, requiring implementation of no-disturbance zones around nest sites during all construction phases.

Therefore, impacts on foraging habitat would be **less than significant**. However, implementing **Mitigation Measures 3.3-1a and 3.3-2a** would further reduce the loss of foraging habitat:

- **Mitigation Measure 3.3-1a** would increase wildlife corridor buffers to 100 feet, thereby maintaining foraging opportunities in the vicinity of Elder Creek.
- **Mitigation Measure 3.3-2a** would preserve an additional 3.26 acres of grassland by avoiding beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland in the development area with a 50-foot buffer.

With implementation of the mitigation measures in this Draft EIR, approximately 17.44 acres of annual grassland would not be affected by the mitigated proposed project. This would reduce the impact on annual grassland to approximately 99.10 acres, or less than 0.82 percent of annual grassland in Napa County. Further, construction of the proposed project would not result in a significant reduction of suitable foraging habitat, given that migratory birds and raptors use a variety of habitats present in the vicinity of the development areas, depending the species, and that over 53 acres of grassland habitat and over 500 acres of woodland habit would remain with mitigation incorporated.

Special-Status Bats

Trees within the annual grassland and oak woodland habitat areas that are proposed for development (in proposed vineyard Blocks 5D, 5F, 5H, 5J, 6, 8, 17, 23C, 23F, 23G, 24G, 25, 27, and 29B) have the potential to support day roosts for special-status bats.

The proposed project would also remove a total of 33.46 acres of oak woodland that provide potential suitable roost sites. Oak woodland impacts are discussed in **Impact 3.3-5**.

Impact Conclusion

Given the limited number of trees present in the annual grassland, individual trees 30 inches or greater dbh are considered suitable roosting trees for bats. Impacts on special-status bat species from the loss of suitable habitat/roost trees would be considered significant. Because

the proposed project has the potential to affect special-status bat species and potential habitat, this impact would be **potentially significant**.

> **Mitigation Measure 3.3-1i:** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to avoid all potential bat habitat/roost trees in proposed vineyard Blocks 5D, 5F, 5H, 5J, 6, 8, 17, 23C, 23F, 23G, 24G, 25, 27, and 29B. These trees are identified in **Figure 3.3-5**. A minimum 50-foot avoidance buffer shall be established around the driplines of the habitat/roost trees, under the direct supervision of a qualified biologist, to protect the trees' canopies and root protection zones with high-visibility fencing. (The term "qualified" refers to a biologist who is knowledgeable and experienced in the botany, biology, and natural history of local mammalian and avian resources with potential to occur at the project site.) The fencing shall be inspected and approved by Napa County before the start any earthmoving and/or development activities. Exclusion buffers shall remain in effect until vineyard development and planting activities are complete.

Table 3.3-7 summarizes the acreages of biological communities associated with trees that would be avoided, by vineyard block, with implementation of **Mitigation Measure 3.3-1i**.

TABLE 3.3-7
ACREAGES OF BIOLOGICAL COMMUNITIES THAT WOULD BE AVOIDED BY BLOCK TO PRESERVE ROOSTING BAT HABITAT WITHIN TREES GREATER THAN 30 INCHES IN DIAMETER AT BREAST HEIGHT

Vineyard Block	Upland Annual Grasslands and Forbs Formation Acreage	Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association	Interior Live Oak–Blue Oak–(Foothill Pine) NFD Association	Scrub Interior Live Oak–Scrub Oak (California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon-California Buckeye) Mesic East County NFD Super Alliance
5D	0.19			
5F		0.01		
5H	0.18			
5J	0.05	0.12		
8	0.45			
17	0.01			
23C			0.15	
23F	0.18			
23G	0.18		0.13	
24G	0.36			
25	0.36			
27	0.53			
29B				0.15
Total	**2.52**	**0.45**	**0.28**	**0.15**

NOTE: Acreages do not include avoided purple needlegrass areas or areas avoided by buffers from waters.

SOURCE: Data compiled by Environmental Science Associates in 2021

Mitigation Measure 3.3-1j: Erosion Control Plan #P17-00432-ECPA shall be revised before approval to provide for the installation of one bat roost box for every 5 acres of oak woodland habitat removed (a total of six bat roost boxes). The type of bat roost box shall be identified and box locations shall be mapped on the ECPA site plan near the habitat trees proposed for removal, and under the direction of a qualified biologist in consultation with Napa County. The owner/permittee/biologist shall provide adequate documentation to the County, including photographs showing that the bat roost boxes have been installed properly, before the start of any vegetation removal and earth-disturbing activities associated with the project.

Mitigation Measure 3.3-1k: Within 14 days before the start of tree removal associated with Phases 1 and 2 of project construction, a qualified biologist shall conduct a preconstruction survey for special-status bats. If no special-status bats are observed roosting, the biologist shall provide a letter report to Napa County for its records, documenting the results of the survey, and no additional measures are required. If tree removal does not begin within 14 days of the preconstruction survey, or if removal halts for more than 14 days, a new survey shall be conducted.

If bats are found in any trees proposed for removal, a minimum 10-foot avoidance buffer shall be established around the roost until it is no longer occupied. High-visibility construction fencing shall be installed around the buffer and shall remain in place until the tree is no longer occupied by bats. The fencing shall be inspected and approved by the County before the start of any earthmoving and/or development activities. The trees shall not be removed until a qualified biologist has determined that the roost is no longer occupied by the bats and documentation has been provided to the County that the roost(s) are no longer occupied.

Impact Significance after Mitigation: With implementation of **Mitigation Measures 3.3-1i** through **3.3-1k**, the project would avoid all potential roost trees identified in the development area; bat roost boxes would be installed to offset the loss of other potential bat habitat trees; preconstruction surveys would occur before tree removal to identify any other roosting bats and habitat trees not otherwise avoided through implementation of **Mitigation Measure 3.3-1i**; and if found, no-disturbance buffer zones would be observed around roost sites. Therefore, implementing **Mitigation Measures 3.3-1i** through **3.3-1k** would reduce potentially significant impacts on bat species to a **less-than-significant** level.

With implementation of **Mitigation Measure 3.3-1i**, the project would avoid a total of 2.52 acres of annual grassland surrounding potential roost trees. Implementing **Mitigation Measure 3.3-5a** (presented later in this section) would further preserve oak woodland and potential bat habitat on the project site.

Impact 3.3-2: Construction and operation of the proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.

As discussed in **Chapter 2, *Project Description***, the proposed project design incorporates setbacks from all drainages on the project site, with the exception of installation of the water intake device on Elder Creek and construction of a spillway berm and overflow structure at the unnamed pond (discussed under Impact 3.3-3). Elder Creek and tributaries on the project site that meet Napa County's definition of a stream have setbacks based on slope, as outlined in County Code Section 18.108.025. In addition, the proposed project would avoid other waters that are not defined by the County as streams and would maintain 50-foot buffers from these areas, consisting of 26 feet of undisturbed native vegetation and 24 feet of vegetated vineyard avenue. The U.S. Natural Resources Conservation Service, part of the U.S. Department of Agriculture, recommends a minimum 50-foot-wide vegetated buffer from aquatic resources such as streams, ephemeral drainages, and wetlands (discussed in **Section 3.6, *Hazards and Hazardous Materials***).

Riverine is considered a sensitive habitat; potential impacts are discussed in **Impact 3.3-3**. Oak woodland (including riparian woodland) is also considered a sensitive habitat, and potential impacts are discussed in **Impact 3.3-5**.

The proposed project would result in the removal of 0.05 acre of beardless wildrye grassland, 0.08 acre of blue wildrye grassland, and 0.19 acre of purple needlegrass grassland, which are designated as native grassland habitat by the Napa County General Plan (Policies CON-17 and CON-24) (Napa County 2005).

Impact Conclusion

The proposed project would result in the loss of sensitive grassland habitat. Thus, the project would conflict with Napa Policy General Plan Policy CON-17, which requires no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Therefore, this impact would be **significant**.

> **Mitigation Measure 3.3-2a:** To avoid impacts on beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland, Erosion Control Plan #P17-00432-ECPA shall be revised before approval to exclude these sensitive natural grassland communities/habitats and plant populations and provide them with a minimum 50-foot buffer from development areas. **Figure 3.3-5** shows the areas that would be excluded from development as a result of implementation of this mitigation measure. Before vegetation clearing, the 50-foot buffer shall be established around these grasslands under the direct supervision of a biologist, using high-visibility construction fencing. The fencing shall be inspected and approved by Napa County before the start of any earthmoving and/or development activities. The protective constructive fencing shall be replaced with a permanent means of demarcation and protection around the grassland habitats (such

as permanent fence or rock barrier) so that grassland avoidance areas are not encroached upon or disturbed as part of ongoing vineyard operations.

Table 3.3-8 summarizes the acreages of sensitive grassland habitat that would be avoided, by vineyard block, with implementation of Mitigation Measure 3.3-2a.

Mitigation Measure 3.3-2b: A qualified biologist shall provide a worker education and awareness program to all on-site personnel before the start of materials staging or ground-disturbing activities. The biologist shall explain to construction workers how to avoid impacts on beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland and shall include topics on species identification and descriptions. The education program should include handouts, illustrations, photographs, and project maps that show showing areas where avoidance measures are in place. The crew members shall sign a sign-in sheet documenting that they received the training. Proof that the education and awareness program has been conducted shall be submitted to Napa County before the start of vegetation removal and earth-disturbing activities associated with Phases 1 and 2 of project construction.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.3-2a** and **3.3-2b** would reduce impacts on sensitive natural communities to a **less-than-significant** level by avoiding removal of the sensitive natural communities.

TABLE 3.3-8
ACREAGES OF PURPLE NEEDLEGRASS GRASSLAND, BEARDLESS WILDRYE GRASSLAND, BLUE WILDRYE GRASSLAND, AND SURROUNDING HABITAT WITHIN THE BUFFER THAT WOULD BE AVOIDED BY BLOCK

Vineyard Block	Purple Needlegrass Grassland Acreage Retained with Mitigation	Blue Wildrye Grassland Acreage Retained with Mitigation	Beardless Wildrye Grassland Acreage Retained with Mitigation	Upland Annual Grasslands and Forbs Formation Acreage Retained with Mitigation	Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association Acreage Retained with Mitigation	Interior Live Oak–Blue Oak (Foothill Pine) NFD Association Acreage Retained with Mitigation
1	0.03	–	–	0.42	–	–
2	–	–	–	0.18	–	–
4B	0.01	–	–	0.18	–	–
5D	0.02	–	–	0.07	–	–
5E	0.02	–	–	0.10	–	–
5F	0.03	–	–	0.18	–	–
7	0.00	–	–	0.22	–	–
8	0.08	0.01	–	0.85	–	–
9A	–	–	–	0.05	–	–
9C	–	0.05	–	0.29	–	––
15A	–	0.01	–	–	0.15	0.10
17	–	<0.00	–	0.14	–	–

TABLE 3.3-8
ACREAGES OF PURPLE NEEDLEGRASS GRASSLAND, BEARDLESS WILDRYE GRASSLAND, BLUE WILDRYE GRASSLAND, AND SURROUNDING HABITAT WITHIN THE BUFFER THAT WOULD BE AVOIDED BY BLOCK

Vineyard Block	Purple Needlegrass Grassland Acreage Retained with Mitigation	Blue Wildrye Grassland Acreage Retained with Mitigation	Beardless Wildrye Grassland Acreage Retained with Mitigation	Upland Annual Grasslands and Forbs Formation Acreage Retained with Mitigation	Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association Acreage Retained with Mitigation	Interior Live Oak–Blue Oak (Foothill Pine) NFD Association Acreage Retained with Mitigation
18A	–	0.01	–	–	–	0.18
23E	–	–	0.05	0.26	–	–
Total	**0.19**	**0.08**	**0.05**	**2.94**	**0.15**	**0.28**

NOTE: NFD = No Formal Description

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.3-3: Construction and operation of the proposed project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

The public trust doctrine requires the state and its legal subdivisions to "consider," give "due regard," and "take the public trust into account" when considering actions that may adversely affect a navigable waterway. (*Environmental Law Foundation v. State Water Resources Control Bd.* [2018] 26 Cal.App.5th 844, 861, 868; *San Francisco Baykeeper, Inc. v. State Lands Com.* [2018] 29 Cal.App.5th 562, 569.) There is no "procedural matrix" governing how an agency should consider public trust uses. (*Citizens for East Shore Parks v. State Lands Com.* [2011] 202 Cal.App.4th 549, 576.) Rather, the level of analysis "begins and ends with whether the challenged activity harms a navigable waterway and thereby violates the public trust." (*Environmental Law Foundation*, 26 Cal.App.5th at p. 403.) As disclosed and assessed in this section and elsewhere in the EIR, it has been concluded that no harm to (or less-than-significant impacts on) on-site streams/waterways would result from the proposed project with the implementation of **Mitigation Measures 3.3-3a through 3.3-3c**.

Furthermore, evaluating project impacts within a regulatory scheme like CEQA is sufficient "consideration" for public trust purposes. (*Citizens for East Shore Parks*, 202 Cal.App.4th at pp. 576–577.) The courts have refused to impose factual evaluation requirements or procedural constraints on agencies considering the public trust. (*Citizens for East Shore Parks*, 202 Cal.App.4th at p. 577; *World Business Academy*, 24 Cal.App.5th at p. 509.). Additional justification related to the consideration of public trust resources can be found in **Chapter 3** and the project's biological resource report (**Appendix E**).

The proposed project would directly affect approximately 0.02 acre of Elder Creek for installation of the water intake device and less than an estimated 0.005 acre of the unnamed pond for construction of a spillway berm and overflow structure. The proposed project would not

directly affect any lacustrine habitat located at Matheson Reservoir. Vegetation clearing and grading work for the proposed project could indirectly affect Matheson Reservoir, the unnamed pond, and Elder Creek outside of the development area by resulting in erosion and deposition of sediment.

As required, the owner/permittee would obtain permits from regulatory agencies to install the diversion structure along the bank of Elder Creek and construct a spillway berm and overflow structure in the unnamed pond near proposed vineyard Block 29. The owner/permittee would comply with all conditions of these permits, which include a Clean Water Act Section 404 Nationwide Permit, Section 401 Water Quality Certification, and Section 1600 Lake and Streambed Alteration Agreement.

The project's impacts on all streams are anticipated to be avoided by establishing buffers and setbacks in compliance with County requirements for minimum setbacks. The project design complies with designated stream setbacks established by the Napa County Conservation Regulations and County Code Section 18.108.025. Streams that do not meet the County's definition of a designated stream have been avoided with a minimum buffer of 50 feet from the top of the bank. Streams and potential waters of the United States and associated Napa County stream setbacks are shown in the Erosion Control Plan design drawings in **Appendix A**.

Impact Conclusion

Direct and indirect impacts on wetlands and other waters of the United States are considered significant. Acquisition of all necessary permits before construction and compliance with all permit minimization and mitigation measures would reduce potential impacts; however, because the proposed project would directly affect approximately 0.02 acre of Elder Creek and less than an estimated 0.005 acre of the unnamed pond, this impact would be **significant**.

> **Mitigation Measure 3.3-3a:** All necessary federal, state and local permits shall be obtained and be provided to Napa County before the construction of the water intake device on Elder Creek and the spillway berm and overflow structure at the unnamed pond. The owner/permittee shall comply with all permit minimization and mitigation measures. Impacts on waters of the United States would require a minimum mitigation ratio of 1:1 (mitigated:affected) to comply with USACE's no-net-loss policy. In addition, the owner/permittee shall comply with the state's NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction Activity, issued by the Regional Water Quality Control Board.
>
> **Mitigation Measure 3.3-3b:** For project activities that are anticipated to occur within 50 feet of potential jurisdictional features and riparian areas that are proposed for avoidance high-visibility construction fencing and silt fencing shall be erected at the edge of the construction/maintenance footprint (i.e., development area) before the commencement of construction. The fencing shall be inspected and approved by Napa County before the start of any earthmoving and/or construction activities in these areas. A qualified

biological monitor shall be present during fence installation and during any initial grading or vegetation-clearing activities within 50 feet of potential jurisdictional features and riparian habitat, which are proposed for avoidance. The biological monitor shall submit letter reports to the County summarizing the results of fencing installation and construction monitoring to document these provisions.

Mitigation Measure 3.3-3c: All areas with temporary impacts on potential waters of the United States shall be restored immediately after construction. The biological monitor shall submit letter reports to the County summarizing the results of restoration activities to document this provision and compliance with Mitigation Measures 3.3-3a and 3.3-3b.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.3-3a**, **3.3-b**, and **3.3-3c** would reduce impacts on waters of the United States to a **less-than-significant** level by ensuring no net loss, installing high-visibility and silt fencing to ensure that no aquatic features would be indirectly affected by erosion and sediment runoff during construction, and restoring affected areas immediately after construction.

Impact 3.3-4: Construction and operation of the proposed project could interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or could impede the use of native wildlife nursery sites.

Construction of the proposed project, including wildlife exclusion fencing around individual proposed vineyard blocks and clusters of proposed vineyard blocks (Figure 2-4), could create barriers to local wildlife movements. It also could conflict with General Plan Policy CON-18. (Vegetation retention, which preserves habitat value and connectivity, is discussed under Impact 3.3-5.)

Various species of wildlife frequently move through their home ranges along stream courses, canyons, ridges, dirt roads, trails, or other linear landscape features. Prominent ridgelines (especially those that support oak woodland and chaparral cover) are also important wildlife movement corridors. Larger species such as mule deer and mountain lions, both known to occur in the project region, also frequently use human-constructed trails and dirt roads for movement. Riparian corridors are also frequently important for wildlife movement because they often provide dense areas of vegetation traversing otherwise open or developed landscapes. In addition, riparian corridors often provide a source of surface water for wildlife.

Wildlife could use unfenced corridors between proposed vineyard blocks and the riparian corridor that bisects the northern portion of the development area. Fencing around some vineyard block clusters has the potential to restrict movement through the area, such as the proposed fencing around vineyard Blocks 4 and 5, 21 and 22, 19 and 20A, 23C and 23D, 23G and 23F, and 23E and 33A (Figure 2-4). Additionally, extra fencing proposed around the vineyard blocks, such as around vineyard Blocks 4, 5, 9, 19, 20, 21, 22, 23, 29, 30, 31, and 33, could preclude wildlife use.

Installing the diversion structure along Elder Creek would not inhibit movement within the corridor because the construction would be temporary. Based on wildlife corridor data, the County assumes that wildlife corridors along streams should be at least 100 feet wide (see the ***Wildlife Movement Corridors*** section in **Section 3.3.1, *Environmental Setting***). Although existing vineyards are as close as 25–50 feet from Elder Creek, the project's proposed avoidance buffer along the corridor ranges from 45 feet to 150 feet wide. Implementing Mitigation Measure 3.3-1a would increase the width of the wildlife corridor by vineyard Blocks 6, 17, 23A, 23B, 23E, 23G, 24B, 24C, 24E, 24G, 29B, 33A, and 33E from 50 feet to 100 feet, thereby minimizing the potential for interference with wildlife movement along Elder Creek to a less-than-significant level.

Impact Conclusion

The proposed project could create barriers to local wildlife movement (e.g., around vineyard Blocks 4 and 5, 21 and 22, 19 and 20A, 23C and 23D, 23G and 23F, and 23E and 33A) by installing wildlife exclusion fencing and extra fencing proposed around some vineyard blocks (e.g., Blocks 4, 5, 9, 19, 20, 21, 22, 23, 29, 30, 31, and 33) could preclude wildlife use. This impact would be **significant**.

> **Mitigation Measure 3.3-4:** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to fence clusters of vineyard blocks as shown in **Figure 3.3-6** and as described below. The revised fencing plan (i.e., Figure 4 of #P17-00432-ECPA) shall be subject to review and approval by Napa County before its incorporation into #P17-00432-ECPA, and shall include and show the fencing design features describe in 3.3-4iii below.
>
> i. The following vineyard blocks shall be fenced individually (not together): Vineyard Blocks 4 and 5, 19 and 20A, 21 and 22, 23C and 23D, 23G and 23F, 23E and 33A, and 29B, 30, and 31. The location of new wildlife exclusion fencing shall generally be limited to the outside edge of vineyard avenues and development areas.
>
> ii. Fencing around vineyard Blocks 9, 19, 20, 29, 30, 31, and 33 shall be revised to place the fencing along the outside the edge of vineyard avenues.
>
> iii. New fencing shall use a design that has 6-inch-square gaps at the base (instead of the typical 3-inch by 6-inch rectangular openings) to allow small mammals to move through the fence. Exit gates shall be installed at the corners of wildlife exclusion fencing to allow trapped wildlife to escape. Smooth wire instead of barbed wire shall be used on top of the fencing to keep wildlife from becoming entangled.
>
> **Impact Significance after Mitigation:** Implementing **Mitigation Measure 3.3-4**, as well as **Mitigation Measure 3.3-1a**, would reduce impacts on wildlife corridors to a **less-than-significant** level by ensuring the maintenance of sufficiently sized wildlife corridors; maximizing wildlife use areas; and installing fencing that would reduce potential negative effects on the movement of smaller animals while effectively excluding

deer and wild pigs from the vineyard. In addition, conditions in the Erosion and Runoff Control Installation and Operation Conditions of Approval in **Section 3.5, *Geology and Soils***, would ensure that temporary and permanent erosion control measures and devices are free from plastic monofilament netting so that reptiles, amphibians, or animals do not become entangled within them.

Impact 3.3-5: Construction and operation of the proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

Oak Woodland (Excluding Valley Oak–California Bay–Coast Live Oak–Walnut-Ash Riparian Forest NFD Association)

A portion of the project site is located in the Elder Valley Creek Sensitive Domestic Water Supply Drainage. Therefore, pursuant to Napa County Code Section 18.108.027(B) (Sensitive Domestic Water Supply Drainages—Vegetation Clearing), the proposed project must retain a minimum of 60 percent of the tree canopy and a minimum of 40 percent of the brush/shrub cover existing on the parcels within the Elder Valley Creek Sensitive Domestic Water Supply Drainage in 1993.

Based on information provided in the Erosion Control Plan (**Appendix A**) and review of historical aerial imagery, the portions of Assessor's Parcel Numbers 025-270-022 and 025-270-025 within the Elder Valley Creek Sensitive Domestic Water Supply Drainage were previously located within Assessor's Parcel Numbers 025-270-004, 025-270-005, 025-270-010, 025-270-017, and 025-270-019 in 1993. These areas contained 781 acres of tree canopy cover and 578 acres of brush/shrub cover in 1993. Since 1993, approximately 40 acres of tree canopy cover and 151 acres of brush/shrub cover have been removed or are proposed for removal, which would result in the retention of approximately 95 percent of the tree canopy cover and 74 percent of the brush/shrub cover that existed on the property as it existed in 1993 within the Elder Valley Creek Sensitive Domestic Water Supply Drainage. This is within the minimum tree canopy and brush/shrub retention requirements for projects within a Sensitive Domestic Water Supply Drainage pursuant to Napa County Code Section 18.108.027(B).

Oak woodland is the most common land cover in Napa County, occurring on approximately 167,000 acres (33 percent of the county's area). Approximately 733 acres of oak woodland, or 0.5 percent of the total area of oak woodland in the county, was cleared for residential and agricultural purposes between 1993 and 2002 (Napa County 2005). Although oak woodland may be one of the most common land covers in Napa County, its past conversion to residential and agricultural uses combined with the foreseeable conversion of oak woodland to agricultural use is considered a potentially significant impact on both the project-specific and cumulative levels (Napa County 2007).

Conversion of oak woodland habitat would conflict with Napa County General Plan Policy CON-24 (Napa County 2009), which states:

> Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following: …
>
> c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio when retention of existing vegetation is found to be infeasible.

The project site includes approximately 521.30 acres of oak woodland. The proposed project would directly affect approximately 33.52 acres of mixed oak woodland by clearing vegetation for development of the proposed vineyard blocks. (With the mitigated proposed project, this impact would be reduced to 29.88 acres.) This includes 5.56 acres of Blue Oak Alliance (also 5.56 acres with the mitigated proposed project), 6.54 acres of Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association (5.80 acres with the mitigated proposed project), 20.71 acres of Interior Live Oak–Blue Oak (Foothill Pine) NFD Association (17.81 acres with the mitigated proposed project), and 0.71 acre of Mixed Oak Alliance (also 0.71 acre with the mitigated proposed project) (**Table 3.3-5**).

Valley Oak–California Bay–Coast Live Oak–Walnut-Ash Riparian Forest NFD Association

The proposed project would directly affect approximately 0.06 acre of Riparian Woodland (Valley Oak–California Bay–Coast Live Oak–Walnut-Ash Riparian Forest NFD Association) (**Table 3.3-5**), which could include valley oaks, for installation of the diversion structure in Elder Creek. Removal of riparian habitat without mitigation would conflict with Napa County General Plan Policy CON-28.

Impact Conclusion

The proposed project would be consistent with the vegetation retention requirements in Napa County Code Section 18.108.027(B). However, the proposed project would require conversion of oak woodland, which would conflict with Napa County General Plan Policy CON-24. Implementing the mitigation measures in this Draft EIR would indirectly reduce oak woodland impacts; however, these measures would not reduce potential impacts on oak woodland to a less-than-significant level. In addition, removal of Valley Oak–California Bay–Coast Live Oak–Walnut-Ash Riparian Forest NFD Association without mitigation would conflict with Policy CON-28.

Therefore, this impact would be **significant**.

> **Mitigation Measure 3.3-5a:** The owner/permittee shall preserve a minimum of 60 acres of oak woodland (29.88 x 2, for a 2:1 preservation ratio) in similar habitat in the west-central or northwest portion of the project site. This acreage shall be preserved in an 'enforceable restriction', such as deed restriction, open space/conservation easement with an organization such as the Land Trust of Napa County as the grantee, or other

means of permanent protection acceptable to Napa County. Land placed in protection shall be restricted from development and other uses that would potentially degrade the quality of the habitat (e.g., conversion to other land uses such as agriculture or urban development, and excessive off-road-vehicle use that increases erosion), and should otherwise be restricted by the existing goals and policies of Napa County.

The areas to be covered by the enforceable restriction shall be determined by a qualified botanist or biologist, and the determination shall be submitted to Napa County for review and approval. The owner/permittee shall record the enforceable restriction within 60 days of the County's approval of #P17-00432-ECPA. In no case shall the erosion control plan be initiated until said enforceable restriction is recorded.

Mitigation Measure 3.3-5b: The owner/permittee shall locate and construct the point of diversion and associated infrastructure in an area along Elder Creek that does not contain valley oak trees. The location shall avoid removal and damage to valley oaks by providing a minimum protective buffer that extends to the tree's dripline. "Removal and damage" also means trimming of the tree and/or work occurring within the tree's buffer area. The tree protective buffer fencing shall be inspected and approved by Napa County before construction of the point of diversion begins.

If avoiding valley oak is infeasible during construction of the point of diversion, the owner/permittee shall provide justification of infeasibility, and a removal and replacement plan prepared by a qualified biologist or restoration ecologist, for review and approval by Napa County before construction of the point of diversion commences. If a valley oak or other oaks are removed (which includes substantial trimming of the tree and/or work within the buffer area), they shall be replaced on-site with 15-gallon oak trees at the following ratios: 4:1 removal between 5 and 10 inches dbh, 5:1 removal between 10 and 15 inches dbh, and 10:1 for removal greater than 15 inches dbh. Replacement trees shall be installed and their good health shall be documented before completion and finalization of the erosion control plan. Replacement trees shall be monitored and maintained as necessary for a minimum of five years to ensure that they achieve a minimum 80 percent survival. If valley oak plantings are not achieving this success criterion during the monitoring years, the owner/permittee shall replace the plantings and monitor them for an additional five years until they achieve a minimum 80 percent survival rate.

If avoidance of valley oaks is infeasible for construction of the point of diversion, the owner/permittee shall also preserve a minimum of 0.06 acre of riparian woodland in similar habitat in the west-central or northwest portion of the project site. This acreage shall be preserved in a deed restriction, an open space easement with an organization such as the Land Trust of Napa County as the grantee, or other means of permanent protection acceptable to the County as described in Mitigation Measure 3.3-5a.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-5a**, as well as **Mitigation Measures 3.3-1i and 3.3-2a,** would reduce significant impacts on oak trees and oak woodland, including riparian woodland, to a **less-than-significant** level by preserving similar habitat at a higher ratio than is proposed for removal. With mitigation, the proposed project would be consistent with General Plan Policy CON-24.

As shown in **Table 3.3-9**, approximately 60 acres of the oak woodland would be preserved on the project site in perpetuity. Although the other 431 acres of oak woodland would not be preserved in perpetuity, they would remain undisturbed within the project site (521 acres within the project site – 29.88 acres of impact – 60.00 acres of preservation at a 2:1 ratio = 431 acres).

TABLE 3.3-9
OAK WOODLAND PROJECT IMPACTS BY BIOLOGICAL COMMUNITY

Oak Woodland Biological Communities	Direct Impact in the Development Area after Mitigation (acres[1])	2:1 Acreage for Preservation on the Project Site	Total Acreage on the Project Site	Percent of Total Preserved through 2:1 Mitigation on the Project Site	Total Acreage in Napa County	Percent of Total Affected in Napa County
Blue Oak Alliance	5.56	11.12	35.27	31.53	44,104	0.01
Coast Live Oak–Blue Oak (Foothill Pine) NFD Association	5.80	11.60	165.37	7.01	26,374	0.02
Interior Live Oak–Blue Oak (Foothill Pine) NFD Association	17.81	35.86	251.89	14.24	18,084	0.10
Mixed Oak Alliance	0.71	1.42	68.77	2.06	28,703	0.00
Total	**29.88**	**60.00**	**521.30**	**-**	**117,265**	**0.03**

NOTES:

NFD = No Formal Description

1 Reflects implementation of the mitigated proposed project. Geographic Information System calculations do not reflect exact acreage of development area due to rounding.

SOURCES: Napa County 2005; data compiled by Environmental Science Associates in 2021

Implementing **Mitigation Measure 3.3-4b** would reduce potentially significant impacts on riparian woodland, including valley oak, to a **less-than-significant** level by avoiding impacts or mitigating at a higher ratio than is proposed for removal, in addition to preserving similar habitat at a higher ratio than is proposed for removal.

3.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section describes the cultural and tribal cultural resources in the project area; summarizes the relevant regulatory setting; and evaluates the potential for the proposed project to result in impacts on cultural and tribal cultural resources during construction, operation, and maintenance activities. Paleontological resources are described and evaluated in **Section 3.5, *Geology and Soils***.

The Native American Heritage Commission (NAHC) and the California Department of Transportation (Caltrans) sent comment letters regarding cultural and tribal cultural resources in response to the Notice of Preparation. The NAHC letter described the requirements for consultation with California Native American tribes and NAHC recommendations for conducting cultural resources assessments. Caltrans stated that a cultural resources technical study may be required if an encroachment permit is needed for work within the Caltrans right-of-way. The comments did not raise any project-specific concerns. See **Appendix B** for Notice of Preparation comment letters.

For the purposes of this analysis, the term *cultural resource* refers to indigenous and historic-era sites, structures, districts, and landscapes, or other evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reasons. Such resources encompass the following types of resources as defined by CEQA: historical resources, archaeological resources, human remains, and tribal cultural resources.

The term *indigenous*, rather than *prehistoric*, is used as a synonym for “Native American–related” (except when quoting), while *pre-contact* is used as a chronological adjective to refer to the period before Euroamerican arrival in the area. “Indigenous” and “pre-contact” are often but not always synonymous; the former term refers to a cultural affiliation and the latter is chronological.

This section relies on the information and findings presented in the following technical report prepared for the proposed project: *Cultural Resources Assessment: Petitions for Change Related to Water Rights Applications 13943 and 26165 and Erosion Control Plan for Somerston Estate, Napa County, California* (Stevens Consulting 2017). The confidential technical report (**Appendix F**) presents additional details regarding the background context, Native American correspondence, and cultural resources identified in the vicinity of the project area.

3.4.1 ENVIRONMENTAL SETTING

ARCHAEOLOGICAL SETTING

Prehistoric Context

Categorizing the prehistoric period into cultural stages allows researchers to describe a range of archaeological resources with similar cultural patterns and components during a given time frame,

creating a regional chronology. Milliken et al. (2007) provide a framework for interpretation and divided human history in Northern California into three periods: the *Early Period* (8,000 to 500 B.C.), the *Middle Period* (500 B.C. to A.D. 1050), and the *Late Period* (A.D. 1050 to 1550). In many parts of California four periods are defined; the fourth, the *Paleoindian Period* (11500–8000 B.C.), is characterized by big-game hunters occupying broad geographic areas. Evidence of human habitation during the Paleoindian Period has not yet been discovered in Napa County and the San Francisco Bay Area. Economic patterns, stylistic aspects, and regional phases further subdivide cultural periods into shorter phases. This scheme uses economic and technological types, socio-politics, trade networks, population density, and variations of artifact types to differentiate between cultural periods.

Ethnographic Context

The project area is located at the cusp of areas inhabited by the Wappo and Patwin (Johnson 1978:350; Sawyer 1978:257). Because of the depopulation and relocation of Native Americans in the 19th century, information about tribal locations is conflicting and incomplete. Although cultural descriptions of these groups in the English language are known from as early as 1849, most current cultural knowledge comes from early 20th century anthropologists (Levy 1978:413).

Although there are no ethnographically known village sites in the project area, three exist in the vicinity. The Wappo village *Anakota-noma* was located near the present-day town of St. Helena, approximately 6 miles east of the project area (Sawyer 1978:257). *Chemocu* and *Putato* are ethnographically known Patwin villages near Putah Creek (Johnson 1978:350). The site of the village *Chemocu* is believed to lie beneath the Lake Berryessa reservoir, approximately 5 miles east of the project area. The exact location of *Putato* along Putah Creek is unknown; however, the village was southeast of *Chemocu*.

Wappo

The Wappo are Yukian-speaking traditional hunter-gatherers, with their own unique dialect and language, who occupied the northern Napa Valley and portions of the north and eastern Russian River Valley. The territorial area occupied by the Wappo stretched in a northwesterly direction from just north of the present-day cities of Napa and Sonoma to include the cities of Geyser, Cloverdale, and Middletown at its northern extent (Kroeber 1925:218–219, Plate 27; Barrett 1908:264). This territory included the broad northwest-southeast–trending river valleys and associated tributaries, as well as the flanking mountains of the Coast Ranges and a small enclave along the south shore of Clear Lake called *Lile'ek* by the Pomo, their neighbors to the west (Kroeber 1925:219). Isolated from other Yukian-speaking peoples, this group was bounded by the Lake Miwok to the north, the Patwin to the south and east, the Pomo to the north and west, and the Coast Miwok to the southwest (Heizer and Whipple 1971:Map 1).

The name *Wappo* is a version of the Spanish term "guapo," which means "handsome" or "brave," a title given to this group during the time of the missions as a result of their "stubborn resistance to the military adjuncts of the Franciscan establishments" (Kroeber 1925:217).

Stephen Powers recognized the original name for these peoples as *Ashochimi*, and noted that this population commonly referred to itself using the term "Wappo–The Unconquerable" (Powers 1877:196).

The population of the Wappo may have exceeded 1,000 persons before European contact before falling drastically to 40 persons by 1908. During Spanish occupation, the Wappo were notably resistant to all attempts at subjugation, from which they obtained their title. Despite this resistance, this native population was eventually brought under the control of the Mission at Sonoma between 1823 and 1834. The remaining population was eventually moved to a reservation in Mendocino, where most perished, eventually leading to the closure of the reservation in 1867 (Kroeber 1925:221; Sawyer 1978:258–259). Today the Wappo are represented by the Mishewal-Wappo Tribe of Alexander Valley, which has 340 living members.

Patwin

The Patwin inhabited an extensive territory in north-central California. Patwin territory consisted of the lower west side of the Sacramento Valley west of the Sacramento River from about the location of the present-day town of Princeton (in Colusa County) in the north to Benicia (Solano County) in the south (Kroeber 1925). The Patwin were bounded to the north, east, and southeast by other Penutian-speaking peoples (Nomlaki, Maidu, and Miwok, respectively), and to the west by the Pomo and other coastal groups. Within this large territory, the Patwin have traditionally been divided into River, Hill, and Southern groups, although linguistic and cultural differences were more complex than these three geographic divisions indicate.

As with most of the hunter-gatherer groups of California, the "tribelet" represented the basic social and political unit for the Patwin. Typically, a tribelet chief would reside in a major village, where ceremonial events were also typically held. The status of Patwin tribelet chiefs was patrilineally inherited, although village elders had considerable power in determining who actually succeeded to particular positions. The chief's main responsibilities involved administration of ceremonial and economic activities. The chief also decided when and where various fishing, hunting, or gathering expeditions would occur, and similarly made critical decisions regarding the more elaborate ceremonial activities. The chief also played a central role in resolving conflicts within the community or during the occasional wars with neighboring groups (McKern 1922; Kroeber 1925).

Euroamerican culture negatively affected Patwin culture and peoples. In 1871–1872, when Stephen Powers surveyed California to gather ethnographic information, the Patwin culture appeared to him to be virtually extinct. Euroamerican influences on Patwin territory increased dramatically as ranching and farming became popular in the area. Euroamerican settlers quickly made inroads into lands occupied by Native Americans, especially in the Sacramento Valley. Conflicts grew in number, and Patwin populations continued to decline as a result of military skirmishes, vigilante raids, and other causes. In 1972, the Bureau of Indian Affairs listed only 11 remaining Patwin descendants (Johnson 1978:352).

Historic Setting

Napa County was first mentioned in 1795 in the records of Mission Dolores. The area was first explored by Father José Altamira and Alfred José Sánchez in 1823 for potential sites of new missions (Beck and Haase 1974:18). After the signing of the Treaty of Guadalupe Hidalgo, which formally ended the Mexican-American War, land grants were issued to individuals throughout California. The project site is located within the Rancho Catacula land grant, which was granted in 1844 to Joseph B. Chiles. Rancho Catacula consisted of 8,545 acres along Chiles Creek, which was historically known as Arroyo de Napa.

Napa County appealed to many miners who traveled to California in the 1850s during the Gold Rush. The earliest mining in Napa County occurred in 1848, for silver. Miners found many profitable metals in the county, including gold. Napa County was most profitable in mercury, a necessary element for processing gold. Mercury ore, also known as cinnabar, was first discovered in Napa County in 1861. The success of mining in Napa County caused many emigrant families to settle in the region. The increase in the population of Napa County generated a need for staple goods. Other booming economies in the Napa Valley region included sawmills, timber harvesting, cattle ranches, and vineyards.

Napa County is historically known for its viticulture. Although viticulture was established commercially in 1861, the first grapes were planted by George C. Yount in 1839. Yount, often known as the Father of Napa Wine, was a trapper and explorer who came to California in 1831. He received his first land grant in Napa County in 1836, the 12,000-acre Rancho Caymus. In 1842 Yount received the Rancho La Jota land grant, also in Napa County. The Napa County town Yountville was named after Yount.

Viticulture evolved in Napa County, with Charles Krug opening the first commercial winery in 1861. The Volstead Act of 1920 outlawed the commercial sale of alcohol and shuttered many wineries in the Napa County region. Viticulture and the commercial sale of wine grew after the Volstead Act was repealed in 1933. Today Napa County is known throughout the world for its viticulture and commercial wine industry.

EXISTING ENVIRONMENT

Stevens Consulting (2017) prepared a cultural resources technical report for the proposed project. The report compiles the methods of and results from four cultural resources investigations that together covered the entire project area and each included a pedestrian survey:

- The study by the State Water Resources Control Board (Sheeders 1981) covered a small area in the central portion of the project area.
- Analytical Environmental Services (AES) (2007) evaluated a large amount of the northern and central portions of the project area, as well as locations outside the project area.

- Peak & Associates, Inc. (Peak) (2014) investigated a large portion of the southern part of the project area, land in the northern and central portions of the project area, and locations outside the project area.
- The Tom Origer & Associates study (Alshuth and Origer 2016) included a large amount of the southern, central, and northern portions of the project area, as well as locations outside the project area.

The following background on the existing environment is summarized from Stevens Consulting (2017).

Archival Research

Cultural resources records searches of the project area and vicinity were conducted at the Northwest Information Center (NWIC) at Sonoma State University, Rohnert Park. The NWIC maintains the California Historical Resources Information System's official records of previous cultural resources studies and recorded cultural resources for the project area and vicinity. The purposes of the records searches were:

(1) Determine whether known cultural resources have previously been recorded in or adjacent to the project area.

(2) Assess the likelihood for unrecorded cultural resources to be present based on historical references and the distribution of nearby resources.

(3) Develop a context for the identification and preliminary evaluation of cultural resources.

The results below were summarized by Peak (2014) and Alshuth and Origer (2016). Sheeders (1981) and AES (2007) did not provide details of their records searches, although those searches are discussed briefly in the Peak and Origer studies. Each of these four studies covered different portions of the project area, and the study areas for the respective records searches included different buffers; however, when combined, the records searches covered the entire project area.

Previously Recorded Cultural Resources

The NWIC has records of two previously recorded cultural resources on the project site (but outside of the development area). Both cultural resources are indigenous flaked-stone lithic scatters, and one appears to represent a habitation site. These two resources were identified during the records searches by Peak (2014) and Alshuth and Origer (2016). To avoid redundancy, as both cultural resources were recorded during the AES (2007) survey, they are discussed in the *Archaeological Surface Surveys and Findings* section below. In addition, the NWIC has a record of one previously recorded rock culvert, of either historic-era or modern age, south of the project area (Peak 2014). **Table 3.4-1** summarizes the results of the records searches.

Previous Cultural Resources Studies

The NWIC has no record of any cultural resources studies that include the project area before the Sheeders (1981) study. The only cultural resources studies on file at the NWIC that include the project area are the four previously mentioned studies (Sheeders [1981], AES [2007], Peak [2014], and Alshuth and Origer [2016]), which when combined form the technical basis for the EIR analysis. The NWIC also has records of three cultural resources studies, all of which included pedestrian surveys, that were conducted outside of but in the vicinity of the project area. Two of these—by Banet (1993) and Leach-Palm et al. (2007)—were conducted for Caltrans projects, and the other was conducted to investigate indigenous resources along Sage and Elder Valley Creeks (Origer 1999).

TABLE 3.4-1
RESULTS OF NORTHWEST INFORMATION CENTER RECORDS SEARCH FOR THE PROJECT AREA AND VICINITY

Primary (P-28-)	Trinomial (CA-NAP-)	Type	Age/Affiliation	Name/Description	Recorder (Year)	Location
001351	[none]	Archaeological	Undetermined, historic era or modern	Rock culvert associated with State Route 128	Douglas (2005)	Just south of project area, adjacent to State Route 128
001682*	1129	Archaeological	Indigenous	Habitation site: flaked- and ground-stone artifacts, fire-affected rock, faunal remains, and possible hammerstone	AES (2007)	On project site
001683*	[none]	Archaeological	Indigenous	Flaked-stone lithic scatter	AES (2007)	On project site

NOTE:
*Identified during Analytical Environmental Services (AES) (2007) study.

SOURCES: AES 2007; Peak 2014; Alshuth and Origer 2016

Native American Outreach

As required by Assembly Bill (AB) 52 (California Public Resources Code [PRC] Sections 21074, 21080.3.1, 21080.3.2, 21082.3, and 21083.09), the County, as part of the CEQA review for the proposed project, reached out to California Native American Tribes listed in the California NAHC's contact list. The goal of this outreach was to provide information on the proposed project and determine whether any tribal cultural resources may be affected by the proposed project.

As part of the AES (2007), Peak (2014), and Alshuth and Origer (2016) studies, the NAHC was contacted and requested to conduct a search of the NAHC's Sacred Lands File for the areas covered in each study, as well as to provide lists of relevant Native American contacts. All three of the NAHC replies stated that the Sacred Lands File had no record of any sacred sites in the area covered by each study. In addition, as part of the three studies, letters with information on the purpose and extent of each study were sent to those Native American representatives whose contact information was provided in the applicable NAHC reply. Only one reply was received from these letters: a letter from the Middletown Rancheria to Alshuth in November

2016, stating that the Middletown Rancheria had no specific comments regarding the Alshuth and Origer (2016) study.

The County sent project notification letters to the Middletown Rancheria and Mishewal Wappo Tribe of Alexander Valley on December 26, 2017, and to the Yocha Dehe Wintun Nation on April 9, 2018. The letters provided information on the proposed project and requested that the tribes notify the County within 30 days should the tribe wish to consult on the project. On April 9, 2018, the County sent letters to the Middletown Rancheria and Mishewal Wappo Tribe of Alexander Valley, indicating that the Planning Division concluded that consultation proceedings with these tribes would not be initiated for the proposed project because no written response was received with a request for consultation. On April 27, 2018, Yocha Dehe Wintun Nation Director of Cultural Resources Marilyn Delgado replied to the County by letter, stating that the tribe would like to formally consult on the proposed project in accordance with PRC Section 21080.3.1.

Following up on these communications with the Yocha Dehe Wintun Nation in May through July 2018 (Reimann Rouse and Larry Longee), Napa County provided a list of project contacts by email to the Yocha Dehe Wintun Nation on July 24, 2018, and sent a follow-up email on October 12, 2018. In a letter received by Napa County on January 7, 2019, the Yocha Dehe Wintun Nation provided the name of a contact for further consultation. Napa County left a voice mail message and emailed the Yocha Dehe Wintun Nation on March 12, 2019, to follow up on the consultation. On that same day, Katie Solorio (Cultural Resources Department administrative assistant) provided an email response indicating that the project's Cultural Resources Report had been forwarded to the Yocha Dehe management team for review, and that the County would be contacted when a response was received regarding the report and the next steps for consultation. Napa County emailed and spoke with Yocha Dehe Wintun Nation (Laverne Bill) on March 3 and March 8, 2021, respectively, to discuss the environmental review, anticipated tribal cultural mitigation measures, and consultation for the proposed project.

In subsequent communications with Yocha Dehe Wintun Nation (Laverne Bill) on March 18, 2021, the County's understanding is that the Tribe is comfortable and satisfied (or otherwise in agreement) with proposed Tribal Cultural Mitigation Measures, and that the County and the Tribe are in a position to satisfactorily conclude consultation. It was also reiterated that the DEIR would be circulated to the Tribe for additional review and comment if necessary.

Appendix G provides documentation of project correspondence with Native American representatives.

Archaeological Surface Surveys and Findings

This section summarizes the findings for the four cultural resources studies (Sheeders [1981], AES [2007], Peak [2014]), and Alshuth and Origer [2016] that have been conducted in the project area. As mentioned above, combined, these four studies covered the entire project area.

All surveys were pedestrian surveys conducted by qualified archaeologists with standard surveying methodologies, using transects averaging 10 to 15 meters apart.

No cultural resources were identified in the project area during these four studies. However, nine cultural resources (P-28-001682, P-28-001683, IF-14-06, Isolate 1, Isolate 2, Isolate 3, Isolate 4, Isolate 5, Isolate 6) were identified within the project site, but outside the project area; and two cultural resources (Espinoza 1, Espinoza 2) were recorded within the project site, but outside the project area, based on reported artifact discoveries by vineyard staff. Two of these resources (P-28-001682, P-28-001683) are indigenous archaeological sites first recorded by AES (2007); six of the resources (Isolate 1, Isolate 2, Isolate 3, Isolate 4, Isolate 5, Isolate 6) are indigenous archaeological isolates first recorded by Alshuth and Origer (2016) and recorded on a single site record; one resource (IF-14-06) is a historic-era archaeological isolate first recorded by Peak (2014); and two of the resources (Espinoza 1, Espinoza 2) are reported archaeological isolates recorded by Peak (2014) on a single site record. These resources are summarized below.

P-28-001682
This resource is an indigenous archaeological site first recorded during the AES (2007) study, in a vineyard on the west bank of Elder Creek, just north of the guest residence and barn within the south-central portion of the project site but outside the project area. Archaeological material observed at the site consists of midden soil, two obsidian projectile points, five obsidian flake tools, a dense obsidian debitage scatter, ground-stone fragments, a possible hammerstone, faunal bone, and fire-affected rock. Based on visual inspection and proximity to source, the obsidian is likely from Napa Glass Mountain. The lithic scatter extends around the guest residence and barn, and is densest within the vineyard. The site appears to be in good condition, although it has been disturbed to some degree by viticulture-related activities, and likely represents an indigenous habitation and possibly flaked-stone manufacture site. The resource has not been evaluated for eligibility to the California Register of Historical Resources (California Register).

P-28-001683
This resource is an indigenous archaeological site also first recorded during the AES (2007) study, located in an alluvial flat in a vineyard in the southern portion of the project site but outside the project area. The site consists of a sparse flaked-stone obsidian scatter, with 11 flakes recorded, and one obsidian flake tool. Based on visual inspection and proximity to source, the obsidian is likely from Napa Glass Mountain. The site appears to be in fair condition despite some disturbance from continued vineyard activities. This resource has not been evaluated for California Register eligibility.

IF-14-06
Peak (2014) first recorded this historic-era resource, which consists of an isolated colorless glass bottle likely dating to the 1940s or 1950s. The resource was identified in the southern

portion of the project site, but outside the project area. This resource has not been evaluated for California Register eligibility.

Isolates 1 to 6

Alshuth and Origer (2016) first recorded this series of six indigenous archaeological isolates throughout the project site, but none within the project area. The isolates were designated Isolate 1, Isolate 2, Isolate 3, Isolate 4, Isolate 5, and Isolate 6. The isolates consisted of five obsidian flakes and a possible obsidian blank, and were visually sourced to Napa Glass Mountain. Alshuth and Origer recorded the isolates on a single site record.

Espinoza 1 and 2

Based on conversations with vineyard staff but without seeing the reported artifacts, Peak (2014) recorded two indigenous archaeological isolates in the southern portion of the project site, but both outside the project area. Peak designated the isolates Espinoza 1 and Espinoza 2 and recorded them on a single site record. Espinoza 1 was recorded as two obsidian bifaces recovered from the surface near a pumphouse, and Espinoza 2 was recorded as a type of obsidian hand axe that was recovered from approximately 6 feet below surface.

3.4.2 REGULATORY SETTING

For the purposes of CEQA, cultural resources are defined to include architectural resources, archaeological resources, and tribal cultural resources. CEQA requires that public agencies consider the effects of their actions on cultural resources eligible for listing in the California Register. In addition, CEQA sets specifications for the evaluation of indigenous cultural resources. This subsection describes the laws, policies, and regulations that address these resources in the project area.

FEDERAL REGULATIONS

No federal regulations related to cultural and tribal cultural resources are applicable to the proposed project.

STATE REGULATIONS

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in California and is codified at PRC Section 21000 et seq. CEQA requires lead agencies to determine whether a proposed project would have a significant effect on the environment, including significant effects on historical or unique archaeological or paleontological resources. Under CEQA (Section 21084.1), a project 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.

The State of California implements provisions in CEQA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation, an office of the California Department of Parks and Recreation, oversees adherence with CEQA regulations and maintains the California Historic Resource Inventory. The State Historic Preservation Officer is an appointed official who implements historic preservation programs within state jurisdiction.

Historical Resources

The State CEQA Guidelines recognize any of the following resources as a historical resource:

(1) A resource in the California Register.

(2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g).

(3) Any object, building, structure, site, area, place, record, or manuscript, which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency, provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of PRC Section 21084.1 and State CEQA Guidelines Section 15064.5 apply. If an archaeological site does not meet the criteria for a historical resource contained in the State CEQA Guidelines, the site may be treated in accordance with the provisions of PRC Section 21083 pertaining to unique archaeological resources.

Unique Archaeological Resources

As defined in PRC Section 21083.2, a "unique archaeological resource" is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

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

The State CEQA Guidelines note that if an archaeological resource is not a unique archaeological resource or historical resource, the effects of the project on those cultural resources shall not be considered a significant effect on the environment (State CEQA Guidelines Section 15064.5[c][4]).

Tribal Cultural Resources

AB 52, enacted in September 2014, recognizes that California Native American tribes have expertise with regard to their tribal history and practices. The bill established a new category of cultural resources, known as *tribal cultural resources*, to consider tribal cultural values when determining impacts on cultural resources (PRC Sections 21080.3.1, 21084.2, and 21084.3). PRC Section 21074(a) defines a tribal cultural resource as any of the following:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - Included or determined to be eligible for inclusion in the California Register; or
  - Included in a local register of historical resources, as defined in PRC Section 5020.1(k).

- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant under criteria set forth in PRC Section 5024.1(c). In applying these criteria, the lead agency would consider the significance of the resource to a California Native American tribe.

A cultural landscape that meets the criteria of PRC Section 21074(a) is also a tribal cultural resource if the landscape is geographically defined in terms of the size and scope. Also, a historical resource as described in PRC Section 21084.1, a unique archaeological resource as defined in PRC Section 21083.2, or a non-unique archaeological resource as defined in PRC Section 21083.2 may be a tribal cultural resource if it meets the criteria of PRC Section 21074(a).

AB 52 requires lead agencies to analyze project impacts on tribal cultural resources separately from impacts on archaeological resources (PRC Sections 21074 and 21083.09), in recognition that archaeological resources have cultural values beyond their ability to yield data important to prehistory or history. AB 52 also defines tribal cultural resources in a new section of the Public Resources Code (Section 21074; see above) and requires lead agencies to engage in additional consultation procedures with respect to California Native American tribes (PRC Sections 21080.3.1, 21080.3.2, and 21082.3).

California Register of Historical Resources

The California Register is “an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change” (PRC Section 5024.1[a]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places (National Register).

To be eligible for the California Register, a cultural resource must be significant at the federal, state, and/or local level under one or more of the following four criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must be of sufficient age and retain enough of its historic character or appearance (integrity) to convey the reason for its significance. Typically, a resource must be more than 50 years old to be considered as a potential historical resource. The California Office of Historic Preservation advises recording any resource 45 years or older because there is commonly a 5-year lag between the date a resource is identified and the date when planning decisions are made.

California Public Resources Code Section 5097

PRC Section 5097.99, as amended, states that no person shall obtain or possess any Native American artifacts or human remains that are taken from a Native American grave or cairn. Any person who knowingly or willfully obtains or possesses any Native American artifacts or human remains is guilty of a felony punishable by imprisonment. Any person who removes, without authority of law, any such items with an intent to sell or dissect or with malice or wantonness is also guilty of a felony punishable by imprisonment.

California Native American Historic Resource Protection Act

The California Native American Historic Resources Protection Act of 2002 imposes civil penalties, including imprisonment and fines up to $50,000 per violation, for any person who unlawfully and maliciously excavates upon, removes, destroys, injures, or defaces a Native American historic, cultural, or sacred site that is listed or may be listed in the California Register.

California Health and Safety Code Section 7050.5

Section 7050.5 of the California Health and Safety Code protects human remains by prohibiting the disinterment, disturbance, or removal of human remains from any location other than a dedicated cemetery. PRC Section 5097.98 (reiterated in State CEQA Guidelines Section 15064.59[e]) also identifies steps to follow in the event of the accidental discovery or recognition of any human remains in any location other than a dedicated cemetery.

LOCAL REGULATIONS

Napa County General Plan

The Community Character Element of the Napa County General Plan includes policies regarding cultural resources and establishes guidelines to preserve and protect resources throughout Napa County. The following is adapted from the General Plan's Community Character Element.

- **Policy CC-17:** Significant cultural resources are sites that are listed in or eligible for listing in either the National Register of Historic Places or the California Register of Historic Resources due to their potential to yield new information regarding prehistoric or historic people and events or due to their intrinsic or traditional cultural value.

- **Policy CC-18:** Significant historical resources are buildings, structures, districts, and cultural landscapes that are designated Napa County Landmarks or listed in or eligible for listing in either the National Register of Historic Places or the California Register of Historic Resources. Owner consent is a prerequisite for designation as a County Landmark.

- **Policy CC-19:** The County supports the identification and preservation of resources from the County's historic and prehistoric periods.

  - **Action Item CC-19.1:** In partnership with interested historic preservation organizations, seek funding to undertake a comprehensive inventory of the County's significant cultural and historic resources using the highest standard of professional practices.

  - **Action Item CC-19.2:** Consider amendments to the County zoning and building codes to improve the procedures and standards for property owner-initiated designation of County Landmarks, to provide for the preservation and appropriate rehabilitation of significant resources, and to incorporate incentives for historic preservation.

- **Policy CC-21:** Rock walls constructed prior to 1920 are important reminders of the County's agricultural past. Those walls which follow property lines or designated scenic roadways shall be retained to the extent feasible and modified only to permit required repairs and allow for openings necessary to provide for access.

- **Policy CC-22:** The County supports efforts to recognize and perpetuate historic vineyard uses and should consider ways to provide formal recognition of "heritage" landscapes, trees, and other landscape features with owner consent.

- **Policy CC-23:** The County supports continued research into and documentation of the county's history and prehistory, and shall protect significant cultural resources from inadvertent damage during grading, excavation, and construction activities.

- **Action Item CC-23.1:** In areas identified in the Baseline Data Report as having a significant potential for containing significant archaeological resources, require completion of an archival study and, if warranted by the archival study, a detailed on-site survey or other work as part of the environmental review process for discretionary projects.

- **Action Item CC-23.2:** Impose the following conditions on all discretionary projects in areas which do not have a significant potential for containing archaeological or paleontological resources:

  - "The Planning Department shall be notified immediately if any prehistoric, archaeologic, or paleontologic artifact is uncovered during construction. All construction must stop and an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards in prehistoric or historical archaeology shall be retained to evaluate the finds and recommend appropriate action."

  - "All construction must stop if any human remains are uncovered, and the County Coroner must be notified according to Section 7050.5 of California's Health and Safety Code. If the remains are determined to be Native American, the procedures outlined in CEQA Section 15064.5 (d) and (e) shall be followed."

- **Policy CC-26:** Projects which follow the Secretary of the Interior's Standards for Preservation Projects shall be considered to have mitigated their impact on the historic resource.

- **Policy CC-26.5:** When discretionary projects involve potential historic architectural resources, the County shall require an evaluation of the eligibility of the potential resources for inclusion in the [National Register] and the [California Register] by a qualified architectural historian. When historic architectural resources that are either listed in or determined eligible for inclusion in the [National Register] or the [California Register] are proposed for demolition or modification, the County shall require an evaluation of the proposal by a qualified preservation architect to determine whether it complies with the Secretary of the Interior's Standards for Preservation Projects. In the event that the proposal is determined not to comply with the Secretary of the Interior's Standards, the preservation architect shall recommend modifications to the project design for consideration by the County and for consideration and possible implementation by the project proponent. These recommendations may include modification of the design, re-use of the structure, or avoidance of the structure.

- **Policy CC-27:** Offer incentives for the appropriate rehabilitation and reuse of historic buildings and disseminate information regarding incentives available at the state and federal level. Such incentives shall include but are not limited to the following:

  a. Apply the State Historical Building Code when building modifications are proposed.

b. Reduce County building permit fees when qualified preservation professionals are retained by applicants to verify conformance with the SHBC and the Secretary of the Interior's Standards.

c. Use of the federal historic preservation tax credit for qualified rehabilitation projects.

d. Income tax deductions for qualified donations of historic preservation easements.

- **Policy CC-28:** As an additional incentive for historic preservation, owners of existing buildings within agricultural areas of the County that are either designated as Napa County Landmarks or listed in the California Register of Historic Resources or the National Register of Historic Places may apply for permission to reuse these buildings for their historic use or a compatible new use regardless of the land uses that would otherwise be permitted in the area so long as the use is compatible with agriculture, provided that the historic building is rehabilitated and maintained in conformance with the U.S. Secretary of the Interior's Standards for Preservation Projects.

- **Policy CC-30:** Because the County encourages preservation of historic buildings and structures in place and those buildings and structure must retain "integrity" to be considered historically significant, the County shall discourage scavenging of materials from pre-1920 walls and other structures unless they are beyond repair.

3.4.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing CEQA*, an impact related to cultural resources is considered significant if the proposed project would do any of the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

ISSUES NOT DISCUSSED IN IMPACTS

Based on the results of the background research and field surveys, no architectural resources older than 50 years of age have been identified in the project area. As such, there are no known historical resources, as defined in State CEQA Guidelines Section 15064.5, in the project area. Construction and operation of the proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in State CEQA Guidelines Section 15064.5 (i.e., historic-era architectural resources, including buildings, structures, and objects).

No impact would occur. Impacts on other historical resources (archaeological and tribal cultural resources) are discussed in **Impacts 3.4-1 and 3.4-3**.

METHODS OF ANALYSIS

Historical Resources

Impacts on historical resources were assessed by identifying any activities, such as new construction, demolition, or substantial alteration, that would affect resources that have been identified as historical. Individual properties and districts identified as historical resources under CEQA include those that are significant because of their association with important events, people, or architectural styles or master architects, or for their informational value (California Register Criteria 1, 2, 3, and 4) and that retain sufficient historic integrity to convey their significance. Criterion 4 is typically applied to the evaluation of archaeological resources and not to architectural resources. Note that historical resources may include architectural resources, archaeological resources, and tribal cultural resources.

Once a resource has been identified as significant, it must be determined whether the impacts of the project would "cause a substantial adverse change in the significance" of the resource (State CEQA Guidelines Section 15064.5[b]). A substantial adverse change in the significance of a historical resource means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of [the] historical resource would be materially impaired" (State CEQA Guidelines Section 15064.5[b][1]). A historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (State CEQA Guidelines Section 15064.5[b][2]). Therefore, material impairment of historical resources constitutes a significant impact.

Archaeological Resources

The significance of most indigenous and historic-era archaeological sites is typically assessed under California Register Criterion 4. This criterion stresses the importance of the information potential contained within a site, rather than its significance as a surviving example of a type or its association with an important person or event. Archaeological resources may qualify as historical resources under the definition provided in State CEQA Guidelines Section 15064.5(a), or they may be assessed under CEQA as unique archaeological resources, defined as archaeological artifacts, objects, or sites that contain information needed to answer important scientific research questions (PRC Section 21083.2). A substantial adverse change in the significance of an archaeological resource is assessed similarly to other historical resources; that is, if the physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings occurs such that the significance of [the] historical resource would be materially impaired (State CEQA Guidelines Section 15064.5[b][1]).

As stated previously, a historical resource is materially impaired through the demolition or alteration of the resource's physical characteristics that convey its historical significance and that justify its inclusion in (or eligibility for inclusion in) the California Register or a qualified local register (State CEQA Guidelines Section 15064.5[b][2]). Therefore, material impairment of archaeological resources considered historical resources or unique archaeological resources constitutes a significant impact.

Archaeological resources, both as historical resources according to State CEQA Guidelines Section 15064.5 and as unique archaeological resources as defined in PRC Section 21083.2(g), are discussed in **Impact 3.4-2**.

Human Remains

Human remains, including those buried outside of formal cemeteries, are protected under several state laws, including PRC Section 5097.98 and Health and Safety Code Section 7050.5. These laws are identified in the *State Regulations* section above. For the purposes of this analysis, intentional disturbance, mutilation, or removal of interred human remains constitutes a significant impact.

Tribal Cultural Resources

CEQA requires that a project's impacts on tribal cultural resources be considered as part of the overall analysis of project impacts (PRC Sections 21080.3.1, 21084.2, and 21084.3). The significance of a tribal cultural resource is assessed by evaluating the following:

(1) Eligibility of the resource for listing in the California Register.

(2) The resource's eligibility as a unique archaeological resource under PRC Section 21083.2.

(3) The listing status of the resource on the NAHC's Sacred Lands File.

In addition, a lead agency can independently determine a resource to be a tribal cultural resource. Because California Native American tribes are considered experts with respect to tribal cultural resources, the analysis of whether project impacts may result in a substantial adverse change to the significance of a tribal cultural resource is heavily dependent on consultation between the lead agency and relevant California Native American tribes during the CEQA process.

IMPACTS AND MITIGATION MEASURES

Table 3.4-2 summarizes the impact conclusions presented in this section.

TABLE 3.4-2
SUMMARY OF IMPACT CONCLUSIONS—CULTURAL AND TRIBAL CULTURAL RESOURCES

Impact Statement	Impact Conclusion
3.4-1: Construction and operation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.	Less than Significant with Mitigation
3.4-2: Construction and operation of the proposed project could disturb human remains, including those interred outside of formal cemeteries.	Less than Significant with Mitigation
3.4-3: Construction and operation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.	Less than Significant with Mitigation

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.4-1: Construction and operation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.

The impact analysis for this question addresses impacts on archaeological resources, both as historical resources according to State CEQA Guidelines Section 15064.5 and as unique archaeological resources as defined in PRC Section 21083.2(g).

Based on the results of the background research and field surveys, no archaeological resources have been identified in the project area. As such, there are no known archaeological resources in the project area that may qualify as historical resources as defined in State CEQA Guidelines Section 15064.5, or as unique archaeological resources as defined in PRC Section 21083.2(g).

However, two indigenous archaeological sites, eight indigenous archaeological isolates, and one historic-era archaeological isolate have been recorded within the project site, but outside the development area. In addition, based on proximity to water and the relatively recent age of surficial geology and soils present, portions of the development area in valley bottoms and adjacent to drainages have a moderate to high potential for the presence of buried archaeological resources. Because the proposed project would involve ground-disturbing activities that may extend into undisturbed soil, it is possible that such actions could unearth, expose, or disturb subsurface archaeological resources that have not been identified on the surface.

Impact Conclusion

If previously unrecorded archaeological deposits are present in the project area, and if they are found to qualify as archaeological resources pursuant to State CEQA Guidelines Section 15064, impacts of the proposed project on the resources would be **potentially significant**.

> **Mitigation Measure 3.4-1a**: Before the start of construction, an Archaeological Resources Worker Environmental Awareness Program shall be implemented. A qualified archaeologist, or designee, shall conduct training for project personnel regarding the appearance of archaeological resources and the procedures for notifying archaeological staff should materials be discovered. The owner/permittee shall ensure that project

personnel are made available for and attend the training and retain documentation demonstrating attendance.

Mitigation Measure 3.4-1b: If indigenous or historic-era archaeological resources are encountered during project development or operation, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. The County and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the find within 24 hours of discovery and notify the County of their initial assessment. Indigenous archaeological materials might include obsidian and chert flaked-stone tools (e.g., projectile points, knives, scrapers) or toolmaking debris; culturally darkened soil (midden) containing heat-affected rocks, artifacts, or shellfish remains; stone milling equipment (e.g., mortars, pestles, handstones, or milling slabs); and battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, and deposits of metal, glass, and/or ceramic refuse.

If the County determines, based on recommendations from the qualified archaeologist, that the resource may qualify as a historical resource or unique archaeological resource (as defined in State CEQA Guidelines Section 15064.5) or a tribal cultural resource (as defined in PRC Section 21074), the resource shall be avoided if feasible. Avoidance means that no activities associated with the project that may affect cultural resources shall occur within the boundaries of the resource or any defined buffer zones.

If avoidance is not feasible, the County shall consult with appropriate Native American tribes (if the resource is indigenous) and other appropriate interested parties to determine treatment measures to avoid, minimize, or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2, State CEQA Guidelines Section 15126.4, and County General Plan Policy CC-23. This shall include documentation of the resource and may include data recovery or other measures. Treatment for most resources would consist of (but would not be not limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the significant resource. The resource and treatment method shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System. Work in the area may commence upon completion of approved treatment and under the direction of the qualified archaeologist.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.4-1a and 3.4-1b** would reduce this potentially significant impact to a **less-than-significant** level because worker awareness training would be conducted. If an archaeological resource is inadvertently discovered, a qualified archaeologist would assess any previously unrecorded archaeological resource. If it is determined to potentially be an

archaeological resource pursuant to State CEQA Guidelines Section 15064, the resource would be avoided if feasible; or, if avoidance is not feasible, Native American tribes would be consulted with (if the resource is indigenous in origin) and treatment measures would be determined. Treatment measures which may include conducting data recovery of the resource.

Impact 3.4-2: Construction and operation of the proposed project could disturb human remains, including those interred outside of formal cemeteries.

No human remains have been identified in the project area through archival research, field surveys, or Native American consultation. Also, the land use designations for the project area do not include cemetery uses, and no known human remains exist within the project area. Therefore, the proposed project is not anticipated to disturb any human remains.

However, because the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains.

Impact Conclusion

In the event that human remains were discovered during project construction activities, impacts of the proposed project on the human remains would be significant if those remains were disturbed or damaged. This impact would be **potentially significant**.

Mitigation Measure 3.4-2: If human remains are uncovered during project construction, all work shall immediately halt within 100 feet and the Napa County Coroner shall be contacted to evaluate the remains, and follow the procedures and protocols set forth in State CEQA Guidelines Section 15064.5(e)(1) and County General Plan Policy CC-23. If the County Coroner determines that the remains are Native American, the County shall contact the NAHC, in accordance with Health and Safety Code Section 7050.5(c) and PRC Section 5097.98. Per PRC Section 5097.98, the County shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the County has discussed and conferred, as prescribed in PRC Section 5097.98, with the most likely descendants regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.4-2** would reduce this potentially significant impact to a **less-than-significant** level because it would require construction workers in the area to cease work and follow appropriate state law if human remains are discovered.

Impact 3.4-3: Construction and operation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in PRC Section 21074.

Through background research, field survey, and outreach to the NAHC and Native American tribes, no tribal cultural resources as defined in PRC Section 21074 have been identified in the project area. Therefore, the proposed project is not anticipated to affect any tribal cultural resources as defined in PRC Section 21074.

However, as mentioned previously, indigenous archaeological resources have been recorded within the project site but are located outside the project area, small portions of the project area have a moderate to high potential for the presence of buried archaeological resources, and the Yocha Dehe Wintun Nation has requested consultation.

Impact Conclusion

If any previously undiscovered archaeological and/or tribal cultural resources and/or human remains are encountered during project construction and found to be a tribal cultural resource, impacts of the proposed project on the resource would be **potentially significant**.

> **Mitigation Measure 3.4-3:** Before the start of vegetation removal and earth-moving activities under #P17-04320-ECPA, the owner/permittee shall provide documentation to the Napa County Planning Department that a Monitoring Agreement has been entered into with the Yocha Dehe Wintun Nation. Should a Monitoring Agreement not be entered into with the Yocha Dehe Wintun Nation, the owner/permittee shall provide, for review and approval by Napa County, a Cultural Monitoring Plan prepared by a professional archaeologist certified by the Registry of Professional Archeologists, that incorporates the Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Yocha Dehe Wintun Nation.
>
> The following are examples of mitigation capable of avoiding or substantially lessening potential significant impacts on a tribal cultural resource or alternatives that would avoid significant impacts on the resource that will need to be included in the Monitoring Agreement or Cultural Monitoring Plan. These measures may be considered to avoid or minimize significant adverse impacts and constitute the standard by which an impact conclusion of less than significant may be reached:
>
> - Implement monitoring requirements including but not limited to sensitivity training for site workers, identification of project activities and project site areas requiring an on-site monitor, procedures that are implemented in the event of a find, and monitoring documentation and reporting.
>
> - Avoid and preserve resources in place, including but not limited to planning construction to avoid the resources and protect the cultural and natural context, or

planning greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.

- Treat the resource with culturally appropriate dignity, taking into account the Tribal cultural values and meaning of the resource, including but not limited to the following:
    - Protect the cultural character and integrity of the resource.
    - Protect the traditional use of the resource.
    - Protect the confidentiality of the resource.
    - Establish permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or using the resources or places.
    - Protect the resource.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.4-1a**, **3.4-1b**, **3.4-2, and 3.4-3** would reduce this potentially significant impact to a **less-than-significant** level because if an archaeological or tribal cultural resource is inadvertently discovered, a qualified archaeologist would assess any previously unrecorded archaeological resource. If the resource is determined to potentially be an archaeological resource, the resource would be avoided if feasible; or, if avoidance is not feasible, Native American tribes would be consulted with (if the resource is indigenous in origin) and treatment measures would be determined. Treatment measures may include conducting data recovery of the resource. In addition, workers in the area would be required to cease work and follow appropriate state law if human remains are discovered.

3.5 GEOLOGY AND SOILS

This section describes the environmental and regulatory setting for geology, soils, and paleontological resources in the project vicinity, and evaluates potential impacts of the proposed project related to geology, soils, and paleontological resources. One comment letter received in response to the Notice of Preparation, from the City of Napa Utilities Department, stated that all erosion control measures should be maintained to prevent an exceedance of baseline natural runoff levels of sediment and nutrients. The comments did not raise any project-specific concerns. See **Appendix B** for Notice of Preparation comment letters.

3.5.1 ENVIRONMENTAL SETTING

GEOLOGY, PALEONTOLOGY, AND TOPOGRAPHY

The project site is located in the California Coast Ranges. The California Coast Ranges consist of relatively young (3.5 million years ago), northwest-trending mountain ranges and valleys that run along the Pacific coast from Santa Barbara to the Oregon border, coincident with the boundary between the Pacific and North American plates (Page et al. 1998).

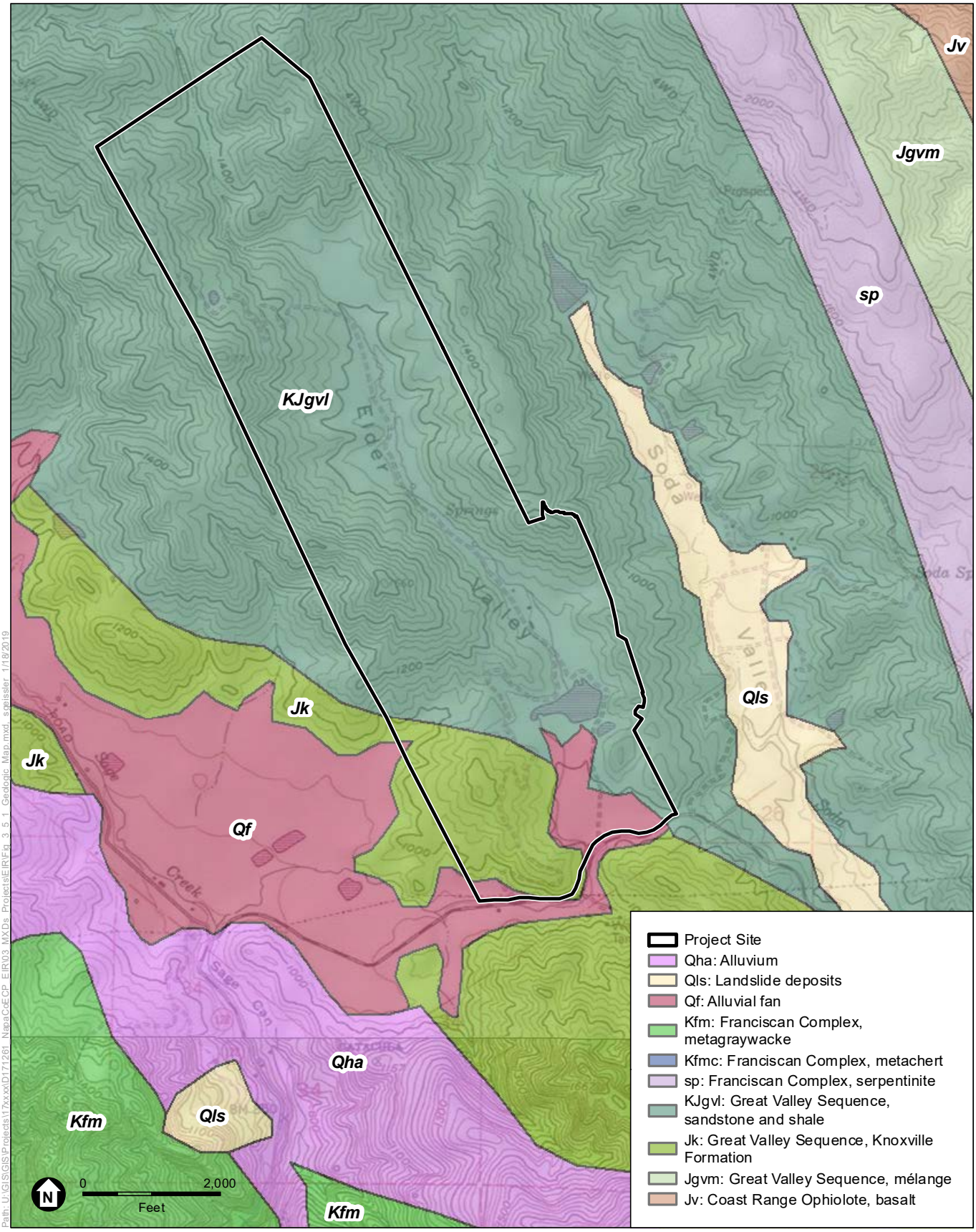
The valleys and ridges of the California Coast Ranges are influenced by folds and faults that resulted from the collision of the Farallon and North American plates and subsequent shearing along the San Andreas Fault. The California Coast Ranges preserve a thick sequence of sedimentary strata dating back to the Mesozoic Era (about 251 million years ago) that overlie granitic and metamorphic bedrock (Norris and Webb 1990). Elevations in the California Coast Ranges are moderate, but these mountains often exhibit considerable relief (differences between the highest and lowest elevations), as peaks rise to around 3,280 feet just a few miles from the coast (Norris and Webb 1990). The North Coast Ranges, in which the project site is located, are the northern portion of the California Coast Ranges.

Sedimentary rocks in the North Coast Ranges have a rich history of fossils. Those fossils record the filling of offshore basins that dates to the Mesozoic, followed by the progressive shallowing of the sea and emergence of terrestrial environments in the Pliocene and Pleistocene (Page et al. 1998). This sedimentary sequence is dominated by Miocene rocks that are primarily marine in origin, such as the well-known Monterey Formation (Norris and Webb 1990).

Geologic mapping (Graymer et al. 2007) indicates that the project site is underlain by three different geologic units, described in further detail below:

- Quaternary alluvial fan deposits, which date from the Holocene to the late Pleistocene.
- Sandstone and shale belonging to the Great Valley Sequence, dating from the late Jurassic to the early Cretaceous.
- The Jurassic-aged Knoxville Formation.

Figure 3.5-1 depicts the regional geology of the project site and vicinity.



SOURCE: USGS 7.5' Topo Quad (Chiles Valley, 1958); USGS NGMDB; ESA, 2019.

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Figure 3.5-1
Geologic Map

Quaternary Alluvial Fan Deposits

These sediments, mapped in **Figure 3.5-1** as Qf, are present in the southeastern-most part of the project site. Quaternary alluvial fan deposits are relatively recent in age, dating from the Holocene (recent to 11,700 years ago) to the late Pleistocene (11,700 years ago to roughly 126,000 years ago) and consist of silt, sand, and gravel eroded from the surrounding highlands (Graymer et al. 2007). The Society of Vertebrate Paleontology (SVP) defines fossils as being more than 5,000 years old (SVP 2010). At the surface and in the shallow subsurface, these sediments are too young to preserve fossil resources. Sediment age increases with depth in this geologic unit, so the deeper sediments may be older than 5,000 years, making them old enough to preserve fossils.

Throughout California, sediments from the late Pleistocene are well known for preserving iconic Ice Age fossils such as mammoths, horses, dire wolves, and ground sloths (Graham and Lundelius 1994; Jefferson 1991a, 1991b; Scott 2010; Scott and Cox 2008). However, neither the Los Angeles County Museum of Natural History (McLeod 2018) nor the online collections database of the University of California Museum of Paleontology (UCMP 2018) has records of fossils from alluvial sediments in the vicinity of the project site.

Sandstone and Shale, Great Valley Sequence

These sediments, mapped as KJgvl in **Figure 3.5-1**, date to the early Cretaceous or late Jurassic (roughly 130–150 million years ago) and consist of sandstone and shale deposited in the forearc basin that occupied what is now the Great Valley and vicinity during the Mesozoic (Case 1968). Sandstone of the Great Valley Group is usually massive to moderately bedded with thin interbeds of shale. The sedimentary bedding attitudes in the project vicinity show a large syncline structure trending northwest, roughly corresponding to the Elder Valley.

Marine invertebrate fossils have been found in Great Valley rocks (Bartow and Nilson 1990). Among these discoveries are seven fossil localities known by the University of California Museum of Paleontology from the Napa Valley, four of them near Lake Berryessa, just northeast of the project site (UCMP 2018). Although the Los Angeles County Museum of Natural History does not have records of any fossil localities from the Great Valley Sequence near the project site, the museum does note that invertebrate fossils are known and vertebrate fossils may also be preserved (McLeod 2018).

Knoxville Formation, Great Valley Sequence

The Knoxville Formation, mapped as Jk in **Figure 3.5-1**, makes up the deepest unit in the Great Valley Complex and dates to the late Jurassic (roughly 150 million years ago) (Bartow and Nilson 1990).

The Knoxville Formation consists primarily of marine shale and siltstones deposited in the forearc basin that occupied what is now the Great Valley and vicinity during the Mesozoic (Case 1968). The Knoxville Formation is known to preserve fossils of marine invertebrates,

primarily bivalves, gastropods, and cephalopods such as ammonites and belemnites (Case 1968; Bartow and Nilson 1990). The University of California Museum of Paleontology has records of 21 fossil localities in the Knoxville Formation, two of which are in Napa County near Lake Berryessa, northeast of the project site (UCMP 2018). Although the Los Angeles County Museum of Natural History does not have records of any Knoxville Formation localities near the project site, the museum does note that invertebrate fossils are known from the Knoxville Formation and that vertebrate fossils may also be preserved (McLeod 2018).

The proposed vineyard blocks lie on the valley floor and flanks of the northwest-trending Elder Valley. Elevations in the development area vary from approximately 940 feet above mean sea level on the western flank of the Elder Valley floodplain to approximately 1,680 feet above mean sea level at the northwestern extent of the development area.

The site is characterized by moderate to steep valley flanks and a gently sloping valley floor. The terrain in the development area varies from knife-edge ridgelines with gently undulating upland surfaces to moderately steep east- and west-facing flanks of the upper valley slopes.

A project-specific engineering geologic investigation was prepared for the proposed project by Gilpin Geosciences, Inc., and is presented in **Appendix H**.

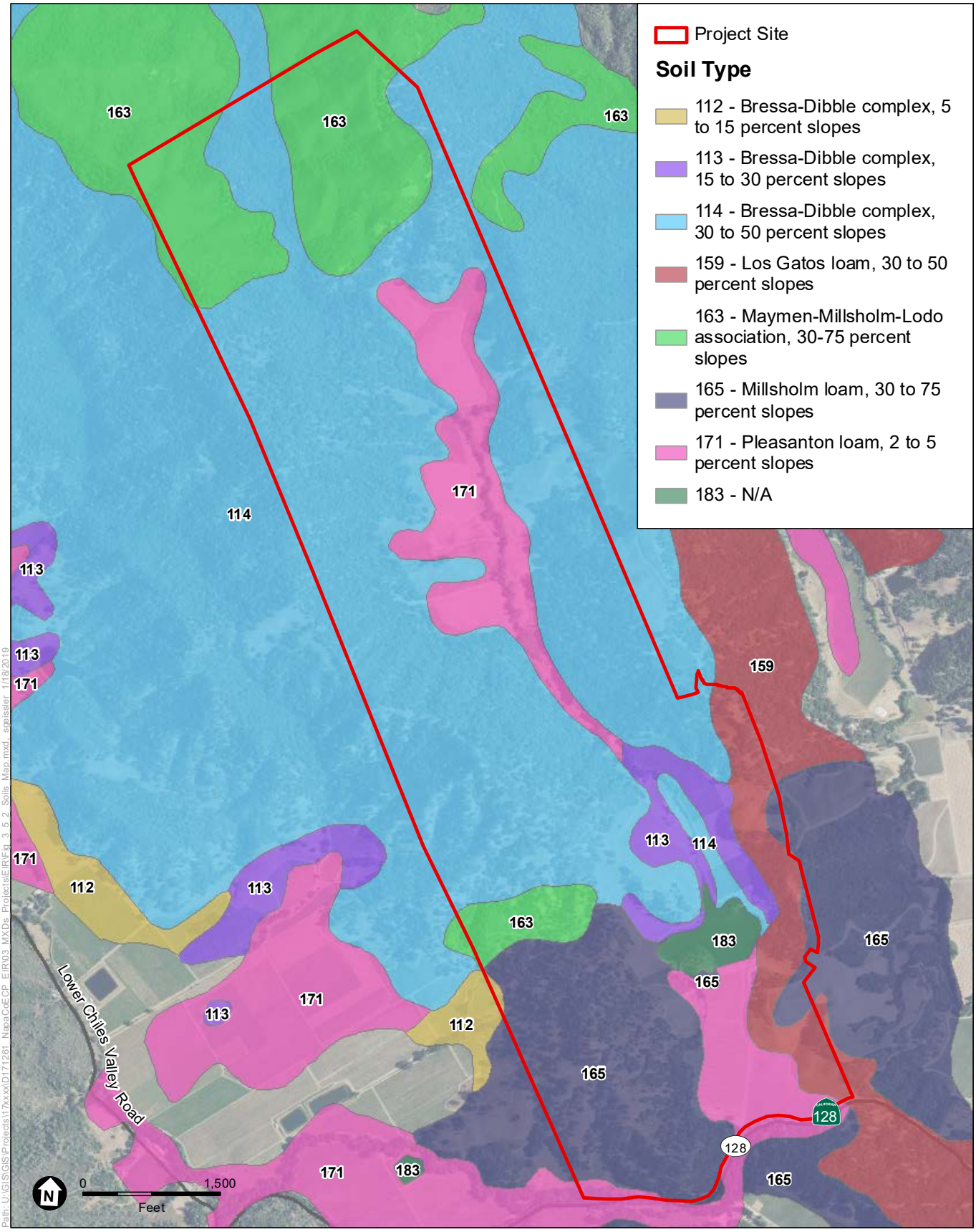
SOILS

The types and characteristics of soils in the Napa Valley subregion are controlled in part by the locations of the soils in either valleys or hillsides. The surficial geologic deposits of the Napa Valley subregion consist of widespread, locally deep alluvium, and generally discontinuous deposits of colluvium[1] and landslide deposits on the flanking ridge systems.

The valley alluvium consists primarily of alluvial fan, stream channel, floodplain, and terrace deposits. Soils in the Napa Valley are generally very deep, have high potential productivity, and are often used for vineyards, orchards, and pastures. The colluvial and landslide deposits are typically more heterogeneous in composition and consist of various combinations of mostly organic-material soil and rock fragments.

Figure 3.5-2 shows soils on the project site and in the vicinity and **Table 3.5-1** summarizes their characteristics pertaining to erosion and hydrologic factors.

1 Colluvium is an alluvial deposit that is formed in place, as opposed to being transported from elsewhere.



SOURCE: NAIP, 2016; ESRI, 2012; Napa County, 2018; SSURGO, 2018; ESA, 2019.

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Figure 3.5-2
Soils Map

TABLE 3.5-1
SOILS ON THE PROJECT SITE

Soil	Slope (%)	Landform	Drainage	Surface Runoff	Erosion	Shrink-Swell
112—Bressa-Dibble complex	5–15	Alluvial fans	Somewhat poorly drained	High	Severe	Moderate
113—Bressa-Dibble complex	15–30	Alluvial fans	Somewhat poorly drained	High	Severe	Moderate
114—Bressa-Dibble complex	30–50	Alluvial fans	Somewhat poorly drained	High	Severe	Moderate
159—Los Gatos loam	30–50	Mountains, ridges	Somewhat poorly drained	High	Moderate	Moderate
163—Maymen-Millsholm-Lodo association	30–75	Mountains	Poorly drained	High	Moderate	Low to Moderate
165—Millsholm loam	30–75	Mountains	Poorly drained	High	Moderate	Low
171—Pleasanton loam	2–5	Alluvial fans	Well-drained	Slow to Medium	Low to Moderate	Low to Moderate
183—Water	N/A	N/A	N/A	N/A	N/A	N/A

NOTE: N/A = not applicable

SOURCE: NRCS 2018

SOIL EROSION AND SEDIMENT YIELD

Soil Erosion

Erosion is the mechanical breakdown of rock material and removal of the resulting materials, such as soil and rock particles, by water or wind. The potential for a particular area to erode depends on factors such as the area's geology, slope, vegetation cover, hydrology, precipitation, and intensity of storm events.

Shallow soil creep is the slow downward movement of soil and loose rock that accumulate as colluviums on slopes. The potential for erosion is greater on steep hillsides, and shallow channels, rutting, and deep incision of gully systems can occur. Along many natural drainage courses, both on hillsides and in valleys, stream and river flow can cause bank erosion. In areas of overland flow, soil can be dislodged and transported to receiving waters, depending on the slope angle. Large-scale erosion occurs from mass wasting (slope movement), including shallow and deep-seated landsliding, particularly during periods of elevated groundwater levels and high-intensity storm events.

Sediment Yield

According to the *Napa County Baseline Data Report*, more than half of the sediment delivered to stream channels in the Napa River basin comes from vineyards, grazing, and roads (Napa County 2005). Notable amounts of water flowing over the surface of hill-slopes and shallow channels may also occur during large storms as hydrologic effects of wildfires or vegetation removal. Large rainstorms that sweep across the Napa River watershed periodically induce both

shallow and deep-seated landsliding (Dietrich 2002). Landsliding is discussed further in the ***Geologic Stability*** section below.

GEOLOGIC STABILITY

Landslides

The density of known landslide occurrences in the ridge systems of the Napa Valley subregion ranges from mostly low to moderate to locally high. Most commonly, the landslide occurrences are combined slump-earthflows; less commonly, they are very rapid failures such as debris flows, mudflows, rock falls, or toppling (Napa County 2005). **Figures 3.5-3a** and **3.5-3b** depict on-site geologic conditions, including the locations of landslide features.

Seismicity

Seismic Potential

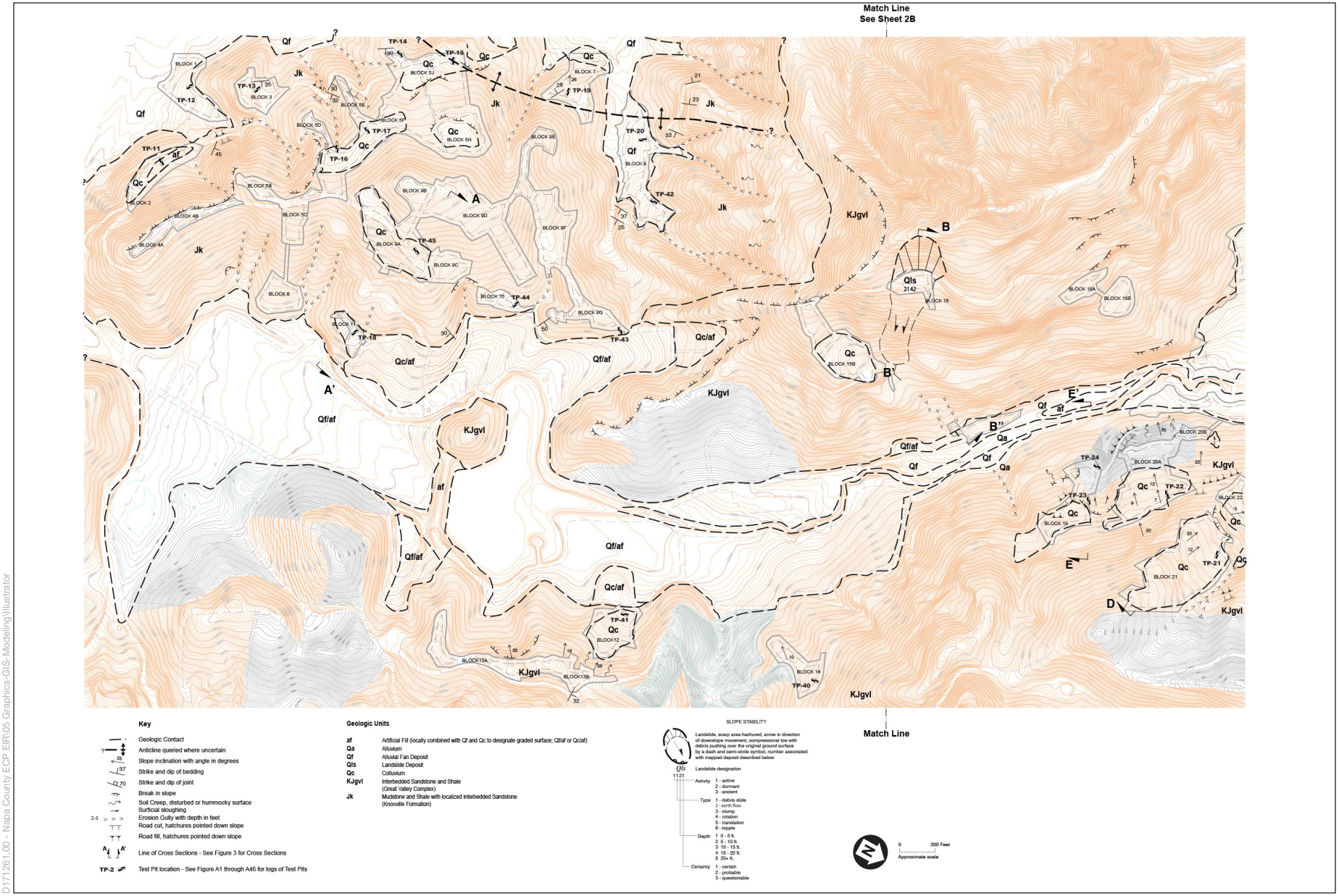
Numerous faults exist in the region; most of the region's active faults are components of the San Andreas Fault zone, a broad north-northwest trending system that extends along coastal California. An *active* fault is a fault that shows displacement within the last 11,000 years (the Holocene epoch; the U.S. Geological Survey [USGS] uses 15,000 years), and therefore, is considered more likely to generate a future earthquake than a fault that has not shown signs of recent activity. A *potentially active* fault is one that has shown activity in the last 1.6 million years (the Quaternary Period).

A fault that the California Geological Survey (CGS) determines to be sufficiently active and well-defined is zoned as an earthquake fault zone according to the mandates of the Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Alquist-Priolo Act). These earthquake fault zone areas are located along active faults that are susceptible to the hazard of surface fault rupture. The project site is not within an earthquake fault zone as delineated by the CGS (DOC 2018).

Earthquake Magnitude

When an earthquake occurs along a fault, its size can be determined by measuring the energy released during the event. A network of seismographs records the amplitude and frequency of the seismic waves generated by an earthquake. The Richter magnitude of an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole-number step, representing a tenfold increase in the amplitude of the recorded seismic waves and 32 times the amount of energy released.

Richter magnitude was historically the primary measure of earthquake magnitude, but seismologists now use Moment Magnitude (Mw) as the preferred way to express the size of an earthquake. The Mw scale is related to the physical characteristics of a fault, which include the rigidity of the rock, the size of fault rupture, and the style of movement or displacement across the fault. Although the two scales have different formulae, they contain a similar continuum of magnitude values, except that Mw can reliably measure larger earthquakes and do so from greater distances.



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SOURCE: Gilpin Geosciences, Inc., 2018

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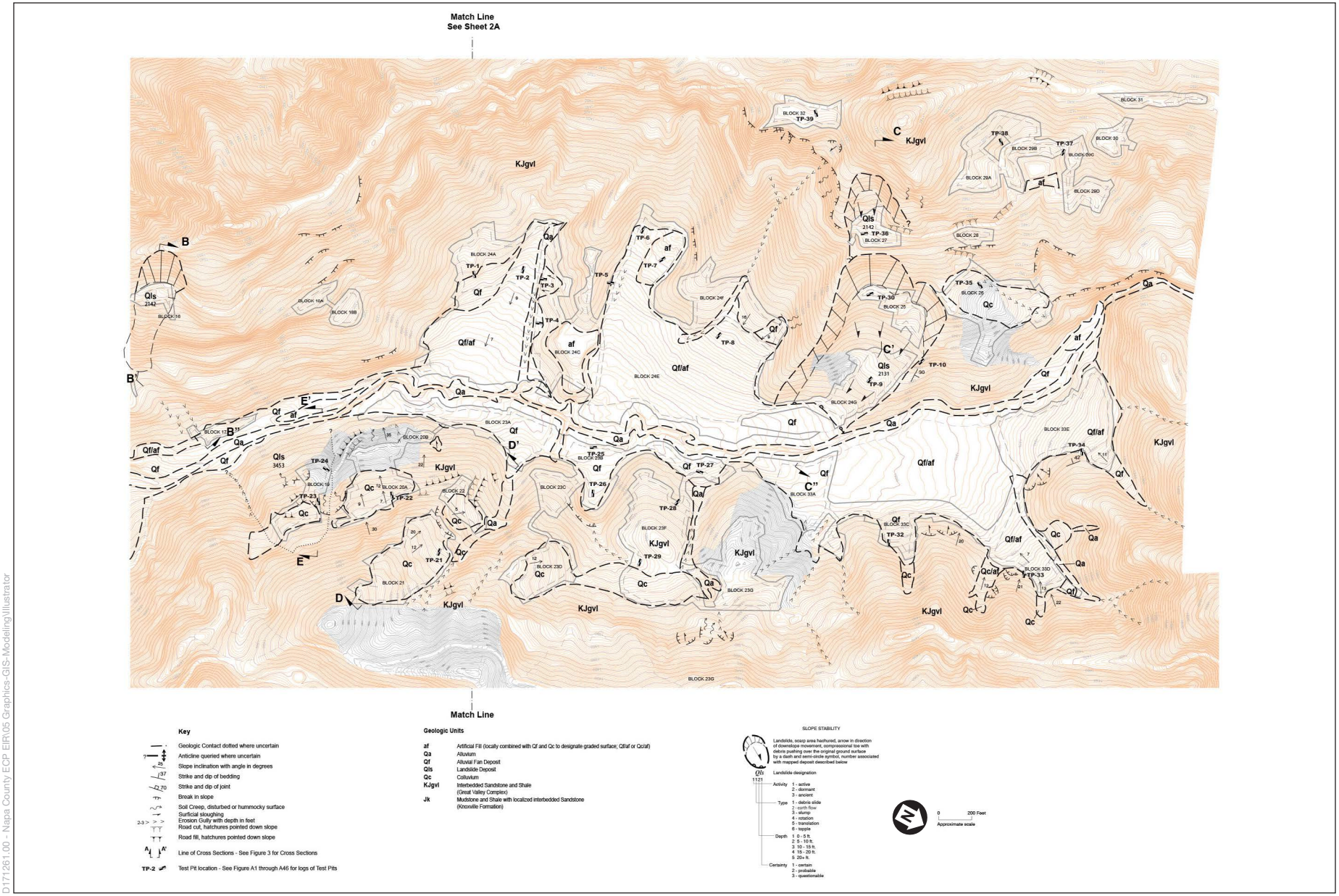
Figure 3.5-3a
Site Plan and Geology Map

ESA



Key

- Geological Contact dotted where uncertain
- Anticline queried where uncertain
- 25 — Slope inclination with angle in degrees
- 37 — Strike and dip of bedding
- 70 — Strike and dip of joint
- Break in slope
- Soil Creep, disturbed or hummocky surface
- Surficial sloughing
- 2-3 — Erosion Gully with depth in feet
- Road cut, hatchures pointed down slope
- Road fill, hatchures pointed down slope
- A — A' — Line of Cross Sections - See Figure 3 for Cross Sections
- TP-2 — Test Pit location - See Figure A1 through A46 for logs of Test Pits

Geologic Units

af	Artificial Fill (locally combined with Qf and Qc to designate graded surface; Qf/af or Qc/af)
Qa	Alluvium
Qf	Alluvial Fan Deposit
Qls	Landslide Deposit
Qc	Colluvium
KJgvl	Interbedded Sandstone and Shale (Great Valley Complex)
Jk	Mudstone and Shale with localized interbedded Sandstone (Knoxville Formation)

SLOPE STABILITY

Landslide, scarp area hachured, arrow in direction of downslope movement, compressional toe with debris pushing over the original ground surface by a dash and semi-circle symbol, number associated with mapped deposit described below

Qls 1121 — Landslide designation

- Activity: 1 - active; 2 - dormant; 3 - ancient
- Type: 1 - debris slide; 2 - earth flow; 3 - slump; 4 - rotation; 5 - translation; 6 - topple
- Depth: 1 0 - 5 ft.; 2 5 - 10 ft.; 3 10 - 15 ft.; 4 15 - 20 ft.; 5 20+ ft.
- Certainty: 1 - certain; 2 - probable; 3 - questionable

0 200 Feet
Approximate scale

D171261.00 - Napa County ECP EIR\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Gilpin Geosciences, Inc., 2018

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Figure 3.5-3b
Site Plan and Geology Map

ESA

Peak Ground Acceleration

A common measure of ground motion at any particular site during an earthquake is the *peak ground acceleration*. The peak ground acceleration for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. Peak ground acceleration is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. In terms of automobile acceleration, 1 "g" of acceleration is equivalent to the motion of a car traveling 328 feet from rest in 4.5 seconds. For comparison purposes, the maximum peak ground acceleration value recorded during the 1994 Northridge earthquake near the epicenter exceeded 1 g in several areas.

Unlike measures of magnitude, which provide a single measure of earthquake energy, peak ground acceleration varies from place to place and is dependent on the distance from the epicenter and the character of the underlying geology (e.g., hard bedrock, soft sediments, or artificial fills).

Modified Mercalli Intensity Scale

The Modified Mercalli Intensity Scale assigns an intensity value based on the observed effects of groundshaking produced by an earthquake. Unlike measures of earthquake magnitude and peak ground acceleration, the Modified Mercalli Intensity Scale is qualitative: It is based on actual observed effects rather than measured values. Similar to peak ground acceleration, Modified Mercalli values for an earthquake at any one place can vary depending on the earthquake's magnitude, the distance from its epicenter, the focus of its energy, and the type of geologic material. Modified Mercalli values for intensity range from I (earthquake not felt) to XII (damage nearly total), and intensities ranging from IV to X can cause moderate to significant structural damage.

Because the Modified Mercalli scale is a measure of groundshaking effects, intensity values can be correlated to a range of average peak ground acceleration values (**Table 3.5-2**).

Seismic Hazards

Seismic hazards are caused by surface fault rupture and seismic shaking from a seismic event. Surface fault rupture occurs when a fault breaks through to the ground surface during a seismic event. The CGS determined that in Napa County, three faults are active and capable of surface fault rupture: the West Napa Fault, the Green Valley Fault, and the Hunting Creek Fault (Napa County 2005). As noted above, the project site is not within an earthquake fault zone as delineated by the CGS, and no known active faults have been mapped crossing the project site; therefore, the hazard of surface rupture is low.

TABLE 3.5-2
MODIFIED MERCALLI INTENSITY SCALE

Intensity Value	Intensity Description	Average Peak Ground Acceleration[a]
I	Not felt.	< 0.0017 g
II	Felt by people sitting or on upper floors of buildings.	0.0017 to 0.014 g
III	Felt by almost all indoors. Hanging objects swing. Vibration like passing of light trucks. May not be recognized as an earthquake.	0.0017 to 0.014 g
IV	Vibration felt like passing of heavy trucks. Stopped cars rock. Hanging objects swing. Windows, dishes, doors rattle. Glasses clink. In the upper range of IV, wooden walls and frames creak.	0.014 to 0.039 g
V (Light)	Felt outdoors. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing. Pictures move. Pendulum clocks stop.	0.035 to 0.092 g
VI (Moderate)	Felt by all. People walk unsteadily. Many frightened. Windows crack. Dishes, glassware, knickknacks, and books fall off shelves. Pictures off walls. Furniture moved or overturned. Weak plaster, adobe buildings, and some poorly built masonry buildings cracked. Trees and bushes shake visibly.	0.092 to 0.18 g
VII (Strong)	Difficult to stand or walk. Noticed by drivers of cars. Furniture broken. Damage to poorly built masonry buildings. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices, unbraced parapets and porches. Some cracks in better masonry buildings. Waves on ponds.	0.18 to 0.34 g
VIII (Very Strong)	Steering of cars affected. Extensive damage to unreinforced masonry buildings, including partial collapse. Fall of some masonry walls. Twisting, falling of chimneys and monuments. Wood-frame houses moved on foundations if not bolted; loose partition walls thrown out. Tree branches broken.	0.34 to 0.65 g
IX (Violent)	General panic. Damage to masonry buildings ranges from collapse to serious damage unless modern design. Wood-frame structures rack, and, if not bolted, shifted off foundations. Underground pipes broken.	0.65 to 1.24 g
X (Very Violent)	Poorly built structures destroyed with their foundations. Even some well-built wooden structures and bridges heavily damaged and needing replacement. Water thrown on banks of canals, rivers, lakes, etc.	> 1.24 g
XI (Very Violent)	Few, if any, masonry structures remain standing. Bridges destroyed. Rails bent greatly. Underground pipelines completely out of service.	> 1.24 g
XII (Very Violent)	Damage nearly total. Practically all works of construction are damaged greatly or destroyed. Large rock masses displaced. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown into the air.	> 1.24 g

NOTE:

[a] Value is expressed as a fraction of the acceleration due to gravity (g). Gravity (g) is 9.8 meters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

SOURCES: ABAG 2019; CGS 2002

Seismic shaking can damage structures. This risk is high because any of the active faults in the region can cause shaking damage. As discussed above, the severity of the shaking damage at a particular location depends on the magnitude of the earthquake, the distance to its epicenter, and the nature and thickness of the deposits at the location. Areas subject to the greatest ground shaking damage are anticipated to be within Napa County's various valleys, because they consist of deep, unconsolidated alluvial deposits underlain by saturated estuarine deposits, which are subject to higher amplitude and lengthier shaking motions (Napa County 2005). Seismically induced landslides pose similar potential hazards on Napa County hillsides.

Numerous faults have been mapped in Napa County, but the CGS has designated only a very small number of these faults as active (**Figure 3.5-4**). Active faults mapped in the project vicinity could cause very strong to severe shaking at the project site. The closest active fault is the Hunting Creek–Berryessa Fault, approximately 2 miles east of the project site, which is classified as a Type B fault by the Uniform Building Code (Gilpin Geosciences 2018) and is capable of generating a Mw 6.9 earthquake. The next closest faults are the West Napa, Concord/Green Valley, and Great Valley faults, respectively located approximately 8.5, 10.5, and 14.5 miles from the project site. These faults can generate earthquakes of Mw 6.5 to 6.7 and cause severe ground motion at the project site (Gilpin Geosciences 2018).

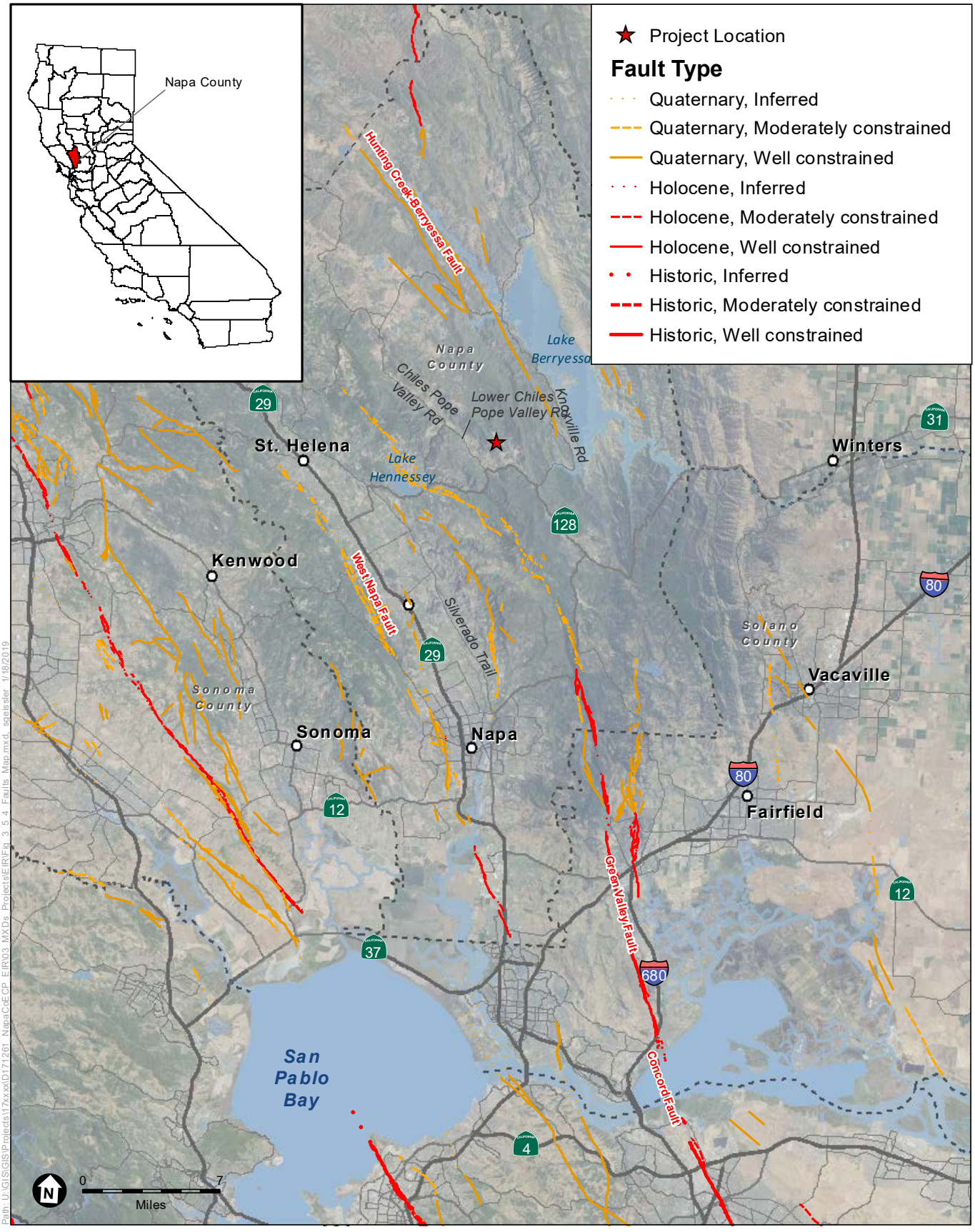
The Napa earthquake (Mw 5.2) in 2000 was centered between Napa and Yountville, approximately 12 miles from the project site. The Mw 6.0 South Napa earthquake occurred on August 24, 2014, approximately 20 miles south of the project site. That earthquake resulted in as much as 8 miles of surface rupture in the West Napa Fault Zone (Gilpin Geosciences 2018).

To estimate the probability of future earthquake events in the region, USGS considered the potential sources of an event on the region's fault systems. USGS has estimated that, based on a combination of the fault systems' earthquake probability and the background earthquakes in the region, the San Francisco Bay region has a 72 percent chance of a Mw 6.7 or greater earthquake within the 30-year period that began in 2014 (WGCEP 2015a). During that same time period, the Hunting Creek–Berryessa Fault has an approximately 7 percent chance of a Mw 6.7 or greater earthquake (WGCEP 2015b).

Ground failures are secondary effects of ground shaking that can extend many miles from an earthquake fault rupture. Ground failures include landsliding, differential settlement, lateral spreading, and liquefaction. Ground shaking in hilly or mountainous terrains can trigger landsliding, activating dormant landslides, causing new landslides, and accelerating or aggravating movement on active slides.

Cyclic densification is a phenomenon in which non-saturated, cohesionless soil is compacted by earthquake vibrations, causing ground-surface settlement. *Lateral spreading* is a phenomenon in which surface soils are displaced along a shear zone that has formed within an underlying liquefied layer. Once mobilized, the surficial soil blocks are transported downslope or in the direction of a free face by earthquake and gravitational forces.

Liquefaction is a phenomenon in which loose, saturated, cohesionless soil experiences a temporary reduction in strength during cyclic loading like that produced by earthquakes. The potential for liquefaction depends on such factors as soil type, depth to groundwater, degree of seismic shaking, and relative soil density. The soil most susceptible to liquefaction is saturated, clean, loose, uniformly graded, fine-grained sand that is subject to high groundwater, most commonly associated with alluvial valleys.



SOURCE: NAIP, 2016; ESRI, 2012; Napa County, 2018; USGS, 2010; ESA, 2019.

KJS Sorrento Vineyard Conversion #P17-00432-ECPA

Figure 3.5-4
Faults Map

The Association of Bay Area Governments creates maps of Bay Area counties that show the susceptibility of mapped areas to liquefaction, based on the presence of water-saturated sand and silty materials that may be more prone to liquefaction than other soils. The potential for liquefaction-induced ground failures in Napa County is relatively low because only about 20 percent of the county is characterized as an alluvial valley. According to the Napa County General Plan Draft EIR, the southern portion of the project site is moderately susceptible to liquefaction; however, the proposed clearing limits in this area are mostly in areas of low liquefaction susceptibility. The rest of the project site has low potential for liquefaction (Napa County 2007).

3.5.2 REGULATORY SETTING

FEDERAL REGULATIONS

Earthquake Hazards Reduction Act of 1977

In 1977, Congress enacted the Earthquake Hazards Reductions Act (Title 44, Section 7701 et seq. of the U.S. Code) to minimize risks to lives and properties from future earthquakes and seismic activity nationally by creating an effective program for reduction of earthquake hazards. To achieve this goal, the National Earthquake Hazards Reduction Program was implemented. Congress adopted the National Earthquake Hazards Reduction Program Act in November 1990 to amend the National Earthquake Hazards Reduction Program to refine the description of agency responsibilities, program goals, and objectives, and reauthorized the act in 2004.

The mission of the National Earthquake Hazards Reduction Program is to improve understanding, characterization, and prediction of hazards vulnerabilities; improve building codes and land use practices; reduce risks through post-earthquake investigations and education; develop and improve design and construction techniques; increase mitigation capacity; and accelerate the application of research findings. The Federal Emergency Management Agency assigns numerous planning, coordination, and reporting tasks under this program. Other agencies with responsibilities under the National Earthquake Hazards Reduction Program Act include the National Institute of Standards and Technology, the National Science Foundation, and USGS.

STATE REGULATIONS

Alquist-Priolo Earthquake Fault Zoning Act

In 1972, the Alquist-Priolo Act was enacted (Public Resources Code [PRC] Sections 2621–2630) to mitigate the effects of surface faulting on structures designed for human occupancy. This law was intended mainly to prevent the construction of buildings for human occupancy directly on the surface trace of active faults. This law addresses only the hazard of surface fault rapture and does not consider other seismic hazards.

Under the Alquist-Priolo Act, the State Geologist is required to establish regulatory zones, known as *earthquake fault zones*, around the surface traces of active faults and issue maps

accordingly. The maps are provided to all affected cities, counties, and California agencies to assist with planning decisions. If a project is within a designated Alquist-Priolo Earthquake Fault Zone, the city or county must require the completion of a geologic investigation before it approves any development, proving that the proposed structures would not be constructed across active faults. The project site is not located in an area mapped within an Alquist-Priolo Earthquake Fault Zone (DOC 2019).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act was enacted in 1990 after the Loma Prieta earthquake to reduce threats to public health and safety and minimize property damage caused by earthquakes. This law requires the State Geologist to delineate various seismic hazard zones, and cities, counties, and other local permitting agencies to regulate certain development projects within these zones. For projects that would locate structures for human occupancy within designated Zones of Required Investigation, the Seismic Hazards Mapping Act requires project applicants to perform a site-specific geotechnical investigation to identify the potential site-specific seismic hazards and corrective measures, as appropriate, before receiving building permits.

The *CGS Guidelines for Evaluating and Mitigating Seismic Hazards* (Special Publication 117A) provide guidance for evaluating and mitigating seismic hazards (CGS 2008). The CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Act. To date, the CGS has not completed delineations for any of the USGS quadrangles in which project components are proposed.

California Environmental Quality Act

CEQA (PRC Section 21000 et seq.) is the principal law governing environmental review of projects occurring in California. CEQA requires lead agencies to determine whether a proposed project would have significant effects on the environment, including significant effects on historical or unique archaeological or paleontological resources. The CEQA threshold of significance for a significant impact on paleontological resources is reached when a project is determined to "directly or indirectly destroy a significant paleontological resource or unique geologic feature." In general, for project sites underlain by paleontologically sensitive geologic units, the greater the amount of ground disturbance, the higher the potential for significant impacts on paleontological resources. For project sites directly underlain by geologic units with no paleontological sensitivity, there is no potential for impacts on paleontological resources unless sensitive geologic units that underlie the non-sensitive unit are also affected.

Public Resources Code Section 30244

PRC Section 30244 requires that reasonable mitigation measures be implemented when development would adversely affect paleontological resources.

LOCAL REGULATIONS

Napa County General Plan

The Napa County General Plan (Napa County 2009) serves as a broad framework for planning within Napa County. The Conservation and Safety Elements of the General Plan contain the following goals and policies related to open space conservation, natural resources, water resources, and safety that provide guidance for issues related to geology and soils.

- **Policy CON-6:** The County shall impose conditions on discretionary projects which limit development in environmentally sensitive areas such as those adjacent to rivers or streamside areas and physically hazardous areas such as floodplains, steep slopes, high fire risk areas and geologically hazardous areas.

- **Policy CON-48:** Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

- **Policy CON-49:** The County shall develop and implement a water quality monitoring program (or programs) to track the effectiveness of temporary and permanent BMPs [best management practices] to control soil erosion and sedimentation within watershed areas and employ corrective actions for identified water quality issues (in violation of Basin Plans and/or associated Total Maximum Daily Loads [TMDLs]) identified during monitoring.

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

    g) Address potential soil erosion by maintaining sections of the County Code that require all construction-related activities to have protective measures in place or installed by the grading deadlines established in the Conservation Regulations. In addition, the County shall ensure enforceable fines are levied upon code violators and shall require violators to perform all necessary remediation activities.

Goal SAF-1: Safety considerations will be part of the County's education, outreach, planning, and operations in order to reduce loss of life, injuries, damage to property, and economic and social dislocation resulting from fire, flood, geologic, and other hazards.

Goal SAF-2: To the extent reasonable, protect residents and businesses in the unincorporated area from hazards created by earthquakes, landslides, and other geologic hazards.

- **Policy SAF-8:** Consistent with County ordinances, require a geotechnical study for new projects and modifications of existing projects or structures located in or near known geologic hazard areas, and restrict new development atop or astride identified active seismic faults in order to prevent catastrophic damage caused by movement along the fault. Geologic studies shall identify site design (such as setbacks from active faults and avoidance of onsite soil-geologic conditions that could become unstable or fail during a seismic event) and structural measures to prevent injury, death and catastrophic damage to structures and infrastructure improvements (such as pipelines, roadways and water surface impoundments not subject to regulation by the Division of Safety of Dams of the California Department of Water Resources) from seismic events or failure from other natural circumstances.

- **Policy SAF-9:** As part of the review and approval of development and public works projects, planting of vegetation on unstable slopes shall be incorporated into project designs when this technique will protect structures at lower elevations and minimize the potential for erosion or landslides. Native plants should be considered for this purpose, since they can reduce the need for supplemental watering which can promote earth movement.

- **Policy SAF-10:** No extensive grading shall be permitted on slopes over 15 percent where landslides or other geologic hazards are present unless the hazard(s) are eliminated or reduced to a safe level.

Napa County Code

Chapter 18.108 of the Napa County Code (Conservation Regulations) includes requirements to use standard erosion control measures and establish erosion hazard areas. Chapter 18.108 includes the following provisions:

- *Section 18.108.010* provides the purpose and intent of the Conservation Regulations, which include preserving natural resources, protecting lands from excessive soil loss, protecting water quality and quantity, providing greater environmental protection for natural environmental resources, and in part, accomplishing the following:
  - Minimize cut, fill, earthmoving, grading operations, and other such man-made effects in the natural terrain.
  - Minimize soil erosion caused by human modifications to the natural terrain.
  - Encourage development that minimizes impacts on existing landforms, avoids steep slopes, and preserves existing vegetation and unique geologic features.
- *Section 18.108.070(D)* requires that erosion potential be minimized by conducting site development in a manner, based on the topography and soil type, that creates no net increase in erosion.
- *Section 18.108.120* specifies that no person shall cause or allow the continued existence of a condition on any site that is causing substantial erosion or runoff due to human-induced alteration of the vegetation, land surface, topography, or runoff pattern.

3.5.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to geology, soils, seismicity, and paleontological resources is considered significant if the proposed project would do any of the following:

- Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - 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.
  - Strong seismic ground shaking.
  - Seismic-related ground failure, including liquefaction.
  - Landslides.
- Result in substantial soil erosion or the loss of topsoil.
- 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.
- Be located on expansive soil creating substantial risks to life or property.[2]
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

ISSUES NOT DISCUSSED IN IMPACTS

The potential for project impacts related to a risk of loss, injury, or death involving fault rupture and seismic-related ground failure, potential to be located on expansive soils, and soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems were analyzed, and these impacts were determined to be less than significant. The project site is not located immediately adjacent to any historically active fault, or within an earthquake fault zone as designated by the Alquist-Priolo Earthquake Fault Zoning Act (CGS 2018). The proposed project would not include any structures, and therefore, would not subject new structures or people within them to fault rupture. The project site is in an area characterized as having very low to moderate susceptibility to liquefaction (Napa County 2009) and is not known to contain expansive soils. Because the project site is in agricultural use and

[2] The California Building Code (CBC) no longer includes a Table 18-1-B. Instead, Section 1803.5.3 of the CBC describes the criteria for analyzing expansive soils. Expansive soils can also be analyzed using ASTM Method 4829.

the proposed project would not include any structures or housing, the potential for adverse effects on people or structures would be less than significant. The proposed project also would not include the construction of any septic tanks or wastewater disposal systems. Therefore, these issues are not evaluated further in this EIR section. A complete discussion can be found in the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

The evaluation of potential geologic, soil, and seismic-related impacts of the proposed project was based on a review of documents relevant to conditions in the project area:

- The Napa County General Plan
- CGS geologic maps
- Published geologic literature
- The Erosion Control Plan (**Appendix A**)
- The project-specific engineering geologic investigation prepared for the proposed project by Gilpin Geosciences, Inc. (2018) (**Appendix H**)
- The Soil Loss Analysis prepared for the proposed project by PPI Engineering (**Appendix K**)

To evaluate potential impacts on paleontological resources, Environmental Science Associates conducted a formal search for paleontological localities through the Los Angeles County Museum of Natural History; accessed the online collections database of the University of California Museum of Paleontology; and reviewed geologic maps and relevant scientific literature. These data sources were used to assess the paleontological sensitivity of the geologic units present on the project site.

The paleontological resources analysis followed Society of Vertebrate Paleontology standards. The SVP has established guidelines for identifying, assessing, and mitigating adverse impacts on nonrenewable paleontological resources (SVP 1995, 2010). Most practicing paleontologists in the United States adhere closely to these guidelines, which were approved by a consensus of professional paleontologists. Many federal, state, county, and city agencies have formally or informally adopted the SVP's standard guidelines for the mitigation of adverse construction-related impacts on paleontological resources. The SVP has helped define the value of paleontological resources. In particular, the SVP indicates that geologic units of high paleontological potential are those from which vertebrate or significant invertebrate or plant fossils have been recovered in the past (i.e., are represented in institutional collections).

The term *paleontological sensitivity* refers to the potential for a geologic unit to produce scientifically significant fossils. A geologic unit's paleontological sensitivity is determined by rock type, the history of the geologic unit in producing significant fossils, and the fossil localities recorded from that unit. Paleontological sensitivity is derived from the known fossil data collected from the entire geologic unit, not just from a specific survey. In its "Standard

Guidelines for the Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources," the SVP (2010:1–2) defines four categories of paleontological sensitivity (potential) for rock units:

- **High Potential**. Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered have high potential for containing additional significant paleontological resources. The following are some of the rock units classified as having high potential to produce paleontological resources:

  - Sedimentary formations and some volcaniclastic formations (those containing volcanic debris), such as ashes or tephras.
  - Some low-grade metamorphic rocks that contain significant paleontological resources anywhere within their geographical extent.
  - Sedimentary rock units that are temporally or lithologically suitable for the preservation of fossils. Examples include middle Holocene and older, fine-grained fluvial sandstones, argillaceous (clay-containing) and carbonate-rich paleosols, cross-bedded point bar sandstones, and fine-grained marine sandstones.

- **Low Potential**. Paleontological resources reports or field surveys by qualified professional paleontologists may allow the determination that some rock units have low potential for yielding significant fossils. Such rock units are poorly represented by fossil specimens in institutional collections; or, based on general scientific consensus, they preserve fossils only under rare circumstances and the presence of fossils is the exception rather than the rule (e.g., basalt flows or Recent colluvium). Impacts on rock units in the "low potential" category typically do not require mitigation measures for protection of fossils.

- **Undetermined Potential**. Rock units for which little information is available regarding paleontological content, geologic age, and depositional environment have undetermined potential for containing significant paleontological resources. Further study is necessary. A qualified professional paleontologist must complete a field survey of these rock units before a program can be developed to mitigate impacts on paleontological resources. When no subsurface data are available, a rock unit's paleontological potential can sometimes be determined by excavating in strategic locations.

- **No Potential**. Some rock units have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks (such as gneisses and schists) and plutonic igneous rocks (such as granites and diorites). Rock units with no potential require neither protection nor paleontological mitigation measures.

The SVP recommends that geologic units with high potential undergo full-time monitoring during project-related ground disturbance. Protection or salvage efforts are not generally required for geologic units with low potential. As discussed above, a qualified vertebrate paleontologist

should conduct a field survey of geologic units with undetermined potential to determine their potential to contain significant paleontological resources.

IMPACTS AND MITIGATION MEASURES

Table 3.5-3 summarizes the impact conclusions presented in this section.

TABLE 3.5-3
SUMMARY OF IMPACT CONCLUSIONS—GEOLOGY AND SOILS

Impact Statement	Impact Conclusion
3.5-1: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	Less than Significant
3.5-2: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.	Less than Significant with Mitigation
3.5-3: Construction and operation of the proposed project could result in substantial soil erosion or the loss of topsoil.	Less than Significant
3.5-4: Construction and operation of the proposed project could occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.	Less than Significant with Mitigation
3.5-5: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	Less than Significant with Mitigation

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.5-1: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.

The project site could experience seismic groundshaking from an earthquake on one of the region's active faults. As discussed previously, USGS has estimated that the San Francisco Bay region has a 72 percent chance of a Mw 6.7 or greater earthquake within the 30-year period that began in 2014; the Hunting Creek–Berryessa Fault has an approximately 7 percent chance of an earthquake of that magnitude during that time period (WGCEP 2015a, 2015b). The proposed project would involve converting natural hillslope and alluvial valley areas into vineyard, constructing a proposed offstream reservoir and associated diversion facilities, and resurfacing roads as needed. Modifications that would alter the geologic setting of the development area would consist of relatively minor changes caused by earthmoving activities. The proposed project would not construct new residences or other facilities (enclosed areas where people could congregate) that would be subject to seismic forces. The project also would not result in a substantial increase in the number of people on the site.

Impact Conclusion

The proposed project would not include construction of buildings or other load-bearing structures, would not result in a substantial increase in the number of people on the project site, and would not cause an increase in enclosed areas where people could congregate. Therefore,

potential risks related to exposure of people or structures to impacts from a seismic event would remain low. This impact would be **less than significant**.

> **Mitigation Measure:** None required.

Impact 3.5-2: Construction and operation of the proposed project could expose potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.

Most of the development area lies on or slightly above the valley floor and is characterized by alluvial fan landforms. The area of the proposed vineyard falls into the category with the lowest potential slope instability. However, vineyard blocks proposed for the hillsides in the development area would be located in some areas prone to slope failure.

The engineering geologic investigation for the proposed project mapped several larger eroded, arcuate (bow-shaped) landslide scarp features in the areas of proposed vineyard Blocks 16, 24G, 25, and 27. These features form a prominent amphitheater-shaped hillside upslope from landslide deposits of unknown depth (Gilpin Geosciences 2018). Test pits showed disturbed bedrock interlayered with clayey gravels and organic debris to the full depth explored. The review of historic aerial photography and Light Detection and Ranging (LiDAR) mapping showed a subdued topographic expression and lack of evidence of slope movement, indicating that these are dormant, deep-seated deposits that do not pose a threat to slope stability in the development area. However, the engineering geologic investigation also states that no grading should be attempted on the landslide deposits (Gilpin Geosciences 2018; **Appendix H**).

Impact Conclusion

The proposed project would not involve developing load-bearing structures or occupied structures that could be exposed to risks from landslides. Because controls would be implemented to limit concentrated surface runoff in areas susceptible to erosion (see **Impact 3.5-3**), the proposed project is not anticipated to adversely affect slope stability. Proposed improvements to surface drainage would also reduce any potential project impacts compared to existing conditions (Gilpin Geosciences 2018; **Appendix H**).

However, the impact of conducting earthmoving activities on the mapped landslide deposits would be **significant**.

> **Mitigation Measure 3.5-2:** Erosion Control Plan #P17-00432-ECPA shall be revised before approval to avoid the mapped landslide deposits in proposed vineyard Blocks 16, 24G, 25, and 27, and provide them with a 50-foot buffer.
>
> **Impact Significance after Mitigation**: Implementing **Mitigation Measure 3.5-2** would reduce impacts related to landslides to a **less-than-significant** level because areas with mapped landslides would be avoided. The areas with mapped landslides in proposed vineyard Blocks 16, 24G, 25, and 27 are shown as avoided with 50-foot buffers in

Figures 3.3-5 and 3.3-6 in **Section 3.3, *Biological Resources***, and the removed acreage is included in the quantification of biological communities that would not be affected by the mitigated proposed project.

Additionally, the following conditions would be implemented before project approval to ensure that erosion control measures would be installed according to recommendations from Gilpin Geosciences' Engineering Geologic Investigation (2018).

Erosion and Runoff Control (i.e., Hydromodification) Installation and Operation—Conditions of Approval:

The owner/permittee shall revise Erosion Control Plan #P17-00432-ECPA before approval to include the following recommendations from Gilpin Geosciences' Engineering Geologic Investigation as well as the County's standard hydromodification conditions (also identified below):

- Vineyard blocks proposed for the hillsides of the project site shall avoid introducing concentrated surface runoff at drainages presently showing excessive erosion.
- The vineyard blocks proposed for sidehill bench and ridgeline/knoll top areas shall control runoff with consideration for the abrupt change in the slope incline downslope of these features.
- Surface runoff shall not be concentrated and shall be directed to an outlet outside of the mapped landslide, where it shall flow onto erosion-resistant surfaces.
- No grading shall be attempted on the landslide deposits.
- Ripping of the vineyard blocks within the landslide deposits shall be limited to a depth of 24 inches.
- Permanent Erosion and Runoff Control Measures: Pursuant to Napa County Code Section 18.108.070(L), installation of runoff and sediment attenuation devices and hydromodification facilities, including but not limited to straw wattles and permanent no-till cover, shall be installed no later than September 15 during the same year that initial vineyard development occurs. This requirement shall be clearly stated on the final Erosion Control Plan. Additionally, pursuant to Napa County Code Section 18.108.135, "Oversight and Operation," the qualified professional who has prepared the erosion control plan (#P17-00432-ECPA) shall oversee its implementation throughout the duration of the project, and confirm that the erosion control measures, sediment retention devices, and hydromodification facilities specified for the vineyard have been installed and are functioning correctly. Prior to the first winter rains after construction begins, and each year thereafter until the project has received a final inspection from the County or its agent and been found complete, the qualified professional shall inspect the site. The professional shall then certify in writing to the planning director, through an inspection report or formal letter of completion, that all erosion control measures, sediment retention devices, and hydromodification

facilities required at that stage of development have been installed in conformance with the plan and related specifications, and are functioning correctly.

- Cover Crop Management/Practice: The permanent vineyard cover crop shall not be tilled (i.e., shall be managed as a no-till cover crop) for the life of the vineyard and the owner/permittee shall maintain a plant residue density of between 75 and 90 percent within the vineyard and vineyard avenues, consistent with the Erosion Control Plan. The cover crop may be strip sprayed in designated vineyard blocks as outlined in the Erosion Control Plan, with a strip no wider than 0.8 to 1.5 feet (9.6 to 18 inches) wide at the base of vines (see the Erosion Control Plan for details), using post-emergent herbicides; no pre-emergent sprays shall be used. Should the permanent no-till cover crop need to be replanted/renewed during the life of the vineyard, cover crop renewal efforts shall follow the County's "Protocol for Replanting/Renewal of Approved Non-Tilled Vineyard Cover Crops" dated July 19, 2004, or as amended.
- Temporary and permanent erosion control measures and devices shall be free of plastic monofilament netting and should generally be composed of biodegradable or compostable materials, and/or utilize biodegradable or compostable materials in their construction, so that reptiles, amphibians, or animals do not become entangled within them.

Impact 3.5-3: Construction and operation of the proposed project could result in substantial soil erosion or the loss of topsoil.

The Universal Soil Loss Equation (USLE) provides a means of quantifying the proposed project's potential effects related to soil loss and erosion. The USLE model evaluates the environmental conditions and physical forces that cause soil particles to detach and potentially move through surface erosion. The USLE model does not describe the distances that soil particles travel once they become dislodged. An increase in soil erosion and yield beyond pre-project conditions would be considered a significant impact under Policy CON-48 of the Napa County General Plan's Conservation Element.

For the USLE calculations completed by PPI Engineering (2018) (**Appendix K**), two site visits were conducted in December 2017 to perform reconnaissance geological mapping to compare pre- and post-project cover values. Ground cover conditions in the USLE model were determined by measuring the extent, height, and type of canopy; identifying the percent of ground cover; and breaking down ground cover based on the proportion of grass-like plants and weedy plants.

Existing conditions on the project site and in the on-site catchments reflect the effects of natural processes, ongoing land uses, and related past land uses. These natural conditions vary by generalized habitat type, such as oak woodlands, chaparral, grassland, and vineyard. Based on the hydrologic analysis prepared for the proposed project, existing hydrologic conditions for the habitat types in the development area range from poor to good. The proposed project would

include a permanent cover crop density ranging from 75 to 90 percent ground cover (see Appendix B of the Erosion Control Plan in **Appendix A** for a block-by-block breakdown of proposed cover crop densities). Hydrologic conditions after development of the proposed project are anticipated to be rated "good," based on the positive effects of soil ripping within certain soil types and assuming that the proposed vegetative cover specifications are achieved and maintained.

The proposed project's vegetation clearing, grading, and earthmoving activities would remove obstacles to sediment transport and expose new soils. Soil ripping and other earthmoving could loosen soils on-site, increasing their susceptibility to erosion, especially in overland flow areas. The USLE analysis of pre-project versus post-project conditions evaluates these changes to determine the potential of the proposed project to increase soil loss. The project's conversion and decommissioning of existing roads could also result in sedimentation impacts, and is therefore included in the USLE calculations (**Appendix K**).

However, the Erosion Control Plan has been designed to prevent increases in erosion. As identified in the ***Vineyard Development*** section of **Chapter 2, Section 2.4.3, *Project Construction***, the Erosion Control Plan includes the following erosion control measures, among others:

- Seeding of a permanent cover crop with vegetative cover maintained according to the Erosion Control Plan.
- Drainage pipelines installed to collect surface runoff at low points throughout the development area and transport it to protected outlets.
- Standard drop inlets, non-standard drop inlets, and infield drop inlets installed at designated locations in the development area.
- Rock energy dissipaters installed to dissipate and reduce flow velocities at the outlet of diversion ditches.
- Standard and non-standard diversion ditches constructed to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet or other stormwater conveyance infrastructure.

Additional erosion control measures are detailed in the Erosion Control Plan (**Appendix A**).

Table 3.5-4 shows the results of the USLE calculations for the proposed project under pre- and post-project conditions. As shown in **Table 3.5-4**, the proposed project is anticipated to reduce annual soil loss by approximately 376.61 tons (43.17 percent) relative to existing conditions. **Appendix K** contains the full USLE calculation analysis.

TABLE 3.5-4
PRE- AND POST-PROJECT SOIL LOSS (UNIVERSAL SOIL LOSS EQUATION) CALCULATIONS BY VINEYARD BLOCK

Proposed Block	Proposed Vineyard Development Acres	Proposed Vineyard Block Acres	Proposed Vineyard Avenue Acres	Pre-project Soil Loss (tons/year)	Post-project Soil Loss (tons/year)	Net Increase/ Decrease (tons/year)
1	1.69	1.35	0.33	1.97	1.62	-0.35
2	1.34	0.77	0.57	5.30	4.94	-0.36
3	1.02	0.85	0.17	2.74	2.25	-0.48
4A	0.41	0.30	0.12	0.32	0.26	-0.06
4B	0.57	0.36	0.20	0.49	0.44	-0.06
5A	0.53	0.38	0.15	1.22	0.74	-0.49
5B	0.23	0.06	0.17	0.37	0.30	-0.07
5C	0.71	0.56	0.15	3.23	1.81	-1.42
5D	0.26	0.17	0.10	0.80	0.75	-0.06
5E	0.25	0.14	0.11	1.63	0.74	-0.89
5F	4.37	3.19	1.18	24.31	11.95	-12.36
5G	0.41	0.17	0.24	0.79	0.73	-0.05
5H	1.48	1.09	0.39	6.55	3.95	-2.60
5J	1.80	1.31	0.48	9.92	3.08	-6.84
6	1.10	0.71	0.39	6.81	3.11	-3.70
7	1.73	1.27	0.47	9.14	4.06	-5.08
8	2.88	2.00	0.88	7.59	7.07	-0.52
9A	1.46	1.28	0.18	10.83	4.81	-6.02
9B	1.53	1.15	0.38	8.59	2.60	-5.99
9C	1.35	1.06	0.29	10.51	4.67	-5.84
9D	3.35	2.50	0.85	28.57	12.70	-15.87
9E	0.88	0.64	0.24	5.13	2.28	-2.85
9F	1.88	1.58	0.31	7.70	3.42	-4.28
9G	1.03	0.79	0.24	4.07	3.69	-0.38
9H	0.15	0.09	0.06	0.43	0.39	-0.04
10	0.56	0.21	0.35	1.48	1.35	-0.14
11	0.43	0.29	0.14	1.40	0.62	-0.78
12	1.53	1.28	0.26	7.54	5.83	-1.71
13A	0.77	0.58	0.19	1.90	0.95	-0.95
13B	1.74	0.95	0.79	4.69	2.66	-2.04
14	1.14	0.89	0.25	7.58	2.87	-4.71
15A	0.97	0.60	0.37	11.68	4.43	-7.26
15B	1.61	1.12	0.49	9.42	4.71	-4.71
16	0.71	0.34	0.37	8.19	3.10	-5.09
17	0.67	0.46	0.21	1.48	0.83	-0.65
18A	0.58	0.29	0.29	3.83	1.21	-2.62
18B	0.78	0.51	0.28	4.80	1.51	-3.29

TABLE 3.5-4
PRE- AND POST-PROJECT SOIL LOSS (UNIVERSAL SOIL LOSS EQUATION) CALCULATIONS BY VINEYARD BLOCK

Proposed Block	Proposed Vineyard Development Acres	Proposed Vineyard Block Acres	Proposed Vineyard Avenue Acres	Pre-project Soil Loss (tons/year)	Post-project Soil Loss (tons/year)	Net Increase/ Decrease (tons/year)
19	1.79	1.09	0.70	21.85	8.34	-13.51
20A	3.12	2.25	0.87	33.30	11.89	-21.42
20B	0.34	0.18	0.16	1.75	1.06	-0.69
21	4.54	3.99	0.55	74.02	30.31	-43.71
22	1.10	0.81	0.28	8.87	5.62	-3.26
23A	4.59	3.01	1.59	3.35	2.68	-0.67
23B	2.46	1.59	0.86	2.23	1.78	-0.45
23C	1.27	0.87	0.41	18.17	6.88	-11.29
23D	2.49	2.05	0.44	31.20	10.97	-21.24
23E	1.42	1.03	0.39	1.55	1.24	-0.31
23F	6.72	5.40	1.32	36.19	21.94	-14.26
23G	3.88	2.85	1.03	25.53	15.34	-10.18
24A	4.84	3.48	1.35	30.55	17.92	-12.63
24B	0.55	0.30	0.24	1.88	0.84	-1.05
24C	6.19	4.90	1.29	39.71	30.21	-9.49
24D	0.26	0.17	0.10	0.57	0.49	-0.07
24E	19.33	16.46	2.87	85.28	74.02	-11.27
24F	3.63	2.74	0.89	24.75	12.77	-11.97
24G	3.35	2.23	1.12	31.56	17.72	-13.84
25	1.56	1.16	0.40	12.82	7.52	-5.30
26	4.64	3.60	1.04	42.75	25.08	-17.67
27	1.10	0.64	0.46	6.37	4.85	-1.52
28	0.48	0.35	0.13	3.46	2.60	-0.85
29A	2.88	1.90	0.98	17.45	9.60	-7.85
29B	3.65	2.33	0.89	20.03	10.96	-9.07
30	0.82	0.65	0.17	8.55	4.21	-4.34
31	1.05	0.80	0.25	5.22	3.97	-1.25
32	1.41	1.18	0.23	1.79	1.35	-0.44
33A	3.33	2.49	0.84	3.90	3.12	-0.78
33B	0.45	0.22	0.23	0.95	0.76	-0.19
33C	3.55	2.56	0.99	22.57	13.23	-9.34
33D	3.33	2.17	1.17	8.57	6.85	-1.71
33E	6.38	4.80	1.58	17.79	14.23	-3.56
Reservoir Area	6.42	0.00	3.36	3.82	2.97	-0.85
Totals	**156.82**	**111.54**	**41.79**	**872.36**	**495.74**	**-376.61**

NOTE: Individual estimates may not add to the totals due to rounding

SOURCE: PPI Engineering 2018

Land preparation activities for the vineyard, such as removing rocks from the soil profile, would not be likely to substantially affect the results of the USLE modeling. The USLE model evaluates the environmental conditions and physical forces that lead to the detachment and movement of soil particles. The primary goal of cultivating the soils in the development area during project implementation would be to prepare the site for planting, including fracturing and mixing layers of compressed soil and rock to facilitate root growth and improve permeability, rather than to remove all rock from the soil. Cultivating the soil may increase the number of smaller rocks at the soil surface; smaller rocks that emerge during development would be left in the vineyard, and only the larger rocks that surface would be removed. Because the larger rocks that may be removed from the site are generally beneath the soil surface, removing large rocks that emerge during development would not substantially alter the composition of the soil.

Increased traffic on existing roads during vineyard construction and operation may accelerate erosion and sedimentation, particularly on primary access roads at stream crossings. In areas of dormant or active landslides, or otherwise unstable slopes, further slope instability could result, which could pose a threat of erosion and sediment transport. The project's surface drainage improvements would substantially reduce the contribution to erosion from the dormant landslides mapped on the project site (see **Impact 3.5-2**).

The proposed project also would upgrade 2.3 miles of Level 2 roads on the project site to Level 1 roads, primary year-round access roads to the vineyard blocks that would contain erosion control features and would be entirely maintained with crushed rock. The project would also decommission 1.6 miles of existing Level 2 dirt roads by incorporating them into the proposed vineyard blocks. Lastly, the project would result in 8.8 miles of Level 1 roads and 2.2 miles of Level 2 roads post-project, which would also include best management practices and roads that would be similar to Level 1 roads, but would not be surfaced with crushed rock. The proposed project and Erosion Control Plan include a road plan describing operational road use and use restrictions, maintenance practices, and improvements (see **Appendix A**).

Impact Conclusion

Development of the proposed project would alter the rate of soil erosion and sediment yield on-site; however, the proposed project is designed to create a decrease in soil erosion and yield.

As detailed in **Table 3.5-4**, implementing the Erosion Control Plan would reduce annual soil loss from the development area by approximately 376.61 tons (43.17 percent) compared to existing conditions. All individual proposed vineyard blocks have been calculated to show decreases in sedimentation during post-project conditions. Therefore, the proposed project would be consistent with Napa County General Plan Policy CON-48 because it would maintain pre-development conditions for sediment erosion.

By implementing the road plan, the project would comply with the requirements of the San Francisco Bay Regional Water Quality Control Board's Farm Plan for vineyard properties in the

Napa River watershed (San Francisco Bay Regional Water Board 2018). Therefore, this impact would be **less than significant**.

Implementation of project-specific and standard hydromodification conditions would ensure that the soil loss calculations provided in **Table 3.5-4** would be realized.

> **Mitigation Measure:** None required.

Impact 3.5-4: Construction and operation of the proposed project could occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.

Construction of the proposed project would involve earthmoving and grading activities that would alter topographic and geologic conditions in the development area. The proposed project would be located on strata or soil that is generally stable (Gilpin Geosciences 2018), but could become unstable as a result of the deep ripping that would occur during development of the proposed project.

Impact Conclusion

The proposed project would implement controls to limit concentrated surface runoff in areas susceptible to erosion. The proposed improvements to surface drainage would also reduce any potential project impacts compared to existing conditions. However, as discussed in **Impact 3.5-2**, the impact related to the potential for soil in the development area to become unstable during development of the proposed project would be **potentially significant**.

> **Impact Significance after Mitigation:** Implementing **Mitigation Measure 3.5-2** would reduce this potentially significant impact to a **less-than-significant** level because mapped landslide deposits would be avoided. The Erosion and Runoff Control (i.e., Hydromodification) Installation and Operation Conditions of Approval would also ensure that erosion control measures would be installed according to the recommendations from Gilpin Geosciences' Engineering Geologic Investigation (2018) and that the County's standard hydromodification conditions would be implemented.

Impact 3.5-5: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Using records collected from the Los Angeles County Museum of Natural History and the University of California Museum of Paleontology and a review of the scientific literature, the geologic units on the project site (shown in **Figure 3.5-1**) were assigned paleontological sensitivity rankings in accordance with SVP (2010) standards:

- **Quaternary Alluvial Fan Deposits**—Low to high sensitivity, increasing with depth. The surficial layers of this unit are too young to preserve fossil resources and therefore have low sensitivity; however, deeper layers are of an age to preserve fossils. Therefore,

ground disturbance extending deeper than approximately 5 feet may affect fossil resources.

- **Great Valley Sequence (sandstone/shale and the Knoxville Formation)**—High sensitivity. The record of fossil resources collected from Great Valley rocks in the project vicinity (UCMP 2018) indicates fossils may be encountered in previously undisturbed sediments.

Impact Conclusion

As noted in the ***Vineyard Development*** section of **Chapter 2, Section 2.4.3, *Project Construction***, the average depth of ripping would be 2 feet, with maximum ripping depth up to 4 feet depending on site conditions. Project activities such as vegetation removal or grading of existing roadbeds are unlikely to disturb fossil resources. However, deeper grading or excavations may affect fossil resources, which would be a **potentially significant** impact.

Mitigation Measure 3.5-5a: A Paleontological Resources Worker Environmental Awareness Program shall be implemented before the start of construction. A qualified paleontologist shall train construction personnel regarding the appearance of fossils and procedures for notifying paleontological staff if fossils are discovered during construction work. The owner/permittee shall provide Napa County documentation demonstrating that construction personnel have attend the training before the commencement of vegetation removal and earth-disturbing activities associated with Phase 1 and 2 of project.

Mitigation Measure 3.5-5b: Initial earth-disturbing, grading and/or construction activities as defined by the County Conservation Regulations (NCC Chapter 18.108) in previously undisturbed sediments more than 2 feet deep in areas that are mapped as Great Valley Sequence (KJgvl or Jk), or that exceed 5 feet deep in areas mapped as Quaternary alluvial fan deposits (Qf), shall be monitored on a 'full time' basis during Phases 1 and 2 of ECPA development, in accordance with a Paleontological Monitoring Plan prepared and implemented by a qualified paleontologist. A qualified paleontologist is defined as an individual who has experience collecting and salvaging paleontological resources and meets the minimum standards of the SVP (2010). The Plan shall be submitted to Napa County for review and approval before commencement of any vegetation removal or earth-disturbing activities associated with the project.

Within the Plan, the extent, and duration and timing of the monitoring shall be determined by the qualified paleontologist based on the location and extent of proposed ground disturbance within the Great Valley Sequence (KJgvl or Jk) or Quaternary alluvial fan (Qf) deposits. If the qualified paleontologist determines during project monitoring that full-time monitoring is no longer warranted, based on the specific geologic conditions at the surface or at depth, the paleontologist may recommend (subject to review and approval by Napa County) that monitoring be reduced to periodic spot-checking or cease entirely.

Monitoring shall not be required in any artificial fill or for activities that do not reach the above-stated depths and mapping areas. Should fossils be encountered, construction work shall halt within the Great Valley Sequence or Quaternary alluvial fan deposits until a qualified paleontologist can assess the significance of the find and develop, for Napa County review and approval, additional Plan measures to avoid impacts to paleontological resources. Significant fossils shall be salvaged, following the standards of the SVP (2010) and curated at an accredited repository, such as the University of California Museum of Paleontology or Los Angeles County Museum of Natural History.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.5-5a** and **3.5-5b** would reduce this potentially significant impact to a **less-than-significant** level because construction personnel would be trained on the procedures to implement if fossils appear, and because ground-disturbing construction activities in previously undisturbed sediments more than 2 feet deep in areas mapped as Great Valley Sequence (KJgvl or Jk) or 5 feet deep in areas mapped as Quaternary alluvial fan deposits (Qf) would be monitored and any fossils encountered would be assessed and avoided and/or salvaged and curated.

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3.6 HAZARDS AND HAZARDOUS MATERIALS

This section describes hazards and hazardous materials associated with the proposed project; summarizes the relevant regulatory setting; and evaluates the potential for project construction and operation to create significant hazards to the public or environment through transport, use, disposal, or accidental release of hazardous materials. The section also addresses the potential for the proposed project to expose people or structures to significant risk of wildland fire.

No comment letters regarding hazards and hazardous materials were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation comment letters.

3.6.1 ENVIRONMENTAL SETTING

EXISTING EVIRONMENT

Limited quantities of hazardous materials used to maintain the existing vineyard and property, such as fuels, pesticides, and fertilizers, are currently stored and mixed at a barn southeast of the proposed vineyard Block 6, as shown in Figure 5 of the Erosion Control Plan (**Appendix A**). Current vineyard operations are currently covered by Hazardous Materials Business Plan (HMBP) DHD Permit #2920, (CERS ID 1017225: DHD Establishment 1125) with the Napa County Division of Environmental Health. See *Local Regulations* in Section 3.6.2 below for additional details on the HMBP program.

Materials and waste may be considered hazardous if they are poisonous (toxic), can be ignited by open flame (ignitable), corrode other materials (corrosive), or react violently, explode, or generate vapors when mixed with water (reactive). The term *hazardous material* is defined in law as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or the environment.

As discussed in **Section 3.9, *Noise***, sensitive receptors within the project site include single-family residences approximately 680 feet west of proposed vineyard Block 14 and 560 feet southeast of proposed vineyard Block 6. (For the locations of the proposed vineyard blocks, see Figure 2-3.) The nearest off-site residence is approximately 300 feet south of proposed vineyard Block 1. Additional residences are located east of the project site; however, these residences are more than 2,000 feet from the nearest proposed vineyard block.

The California Department of Forestry and Fire Protection (CAL FIRE) assesses fire hazard severity and designates Fire Hazard Severity Zones (FHSZs) throughout the state. An FHSZ is a zone that has been mapped (based on factors such as fuel, slope, and fire weather) to indicate varying degrees of fire hazard (moderate, high, and very high). Although FHSZ zones do not predict when or where a wildfire will occur, they do identify areas where wildfire hazards could be more severe and therefore are of greater concern. The project site is in an area designated by CAL FIRE as “moderate” for fire hazard severity (Napa County 2009).

3.6.2 REGULATORY SETTING

FEDERAL REGULATIONS

The Federal Insecticide, Fungicide, and Rodenticide Act governs the sale, distribution, and use of pesticides in the United States (EPA 2019a). Pesticides are regulated under this law until their disposal, when they become wastes regulated under the Resource Conservation and Recovery Act, which ensures responsible management of hazardous and nonhazardous waste (EPA 2019b). Some but not all pesticides are regulated as hazardous waste when disposed. The Federal Insecticide, Fungicide, and Rodenticide Act requires manufacturers to register each pesticide and its label with the U.S. Environmental Protection Agency (EPA) before it can be manufactured for commercial use.

The Occupational Safety and Health Administration (OSHA) was established to ensure worker safety and health in the United States by working with employers and employees to create better working environments. Section 1919, Subpart H (Hazardous Materials), of the Occupational Safety and Health Act of 1970 provides information and guidelines for working with hazardous materials (OSHA 1970). The U.S. Department of Transportation regulates the safety aspects of transporting hazardous materials in accordance with the Hazardous Materials Transportation Act of 1975. The Motor Carrier Act of 1980 requires carriers of hazardous materials to demonstrate that they have adequate insurance to pay for damage sustained in accidents involving such materials (DOT 1980). The California Highway Patrol regulates transportation of hazardous materials in California.

STATE REGULATIONS

The California Department of Pesticide Regulation protects human health and the environment by regulating the sale and use of pesticides and fostering reduced-risk pest management. The department oversees product evaluation and registration, environmental monitoring, residue testing of fresh produce, and local use enforcement through county agricultural commissioners. The California Department of Pesticide Regulation would regulate the proposed project's pesticide use through the policies of the Napa County Agricultural Commissioner.

The Resource Conservation and Recovery Act and California Health and Safety Code authorize the California Department of Toxic Substances Control to regulate the handling, storage, transport, and disposal of hazardous substances. The local Certified Unified Program Agencies would regulate the use of hazardous materials on the project site as described below.

Senate Bill 1082, enacted in 1993, required that California establish a unified hazardous waste and hazardous materials management program. The result was the California Environmental Protection Agency (CalEPA) Unified Program. The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of six environmental and emergency response programs. The responsible state

agencies set the standards for their programs and local governments implement the standards. CalEPA oversees implementation of the program as a whole.

The Unified Program is implemented locally by 85 government agencies certified by the Secretary of CalEPA. These certified unified public agencies have typically been established as functions of local environmental health or fire departments. The proposed project would be required to comply with the Unified Program through the Napa County Department of Planning, Building and Environmental Services, Division of Environmental Health.

To comply with Title 22 of the California Code of Regulations (Section 66262.34[f]), hazardous waste containers must be marked with specific information. State laws and regulations require a motor carrier to obtain a valid hazardous-materials transportation license (Vehicle Code Section 32000.5) to transport hazardous materials if either of the following scenarios apply:

- The motor carrier is required to display placards pursuant to Vehicle Code Section 27903.
- The motor carrier is transporting, for a fee, a hazardous-materials load exceeding 500 pounds that require placards pursuant to Section 27903.

All motor carriers and drivers transporting hazardous materials must comply with federal and state regulations, and must obtain a hazardous-materials transportation license from the California Highway Patrol (CHP 2015). On-site deliveries of fertilizers and petroleum fuel by contracted delivery companies must also comply with federal and state regulations.

LOCAL REGULATIONS

The Napa County Division of Environmental Health is the Certified Unified Program Agency for Napa County, and administers the following programs in all cities and unincorporated areas:

- Hazardous Materials Release Response Plans and Inventory (Business Plan) Program
- California Accidental Release Prevention Program
- Underground Storage Tank Program
- Hazardous Waste Generator and Hazardous Waste Onsite Treatment Programs
- Aboveground Storage Tank Program (Spill Prevention, Control and Countermeasure Plans)

Assembly Bill 2185 (1985) created the Business Plan Program, commonly known as the Hazardous Materials Business Plan (HMBP) or Community Right-to-Know Program (CalOES 2020). The program's purpose is to inform the public about the hazardous materials being handled at businesses in the community, inform emergency responders about which hazardous materials are handled at a facility, and train employees on handling releases or threatened releases of hazardous materials. An estimated 1,250 facilities in Napa County are subject to the HMBP program. The Napa County Division of Environmental Health began countywide implementation of this program in 1989. The division requires businesses to have an HMBP if

they store hazardous materials at levels exceeding the minimum reportable quantities (a total weight of 500 pounds for solids, a total volume of 55 gallons for liquids, and 200 cubic feet for compressed gases). The HMBP consists of owner/operator information, an inventory of chemicals, and an emergency response plan and maps. The HMBP is reviewed by the Napa County Division of Environmental Health and kept on file with the Napa County Division of Environmental Health and the California Environmental Reporting System.

The Napa County Agricultural Commissioner and staff implement federal, state, and local hazardous materials regulatory programs in Napa County. The Agricultural Commissioner is authorized to enforce the laws administered by the California Department of Pesticide Regulation. The Agricultural Commissioner requires that users of California-restricted materials (pesticides) take an exam and obtain a private applicator certificate. Certificate holders are allowed to purchase and use California-restricted materials and authorized to perform required training of pesticide handlers and field workers. The certificate is valid for three years and may be renewed through continuing education or reexamination. Restricted-materials permits are required for commercial use of certain pesticides and must be renewed annually. Pesticide use reports must be submitted to the Napa County Agricultural Commissioner on the 10th of the month after the pesticide was applied.

Napa County General Plan

The Safety Element of the Napa County General Plan discusses safety issues associated with transportation of hazardous substances. The Safety and Conservation Elements of the General Plan lists the following applicable policies (Napa County 2009):

- **Policy SAF-5:** The County shall cooperate with other local jurisdictions to develop intracounty evacuation routes to be used in the event of a disaster within Napa County.

- **Policy SAF-30:** Potential hazards resulting from the release of liquids (wine, water, petroleum products, etc.) from the possible rupture or collapse of aboveground tanks should be considered as part of the review and permitting of these projects.

- **Policy SAF-31:** All development projects proposed on sites that are suspected or known to be contaminated by hazardous materials and/or are identified in a hazardous material/waste search shall be reviewed, tested, and remediated for potential hazardous materials in accordance with all local, state, and federal regulations.

- **Policy CON-2:** The County shall identify, improve, and conserve Napa County's agricultural land through the following measures: …

    e) Encourage inter-agency and inter-disciplinary cooperation, recognizing the agricultural commissioner's role as a liaison and the need to monitor and evaluate pesticide and herbicide programs over time and to potentially develop air quality, wildlife habitat, or other programs if needed to prevent environmental degradation.

f) Minimize pesticide and herbicide use and encourage research and use on integrated pest control methods such as cultural practices, biological control, host resistance, and other factors.

3.6.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to hazards and hazardous materials is considered significant if the proposed project would do any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- 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.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school.
- 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, create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, result in a safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

ISSUES NOT DISCUSSED IN IMPACTS

The project site is not located within 0.25 mile of any existing or proposed schools. The closest school, Yountville Elementary School, is approximately 8 miles southwest of the project site.

Information about hazardous materials sites in the project area was collected by conducting a review of CalEPA's Cortese List Data Resources. The project site is not located on a site that is known to be included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.

The project site is not located in the vicinity of a public or private airport, or within an airport land use plan. The nearest airport is the Angwin-Parrett Field, more than 8 miles northwest of the project area.

The project site would be accessed by Sage Canyon Road/State Route 128. The proposed project would have a less-than-significant impact on emergency response plans and evacuation plans, and this impact is not evaluated further in this EIR. The proposed project would not impair implementation of or physically interfere with any adopted emergency plan or emergency evacuation plan. The potential for the proposed project to interfere with emergency access is analyzed in **Section 3.10, *Transportation*,** of this EIR.

Therefore, these issues are not evaluated further in this EIR section. A complete discussion can be found in the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

The following impact analysis considers the foreseeable range and nature of the use, storage, and disposal of hazardous materials during construction and operation of the proposed project. The analysis then identifies the primary ways these hazardous materials could expose individuals or the environment to health and safety risks. The evaluation was made in light of the proposed project, applicable regulations and guidelines, and preliminary findings from regulatory agency databases.

This assessment was limited to a qualitative evaluation of environmental concerns associated with the potential presence of hazardous conditions at and near the project site. The analysis did not include any sampling, site-specific review, laboratory analysis, or inspection of the project site.

The analysis assumes that the proposed project would comply with applicable federal, state, and local health and safety laws and regulations. State and local agencies would be expected to continue to enforce applicable requirements to the extent that they do so now.

IMPACTS AND MITIGATION MEASURES

Table 3.6-1 summarizes the impact conclusions presented in this section.

TABLE 3.6-1
SUMMARY OF IMPACT CONCLUSIONS—HAZARDS AND HAZARDOUS MATERIALS

Impact Statement	Impact Conclusion
3.6-1: Construction and operation of the proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than Significant
3.6-2: Construction and operation of the proposed project could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.	Less than Significant

Source: Data compiled by Environmental Science Associates in 2019

Impact 3.6-1: Construction and operation of the proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

During both construction and operation, the proposed project would transport, use, and store hazardous materials, including fuels, pesticides, and fertilizers, similar to current use and on-site storage for the existing vineyard. Incidental spills could occur and containers could leak or rupture, spilling chemicals during storage or fueling of agricultural equipment, although the potential for a spill is not greater than under current conditions at the existing on-site vineyard. Release of these chemicals could result in hazards to the public or environment.

As stated in **Chapter 2, *Project Description***, the proposed vineyards would be managed using sustainable agricultural practices. "Sustainable" farming is defined as environmentally sound, economically viable, and equitable. The sustainable approach allows latitude in making decisions on controlling weeds, pests, and disease; chemical, mechanical, or biological means may be used. Agricultural chemicals and chemical pesticides could be used as needed throughout the development area.

Integrated pest management (IPM) techniques would be used to manage pest damage by the most economical means, with the least possible hazard to people, property, and the environment. IPM techniques include permanent cover crops, beneficial insects, and minimal to no use of chemical pesticides, as discussed further in the Integrated Pest Management Plan (**Appendix I**). IPM employs an aggressive visual monitoring regime that identifies the presence of invasive insects before infestation. Should an infestation occur, EPA-certified pesticides would be used only as a last resort and would be applied by certified applicators.

Proposed fertilizers (including 15-15-15, boran, and zinc) and herbicides (including Lifeline® for weed control) may be applied up to two times per year during vineyard operations. Mildewcides (including Sulfur® DF and Luna® Experience) to protect against mildew may be applied up to four times per year. No pre-emergent herbicides would be used for weed management. Weed control and mowing would occur between April and August. Mowing would reduce habitat for invasive insects, potentially reducing the need to use pesticides that would otherwise be used to control insects.

Chemicals would be stored and mixed at an existing barn southeast of the proposed vineyard Block 6, as shown in Figure 5 of the Erosion Control Plan (**Appendix A**). Elder Creek is located approximately 55 feet south of the barn. As discussed in **Chapter 2, *Project Description***, stream setbacks are proposed consistent with Napa County stream setback requirements, based on slope. No vineyard operation activities would occur in the setback areas. In addition, waters of the United States that are not Napa County–defined streams would be avoided with setbacks of 50 feet, consisting of a 26-foot undisturbed filter strip of native vegetation and a 24-foot vegetated vineyard avenue. During storms, these setbacks would filter flows and reduce

the potential for petroleum products, pesticides, herbicides, mildewcides, or fertilizers to reach waters of the United States and drainages on-site.

The U.S. Natural Resources Conservation Service, part of the U.S. Department of Agriculture, recommends a minimum 50-foot-wide vegetated buffer from aquatic resources such as streams, ephemeral drainages, and wetlands. Under most conditions, this buffer width is generally adequate to provide enough vegetation to effectively entrap and filter chemicals, nutrients, and sediment, thereby facilitating degradation within buffer soils and vegetation (NRCS 2000). These buffer areas serve as filter strips and have the potential to trap as much as 75–100 percent of sediment, capture nutrients and herbicides, and remove more than 60 percent of certain pathogens from runoff (Grismer et al. 2006). Several studies support this evidence, particularly regarding the effectiveness of a filter strip with a width of less than 50 feet:

- Colquhoun et al. (2008) found that filter strips were the most effective at removing sediment within the first 8–12 feet.
- Schultz and Cruse (1993) identified that filter strips could remove 70–80 percent of sediment within the initial 15 feet, which grew to more than 85 percent of sediment removed within the initial 30 feet.
- Gharabaghi et al. (2006) found that filter strips trapped more than 95 percent of the particles larger than 40 micrometers in diameter within about the first 16 feet of the filter strip.

As discussed in **Section 3.7, *Hydrology and Water Quality***, most agricultural projects are exempt from regulation under the National Pollutant Discharge Elimination System (NPDES). The proposed project, which is agricultural, would not require coverage under the NPDES General Permit; however, the Erosion Control Plan sufficiently covers stormwater management.

The proposed project would be required to comply with numerous hazardous materials and stormwater regulations. Such compliance would help ensure that hazardous materials are transported, used, stored, and disposed of safely to protect worker safety, and would reduce the potential for a release of construction-related fuels or other hazardous materials into the environment, including stormwater and downstream receiving water bodies. Potentially hazardous materials would be contained, stored, and used on-site in accordance with manufacturers' instructions and handled in compliance with applicable standards and regulations. For example, the California Fire Code requires measures for the safe storage and handling of hazardous materials. In addition, the U.S. Department of Transportation, California Department of Transportation, and California Highway Patrol would regulate the transport of hazardous materials. Together, federal and state agencies determine driver-training requirements, load labeling procedures, and container specifications to minimize risks of accidental release. Hazardous materials would be transported on public roads, subject to OSHA and California Department of Toxic Substances Control requirements. Handling of hazardous materials is also regulated by Title 22 of the California Code of Regulations.

Project approval, if granted, would be subject to the following standard conditions that would further avoid and/or reduce potential impacts from the routine transport and use of hazardous materials during project implementation and ongoing vineyard operations and maintenance.

Hazardous Materials—Conditions of Approval:

The owner/permittee shall implement the following best management practices:

- The owner/permittee shall implement the Hazardous Materials Business Plan (DHD Permit #2920) with the Napa County Division of Environmental Health documenting all proposed hazardous materials to be used on-site during construction and operation. If storage amounts or the use of hazardous materials change during project operation, the owner/permittee shall update the Hazardous Materials Business Plan, as necessary. The Napa County Division of Environmental Health will review the plan and may conduct inspections to ensure that the Hazardous Materials Business Plan is being followed during project operations. Updates to the Hazardous Materials Business Plan, if warranted, will be made through the California Environmental Reporting System.
- The owner/permittee shall refrain from disposing of debris, storing materials, or constructing and operating the vineyard (including vineyard avenues) outside the boundaries of the approved plan, or within required setbacks pursuant to Napa County Code Section 18.108.025 (General Provisions–Intermittent/Perennial Streams). Furthermore, consistent with best management practices for hazardous materials, and to avoid the risk of contaminating surface water or groundwater, all operational activities that include the use or handling of hazardous materials (e.g., storing and washing agricultural chemicals; using portable restrooms; refueling, maintaining, and storing vehicles and equipment; and storing soil amendments) shall occur at least 100 feet from groundwater wells, watercourses, streams, and any other water resources. This requirement shall apply whether or not such activities occurred in these areas before this ECPA.
- During construction and operation, best management practices consistent with recommendations from the Napa County Division of Environmental Health shall be used to reduce contamination of surface water and groundwater by hazardous materials. Best management practices may include but are not limited to:

  - Workers shall follow manufacturers' recommendations on the use, storage, and disposal of chemical products.
  - Workers shall avoid overtopping fuel gas tanks and shall use automatic shutoff nozzles where available.
  - During routine maintenance of equipment, grease and oils shall be properly contained and removed.
  - Discarded containers of fuel and other chemicals shall be disposed of properly.

- Spill containment features shall be installed at the project site wherever chemicals are stored overnight.
- All refueling, maintenance of vehicles and other equipment, handling of hazardous materials, and project staging areas shall occur at least 100 feet from watercourses, the existing groundwater well, and any other water resource to avoid the risk of surface water or groundwater contamination.
- To prevent the accidental discharge of fuel or other fluids from vehicles and other equipment, all workers shall be informed of the importance of preventing spills and of the appropriate measures to take should a spill occur.

Impact Conclusion

The proposed project would comply with the laws and regulations that govern the transportation and management of hazardous materials to reduce potential hazards. In addition, the best management practices in the conditions of approval would limit the potential for the project to create hazardous conditions from the accidental release of hazardous materials. Therefore, this impact would be **less than significant**.

Mitigation Measure: None required.

Impact 3.6-2: Construction and operation of the proposed project could expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

The project site is an area designated by CAL FIRE as “moderate” for fire hazard severity. In general, the risk of fire in vineyards is relatively low because of the limited amounts of fuel, combustibles, and ignition sources present. Vineyards are irrigated and cover crops are typically mowed between April and August, thereby reducing the vineyards’ fuel loads. The proposed project would remove pasture, hayfield, grassland, brush/shrubland, and trees and woodland within the proposed clearing limits. In addition, no structures are proposed as part of the project.

Impact Conclusion

Although the project site is in an area classified as moderate risk for fire hazard severity, the proposed project would involve the removal of existing vegetation (grasses, brush, and trees) and the management of a vineyard, thereby resulting in an overall reduction of fuel load in the vineyard compared to existing conditions. Given the reduction of fuel load and the rural nature of the project site, the proposed project also is not likely to expose occupants to pollutant concentrations from a wildfire or uncontrolled spread of a wildfire. Therefore, the proposed project would not exacerbate wildfire risks or expose people or structures to a significant risk related to wildland fires, and this impact would be **less than significant**.

Mitigation Measure: None required.

3.7 HYDROLOGY AND WATER QUALITY

This section describes the environmental and regulatory setting in the project vicinity related to hydrology and water quality, and evaluates the potential for the proposed project to result in impacts on hydrology and water quality.

One comment letter regarding hydrology and water quality that was received in response to the Notice of Preparation from the City of Napa Utilities Department stated that all erosion control measures should be maintained to prevent an exceedance of baseline natural runoff levels of sediment and nutrients. Maintenance of the erosion control measures is part of the Erosion Control Plan. The comments did not raise any other project-specific concerns. See **Appendix B** for Notice of Preparation comment letters.

3.7.1 ENVIRONMENTAL SETTING

Napa County has a Mediterranean climate with wet winters and dry summers. Approximately 90 percent of the county's precipitation occurs between November and April. Higher elevations receive more precipitation than lower elevations and northern Napa County receives more than the southern part of the county. Precipitation also varies from year to year, with deviations as high as 200 percent from the 85-year average.

SURFACE WATER RESOURCES

Napa County is located within the Coast Range physiographic province. The county's topography consists of intervening valleys and mountain ridges that divide the land area into three principal watersheds: the Napa River, Putah Creek/Lake Berryessa, and Suisun Creek watersheds. The project site drains primarily to the Napa River watershed, but also drains to the Putah Creek/Lake Berryessa watershed (Napa County 2007).

The Napa River watershed extends from the hills north of Calistoga to San Pablo Bay approximately 45 miles to the southeast. The watershed consists primarily of a central valley floor bounded by Mount St. Helena to the north; the Mayacama Mountains to the west, a northwest-trending range of mountains generally above 2,000 feet above sea level; and San Pablo Bay to the south (Napa County 2007).

The Napa River is the largest river in Napa County and drains its tributaries in the watershed south to San Pablo Bay. Tidal influence is observed along the Napa River as far north as the city of Napa (Napa County 2007).

Significant storage facilities in Napa Valley include Bell Canyon Reservoir, Kimball Reservoir, Lake Hennessey, Milliken Reservoir, and Rector Reservoir. Of these facilities, Lake Hennessey makes up the vast majority of surface water storage (Napa County 2007).

The Putah Creek/Lake Berryessa watershed, east of the Napa River watershed, contains numerous small valleys surrounded by mountainous and steep topography. In general, the Putah Creek/Lake Berryessa watershed is higher in elevation than the Napa Valley watersheds.

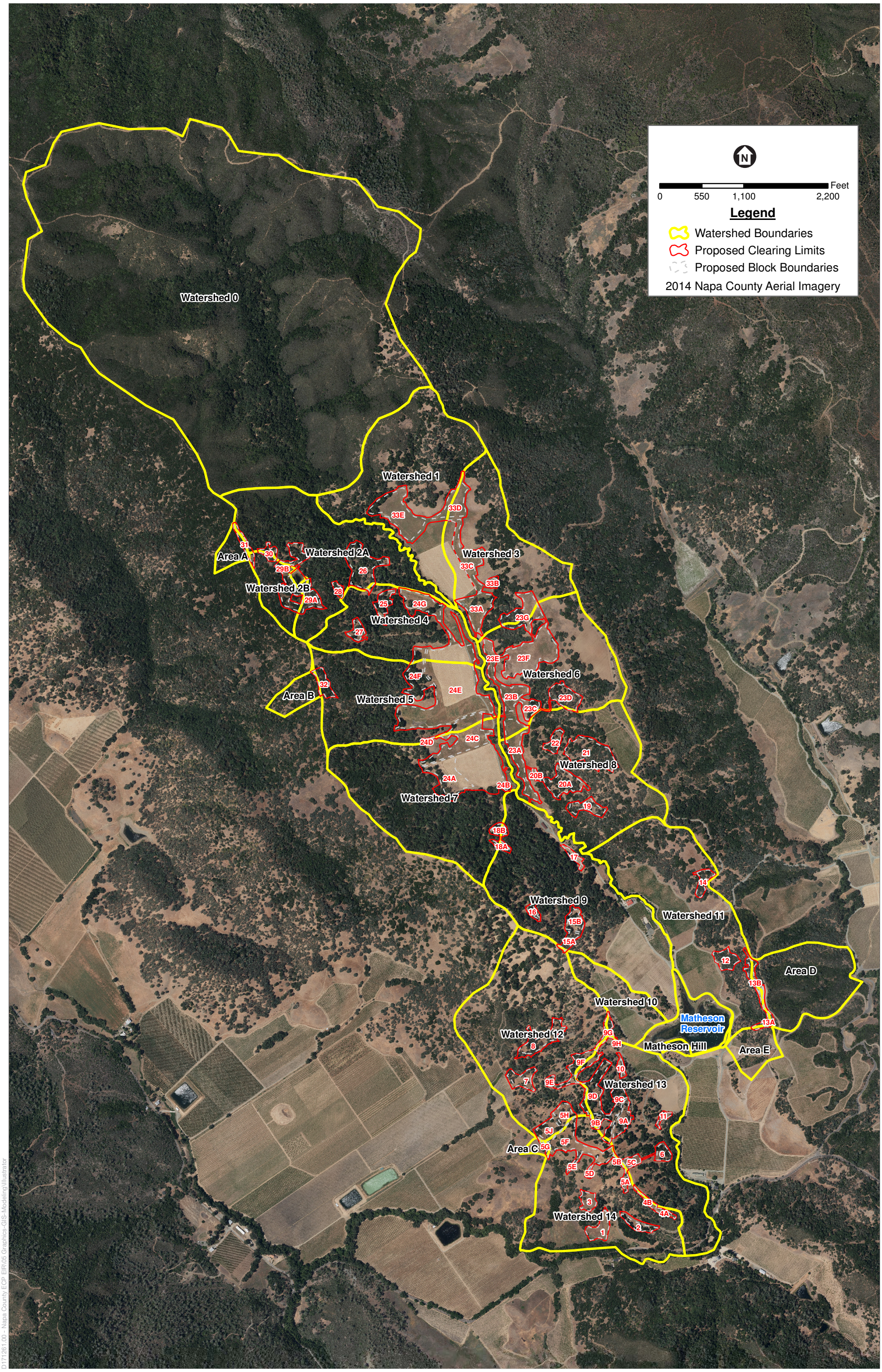
Putah Creek is the largest river in the Lake Berryessa basin. Originating in Lake County to the north, the creek flows south to Lake Berryessa in Napa County, eventually leaving Lake Berryessa and Napa County and flowing into the Sacramento River. Lake Berryessa is controlled by Monticello Dam, and with a capacity of 1.6 million acre-feet, is the largest surface water body in Napa County.

Elder Creek traverses the length of the project site from north to south and bisects the development area. Elder Creek, a seasonal intermittent stream, is tributary to Sage Creek, which is tributary to Conn Creek, which is tributary to the Napa River. Elder Creek extends approximately 1,700 feet upstream from an access road crossing of the drainage at the inlet to Matheson Reservoir (see additional description in **Section 3.3, *Biological Resources***). Downstream of Matheson Reservoir, Elder Creek continues southward and drains to Sage Creek.

Project Site Watersheds

A site-specific hydrologic analysis of the project site was conducted by PPI Engineering (2018) (**Appendix J**). This analysis, which used HydroCAD computer modeling software, assessed runoff from existing (pre-project) and developed (post-project) conditions. The hydrologic analysis identified watersheds within the project site (shown in **Figure 3.7-1**, using the numbering system identified in the hydrologic analysis [**Appendix J**]) that eventually drain to larger, named watersheds in the project vicinity:

- Watersheds 0–11 encompass approximately 1,022 acres and are part of the Matheson Reservoir Basin. Approximately 160 acres (15.7 percent) of the basin are proposed for vineyards, avenues, reservoirs, and other erosion control infrastructure with the proposed project.
- Watershed 12 on the west side of the project site encompasses approximately 77 acres, with approximately 10.8 acres proposed for vineyard conversion.
- Watersheds 13 and 14, below Matheson Reservoir, are part of the Elder Creek watershed. These two watersheds each encompass about 55 acres, with approximately 11 acres in each watershed proposed for vineyard conversion.



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SOURCE: PPI Engineering, 2018

Napa County ECP EIR

Figure 3.7-1
Watersheds and Proposed Vineyard Block Locations

ESA

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In addition, as shown in **Figure 3.7-1**, five areas that include very small parts of the development area are located outside the delineated watersheds described previously and are labeled Areas A–E in **Appendix J** (PPI Engineering 2018):

- *Area A,* west of Watershed 2, contains approximately 3.5 acres, with 0.4 acre proposed for vineyard conversion.
- *Area B,* west of Watershed 5, contains approximately 5.1 acres, with 0.1 acre proposed for vineyard conversion.
- *Area C,* northwest of Watershed 14, contains approximately 1.2 acres, with 0.2 acre proposed for vineyard conversion.
- *Area D,* southeast of Watershed 11, contains approximately 26.4 acres, with 0.9 acre proposed for vineyard conversion.
- *Area E*, south of Watershed 11, contains approximately 7.2 acres, with 0.2 acre proposed for vineyard conversion.

Project Site Drainage

Watersheds 0–9 and 11 flow to Elder Creek, which is the main stream of the Elder Valley. Elder Creek flows into Matheson Reservoir, also located on the project site. Watershed 10 flows directly into Matheson Reservoir via an existing sediment basin and culvert located on the reservoir's west side. The Matheson Hill watershed contains the contributing area south of the reservoir (PPI Engineering 2018).

Watershed 12 is located on the west side of the project site. Flows concentrate in a small drainage at the downstream end of the watershed, which is mapped as a wetland swale. The drainage continues west beyond the project site through other vineyards before eventually joining Sage Creek and Lake Hennessey (PPI Engineering 2018).

Watersheds 13 and 14 are located within the Elder Creek watershed below Matheson Reservoir. Once Matheson Reservoir has reached full capacity, a concrete weir and rocked spillway outlet structure on the southwest side of the reservoir allow water to flow into lower Elder Creek. Watershed 13 is located predominantly west of lower Elder Creek as it flows south toward State Route 128. The stream then crosses State Route 128 and leaves the project site for a short distance, then re-crosses State Route 128 and reenters the project site within Watershed 14, which lies southwest of Watershed 13 (PPI Engineering 2018).

Eventually, most surface runoff from these watersheds converges and flows to Sage Creek and then to Lake Hennessey. A small portion of the project site is located in the Soda Valley Creek watershed (which is part of the Putah Creek watershed), from which runoff flows to Lake Berryessa in eastern Napa County.

Runoff Potential

The primary landscape features affecting the volume and rate of runoff are soil type, land use, vegetative cover, and slope. Several different types of soils are located on the project site, as discussed in **Section 3.5, *Geology and Soils***. The soil types in the development area consist largely of Bressa Dibble Complex, Los Gatos Loam, Maymen-Millsholm-Lodo Association, Millsholm Loam, and Pleasanton Loam, which are classified as being poorly drained to well-drained, having low to high runoff, and having moderately slow to moderate permeability (Table 3.5-1) (NRCS 2018).

The U.S. Natural Resources Conservation Service (NRCS) Web Soil Survey for Napa County was used to delineate soil boundaries within the development area and determine their hydrologic soil groups. Hydrologic soil groups separate different soil types into categories based on their infiltration and runoff characteristics. Chapter 7 of the NRCS National Engineering Handbook defines four hydrologic soil groups:

- *Hydrologic Soil Group "A" soils:* Low runoff potential and high infiltration rates.
- *Hydrologic Soil Group "B" soils:* Moderately low runoff potential and moderate infiltration rates.
- *Hydrologic Soil Group "C" soils:* Moderately high runoff potential, with somewhat restricted water transmission.
- *Hydrologic Soil Group "D" soils:* High runoff potential, with restricted to very restricted water movement through the soil, or any soil with a shallow depth (less than 20 inches) to an impermeable layer.

Approximately 55 percent of the project site is mapped as Hydrologic Soil Group "C" and 45 percent is mapped as Hydrologic Soil Group "D" (PPI Engineering 2018).

Chapter 9 of the National Engineering Handbook defines nine land use cover types within the watersheds:

- Vineyard (annual grass)
- Pasture/grass
- Brush
- Woods-grass
- Woods
- Farmstead
- Fallow/bare
- Dirt road
- Gravel road

Areas within each land use with similar hydrologic condition ratings of either "poor" (generally less than 25 percent ground cover density), "fair" (generally 25–50 percent ground cover

density), or “good” (generally more than 50 percent ground cover density) were delineated and further subdivided by hydrologic soil group. Runoff curve numbers were then assigned to each soil-cover complex using the combination of hydrologic soil group, hydrologic condition, and cover type. The runoff curve number reflects the runoff potential for each complex; the larger the runoff curve number, the greater the runoff potential.

Tables showing curve numbers for each land use within each soil type, hydrologic condition, and watershed, including calculated acreages in the development area, are provided in the Hydrologic Analysis (**Appendix J**) for existing conditions. After the runoff curve numbers were established for small subareas within the watersheds, weighted-average curve numbers were calculated to represent the larger, collective drainage areas. An increase in the runoff curve number is an indication of reduced infiltration and generally associated with higher runoff potential, while a decrease is an indication of increased infiltration and lower runoff potential.

As stated in **Chapter 2, *Project Description***, the proposed project would rip to an average depth of 24 inches, with a maximum of 48 inches depending on site conditions, in preparation for installation of the vineyard. The proposed project would primarily involve removing pasture, hayfield, grass, brush, and trees within the proposed clearing limits; ripping; removing rocks; cultivating the soil to prepare for planting; seeding cover crops; and mulching. Activities that change the land use characteristics would inherently modify the runoff curve numbers. For example, removing grass and trees may have the potential to increase runoff when an equivalent vegetative cover is not planted and no additional measures are taken.

Surface Water Quality

Runoff from the project site is eventually transported to the Napa River. Portions of the river are currently listed as impaired water bodies under Section 303(d) of the Clean Water Act (CWA). The non-tidal segment of the Napa River (the 38-mile segment from Calistoga to the city of Napa) is listed as an impaired water body for nutrients, pathogens, and sedimentation/siltation. The tidal segment of the Napa River (23 miles from the city of Napa to San Pablo Bay) is listed as an impaired water body for nutrients and pathogens (State Water Board 2018).

Sediment Loading

Sediment delivery and transport processes in the Napa River watershed have been affected and changed by human development over about the last century. The construction of several large dams between 1924 and 1959 (on major tributaries in the eastern Napa River watershed and northern headwater areas) altered sediment transport processes in the mainstem Napa River by reducing the delivery of coarse sediment to the river. Thirty percent of the Napa River watershed drains into dams, and the ponds and reservoirs behind these dams capture a large fraction of the coarse sediment input to channels (Napolitano et al. 2009).

Historically, the Napa River system was typically described as a gravel-bed river. More recently, the Napa River has become increasingly dominated by finer sediments. The sources of these finer sediments include a variety of land use changes, infrastructure construction, road runoff,

and instream erosion. Dams that trap coarse sediment in the area have not substantially reduced the degree to which finer sediments are being delivered to the main stem Napa River and its tributaries. As a result of this fine sedimentation, habitat for steelhead, Chinook salmon, and California freshwater shrimp, which rely on more gravel substrate in the river, have been negatively affected by reduced gravel permeability (Stillwater Sciences and Dietrich 2002). The San Francisco Bay Regional Water Quality Control Board (Regional Water Board) has released a technical report proposing a total maximum daily load (TMDL) for the Napa River. The report calls for substantial reductions in the amount of fine sediment deposits into the watershed to improve water quality and maintain beneficial uses of the river, including spawning and rearing habitat for salmonid species.

Nutrients

Nutrients, specifically nitrogen and phosphorus, are essential for life and play a primary role in ecosystem functions. In addition to the naturally present concentrations in the atmosphere and organic matter, nutrients are introduced to water bodies through disposal of human or animal waste or agricultural application of fertilizers.

Nutrients are commonly the limiting factor for growth in aquatic systems. Excessive levels of nutrients affect aquatic systems in a wide range of ways, including producing toxic or eutrophic conditions. (A eutrophic lake or other water body is rich in nutrients and thus supports a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.) Both conditions impair aquatic life.

The Napa River is identified as impaired by nutrient loading according to CWA Section 303(d), as discussed in **Section 3.7.2, *Regulatory Setting***. Wang et al. (2004) identified numerous contributors to nutrient loads, including both point sources (e.g., wastewater treatment plants) and non-point sources (e.g., seepage from septic systems, agricultural and urban runoff, and atmospheric deposition). The San Francisco Bay Regional Water Board has not established specific numeric nutrient targets for the Napa River watershed.

Pathogens

High concentrations of fecal bacteria have been recorded in the Napa River since the 1960s. As a result, the San Francisco Bay Regional Water Board has identified the river as impaired by pathogens under CWA Section 303(d). Sources of the watershed's significant pathogen loads include faulty on-site sewage treatment (septic) systems, failing sanitary sewer lines, municipal runoff, and livestock grazing. Monitoring has shown that urban runoff and failing septic systems are the primary pathogen sources during wet-weather months, while failing sanitary sewer lines and septic tanks may be the primary sources during the dry season. To address this issue, a TMDL has been developed for the Napa River and its tributaries. The TMDL implements density-based targets and requires zero discharge of untreated or inadequately treated human waste.

GROUNDWATER

The California Department of Water Resources (DWR) has delineated groundwater basins and subbasins in California. The project site is not located within a delineated regional basin. The project site is approximately 3 miles south of the Pope Valley regional groundwater basin and is near the Napa-Sonoma Valley regional groundwater basin. The Napa-Sonoma Valley groundwater basin is divided into subbasins, including the Napa Valley Basin; the eastern edge of this closest subbasin to the project site is approximately 5.5 miles east of the project site (DWR 2003).

The North Napa Valley Basin is the largest and most productive groundwater basin in Napa County. This aquifer is unconfined and is primarily alluvium consisting of poorly sorted, lenticular stream deposits of sand and gravel interspersed with floodplain deposits of silts and clays. (Lenticular soil particles are arranged around an elliptical or circular plane and are bounded by curved faces, i.e., lens-shaped.) These deposits vary in thickness from more than 300 feet at the southern end of the valley, west of the project site, to less than 50 feet near Calistoga. Underlying the alluvium in most locations are the Sonoma Volcanics, which are up to 2,000 feet thick (Napa County 2005). DWR does not consider the Sonoma Volcanics to be a part of the North Napa Valley Basin. Groundwater data from the North Napa Valley Basin show well yields reaching a maximum of 3,000 gallons per minute and averaging 223 gallons per minute (DWR 2003). Given the differing geology and the distance between the North Napa Valley Basin and the project site, these areas are not hydraulically connected, although flows in Elder Creek may recharge the North Napa Valley Basin.

The proposed vineyard would be served entirely by surface water; no groundwater would be used for irrigation and operation of the proposed vineyard.

In general, groundwater quality in most of the San Francisco hydrologic region is suitable for most urban and agricultural uses, with only local impairments. The primary constituents of concern are high total dissolved solids, nitrate, boron, and organic compounds. Releases of fuel hydrocarbons from leaking underground storage tanks and spills or leaks of organic solvents at industrial sites have caused minor to significant groundwater impacts in the urbanized portions of many basins throughout the region.

3.7.2 REGULATORY SETTING

FEDERAL REGULATIONS

Clean Water Act

The federal Clean Water Act (U.S. Code Title 33, Section 1251 et seq.), formerly known as the Federal Water Pollution Control Act of 1972, was enacted to help restore and maintain the chemical, physical, and biological integrity of waters of the United States. CWA Section 402 requires states to set standards to protect, maintain, and restore water quality. Specifically,

discharges from point sources and certain non-point sources to surface water are regulated through the National Pollutant Discharge Elimination System (NPDES) permitting process.

CWA Section 401 regulates surface water quality; a water quality certification is required for federal actions (including construction activities) that may entail impacts on surface water. In California, NPDES permitting authority has been delegated to, and is administered by, the nine Regional Water Boards.

The CWA prohibits certain discharges of stormwater containing pollutants except in compliance with an NPDES permit. Most projects must obtain coverage under an NPDES permit to be able to discharge stormwater generated by construction work (demolition, clearing, grading, excavation, and other land disturbance) to surface waters. Exceptions are projects that would disturb less than 1 acre of land or would discharge to a municipality's combined stormwater/sewer system. The NPDES permit must require the project to implement Best Available Technology Economically Achievable and Best Conventional Pollutant Control Technology to reduce or eliminate pollutants in stormwater runoff.

STATE REGULATIONS

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) established the State Water Resources Control Board (State Water Board), which oversees the nine Regional Water Boards. By enforcing the Porter-Cologne Act, the State Water Board determines the beneficial uses of the waters of the state (surface water and groundwater), establishes narrative and/or numerical water quality standards, and establishes and enforces policies governing water quality.

The State Water Board and Regional Water Boards are authorized to prescribe waste discharge requirements, which may affect waters of the state. The Porter-Cologne Act also requires the development of water quality control plans, also known as basin plans, to protect water quality. The State Water Board issues both General Construction Permits and individual permits under the auspices of the federal NPDES program.

General Waste Discharge Requirements for Vineyard Properties in the Napa River and Sonoma Creek Watersheds, Order No. R2-2017-0033

Most agricultural projects in California are exempt from regulation under the NPDES. However, the San Francisco Bay Regional Water Board has adopted waste discharge requirements under the NPDES for vineyard properties in the Napa River and Sonoma Creek watersheds (San Francisco Bay Regional Water Board 2018). The waste discharge requirements apply to vineyards in these watersheds that are larger than 5 acres.

Vineyards subject to these waste discharge requirements must achieve performance standards for soil erosion in the farm area and for the discharge of nutrients and pesticides. Hillslope

vineyard parcels also must achieve performance standards for vineyard storm runoff and for sediment discharge from unpaved roads.

Projects similar to the proposed project are required to develop a Farm Water Quality Protection Plan. The plan must include a comprehensive inventory of vineyards, roads, reservoirs, and waterways throughout the property and must document best management practices to comply with the waste discharge requirements and performance standards.

LOCAL REGULATIONS

Napa County Code

Chapter 18.108 of the Napa County Code (Conservation Regulations) includes requirements to use standard erosion control measures and to establish erosion hazard areas. The code also defines streams and provides for stream setbacks during grading and land clearing for agricultural development (see **Section 3.3, *Biological Resources*,** for further discussion). Chapter 18.108 includes the following specific requirements:

- *Section 18.108.010* provides the purpose and intent of the Conservation Regulations, which include preserving natural resources, protecting lands from excessive soil loss, protecting water quality and quantity, providing greater environmental protection for natural environmental resources, and in part, accomplishing the following:
  - Minimize soil erosion caused by human modifications to the natural terrain.
  - Maintain and improve, to the extent feasible, existing water quality by regulating the quantity and quality of runoff entering local watercourses.
  - Protect drinking water supply reservoirs in sensitive domestic water supply drainages from sediment, turbidity, and pollution through vegetation retention.
- *Section 18.108.027* requires uses involving earth-disturbing activity in sensitive domestic water supply drainages to meet the following vegetation retention and drainage facility requirements:
  - A minimum of 60 percent of the tree canopy cover on the parcel or holding existing on June 16, 1993, along with any understory vegetation, shall be maintained; when vegetation consists of shrub and brush without tree canopy, a minimum of 40 percent of the shrub, brush, and associated annual and perennial herbaceous vegetation existing on June 16, 1993, shall be maintained.[1]

[1] As noted in Draft EIR **Chapter 1, *Introduction***, the original Erosion Control Plan application submittal (December 14, 2017) contained the materials that were required by the County's Erosion Control Plan Application Checklist at that time. As a result, the application was determined to be a "substantially conforming and qualified permit application'' pursuant to the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective on May 9, 2019. Therefore, continued processing and review of the application will not be subject to the County Conservation Regulations (Napa County Code Chapter 18.108), as amended by the Water Quality and Tree Protection Ordinance. This application is subject to the County Conservation Regulations that were in effect before May 2019.

- All earth-disturbing activities shall be limited to April 1 through September 1 of each year, with the exception of NPDES-related earth-disturbing activities, which are limited to April 1 through October 1.
- Concentrated runoff shall, whenever feasible, be avoided. Runoff shall instead be spread in small incremental doses into relatively flat buffer areas. Those drainage facilities and outfalls that unavoidably have to be installed shall be sized and designed to handle the runoff from a one hundred-year storm event without failure or unintentional bypassing. Outlets shall be protected against erosion in the one-hundred-year storm event.
- The County shall provide notice to the owners/operators of water supply systems located in a sensitive domestic water supply of each erosion control plan filed in their drainage.
- The property owner shall submit a geotechnical report for any project located in sensitive domestic water supply drainage.

- *Section 18.108.060* prohibits construction, improvement, grading, earthmoving activity, or vegetation removal in areas with slope of 30 percent or greater unless an exception through the permit process is granted, or unless the project is exempt under Section 18.108.050 or Section 18.108.055.

- *Section 18.108.070* outlines requirements for uses in erosion hazard areas, including erosion control measures, erosion control plans, phasing, and vegetation removal limited to the minimum amount necessary to accommodate the project.

Napa County Resource Conservation District

The Napa County Resource Conservation District published the Napa River Watershed Owner's Manual in 1996. This manual lists the following objective and recommendations that pertain to the proposed project:

Objective G: Reduce Soil Erosion Recommendation G2: Reduce erosion resulting from agricultural activities. Agricultural activities in the Napa River watershed include grazing, viticulture, small farms and horticulture. Soil disturbance or vegetation removal as a result of agricultural activities can result in loss of topsoil and subsequent water quality degradation. Good agricultural management can also benefit water quality and wildlife habitat, and can contribute to the overall good health of the watershed. Sub-recommendations include:

G2.1. Emphasize erosion prevention over sediment retention as a priority in agricultural planning and operations.

G2.2. Promote the use of permanent vegetative ground cover in vineyards. Support research, demonstrations and technology exchange to refine cover crop technology for vineyards and orchards.

G2.3. Establish tree cover in unused areas to decrease erosion of topsoil.

G2.4. Maintain access roads and farm roads to control storm water runoff in agricultural areas. Utilize assistance from the USDA [U.S. Department of Agriculture] Natural Resource Conservation Service, or other erosion control professionals, for design of storm water runoff control on rural roads.

G2.5. Minimize wet weather vehicle traffic through or across agricultural areas, especially on hillsides.

G2.6. Provide adequate energy dissipaters for culverts and other drainage pipe outlets.

G2.7. Establish vegetated buffer strips along waterways.

G2.8. Develop grazing management plans to increase vegetation residue on rangeland.

Napa County General Plan

The Conservation and Safety Elements of the Napa County General Plan (Napa County 2009) contain the following goals and policies pertinent to water resources.

Conservation Element

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.

Goal CON-10: Conserve, enhance and manage water resources on a sustainable basis to attempt to ensure that sufficient amounts of water will be available for the uses allowed by this General Plan, for the natural environment, and for future generations.

Goal CON-11: Prioritize the use of available groundwater for agricultural and rural residential uses rather than for urbanized areas and ensure that land use decisions recognize the long term availability and value of water resources in Napa County.

Goal CON-12: Proactively collect information about the status of the county's surface and groundwater resources to provide for improved forecasting of future supplies and effective management of the resources in each of the County's watersheds.

Goal CON-13: The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special status species to the extent

feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to:

a. Maintain the following essentials for fish and wildlife resources:
    1) Sufficient dissolved oxygen in the water.
    2) Adequate amounts of proper food.
    3) Adequate amounts of feeding, escape, and nesting habitat.
    4) Proper temperature through maintenance and enhancement of streamside vegetation, volume of flows, and velocity of water.

b. Ensure that water development projects provide an adequate release flow of water to preserve fish populations.

c. Employ supplemental planting and maintenance of grasses, shrubs and trees of like quality and quantity to provide adequate vegetation cover to enhance water quality, minimize sedimentation and soil transport, and provide adequate shelter and food for wildlife and special-status species and maintain the watersheds, especially stream side areas, in good condition.

d. Provide protection for habitat supporting special-status species through buffering or other means.

e. Provide replacement habitat of like quantity and quality on- or off-site for special status species to mitigate impacts to special-status species.

f. Enhance existing habitat values, particularly for special-status species, through restoration and replanting of native plant species as part of discretionary permit review and approval.

g. Require temporary or permanent buffers of adequate size (based on the requirements of the subject special-status species) to avoid nest abandonment by birds and raptors associated with construction and site development activities.

h. Demonstrate compliance with applicable provisions and regulations of recovery plans for federally listed species.

- **Policy CON-6:** The County shall impose conditions on discretionary projects which limit development in environmentally sensitive areas such as those adjacent to rivers or streamside areas and physically hazardous areas such as floodplains, steep slopes, high fire risk areas and geologically hazardous areas.

- **Policy CON-30:** All public and private projects shall avoid impacts to wetlands to the extent feasible. If avoidance is not feasible, projects shall mitigate impacts to wetlands consistent with state and federal policies providing for no net loss of wetland function.

- **Policy CON-42:** The County shall work to improve and maintain the vitality and health of its watersheds. Specifically, the County shall: …

d. Support environmentally sustainable agricultural techniques and best management practices that protect surface water and groundwater quality and quantity (e.g., cover crop management, integrated pest management, informed surface water withdrawals and groundwater use).

- **Policy CON-47:** The County shall comply with applicable Water Quality Control/Basin Plans as amended through the TMDL process to improve water quality. In its efforts to comply, the following may be undertaken: …

  e. Ensuring continued effectiveness of the National Pollution Discharge Elimination System program and storm water pollution prevention.

  f. Ensuring continued effectiveness of the County's Conservation Regulations related to vineyard projects and other earth-disturbing activities.

- **Policy CON-48:** Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain pre-development sediment erosion conditions or at minimum comply with state water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.

- **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. …

  c. The County shall require discretionary projects to meet performance standards designed to ensure peak runoff in 2-, 10-, 50-, and 100-year events following development is not greater than predevelopment conditions. …

  e. In conformance with National Pollution Discharge Elimination System requirements, prohibit grading and excavation unless it can be demonstrated that such activities will not result in significant soil erosion, silting of lower slopes or waterways, slide damage, flooding problems, or damage to wildlife and fishery habitats. …

  h. 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 in considered infeasible.

- **Policy CON-52:** Groundwater is a valuable resource in Napa County. The County encourages responsible use and conservation of groundwater and regulates groundwater resources by way of its groundwater ordinances.

- **Policy CON-53:** The County shall ensure that the intensity and timing of new development are consistent with the capacity of water supplies and protect groundwater and other water supplies by requiring all applicants for discretionary projects to demonstrate the availability of an adequate water supply prior to approval. Depending on the site location and the specific circumstances, adequate demonstration of availability may include evidence or calculation of groundwater availability via an appropriate hydrogeologic analysis or may be satisfied by compliance with County Code "fair-share" provisions or applicable State law. In some areas, evidence may be provided through coordination with applicable municipalities and public and private water purveyors to verify water supply sufficiency.

Circulation Element

- **Policy CIR-8:** Roadway, culvert, and bridge improvements and repairs shall be designed and constructed to minimize fine-sediment and other pollutant delivery to waterways, to minimize increases in peak flows and flooding on adjacent properties, and where applicable to allow for fish passage and migration, consistent with all applicable codes and regulations.

3.7.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to hydrology and water quality is considered significant if the proposed project would do any of the following:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- 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.
  - Substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.
  - 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.
  - Impede or redirect flood flows.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

In addition, because the proposed project includes Petitions for Change on Water Right License 9125 and Permit 18459 and a Petition for Extension of Time on Permit 18459, the significance criterion established by the State Water Board, Division of Water Rights also applies. Specifically, an impact is also considered significant if the proposed project would cause a change in the water volume and/or pattern of seasonal flows in the affected watercourse or result in any of the following:

- A significant cumulative reduction in the water supply downstream of the diversion.
- A significant reduction in water supply, either on an annual or seasonal basis, to senior water right holders downstream of the diversion.
- A significant reduction in the available aquatic habitat or riparian habitat for native species of plants and animals.
- A significant change in seasonal water temperatures due to changes in the patterns of water flow in the stream.

ISSUES NOT DISCUSSED IN IMPACTS

The EIR analysis evaluated the potential for the proposed project to result in a decrease in groundwater supplies, in the placement of housing or structures within a 100-year flood hazard area, in the potential to impede or redirect flood flows, and in susceptibility to tsunami or seiche. The project was determined to result in no impact or less-than-significant impact with regard to these issues. The proposed project would have limited impermeable surfaces and only surface water would be used to irrigate the vineyard; therefore, the project would not include groundwater extraction, significantly decrease groundwater supplies, or impede groundwater recharge or sustainable groundwater management in the basin.

The Federal Emergency Management Agency (FEMA) has mapped flood zones in Napa County for 100- and 500-year flood events. The project site is not within a FEMA-designated flood zone (Napa County 2018) and the proposed project would not impede or redirect flood flows. The project site is located more than 40 miles from the Pacific Ocean and more than 25 miles from San Pablo Bay; therefore, the project site would not be susceptible to tsunami. The potential for seiche exists in Napa County because of its proximity to San Pablo Bay, Lake Hennessey, and Lake Berryessa; however, the development area is located in the hillsides of Napa County, in an area that would not be affected by seiche.

These issues are not evaluated further in this EIR section. A complete discussion can be found in the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

Potential impacts on water resources were evaluated based on a review of planning documents relevant to the project site, including the Napa County General Plan and the Napa County Zoning Ordinance.

Hydrologic Analysis Prepared by PPI Engineering

To evaluate the effects of the proposed project on runoff, PPI Engineering prepared a hydrologic analysis (**Appendix J**; PPI 2018). The analysis modeled existing (pre-project) and developed (post-project) conditions to predict runoff values under each scenario. The primary goal is to keep the proposed project "flood neutral," or to achieve no net increase in peak runoff post-project. Increases in peak runoff could result in negative effects on natural drainages such as hydromodification or increased sedimentation.

To determine the runoff potential of different land uses, runoff curve numbers were assigned to the land uses in the development area. *Runoff curve numbers* indicate a soil's runoff potential and are based on ground cover type, the land's hydrologic condition, and the hydrologic soil group. A runoff curve number was attributed to different land uses to measure the influence of land cover on infiltration and runoff rates. Curve numbers depend on the type of vegetation, amount and condition of cover, and land use practice. The higher the curve number, the higher the potential for runoff.

As discussed in the ***Surface Water Resources*** section of Section 3.7.1, ***Environmental Setting***, soils are classified into four hydrologic soil groups—A, B, C, and D—according to the infiltration rate and associated runoff potential during rainfall events. Classifications range from a high infiltration rate and low runoff potential (Soil Group A) to a very slow infiltration rate and high runoff potential (Soil Group D). Land-disturbing activities such as vegetation removal, earthmoving, and soil ripping would change the land use characteristics and inherently modify the runoff curve numbers. Removing grass and trees may increase runoff when an equivalent vegetative cover is not planted and no additional measures are taken (**Appendix J**).

Input data for the analysis were separated into sub-watersheds, areas, and reaches and were evaluated in terms of these divisions in the hydrologic analysis, as depicted in **Figure 3.7-1** (adapted from Figure 3 of **Appendix J**). The Elder Creek/Matheson Reservoir Basin was divided into 13 watersheds on the project site. An unnamed tributary on the west side of the project site includes one watershed. Elder Creek below Matheson Reservoir includes two watersheds. There are five areas in which very small portions of proposed vineyard are located outside the delineated watersheds described above. In the analysis, the on-site watersheds account for the factors of land use and runoff curve numbers, initial loss, and lag time. *Initial loss* accounts for water not available for runoff from factors other than land use, such as evaporation. *Lag time* accounts for the time it takes to route flows through the watersheds, and

was calculated using Manning's equation[2] roughness values[3] and average channel dimensions and slope. Reaches represent areas of drainage from one watershed to the next, and account for the factor of additional lag time. Junctions represent areas where water outlets from one watershed and flows into another.

The Manning's equation was used in conjunction with the Continuity equation[4] to calculate average channel velocities (open channel flow) based on typical cross sections measured in the field. Channel lengths and average channel slopes were measured from existing topographic maps.

HydroCAD computer modeling software was used for the hydrologic analysis. The program uses the NRCS Curve Number methodology and procedures for analyzing storm runoff that are based on NRCS unit hydrograph theory. HydroCAD employs the TR-20[5] program's approach to runoff modeling along with standard routing and hydraulic procedures.

HydroCAD is a single-event, rainfall-runoff, small-watershed hydrologic model. The model generates hydrographs from both urban and agricultural areas and at selected points along the stream system. The technical reference for this program is the HydroCAD software owner's manual. Additional resources can be found in Part 630 of the NRCS National Engineering Handbook, which provides detailed information on hydrology and the NRCS curve number methodology.

All proposed stormwater conveyance infrastructure was modeled to ensure that there were no local increases in peak runoff at points of discharge. All proposed pipes, inlets, diversion ditches, junction boxes, and level spreaders were designed to handle the 100-year storm event as required by Napa County Code Chapter 18.108 (Conservation Regulations). HydroCAD software was used to model watersheds with a point of interest at the proposed point of discharge of every pipe. Similar to the overall basin model, pre-project and post-project analyses at the infrastructure's outfall determined whether the potential would exist for increased runoff.

To properly route flows through proposed conveyance infrastructure, each post-project watershed was split into multiple sub-watersheds. **Appendix J** includes maps showing pre-project and post-project infrastructure modeling for the watersheds, land uses, time of concentrations, defined reaches, and full modeling results.

The peak discharge for each designated watershed in the overall basin model and the stormwater conveyance infrastructure modeling was computed using the HydroCAD computer software.

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2 The *Manning's equation* is an empirical equation that applies to uniform flow in open channels and is a function of the channel velocity, flow area, and channel slope.

3 The *Manning's roughness value (n)* is a coefficient that represents the roughness or friction applied to the flow by the channel.

4 The *Continuity equation* reflects the fact that mass is conserved in any non-nuclear continuum mechanics analysis; i.e., for a fluid passing through a tube in a steady flow, the mass flowing through any section of the tube in a unit of time is constant.

5 *TR-20* is a physically based watershed-scale runoff event model. It computes direct runoff and develops hydrographs resulting from any synthetic or natural rainstorm.

Reaches were used where applicable to route inflows and outflow from each watershed into stream or pipe networks. Input data for the basin models consisted of the following:

- Surface areas for pre-project and post-project land use
- 24-hour rainfall data for each modeled storm
- Rainfall Distribution—Type 1A
- Watershed time of concentration
- Reach data
- Detention basin data (if required)
- Reservoir or pond storage data (if applicable)

Hydrologic Analysis Prepared by Wagner & Bonsignore Consulting Civil Engineers

Wagner & Bonsignore Consulting Civil Engineers prepared a hydrologic analysis in support of the Petitions for Change and Extension of Time (as amended) for Permit 18459 (**Appendix J**; Wagner & Bonsignore 2020). The analysis evaluated diversions under Permit 18459, using minimum bypass flow and maximum diversion rate restrictions listed in the 2002 California Department of Fish and Game protest. It also quantified seasonal cumulative diversion under the permit and senior rights. The analysis was included the following procedures and assumptions:

- Diversions under the subject permit and under senior water rights were evaluated for impacts on flows at points of interest at or below the points of diversion named in Permit 18459.
- Diversions under Permit 18459 were assumed to occur only when flows at the points of diversion were above the calculated February median flow. The February median flow values for Point of Diversion 1 (proposed for installation in Elder Creek) and Point of Diversion 2 (the dam at Matheson Reservoir) were calculated to be approximately 0.6 cubic feet per second and 0.9 cubic feet per second, respectively.
- The cumulative maximum rates of diversion at the points of diversion in Permit 18459 were set equal to 15 percent of the calculated 20 percent winter exceedance flow. The combined simultaneous rate of diversion to offstream storage under both points of diversion would not exceed the computed maximum instantaneous rate for the most downstream point of diversion (i.e., Point of Diversion 2). The rates were computed to be 0.29 cubic feet per second for Point of Diversion 1 and 0.41 cubic feet per second for Point of Diversion 2.
- The permit was evaluated for diversion of a maximum of 48 acre-feet per year during the permitted diversion season of November 1 through April 30.
- Based on historical operations, frost protection (under other rights held by the Permittee) may occur for up to 6 hours per day for up to 40 hours per season during the period of March 15 through March 31. In this analysis, water demand for frost protection was calculated based on an application rate of 55 gallons per minute per acre over 87.5 acres. Frost protection demand was assumed to be met by direct diversions under

the Permittee's other existing and claimed rights. It was assumed that starting March 15, no water would be diverted to offstream storage under Permit 18459 unless the computed rate of frost protection demand and the February median flow bypass flow discussed above were being met at the permit points of diversion.

- The analysis assumed that water is not diverted under Permit 18459 to offstream storage from Point of Diversion 2 until the water right Permittee's senior rights attaching to Point of Diversion 2, and coinciding with all or part of the diversion season authorized in Permit 18459, are fulfilled.

The California Department of Fish and Wildlife identified 12 points of interest for hydrologic analysis (**see Appendix J**). Points of Interest 1–6 are located upstream of Lake Hennessey within the Sage Creek watershed. Points of Interest 7–12 are located on Conn Creek downstream of Conn Dam (Lake Hennessey), which is owned and operated by the City of Napa. Flows in Conn Creek below Conn Dam are controlled by the City's operation of Lake Hennessey, which has a capacity of about 31,000 acre-feet and is a complete barrier to anadromous fish. Consequently, an analysis of flow downstream of Conn Dam is not warranted, and Points of Interest 7–12 are not considered further in this analysis. Points of Interest 1–6 are located as follows:

- *Point of Interest 1:* The point on Elder Creek immediately below proposed Point of Diversion 1 of Permit 18459.
- *Point of Interest 2:* The point on Elder Creek immediately below the requested location of Point of Diversion 2 of Permit 18459, which is also the point of diversion named in License 9125, Permit 18282, and Statement S015232.
- *Point of Interest 3:* The point on Elder Creek immediately above the confluence with Sage Creek.
- *Point of Interest 4:* The point on Sage Creek immediately below the confluence with Elder Creek.
- *Point of Interest 5:* The point on Sage Creek immediately above the confluence with Clear Creek.
- *Point of Interest 6:* The point on Sage Creek immediately below the confluence with Clear Creek.

There are no senior water rights of record upstream of Point of Diversion 1; therefore, no points of interest were provided upstream of Point of Diversion 1.

Average unimpaired stream flows at points of diversion and points of interest were estimated based on reference to a local U.S. Geological Survey stream gauge record.

IMPACTS AND MITIGATION MEASURES

Table 3.7-1 summarizes the impact conclusions presented in this section.

TABLE 3.7-1
SUMMARY OF IMPACT CONCLUSIONS—HYDROLOGY AND WATER QUALITY

Impact Statement	Impact Conclusion
3.7-1: Construction and operation of the proposed project could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	Less than Significant
3.7-2: Construction and operation of the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	Less than Significant
3.7-3: Construction and operation of the proposed project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Less than Significant
3.7-4: Operation of the proposed project could change the water volume and pattern of seasonal flows in the affected watercourse, resulting in a significant cumulative reduction in the water supply downstream of the diversion or a significant reduction in water supply to downstream senior water right holders.	Less than Significant

SOURCE: Data compiled by Environmental Science Associates in 2020

Impact 3.7-1: Construction and operation of the proposed project could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.

Construction of the proposed project would involve removal of existing vegetation (pasture, hayfield, grassland, brush/shrubland, and trees), soil ripping (to an average depth of 24 inches, with a maximum ripping depth of up to 48 inches depending on site conditions), and earthmoving activities. Soil types in the development area consist largely of Bressa Dibble Complex, Los Gatos Loam, Maymen-Millsholm-Lodo Association, Millsholm Loam, and Pleasanton Loam with low to high runoff rates. As such, these activities could expose soil to increased rates of erosion compared to current conditions. They also could increase sedimentation in surface runoff, which could adversely affect the water quality of on-site watersheds and Elder Creek, and subsequently in off-site streams, Lake Hennessey, and the Napa River. The increased accumulation of sediments in receiving waters could alter channel geometry and accumulation of fine-grained sediment, causing an increase in turbidity that could alter aquatic habitat conditions, including temperature.

During project operations, the increased loading of nutrients, including from chemicals applied to vineyard areas, could result in eutrophication and toxic conditions in receiving waters and impacts on groundwater quality. (As noted under ***Nutrients*** in **Section 3.7.1, *Environmental Setting*,** a *eutrophic* water body is rich in nutrients and thus supports a dense plant population, the decomposition of which kills animal life by depriving it of oxygen.)

The potential for project construction and operation to adversely affect water quality and the beneficial uses established for Elder Creek and downstream areas is discussed further below.

Sediment Loading

The main stem Napa River is listed as sediment-impaired according to CWA Section 303(d) because it does not meet the beneficial uses for which it was designated, including steelhead habitat. Section 303(d) requires the Regional Water Board to create a TMDL for sediment in the Napa River watershed. Under California Water Code Section 13242, the Regional Water Board is also authorized to develop an implementation a program to meet the TMDL. To meet the TMDL standard, it is County policy (General Plan Policy CON-48) that post-project conditions should not include a net increase in sediment yield from the project site; that is, projects should maintain or improve upon their pre-development sediment erosion conditions.

An essential part of the proposed project is to control erosion on the project site rather than attempting to capture soil after it has been displaced. To achieve this goal, the project's Erosion Control Plan includes the use of diversion ditches or other artificial measures to control runoff, and emphasizes preventing erosion through sustainable farming practices including cover crops and filter strips, and avoiding and managing erosion-prone areas. The Erosion Control Plan includes a variety of measures to prevent erosion and control sediment. These measures include methods for installing irrigation piping, and for installing erosion control features, such as level spreaders and rock aprons; riprap berms; outsloped roads and benches; and vegetative cover in proposed vineyard blocks (i.e., no-till cover crops). The proposed project would retain the existing courses of runoff and drainage on-site and contains features that would improve the on-site runoff and drainage courses once the vineyard blocks are developed.

As described in the Erosion Control Plan (**Appendix A**), surface drainage pipelines would be installed to collect surface runoff at low points throughout the development area and transport it to protected outlets. Final backfill would be placed and spread in approximately uniform layers to fill the trench completely. When installed under all-weather roads, the pipe trench would be backfilled and compacted to 90 percent and re-graded or paved to match existing conditions. Standard diversion ditches would be constructed to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet or other stormwater conveyance infrastructure. Infield ditches would be constructed in certain blocks to reduce the slope run length and intercept surface runoff.

Concrete cutoff collars and other erosion prevention features would be installed in some areas as detailed in the Erosion Control Plan (**Appendix A**). Pipe level spreaders and rock level spreaders would return concentrated runoff at the end of pipes and natural drainage courses to sheet flow, to avoid concentrating runoff that could gain additional velocity and erosion potential.

In addition, temporary erosion control measures such as straw wattles, straw mulching, waterbars, and straw bale dikes would be installed as needed to help reduce surface erosion and promote high infiltration rates and settling of soil sediment particulates. These measures would serve to reduce the velocity of overland flow by increasing surface roughness and adding breaks in slope.

Maintaining a permanent vegetative cover crop as described in the Erosion Control Plan (**Appendix A**) would provide surface roughness to help prevent the concentration of runoff, collect moisture, and ward off the loosening of soil that would be susceptible to erosion. Disturbed areas would be seeded and mulched before September 15. Each year, any areas with less than the identified percent vegetative cover would be fertilized or reseeded and mulched until adequate coverage is achieved. The cover crop would be mowed only, and not disked. The permanent no-till cover crop for most vineyard blocks would be maintained with between 75 and 85 percent cover; cover crop percentages for proposed vineyard Blocks 5C, 5J, 9B, 17, 18A, and 18B would be 90 percent (see **Appendix A** for cover crop densities).

Elder Creek and tributaries in the development area that meet the County's definition of a stream (Napa County Code Section 18.108.030) would have required setbacks of 35–150 feet depending on slope, as outlined in Napa County Code Section 18.108.025 and discussed in **Chapter 2, *Project Description***. All waters of the United States not requiring a Napa County stream setback and all wetlands would be avoided and afforded a 50-foot buffer, consisting of a 26-foot undisturbed area and a 24-foot vegetated vineyard avenue. NRCS (2000) and the University of California Division of Agricultural and Natural Resources (2006) recommend 50-foot-wide vegetated buffers for protection of streams and wetlands. As also discussed in **Impact 3.6-1** in **Section 3.6, Hazards and Hazardous Materials,** under most conditions, this buffer width is generally sufficient to provide enough vegetation to entrap sediments and soils, and to filter chemicals adequately by facilitating degradation within buffer soils and vegetation.

As discussed in **Impact 3.7-2**, incorporating the measures proposed in the Erosion Control Plan would result in a decrease in the volume and rate of runoff from the Elder Creek watershed during post-project conditions. Post-project, overall soil loss from the development area would decline by approximately 43.17 percent and sedimentation would decrease on all individual proposed vineyard blocks, as demonstrated in the Universal Soil Loss Equation (USLE) calculations discussed in **Impact 3.5-3** and Table 3.5-4 in **Section 3.5, *Geology and Soils***.

The proposed project would conform to the Regional Water Board's waste discharge requirements for vineyards of 5 acres or larger located in the Napa River watershed, because it would achieve performance standards for soil erosion in the farm area. The proposed project and Erosion Control Plan include a road plan that describes operational road use and use restrictions, maintenance practices, and improvements (see **Appendix A**). Following the road plan would achieve compliance with the Regional Water Board's Farm Plan requirements for vineyard properties in the Napa River watershed. The Erosion Control Plan also incorporates rocked water crossings into the proposed project, which would minimize sedimentation during construction and operation of the proposed ECPA and vineyard development from equipment and vehicles crossings drainage ditches.

As discussed in **Impact 3.3-5** in **Section 3.3, *Biological Resources***, the proposed project is consistent with Napa County Code Section 18.108.027(B) because it would retain more than 60 percent of the tree canopy cover of the project parcels from 1993 and more than 40 percent

of the shrub, brush, and associated annually and perennial herbaceous vegetation. The proposed project would also limit all earth-disturbing activities to April 1 through September 15 of each year, and all winterization measures would be in place by September 15.

Chemical Loading

The use of fertilizers can cause runoff to become laden with excessive plant nutrients, which can lead to eutrophication and the growth of algae in receiving waters. Runoff from areas of pesticide use can contribute to toxic conditions in receiving waters. The proposed project would be required to conform to federal and California laws enforced by EPA and the California Department of Pesticide Regulation.

In addition, the proposed project must achieve performance standards for nutrient and pesticide discharges pursuant to the Regional Water Board's waste discharge requirements for vineyards 5 acres or larger located in the Napa River watershed. During vineyard operation, the proposed project would use integrated pest management (IPM) techniques (see **Impact 3.6-1** in **Section 3.6, *Hazards and Hazardous Materials***) and best management practices to minimize impacts on the environment from chemicals. For example, fertilizers proposed for use at the project site would include slow-release nitrogen sources such as organic compost and fish emulsion.

The State Water Board manages the Safe Drinking Water Information System, which provides monitoring results for individual sampling points within various waters. The system indicates a recent uptick in various pesticides and herbicides in Lake Hennessey; however, no maximum contaminant levels have been set for these particular chemicals. The Safe Drinking Water Information System also indicates that certain contaminants commonly associated with vineyard land uses, such as turbidity and sulfate are below the set maximum contaminant levels. Despite its proximity to vineyards, Lake Hennessey is within maximum contaminant level ranges for numerous key contaminants.

The proposed project may require the use of sulfur products as discussed in the IPM Plan (**Appendix I**). Based on samples collected by the City of Napa, Lake Hennessey consistently contains sulfate at 30–50 times less than the maximum contaminant levels. The only constituent with consistently high sample results is manganese, a naturally occurring mineral that would not be used as a soil additive for the proposed project. The guidelines in the IPM Plan (**Appendix I**) that would limit the use of pesticides, herbicides, and fertilizers would greatly reduce the likelihood that the project would contribute such chemicals to the Lake Hennessey watershed. Therefore, the proposed project would not have a significant impact on turbidity, sulfate, iron, or manganese levels in Lake Hennessey.

Pesticides are proposed for potential use in the development area. No pre-emergent herbicides would be used for weed management (as discussed in **Impact 3.6-1** in **Section 3.6, *Hazards and Hazardous Materials***). Contact or systemic herbicides may be applied in the spring (no earlier than February 15).

During storms, the setbacks from waters described above would act as a filter to reduce the potential for pollutants to reach both on-site and off-site drainages. The use of stream setbacks to reduce pollutant transfer and nutrient loading to receiving waters is an effective and appropriate mitigation measure that is consistent with the Napa County Code (Section 18.108.025), the State CEQA Guidelines (Section 15126.4[a]), and Napa County General Plan policies (CON-18, CON-45, and CON-50). The proposed project would establish and maintain setbacks from on-site drainage features, adhere to the IPM Plan, use cover crops, and comply with the laws and regulations governing the transportation and management of hazardous materials to reduce potential hazards, as discussed in **Section 3.6, *Hazardous Materials***. Through these actions, the project would minimize the potential for pesticides to enter receiving waters on the project site.

Similarly, establishing stream setbacks, adhering to the IPM Plan, using cover crops, and complying with laws and regulations governing transportation and management of hazardous materials would adequately protect groundwater quality. High total dissolved solids, nitrate, boron, organic compounds, and releases of fuel hydrocarbons from leaking underground storage tanks and chemical spills or leaks could affect groundwater quality. However, implementing the measures described above would reduce the likelihood that these constituents would enter the groundwater supply.

Temperature

Water temperature influences a number of chemical processes in water bodies, and is influenced by ambient air temperature, humidity, riparian vegetation, topography, surrounding land use, and flow conditions.

The proposed project would not alter the topography of on-site creeks or remove any riparian vegetation that provides shade. All proposed stream setbacks maintained on-site would also help to preserve natural stream function. As determined by the USLE calculations discussed in **Section 3.5, *Geology and Soils***, sediment yield from the proposed vineyard and sediment accumulation in receiving waters would decrease with the proposed project. Potential sedimentation impacts that could increase water temperature, such as alteration of stream geometry and an increase in fine sediment, would not occur.

Impact Conclusion

Construction and operation of the proposed project would have a less-than-significant impact on sediment loading, would not impair the water quality of flows entering waterways or groundwater, and would not alter water temperature. Further, as discussed in **Impact 3.7-2**, an overall decrease in the volume and rate of runoff from the Elder Creek watershed would occur during post-project conditions. Therefore, the proposed project would not violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality. This impact would be **less than significant**.

Mitigation Measure: None required.

Impact 3.7-2: Construction and operation of the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.

An area's relief and drainage pattern, in part, determine the rate and volume of runoff. The characteristics of a landscape, including the size and extent of vegetation and topographic and geologic features, influence the course of runoff in an area. Lands that typically generate greater concentrations of runoff characteristically contain less tree or vegetative canopy and more impervious surfaces, and contain poorly drained soils. As discussed under **Impact 3.7-1**, development of the proposed project would involve removing existing vegetation, ripping soil, and conducting earthmoving activities. These activities would alter the project site's existing drainage pattern, which could change the rainfall-runoff relationship from existing site conditions.

If the project were to alter existing drainage patterns, resulting in an increased volume and rate of runoff to on-site drainages, hydrologic changes could occur in Elder Creek, Matheson Reservoir, Sage Creek, and Lake Hennessey, and in the Napa River, which could result in on- and off-site flooding. The following presents the results of the hydrologic analysis evaluating effects on pre- and post-project runoff conditions. An increased volume and rate of runoff could result in bank erosion in unstable channels and increased sediment transport and loading to receiving waters, and could exceed the capacity of existing stream channels. These would all be potentially significant impacts.

The Hydrologic Analysis generated data for each overall on-site watershed and infrastructure model (**Appendix J**). The hydrology of each watershed is representative of the size and land uses of that particular watershed. Therefore, collectively, these results provide a perspective on surface runoff throughout the project site.

Elder Creek/Matheson Reservoir Basin

The hydrologic model calculated the pre-project and post-project discharges for the on-site sub-watersheds under the 2-year and 100-year storm events (provided in **Tables 3.7-2** through **3.7-4**). Modeling results for the Elder Creek/Matheson Reservoir Basin predict modest decreases for most watersheds analyzed. Reductions in peak runoff from individual watersheds range from 0.5 to 7.3 percent for the 100-year event. Most of the reductions can be attributed to either a decrease in the runoff curve number after development or an increase in the time of concentration after development. Watersheds 2, 3, 4, 5, 6, 7, 13, and 14 predict reductions in average runoff curve numbers post-project, while the remaining watersheds exhibited no change. Time of concentration increased in Watersheds 1, 2, 4, 6, 9, 11, 12, and 14 while decreasing in Watersheds 3, 7, and 8. The remaining watersheds did not experience a change in times of concentration from pre-project to post-project.

TABLE 3.7-2
EXISTING AND DEVELOPED PEAK RUNOFF FOR THE 2-YEAR STORM

Watershed Basin Area	Watershed/Reach	Existing Peak Runoff (cfs)	Developed Peak Runoff (cfs)	Net (cfs)	Percent Change
Elder Creek/Matheson Reservoir Basin	0	115.3	115.3	0.0	0.0
	1	22.0	21.7	-0.3	-1.4
	2	16.0	15.3	-0.7	-4.4
	3	18.2	17.6	-0.5	-2.7
	4	12.8	12.0	-0.9	-7.0
	5	17.3	16.1	-1.2	-6.9
	6	18.7	16.5	-2.2	-11.8
	7	23.0	20.7	-2.3	-10.0
	8	19.3	20.1	0.8	4.1
	9	24.6	23.5	-1.1	-4.5
	10	6.3	6.3	0.0	0.0
	11	24.2	23.8	-0.4	-1.7
	Matheson Hill	0.8	0.8	0.0	0.0
	Direct Rainfall	10.7	10.7	0.0	0.0
	Reach 0—In	115.3	115.3	0.0	0.0
	Reach 0—Out	108.9	108.9	0.0	0.0
	Reach 1—In	136.3	136.3	0.0	0.0
	Reach 1—Out	136.2	136.1	0.0	-0.1
	Reach 2—In	147.3	145.5	-1.8	-1.2
	Reach 2—Out	147.2	145.4	-1.8	-1.2
	Reach 3—In	154.3	151.6	-2.7	-1.7
	Reach 3—Out	153.7	151.6	-2.2	-1.4
	Reach 4—In	163.4	160.6	-2.8	-1.7
	Reach 4—Out	163.3	160.5	-2.8	-1.7
	Reach 5—In	173.5	171.5	-2.0	-1.2
	Reach 5—Out	173.1	171.0	-2.1	-1.2
	Reach 6—In	184.7	181.5	-3.3	-1.8
	Reach 6—Out	181.8	178.3	-3.5	-1.9
	Reach 7—In	192.1	188.3	-3.8	-2.0
	Reach 7—Out	189.2	185.0	-4.2	-2.2
	Matheson Reservoir—In	n/a	n/a	n/a	n/a
	Matheson Reservoir—Out	165.4	161.5	-3.9	-2.4
Unnamed Tributary	12	34.6	33.7	-0.9	-2.6
Elder Creek below Matheson Reservoir	13	25.6	24.2	-1.4	-5.5
	14	27.1	25.2	-2.0	-7.4

NOTE: cfs = cubic feet per second

SOURCE: PPI Engineering 2018

TABLE 3.7-3
EXISTING AND DEVELOPED PEAK RUNOFF FOR THE 100-YEAR STORM

Watershed Basin Area	Watershed/Reach	Existing Peak Runoff (cfs)	Developed Peak Runoff (cfs)	Net (cfs)	Percent Change
Elder Creek/Matheson Reservoir Basin	0	501.7	501.7	0.0	0
	1	84.5	83.5	-0.9	-1.1%
	2	71.4	66.5	-4.9	-6.9%
	3	69.3	68.9	-0.3	-0.5%
	4	50.4	49.0	-1.5	-2.9%
	5	71.1	69.1	-2.0	-2.8%
	6	71.4	66.2	-5.2	-7.3%
	7	94.6	88.7	-5.9	-6.2%
	8	77.4	79.9	2.5	3.2%
	9	97.8	94.0	-3.8	-3.9%
	10	22.2	22.2	0.0	0.0%
	11	90.8	89.9	-0.9	-1.0%
	Matheson Hill	2.5	2.5	0.0	0.0%
	Direct Rainfall	23.4	23.4	0.0	0.0%
	Reach 0—In	501.7	501.7	0.0	0.0%
	Reach 0—Out	489.4	489.4	0.0	0.0%
	Reach 1—In	620.1	616.6	-3.6	-0.6%
	Reach 1—Out	619.7	616.1	-3.6	-0.6%
	Reach 2—In	670.4	658.0	-12.5	-1.9%
	Reach 2—Out	670.2	657.7	-12.5	-1.9%
	Reach 3—In	703.1	689.5	-13.6	-1.9%
	Reach 3—Out	701.9	688.4	-13.5	-1.9%
	Reach 4—In	750.6	735.0	-15.6	-2.1%
	Reach 4—Out	750.4	734.8	-15.6	-2.1%
	Reach 5—In	799.8	790.5	-9.4	-1.2%
	Reach 5—Out	798.8	789.5	-9.3	-1.2%
	Reach 6—In	859.6	844.3	-15.3	-1.8%
	Reach 6—Out	848.0	833.3	-14.7	-1.7%
	Reach 7—In	898.5	878.3	-20.3	-2.3%
	Reach 7—Out	887.9	868.0	-19.8	-2.2%
	Matheson Reservoir—In	989.3	973.3	-16.0	-1.6%
	Matheson Reservoir—Out	883.1	870.0	-13.1	-1.5%
Unnamed Tributary	12	117.9	115.9	-2.0	-1.7%
Elder Creek below Matheson Reservoir	13	82.8	81.0	-1.9	-2.2%
	14	87.0	83.7	-3.3	-3.7%

NOTE: cfs = cubic feet per second

SOURCE: PPI Engineering 2018

TABLE 3.7-4
CONVEYANCE INFRASTRUCTURE—EXISTING AND DEVELOPED PEAK RUNOFF FOR THE 100-YEAR STORM

Watershed	Pipe Watershed	Existing Peak Runoff (cfs)	Developed Peak Runoff (cfs)	Net (cfs)	Percent Change
2	2.2	8.9	5.0	-3.9	-44%
3	3.1	7.5	54.0	46.5	N/A*
	3.2	70.2	21.2	-49.0	N/A
	3.1 and 3.2 Net			-2.5	N/A
4	4.1	47.9	47.5	-0.4	-1%
	4.2	15.9	7.2	-8.7	-55%
5	5.1	63.7	63.5	-0.2	0%
6	6.1	68.2	66.9	-1.3	-2%
7	7.1	20.8	20.2	-0.6	-3%
	7.2	50.6	49.0	-1.6	-3%
8	8.1	48.6	49.0	0.4	1%

NOTE: cfs = cubic feet per second; N/A = not applicable

SOURCE: PPI Engineering 2018

The section of Elder Creek above Matheson Reservoir is defined in the analysis as Reaches 0–7. Reach 0 flow rates did not experience any changes because no development area has been proposed for Watershed 0. All subsequent reaches predict modest decreases in peak runoff compared to existing conditions, ranging from 0.5 to 7.3 percent for the 100-year event.

Watershed 8 modeling results yielded a slight increase in peak runoff as a result of the proposed project. This increase was attributable to a reduction in the modeled time of concentration after development. The modest increases from Watershed 8 range from 0.8 to 2.4 cubic feet per second (cfs) for the 2-year and 100-year storm events, respectively. Watershed 8 outflows to Elder Creek at Reach 7 in the analysis. The modeling results predict a decreased inflow into Reach 7 ranging from 3.8 to 20.3 cfs for the same 2-year and 100-year storm events, as a result of moderate runoff reductions in the upstream watersheds. The upstream decreases in Reach 7 would offset the predicted increase from Watershed 8 and the resultant flow in Reach 7 would still be below pre-project levels.

The hydrologic analysis prepared by PPI Engineering also includes 10-year and 50-year peak runoff calculations, which can be found in **Appendix J**.

Unnamed Tributary

The modeling results for Watershed 12 predict a small decrease in peak runoff, ranging from 0.9 to 2.0 cfs for the 2-year and 100-year events. This decrease in peak runoff is attributable to an increase in time of concentration after development.

Elder Creek below Matheson Reservoir

The modeling results for Watershed 13 predict a decrease in runoff for all storm events analyzed. These decreases range from 1.4 to 1.9 cfs for the 2-year and 100-year events. The expected decrease is from a reduction in the runoff curve number after development. Watershed 14 modeling results yield reductions in peak flow that are slightly larger than those of Watershed 13. The decreases range from 2.0 to 3.3 cfs for the 2-year and 100-year events. Similarly, this anticipated decrease is attributable to a reduction in the runoff curve number after development and an increased time of concentration.

Areas A, B, C, D, and E

A composite curve-number analysis was used to analyze potential runoff changes in Areas A–E, given the very small sizes of the areas that would be developed there. A change in the curve number would directly correlate with a change in runoff at this small scale because no infrastructure is proposed in these areas, and a higher post-project curve number indicates higher runoff potential. No change in runoff curve number is shown for Areas A–E; therefore, no increases in peak runoff in post-project conditions are expected.

The hydrologic model also calculated peak discharges from stormwater conveyance infrastructure (**Appendix J**). As shown in **Table 3.7-4**, the analyses specifically show no net increases in peak flow where infrastructure outlets directly into a stream or mapped water course. Similar to the overall basin model, Pipe Watershed 8.1 predicted a small increase in peak runoff post-project. This increase would be offset by upstream decreases in the same way as described above and is not expected to create any adverse effects. In addition, a negligible increase in peak runoff was predicted in Pipe Watershed 4.3. It is anticipated that this increase of less than 0.05 cfs for all modeled storm events would be attenuated to pre-project levels as it flows into and through the rock apron outlet structure, which would help disperse concentrated flow and provide a small amount of detention.

Several proposed pipelines would outlet directly to Elder Creek. The locations of these outlets were chosen by identifying the sites' natural drainage patterns and points of concentration. During field review, each location was observed to have some level of existing erosion or natural degradation caused by concentrated flow. With these sites selected as proposed points of discharge for project infrastructure, the existing erosion sites would be repaired and improved from their existing condition (see **Appendix A**, page EC-4, for additional detail regarding repairs). These improvements are expected to reduce sediment delivery into the watercourses, which would improve overall water quality both on-site and off-site.

Based on this analysis, there are no predicted increases in net runoff, and the proposed project is not expected to result in negative hydrologic impacts.

Drainage System Capacity and Flooding

The proposed project would construct stormwater conveyance infrastructure, such as diversion ditches, inlets, and pipelines, in some locations (see **Chapter 2, *Project Description,*** and the Erosion Control Plan in **Appendix A**). These features were included in the hydrologic model of post-project conditions. The model accounted for the proposed infrastructure in the time-of-concentration (Tc) calculations, incorporating it into the longest flow path through the watershed. By definition, peak runoff at the point of interest cannot occur until water from the most hydrologically distant point in the watershed has reached the outlet. Therefore, the overall watershed model did not account for proposed infrastructure if it would not be along the longest flow path.

The proposed project would install various surface drainage facilities in a number of vineyard blocks not along the Tc flow path for the overall watershed model. Potential drainage increases related to this infrastructure would be attenuated at the point of interest because they would not be on the Tc flow path. However, a separate analysis of stormwater conveyance infrastructure was performed, modeling numerous points of interest within the overall watersheds.

Because of the complexity of splitting watersheds for the infrastructure analysis, direct comparison between the overall model and the pipe-analysis models is not possible in all cases. With implementation of the proposed project, runoff and flooding on-site would be expected to decrease, which would reduce impacts on the capacity of the drainage system.

Impact Conclusion

Development of the proposed project would alter the drainage pattern of the project site, but would not result in an increased rate or volume of runoff. In the overall basin model, the proposed project would result in net decreases in peak flow rates for almost all watersheds; Watershed 8 is the only watershed for which a slight increase in peak runoff was predicted. This predicted increase would be offset where flows enter Elder Creek by a decrease in runoff in the upstream watersheds and reaches. These upstream decreases would attenuate the apparent Watershed 8 flow increase into Elder Creek to below pre-project levels.

As shown in **Table 3.7-3**, the calculated peak discharge was reduced by 1.6 percent in the Elder Creek/Matheson Reservoir Basin; by 1.7 percent in the Unnamed Tributary; and by 2.2 and 3.7 percent, respectively, in Watersheds 13 and 14 below Matheson Reservoir.

Proposed stormwater conveyance infrastructure was also modeled at points of discharge throughout the project site. Most of these models predict either a small decrease or no change in runoff post-project (**Table 3.7-4**). The analyses specifically show no net increases in peak flow where infrastructure outlets directly into a stream or mapped water course.

Similar to the overall basin model, Pipe Watershed 8.1 predicted a small increase in peak runoff post-project. This increase would be offset by upstream decreases in the same way as described above and is not expected to create any adverse effects. In addition, a negligible

increase in peak runoff was predicted for Pipe Watershed 4.3. It is anticipated that this increase of less than 0.05 cfs for all modeled storm events would be attenuated to pre-project levels as it flows into and through the rock apron outlet structure, which would help disperse concentrated flow and provide a small amount of detention.

Based on this analysis, no increases in net runoff are predicted and no negative hydrologic impacts are expected as a result of this project. Because the proposed project would not increase runoff rates or volume, and because the drainage features were determined to be appropriate for local hydrologic conditions during development of the Erosion Control Plan, drainage system features on-site would not result in flooding.

As discussed in **Impact 3.5-3** in **Section 3.5, *Geology and Soils***, on-site sediment loading from erosion would decrease with incorporation of the erosion and runoff control measures proposed in the Erosion Control Plan, as demonstrated in the USLE calculations (**Table 3.5-4**). Road systems can also be a source of sediment production and delivery to the stream system. The project proposes the use of existing roads, and some roads would be improved through the proposed road plan (see Appendix G of the Erosion Control Plan, provided as **Appendix A**), which is consistent with recent road management plans prepared by the Napa County Resource Conservation District. As discussed in the road plan, the proposed road upgrades would ensure that the increased use of the existing dirt roads would not increase erosion or sedimentation to local waterways.

Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial flooding, erosion, or siltation on- or off-site. This impact would be **less than significant**.

Additionally, the County's standard hydromodification conditions would be implemented before project approval, as discussed in Impact 3.5-2 in **Section 3.5, *Geology and Soils***.

Implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, which would reduce the project's acreage by approximately 21.73 acres, is anticipated to result in similar hydrologic effects and rates of runoff.

Mitigation Measure: None required.

Impact 3.7-3: Construction and operation of the proposed project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

As discussed under **Impact 3.7-2**, the results of hydrologic modeling for the proposed project using the overall basin model predict net decreases in peak flow rates for almost all watersheds. Watershed 8 is the only watershed for which a slight increase in peak runoff was predicted. However, the predicted increase in peak runoff within Watershed 8 would be offset where flows

enter Elder Creek by a decrease in runoff in the upstream watersheds and reaches. These upstream decreases would attenuate the Watershed 8 flow increase into Elder Creek to below pre-project levels.

Proposed stormwater conveyance infrastructure was also modeled at points of discharge throughout the project site. Most of these models predict either a small decrease or no change in runoff post-project. The analyses specifically show that there are no net increases in peak flow where infrastructure outlets directly into a stream or mapped water course. Similar to the overall basin model, Pipe Watershed 8.1 predicted a small increase in peak runoff post-project. This increase would be offset by upstream decreases and is not expected to create any adverse effects. In addition, a negligible increase in peak runoff was predicted for Pipe Watershed 4.3.

It is anticipated that this increase of less than 0.05 cfs for all modeled storm events would be attenuated to pre-project levels as it flows into and through the rock apron outlet structure, which would help disperse concentrated flow and provide a small amount of detention. In addition, decreases in runoff would lead to a decrease in sedimentation. Lastly, erosion control measures implemented as part of the proposed project and discussed in **Impact 3.7-1** would reduce impacts of the proposed project on water quality.

Impact Conclusion

The proposed project would have a **less-than-significant** impact on stormwater drainage system capacities and polluted runoff.

Mitigation Measure: None required.

Impact 3.7-4: Operation of the proposed project could change the water volume and pattern of seasonal flows in the affected watercourse, resulting in a significant cumulative reduction in the water supply downstream of the diversion or a significant reduction in water supply to downstream senior water right holders.

If approved, the proposed project would be irrigated with surface water diverted pursuant to Water Right License 9125 and Permit 18459. The following discussion focuses on water supply changes associated with the Petitions for Change and Extension of Time (as amended) that were filed with the State Water Board, Division of Water Rights, for Permit 18459; no water supply changes would occur under License 9125.

Water Right Permit 18459 (Application 26165) was issued by the State Water Board in 1982 and allowed for the construction of an onstream dam on Elder Creek impounding a 48-acre-foot reservoir. The onstream dam was never constructed, and no water has been diverted or used under the permit.

The original Petition for Change for Permit 18459 was filed in 2001 and was publicly noticed by the State Water Board in May 2002. The petition was protested by the California Department of

Fish and Game (now California Department of Fish and Wildlife) in July 2002. The 2002 protest listed several proposed conditions that might be required for resolution of the protest depending on the outcome of environmental studies. The proposed conditions included a minimum bypass flow, a limitation on the cumulative rate of diversion, and a limitation on the cumulative annual amount of water diverted in the watersheds of interest. The petition has since been amended several times, with the most recent amendment filed in 2018 (see **Chapter 2, *Project Description***).

Wagner & Bonsignore Consulting Civil Engineers prepared a hydrologic analysis in support of the petitions, analyzing the diversion of up to 48 acre-feet from Elder Creek between November 1 and April 30 under Permit 18459 (**Appendix J**). Six points of interest were chosen for the analysis and are located downstream of Point of Diversion 1, as described in ***Methods of Analysis*** above. The February median flow values for Points of Diversion 1 and 2 were calculated to be approximately 0.6 cfs and 0.9 cfs, respectively.

The analysis assumed that diversions under Permit 18459 would not occur until the minimum bypass flows were met, and that maximum diversion rate restrictions of 0.29 cfs at Point of Diversion 1 and 0.41 cfs at Point of Diversion 2 would occur.

Table 3.7-5 summarizes the results of the calculations of average annual impaired flow. For Points of Interest 2–4, the average annual impairment from senior diversions (baseline condition) is above 10 percent without considering the effects of the diversion from the proposed project. The average annual impairment values, including the effects of the proposed project, are incrementally higher at these points of interest; however, they are relatively small, ranging from about 1.4 percent to about 4.4 percent. The percentage impairment from senior diversions at Points of Interest 1, 5, and 6 are less than 10 percent. When diversion from the proposed project is included, impairment at these points of interest increases, but it does not exceed 10 percent. For all six points of interest, the percentage of incremental impairment resulting from the proposed project decreases from upstream to downstream.

TABLE 3.7-5
AVERAGE ANNUAL IMPAIRED FLOW

Point of Interest	Average Annual Senior Impairment (%)	Average Annual Senior Plus Project Impairment (%)	Incremental Impairment due to Project (%)
1	0	4.7	4.7
2	16.2	20.6	4.4
3	10.2	12.5	2.1
4	12.0	13.3	1.4
5	6.5	7.2	0.7
6	5.1	5.7	0.6

SOURCE: Appendix J; Wagner & Bonsignore 2020

Based on modeling in the hydrologic analysis and the incremental impairment percentages shown in **Table 3.7-5**, the proposed project would not result in a significant cumulative reduction in the water supply downstream of the diversion or a significant reduction in water supply to downstream senior water right holders.

Although the project site is above the upper limit of anadromy (which the State Water Board has determined to be at Conn Creek Dam) and the proposed project would not affect migrating fish, water diversion under Permit 18459 would include the following elements to protect non-anadromous aquatic habitat from flow-related effects and comply with State Water Board guidelines:

- Shortened diversion season (December 15–March 31)
- Minimum bypass flow
- Maximum rate of diversion to offstream storage restrictions

Specifically, as described in **Chapter 2, *Project Description***, water diverted under Permit 18459 would be limited to the quantity that could be beneficially used and would not exceed 48 acre-feet per year by storage collected from December 15 of each year to March 31 of the succeeding year. Diversions under Permit 18459 would not occur unless the February median bypass flows of 0.6 cfs at Point of Diversion 1 on Elder Creek and 0.9 cfs at Point of Diversion 2 at Matheson Reservoir were met, and the maximum rate of diversion to offstream storage would not exceed 0.29 cfs at Point of Diversion 1 or 0.41 cfs at Point of Diversion 2.

Project approval, if granted, would be subject to the following conditions of approval, which would further reduce potential impacts associated with water use as a result of vineyard establishment and ongoing vineyard operations and maintenance.

> **Vineyard Irrigation—Conditions of Approval:**
>
> Before the start of any vegetation removal or earthmoving activities associated with development areas located outside of the current authorized place of use, or any portions thereof, the owner/permittee shall provide documentation to Napa County showing or otherwise demonstrating that all portions of this development area are located within the place of use prescribed in Water Right License 9125 and Permit 18459. Development of those areas located outside of the prescribed place of use shall not begin or occur until evidence has been provided to Napa County that the place of use has been changed with the State Water Resources Control Board, Division of Water Rights, to cover said development areas, or until a modification of #P17-00432-ECPA has been processed to evaluate an alternate water supply pursuant to the California Environmental Quality Act and County policies.
>
> Before development of the offstream reservoir, the owner/permittee shall also provide documentation to the County showing or otherwise demonstrating that: i) the offstream location under Permit 18459 has been changed with the State Water Resources Control

Board, Division of Water Rights, from an onstream location to the offstream location; ii) that Permit 18459 has been modified to not exceed 48 acre-feet per year by storage collected from December 15 of each year to March 31 of the succeeding year; iii) that Diversions under Permit 18459 would not occur unless the February median bypass flows of 0.6 cfs at Point of Diversion 1 on Elder Creek and 0.9 cfs at Point of Diversion 2 at Matheson Reservoir were met; and iv) that the maximum rate of diversion to offstream storage would not exceed 0.29 cfs at Point of Diversion 1 or 0.41 cfs at Point of Diversion.

No new or existing on-site or off-site water sources, other than the surface water evaluated as part of the proposed project (i.e., existing water right License 9125 and Permit 18459) shall be used for irrigation of the proposed vineyard. Any other proposed irrigation source, including but not limited to wells, imported water, new or existing ponds/reservoir(s) or other surface water impoundments, to serve the vineyard, shall not be allowed without additional environmental review, if necessary, and may be subject to modification to this ECPA.

Impact Conclusion

Operation of the proposed project would not change the water volume and pattern of seasonal flows in the affected watercourse that would result in a significant reduction in water supply downstream of the diversion, and the proposed project would incorporate the vineyard irrigation conditions of approval. This impact would be **less than significant**.

With implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, which would reduce the project acreage by approximately 21.73 acres, anticipated surface water demand and corresponding downstream flow impairment would slightly decrease.

Mitigation Measure: None required.

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3.8 LAND USE AND PLANNING

This section describes land uses on and near the project site, summarizes the regulatory setting relevant to the proposed project, and evaluates the project's consistency with land use and planning policies and regulations. No comment letters regarding land use and planning were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation comment letters.

3.8.1 ENVIRONMENTAL SETTING

Napa County is located north of the San Francisco Bay Area and is bounded by Yolo County to the north and northeast, Solano County to the south and southeast, Sonoma County to the west, and Lake County to the west and northwest. The county occupies approximately 506,000 acres, approximately 479,000 acres (95 percent) of which are in the county's unincorporated areas. Incorporated areas include the Cities of American Canyon, Calistoga, Napa, and St. Helena and the Town of Yountville (Napa County 2007).

The project site lies approximately 10 miles east of St. Helena, in the interior of Napa County within the Central Interior Valley unincorporated area, between the Berryessa area and the Napa Valley floor. The southern portion of Lake Berryessa is approximately 3.5 miles east of the project site and Lake Hennessey is approximately 4.5 miles west of the site. Lands in the area are mostly rural, with surrounding land uses consisting primarily of vineyards and wineries, rural residential uses, and open space. Approximately 104 acres of vineyard exist on the project site and the entire property is grazed for fire protection. The dominant land cover types in the development area include oak woodlands, chaparral, grassland, riparian, and vineyards; elevations range from approximately 940 feet to 1,680 feet above mean sea level. There are two existing residences on the project site. See **Section 2.2, *Project Site and Vicinity*,** in **Chapter 2, *Project Description*,** for additional information about the project site and vicinity.

The parcels within the project site (Assessor's Parcel Numbers 025-270-022 and 025-270-025) have an Agriculture, Watershed and Open Space (AWOS) designation in the Napa County General Plan (General Plan). The General Plan describes the intent of the AWOS designation as follows:

> To provide areas where the predominant use is agriculturally oriented; where watersheds are protected and enhanced; where reservoirs, floodplain tributaries, geologic hazards, soil conditions, and other constraints make the land relatively unsuitable for urban development; where urban development would adversely impact all such uses; and where the protection of agriculture, watersheds, and floodplain tributaries from fire, pollution, and erosion is essential to the general health, safety, and welfare.

General uses within the AWOS designation include agriculture, processing of agricultural products, and single-family dwellings.

Approximately 90 percent of Napa County is designated as AWOS; about 10 percent of that area (or about 46,000 acres) is in wine grape production (Napa County 2017).

The parcels within the project site are zoned as Agricultural Watershed (AW). The Napa County Zoning Ordinance describes the AW zoning district as follows:

> The AW district classification is intended to be applied in those areas of the county where the predominant use is agriculturally oriented, where watershed areas, reservoirs and floodplain tributaries are located, where development would adversely impact on all such uses, and where the protection of agriculture, watersheds and floodplain tributaries from fire, pollution and erosion is essential to the general health, safety and welfare.

Agriculture is one of the uses allowed within AW districts without a use permit.

3.8.2 REGULATORY SETTING

FEDERAL REGULATIONS

There are no relevant federal regulations applicable to land use and planning.

STATE REGULATIONS

State Planning and Zoning Laws

Section 65300 et seq. of the California Government Code describes the authority and scope of each county and city to adopt a comprehensive, long-term general plan for its physical development, and for physical development of any land outside its boundaries that in the planning agency's judgment bears relation to its planning. The general plan consists of a statement of development policies and objectives, principles, standards, and plan proposals. At a minimum, the general plan contains the following elements: land use, circulation, housing, conservation, open space, noise, and safety.

Government Code Section 65800 et seq. provides for the adoption and administration of zoning laws, ordinances, rules, and regulations by counties and cities and for the implementation of the general plan in effect in any such county or city. The zoning ordinance defines permitted land uses in specific zone districts. Chapter 4, Title 7 of the Government Code requires that county or city zoning ordinances be consistent with the general plan.

LOCAL REGULATIONS

Napa County General Plan

The Napa County General Plan serves as a broad framework for planning in Napa County. The Agricultural Preservation and Land Use Element describes Napa County's goals and policies on issues related to the use of land and agricultural preservation. The Conservation Element includes Napa County's goals and policies related to open space conservation and natural resources, including water resources. **Table 3.8-2** summarizes General Plan policies that are applicable to the proposed project.

Napa County Code

The Napa County Zoning Ordinance (Title 18 of the Napa County Code) defines permitted land uses in Napa County zoning districts. Chapter 18.20 of the zoning ordinance describes the intent, uses allowed, and other regulations applicable to the Agricultural Watershed District (see **Section 3.8.1, *Environmental Setting***). Applicable code sections from the Napa County Conservation Regulations are discussed in the individual resource sections of this Draft EIR.

The original submittal (December 14, 2017) contained the application materials that were required by the County's Erosion Control Plan Application Checklist at that time. As a result, the application was determined to be a "substantially conforming and qualified permit application" pursuant to the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective on May 9, 2019. Therefore, continued processing and review of this application will not be subject to the County Conservation Regulations (Napa County Code Chapter 18.108), as amended by the Water Quality and Tree Protection Ordinance. This application is subject to the County Conservation Regulations that were in effect before May 2019.

3.8.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, a land use impact is considered significant if the proposed project would do any of the following:

- 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.

ISSUES NOT DISCUSSED IN IMPACTS

The potential for the proposed project to physically divide an established community was evaluated. The project was determined to result in no impact related to this issue, as the project site is not located in or near any established community. Therefore, this issue is not evaluated

further in this EIR section. A complete discussion can be found in the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

Potential land use impacts were evaluated based on a review of planning documents relevant to the project site, including the Conservation, Safety, Circulation, and Agricultural Preservation and Land Use Elements of the Napa County General Plan (Napa County 2009, 2013, 2019) and the Napa County Zoning Ordinance.

IMPACTS AND MITIGATION MEASURES

Table 3.8-1 summarizes the impact conclusion presented in this section.

TABLE 3.8-1
SUMMARY OF IMPACT CONCLUSIONS—LAND USE AND PLANNING

Impact Statement	Impact Conclusion
3.8-1: Construction and operation of the proposed project could 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 with Mitigation

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.8-1: Construction and operation of the proposed project could 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.

The proposed vineyard is consistent with the project site's General Plan designation of AWOS because agriculture is an allowable use. The proposed project is also consistent with the project site's AW zoning designation because agriculture is one of the uses allowed in AW districts without a use permit.

The proposed project has been analyzed for consistency with applicable sections of the Napa County Code and the Napa County General Plan. **Table 3.8-2** discusses the project's consistency with the General Plan. Various mitigation measures are required to reduce resource-specific impacts to ensure compliance with the Napa County Code of Ordinances and the Napa County General Plan. Because these impacts and mitigation measures are addressed elsewhere throughout this Draft EIR, **Table 3.8-2** identifies the specific mitigation measures that would ensure compliance with the General Plan.

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
Agricultural Preservation and Land Use Element				
AG/LU-1	Agriculture and related activities are the primary land uses in Napa County.	Yes	Appendix B (Section 2, *Agriculture and Forestry Resources*)	N/A
AG/LU-4	The County will reserve agricultural lands for agricultural use including lands used for grazing and watershed/open space, except for those lands which are shown on the Land Use Map as planned for urban development.	Yes	Appendix B (Section 2, *Agriculture and Forestry Resources*)	N/A
AG/LU-20	The following standards shall apply to lands designated as Agriculture, Watershed, and Open Space on the Land Use Map of this General Plan. **Intent**: To provide areas where the predominant use is agriculturally oriented; where watersheds are protected and enhanced; where reservoirs, floodplain tributaries, geologic hazards, soil conditions, and other constraints make the land relatively unsuitable for urban development; where urban development would adversely impact all such uses; and where the protection of agriculture, watersheds, and floodplain tributaries from fire, pollution, and erosion is essential to the general health, safety, and welfare. **General Uses**: Agriculture, processing of agricultural products, single-family dwellings.	Yes	Impact 3.8-1	N/A
Circulation Element				
CIR-31	The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is efficient in providing local access.	Yes	Impacts 3.10-1 through 3.10-4	N/A
CIR-38	The County seeks to maintain operations of roads and intersections in the unincorporated County area that minimize travel delays and promote safe access for all users. Operational analysis shall be conducted according to the latest version of the Highway Capacity Manual and as described in the current version of the County's Transportation Impact Study Guidelines. In general, the County seeks to maintain Level of Service (LOS) D on arterial roadways and at signalized intersections, as the service level that best aligns with the County's desire to balance its rural character with the needs of supporting economic vitality and growth.	Yes	Impacts 3.10-1 and 3.10-2	N/A
CIR-40	The County shall maintain and apply consistent highway access standards regarding new driveways to minimize interference with through traffic while providing adequate local access. The County shall also maintain and apply consistent standards (though not exceeding public road standards) regarding road widths, turn lanes, and other improvements required in association with new development. When a project is proposed in a location such that County roads are needed to access the nearest fully staffed fire station, the County may require the developer to improve the County roads to meet adequate fire protection standards similar to improvements required on the developer's property.	Yes	Impact 3.10-3	N/A

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
Conservation Element				
CON-1	The County will preserve land for greenbelts, forest, recreation, flood control, adequate water supply, air quality improvement, habitat for fish, wildlife and wildlife movement, native vegetation, and natural beauty. The County will encourage management of these areas in ways that promote wildlife habitat renewal, diversification, and protection.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5b
CON-2	The County shall identify, improve, and conserve Napa County's agricultural land through the following measures: … c) Require that existing significant vegetation be retained and incorporated into agricultural projects to reduce soil erosion and to retain wildlife habitat. When retention is found to be infeasible, replanting of native or non-invasive vegetation shall be required. … f) Minimize pesticide and herbicide use and encourage research and use of integrated pest control methods such as cultural practices, biological control, host resistance, and other factors.	Yes, with mitigation	Chapter 2, *Project Description*; Appendix A; Impacts 3.3-1 through 3.3-5; Impact 3.6-1	Mitigation Measures 3.3-1a through 3.3-5b
CON-4	The County recognizes that preserving watershed open space is consistent with and critical to the support of agriculture and agricultural preservation goals.	Yes	Chapter 2, *Project Description*; Appendix A	N/A
CON-6	The County shall impose conditions on discretionary projects which limit development in environmentally sensitive areas such as those adjacent to rivers or streamside areas and physically hazardous areas such as floodplains, steep slopes, high fire risk areas and geologically hazardous areas.	Yes, with mitigation	Impacts 3.3-1, 3.3-2, 3.3-3, 3.5-2, and 3.5-4	Mitigation Measures 3.3-1a, 3.3-3a, 3.3-3b, 3.3-3c, and 3.5-2c
CON-9	The County shall pursue a variety of techniques and practices to achieve the County's Open Space Conservation policies, including: a) Exclusive agriculture zoning or Transfer of Development Rights. b) Acquisition through purchase, gift, grant, bequest, devise, lease, or otherwise, the fee or any lesser interest or right in real property. c) Williamson Act or other incentives to maintain land in agricultural production or other open space uses. d) Requirements for mitigation of development impacts, either on-site or at other locations in the county or through the payment of in-lieu fees in limited circumstances when impacts cannot be avoided.	Yes, with mitigation	Impacts 3.3-1, 3.3-2, and 3.3-5	Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, 3.3-5a, and 3.3-5b
CON-10	The County shall conserve and improve fisheries and wildlife habitat in cooperation with governmental agencies, private associations and individuals in Napa County.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5b

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-11	The County shall maintain and improve fisheries habitat through a variety of appropriate measures, including the following as well as best management practices developed over time: … m) Control sediment production from mines, roads, development projects, agricultural activities, and other potential sediment sources. n) Implement road construction and maintenance practices to minimize bank failure and sediment delivery to streams. …	Yes	Chapter 2, *Project Description*; Appendix A; Impact 3.5-3	N/A
CON-13	The County shall require that all discretionary residential, commercial, industrial, recreational, agricultural, and water development projects consider and address impacts to wildlife habitat and avoid impacts to fisheries and habitat supporting special-status species to the extent feasible. Where impacts to wildlife and special-status species cannot be avoided, projects shall include effective mitigation measures and management plans including provisions to: a) Maintain the following essentials for fish and wildlife resources: 1) Sufficient dissolved oxygen in the water. 2) Adequate amounts of proper food. 3) Adequate amounts of feeding, escape, and nesting habitat. 4) Proper temperature through maintenance and enhancement of streamside vegetation, volume of flows, and velocity of water. … d) Provide protection for habitat supporting special-status species through buffering or other means. … g) Require temporary or permanent buffers of adequate size (based on the requirements of the subject special-status species) to avoid nest abandonment by birds and raptors associated with construction and site development activities.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5b
CON-14	To offset possible losses of fishery and riparian habitat due to discretionary development projects, developers shall be responsible for mitigation when avoidance of impacts is determined to be infeasible. Such mitigation measures may include providing and permanently maintaining similar quality and quantity habitat within Napa County, enhancing existing riparian habitat, or paying in-kind funds to an approved fishery and riparian habitat improvement and acquisition fund. Replacement habitat may occur either on-site or at approved off-site locations, but preference shall be given to on-site replacement.	Yes, with mitigation	Impacts 3.3-1, 3.3-3 and 3.3-4	Mitigation Measures 3.3-1a, 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-4
CON-16	The County shall require a biological resources evaluation for discretionary projects in areas identified to contain or potentially contain special-status species based upon data provided in the Baseline Data Report (BDR), California Natural Diversity Database (CNDDB), or other technical materials. This evaluation shall be conducted prior to the approval of any earthmoving activities. The County shall also encourage the development of programs to protect special-status species and disseminate updated information to state and federal resource agencies.	Yes	Section 3.3; Appendix E	N/A

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-17	Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic communities and habitats of limited distribution. The County, in its discretion, shall require mitigation that results in the following standards: a) Prevent removal or disturbance of sensitive natural plant communities that contain special-status plant species or provide critical habitat to special-status animal species. b) In other areas, avoid disturbances to or removal of sensitive natural plant communities and mitigate potentially significant impacts where avoidance is infeasible. … d) Encourage scientific study and require monitoring and active management where biotic communities and habitats of limited distribution or sensitive natural plant communities are threatened by the spread of invasive non-native species. e) Require no net loss of sensitive biotic communities and habitats of limited distribution through avoidance, restoration, or replacement where feasible. Where avoidance, restoration, or replacement is not feasible, preserve like habitat at a 2:1 ratio or greater within Napa County to avoid significant cumulative loss of valuable habitats.	Yes, with mitigation	Impacts 3.3-1, 3.3-2, and 3.3-5	Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, 3.3-5a, and 3.3-5b
CON-18	To reduce impacts on habitat conservation and connectivity: a) In sensitive domestic water supply drainages where new development is required to retain between 40 and 60 percent of the existing (as of June 16, 1993) vegetation onsite, the vegetation selected for retention should be in areas designed to maximize habitat value and connectivity. … c) Preservation of habitat and connectivity of adequate size, quality, and configuration to support special-status species should be required within the project area. The size of habitat and connectivity to be preserved shall be determined based on the specific needs of the species. d) The County shall require discretionary projects to retain movement corridors of adequate size and habitat quality to allow for continued wildlife use based on the needs of the species occupying the habitat. e) The County shall require new vineyard development to be designed to minimize the reduction of wildlife movement to the maximum extent feasible. In the event the County concludes that such development will have a significant impact on wildlife movement, the County may require the applicant to relocate or remove existing perimeter fencing installed on or after February 16, 2007 to offset the impact caused by the new vineyard development.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5, and Impact 3.8-1	Mitigation Measures 3.3-1a through 3.3-5b
CON-19	The County shall encourage the preservation of critical habitat areas and habitat connectivity through the use of conservation easements or other methods as well as through continued implementation of the Napa County Conservation Regulations associated with vegetation retention and setbacks from waterways.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5b

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-22	The County shall encourage the protection and enhancement of natural habitats which provide ecological and other scientific purposes. As areas are identified, they should be delineated on environmental constraints maps so that appropriate steps can be taken to appropriately manage and protect them.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5b
CON-24	Maintain and improve oak woodland habitat to provide for slope stabilization, soil protection, species diversity, and wildlife habitat through appropriate measures including one or more of the following: a) Preserve, to the extent feasible, oak trees and other significant vegetation that occur near the heads of drainages or depressions to maintain diversity of vegetation type and wildlife habitat as part of agricultural projects. b) Comply with the Oak Woodlands Preservation Act (Public Resources Code Section 21083.4) regarding oak woodland preservation to conserve the integrity and diversity of oak woodlands, and retain, to the maximum extent feasible, existing oak woodland and chaparral communities and other significant vegetation as part of residential, commercial, and industrial approvals. c) Provide replacement of lost oak woodlands or preservation of like habitat at a 2:1 ratio when retention of existing vegetation is found to be infeasible. Removal of oak species limited in distribution shall be avoided to the maximum extent feasible. d) Support hardwood cutting criteria that require retention of adequate stands of oak trees sufficient for wildlife, slope stabilization, soil protection, and soil production be left standing. e) Maintain, to the extent feasible, a mixture of oak species which is needed to ensure acorn production. Black, canyon, live, and brewer oaks as well as blue, white, scrub, and live oaks are common associations.	Yes, with mitigation	Impacts 3.3-1, 3.3-2, and 3.3-5	Mitigation Measures 3.3-1a, 3.3-2a, 3.3-5a, and 3.3-5b
CON-26	Consistent with Napa County's Conservation Regulations, natural vegetation retention areas along perennial and intermittent streams shall vary in width with steepness of the terrain, the nature of the undercover, and type of soil. The design and management of natural vegetation areas shall consider habitat and water quality needs, including the needs of native fish and special-status species and flood protection where appropriate. Site-specific setbacks shall be established in coordination with Regional Water Quality Control Boards, California Department of Fish and Game [CDFW], U.S. Fish and Wildlife Service, National Oceanic and Atmospheric Administration National Marine Fisheries Service, and other coordinating resource agencies that identify essential stream and stream reaches necessary for the health of populations of native fisheries and other sensitive aquatic organisms within the County's watersheds.	Yes, with mitigation	Chapter 2, *Project Description*; Appendix A; Impacts 3.3-1, 3.3-3 and 3.3-4	Mitigation Measures 3.3-1a, 3.3-3a, 3.3-3b, and 3.3-3c

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-26 (cont.)	Where avoidance of impacts to riparian habitat is infeasible along stream reaches, appropriate measures will be undertaken to ensure that protection, restoration, and enhancement activities will occur within these identified stream reaches that support or could support native fisheries and other sensitive aquatic organisms to ensure a no net loss of aquatic habitat functions and values within the county's watersheds.			
CON-27	The County shall enforce compliance and continued implementation of the intermittent and perennial stream setback requirements set forth in existing stream setback regulations, provide education and information regarding the importance of stream setbacks and the active management and enhancement/restoration of native vegetation within setbacks, and develop incentives to encourage greater stream setbacks where appropriate. Incentives shall include streamlined permitting for certain vineyard proposals on slopes between 5 and 30 percent and flexibility regarding yard and road setbacks for other proposals.	Yes	Chapter 2, *Project Description*; Appendix A; Impact 3.3-1, 3.3-2, 3.3-3, 3.3-4	Mitigation Measures 3.3-1a, 3.3-2a, 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-4
CON-28	To offset possible additional losses of riparian woodland due to discretionary development projects and conversions, developers shall provide and maintain similar quality and quantity of replacement habitat or in-kind funds to an approved riparian woodland habitat improvement and acquisition fund in Napa County. While on-site replacement is preferred where feasible, replacement habitat may be either on-site or off-site as approved by the County.	Yes, with mitigation	Impact 3.3-5	Mitigation Measures 3.3-5a and 3.3-5b
CON-29	The County shall coordinate its efforts with other agencies and districts such as the Resource Conservation District and share a leading role in developing and providing outreach and education related to stream setbacks and other best management practices that protect and enhance the County's natural resources.	Yes	Chapter 2, *Project Description*; Appendix A	N/A
CON-30	All public and private projects shall avoid impacts to wetlands to the extent feasible. If avoidance is not feasible, projects shall mitigate impacts to wetlands consistent with state and federal policies providing for no net loss of wetland function.	Yes, with mitigation	Chapter 2, *Project Description*; Appendix A; and Impact 3.3-3	Mitigation Measures 3.3-3a, 3.3-3b, and 3.3-3c
CON-41	The County will work to protect Napa County's watersheds and public and private water reservoirs to provide for the following purposes: a) Clean drinking water for public health and safety; b) Municipal uses, including commercial, industrial and domestic uses; c) Support of the eco-systems; d) Agricultural water supply; e) Recreation and open space; and f) Scenic beauty.	Yes	Impacts 3.7-1 through 3.7-5	N/A

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-42	The County shall work to improve and maintain the vitality and health of its watersheds. Specifically, the County shall: … d) Support environmentally sustainable agricultural techniques and best management practices (BMPs) that protect surface water and groundwater quality and quantity (e.g., cover crop management, integrated pest management, informed surface water withdrawals and groundwater use). …	Yes	Chapter 2, *Project Description*; Appendix A; and Impacts 3.7-1 through 3.7-4	N/A
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.	Yes	Chapter 2, *Project Description*; Appendix A; and Impacts 3.3-1, 3.3-3, 3.3-4, and 3.7-1	Mitigation Measures 3.3-1a, 3.3-3a, 3.3-3b, and 3.3-3c
CON-47	The County shall comply with applicable Water Quality Control/Basin Plans as amended through the Total Maximum Daily Load (TMDL) process to improve water quality.	Yes	Impacts 3.7-1 and 3.7-4	N/A
CON-48	Proposed developments shall implement project-specific sediment and erosion control measures (e.g., erosion control plans and/or stormwater pollution prevention plans) that maintain predevelopment sediment erosion conditions or at a minimum comply with State water quality pollution control (i.e., Basin Plan) requirements and are protective of the County's sensitive domestic supply watersheds. Technical reports and/or erosion control plans that recommend site-specific erosion control measures shall meet the requirements of the County Code and provide detailed information regarding site specific geologic, soil, and hydrologic conditions and how the proposed measure will function.	Yes	Impacts 3.7-1 and 3.7-4	N/A
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). … c) The County shall require discretionary projects to meet performance standards designed to ensure peak runoff in 2-, 10-, 50-, and 100-year events following development is not greater than predevelopment conditions. d) Maintain minimum lot sizes of not less than 160 acres in Agriculture, Watershed, and Open Space (AWOS) designated areas to reflect desirable densities based on access, slope, productive capabilities for agriculture and forestry, sewage disposal, water supply, wildlife habitat, and other environmental considerations.	Yes	Chapter 2, *Project Description;* Appendix A; Impacts 3.3-1, 3.3-2, 3.3-3, 3.3-4, and 3.7-1 through 3.7-4	Mitigation Measures 3.3-1a, 3.3-2a, 3.3-3a, 3.3-3b, 3.3-3c, and 3.3-4

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
CON-50 (cont.)	e) In conformance with National Pollution Discharge Elimination System (NPDES) requirements, prohibit grading and excavation unless it can be demonstrated that such activities will not result in significant soil erosion, silting of lower slopes or waterways, slide damage, flooding problems, or damage to wildlife and fishery habitats. … g) Address potential soil erosion by maintaining sections of the County Code that require all construction-related activities to have protective measures in place or installed by the grading deadlines established in the Conservation Regulations. In addition, the County shall ensure enforceable fines are levied upon code violators and shall require violators to perform all necessary remediation activities. h) 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. …			
CON-53	The County shall ensure that the intensity and timing of new development are consistent with the capacity of water supplies and protect groundwater and other water supplies by requiring all applicants for discretionary projects to demonstrate the availability of an adequate water supply prior to approval.	Yes	Impacts 3.7-2 and 3.7-5	N/A
CON-65	The County shall support efforts to reduce and offset greenhouse gas (GHG) emissions and strive to maintain and enhance the County's current level of carbon sequestration functions through the following measures: … b) Preserve and enhance the values of Napa County's plant life as carbon sequestration systems to recycle greenhouse gases.	Yes	Impact 3.2-5	N/A
Safety Element				
SAF-8	Consistent with County ordinances, require a geotechnical study for new projects and modifications of existing projects or structures located in or near known geologic hazard areas, and restrict new development atop or astride identified active seismic faults in order to prevent catastrophic damage caused by movement along the fault.	Yes	Impacts 3.5-2 and 3.5-4	Mitigation Measure 3.5-2
SAF-9	As part of the review and approval of development and public works projects, planting of vegetation on unstable slopes shall be incorporated into project designs when this technique will protect structures at lower elevations and minimize the potential for erosion or landslides.	Yes	Chapter 2, *Project Description*; Appendix A	N/A
SAF-10	No extensive grading shall be permitted on slopes over 15 percent where landslides or other geologic hazards are present unless the hazard(s) are eliminated or reduced to a safe level.	Yes, with mitigation	Chapter 2, *Project Description*; Appendix A; Impacts 3.5-2 and 3.5-4	Mitigation Measure 3.5-2

TABLE 3.8-2
CONSISTENCY OF THE PROPOSED PROJECT WITH THE NAPA COUNTY GENERAL PLAN

Relevant Policy	Policy Summary	Is the Proposed Project Consistent?	Draft EIR Analysis	Mitigation Measure(s)
SAF-30	Potential hazards resulting from the release of liquids (wine, water, petroleum products, etc.) from the possible rupture or collapse of aboveground tanks should be considered as part of the review and permitting of these projects.	Yes	Impact 3.6-1	N/A

NOTES: County = Napa County; EIR = environmental impact report; N/A = not applicable

SOURCE: Data compiled by Environmental Science Associates in 2021

Impact Conclusion

Specific land use impacts would not occur and land use mitigation measures are not required. However, without mitigation, construction and operation of the proposed project would conflict with applicable sections of the Napa County Code and Napa County General Plan. This impact would be **significant**.

As discussed in **Table 3.8-2** and in this EIR, implementation of mitigation measures identified in Section 3.2, *Air Quality and Greenhouse Gas Emissions*; Section 3.3, *Biological Resources*; and Section 3.5, *Geology and Soils*, would reduce potentially significant impacts identified in those resource/impact categories to a less-than-significant level.

> **Impact Significance after Mitigation**: Implementing **Mitigation Measures 3.2-1a, 3.2-1b, 3.3-1a** through **3.3-5b, and 3.5-2** would reduce this significant impact to a **less-than-significant** level because with these mitigation measures incorporated, the proposed project would not conflict with applicable County regulations, policies, or goals.

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3.9 NOISE

This section describes existing sources of noise in the vicinity of the project site; summarizes the regulatory setting relevant to the proposed project; and evaluates the potential for project construction and operation to result in adverse noise impacts. The analysis in this section was developed based on information obtained from the Napa County General Plan (Napa County 2008) and the local noise ordinance, the Federal Highway Administration (FHWA) *Road Construction Noise Model* (FHWA 2006), and the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment* (FTA 2018).

No comment letters regarding noise and vibration were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation scoping comment letters.

3.9.1 ENVIRONMENTAL SETTING

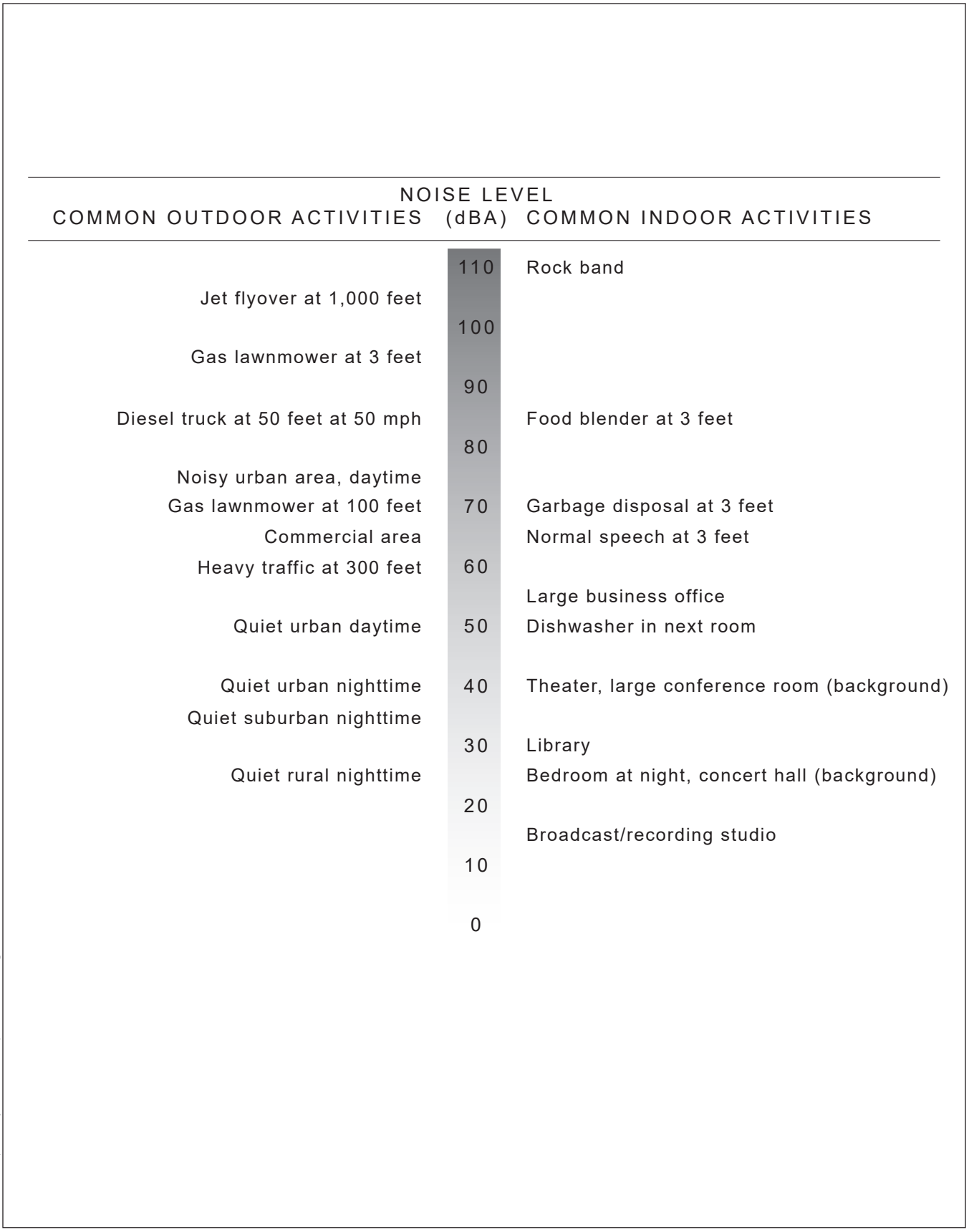
TECHNICAL BACKGROUND AND NOISE TERMINOLOGY

Noise can be generally defined as unwanted sound. Sound, traveling in the form of waves from a source, exerts a sound pressure level (referred to as the *sound level*), which is measured in decibels (dB). Zero dB corresponds roughly to the threshold of human hearing and 120–140 dB corresponds to the threshold of pain.

Sound pressure fluctuations can be measured in units of hertz (Hz), which correspond to the frequency of a particular sound. Typically, sound does not consist of a single frequency, but rather a broad band of frequencies that vary in levels of magnitude (sound power). The sound pressure level thus constitutes the additive force exerted by a sound that corresponds to the spectrum of frequency/sound power levels.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. For this reason, assessments of potential noise impacts measure sound using an electronic filter that deemphasizes frequencies below 1,000 Hz and above 5,000 Hz, similar to the human ear's decreased sensitivity to low and extremely high frequencies relative to the mid-range frequency. This method of frequency weighting, called *A-weighting*, is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology for deemphasizing frequency and is typically applied to community noise measurements. **Figure 3.9-1** shows some representative noise sources and their corresponding A-weighted noise levels.

Noise exposure is a measure of noise over a period of time, while *noise level* is a measure of noise at a given instant in time. Community noise varies continuously over a period of time based on the sources that contribute sounds to the community noise environment. Community noise is primarily the product of many distant noise sources that together generate a relatively stable level of background noise exposure, with individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually with the



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SOURCE: Caltrans, 2013a

Napa County ECP EIR

Figure 3.9-1
Typical Noise Levels

ESA

addition and subtraction of distant noise sources, such as traffic, and atmospheric conditions. What causes community noise to vary constantly throughout a day, besides the slowly changing background noise, is the addition of short-duration, single-event noise sources (e.g., aircraft flyovers, motor vehicles, sirens), which are readily identifiable. With these successive additions of sound to the community noise environment, the community noise level varies from instant to instant. Thus, noise exposure must be measured over a period of time to legitimately characterize the community noise environment and evaluate cumulative noise impacts.

This time-varying characteristic of environmental noise is described using statistical noise descriptors. The following are the most frequently used noise descriptors:

- **L_{eq}:** The energy-equivalent sound level, used to describe noise over a specified period of time—typically one hour—in terms of a single numerical value. The L_{eq} is the constant sound level that would contain the same acoustic energy as the varying sound level during the same time period (i.e., the average noise exposure level for the given time period).
- **L_{max}:** The instantaneous maximum noise level for a specified period of time.
- **L_{dn}:** A 24-hour, day and night, A-weighted noise exposure level that accounts for the greater sensitivity of most people to nighttime noise. Noise measurements weight ("penalize") noise generated between 10 p.m. and 7 a.m. by adding 10 dB to account for the greater tendency of nighttime noise to annoy people.

As a general rule, in areas where traffic dominates the noise environment, the L_{eq} during the peak hour is generally within 1–2 dB of the L_{dn} at that location (Caltrans 2013a).

EFFECTS OF NOISE ON PEOPLE

When a new noise is introduced, human reaction can be predicted by comparing the new noise to the *ambient noise level*, which is the existing noise level from all sources in a given location. In general, the more a new noise exceeds the ambient noise level, the less acceptable the new noise will be to those hearing it. Increases in A-weighted noise levels have the following effects:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3-dB change is considered to be just perceivable.
- A noise level change of at least 5 dB is required before any noticeable change in human response is expected.
- A 10-dB change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

The perceived increases in noise levels listed above apply to both mobile and stationary noise sources. These relationships occur in part because the human ear perceives sound in a non-linear fashion. The decibel scale was developed to reflect this human characteristic and is based on logarithms. Using this scale, two noise sources do not combine in a simple additive

fashion; rather, they combine logarithmically. For example, if two identical noise sources produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

NOISE ATTENUATION

Noise from stationary point sources, including mobile sources that are temporarily stationary such as idling vehicles, attenuates (lessens) at a rate between 6.0 dB for hard sites and 7.5 dB for soft sites for each doubling of distance from the source. A *hard site* is one with a reflective surface between the source and the receiver such as parking lots or smooth bodies of water. No excess ground attenuation is assumed for hard sites, and the change in noise levels with distance (*drop-off rate*) is simply the geometric spreading of the noise from the source. *A soft site* has an absorptive ground surface such as soft dirt, grass, or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dB (per doubling of distance) is normally assumed for soft sites. Noise from line sources (such as traffic noise from vehicles) attenuates at a rate between 3.0 dB for hard sites and 4.5 dB for soft sites for each doubling of distance from the reference measurement (Caltrans 2013a).

Intervening structures, such as a row of buildings, a solid wall, or a berm between the receptor and the noise source, may also reduce noise levels.

FUNDAMENTALS OF VIBRATION

Groundborne vibration can be a serious concern for nearby neighbors, causing buildings to shake and rumbling to be heard (FTA 2018). In contrast with airborne noise, groundborne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even near major roads. Some common sources of groundborne vibration are trains, buses, and heavy trucks on rough roads, and construction activities such as blasting, sheet pile-driving, and operation of heavy earth-moving equipment.

Several different methods are used to quantify vibration. The *peak particle velocity* (PPV) is most frequently used to describe the impacts of vibration on buildings. The PPV is the maximum instantaneous peak of the vibration signal, measured in inches per second (in/sec). The root-mean-square amplitude is most frequently used to describe the effects of vibration on the human body. The root-mean-square amplitude is the average of the squared amplitude of the signal. Decibel notation (shown as vibration decibels, or VdB) is commonly used to express the root-mean-square amplitude, acting to compress the range of numbers required to describe vibration.

Typically, groundborne vibration from human activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration assessments include structures (especially older masonry structures); people who spend a lot of time indoors (especially residents, students, the elderly, and sick); and vibration-sensitive equipment, such as analytical equipment in hospitals and equipment used for computer chip manufacturing.

The effects of groundborne vibration include movement of building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can damage buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Vibration often causes annoyance even when it exceeds the threshold of perception by only a small margin.

EXISTING NOISE-SENSITIVE LAND USES

Humans' responses to noise vary considerably from one individual to another. Various levels of noise can interfere with sleep, concentration, and communication, and can cause physiological and psychological stress and hearing loss. Some land uses are considered more sensitive to noise levels than others, considering the duration and nature of the time people spend at these uses:

- In general, residences are considered most sensitive to noise, as people spend extended amounts of time there, including the nighttime hours. Therefore, the impacts of noise on rest and relaxation, sleep, and communication are highest at residential uses.
- Schools, hotels, hospitals, nursing homes, and recreational uses are also considered more sensitive to noise because activities at these land uses involve rest and recovery, relaxation, and concentration, and increased noise levels tend to disrupt such activities.
- Places such as churches, libraries, and cemeteries, where people tend to pray, study, and/or contemplate, are also sensitive to noise; however, because of the limited time people spend at these uses, impacts are usually tolerable.
- Commercial and industrial uses are considered the least noise-sensitive.

The project site is located in an unincorporated and rural area of Napa County. Land uses in the project vicinity include agriculture and residential. Two single-family residences are located within the project site, one approximately 680 feet west of proposed vineyard Block 14 and the other approximately 560 feet southeast of proposed vineyard Block 6. (For the locations of the proposed vineyard blocks, see Figure 2-3.) The nearest off-site residence is approximately 300 feet south of proposed vineyard Block 1. Additional residences are located east of the project site; however, these residences are more than 2,000 feet from the nearest proposed vineyard block, where noise generated by the proposed project would not be audible.

EXISTING NOISE ENVIRONMENT

The noise environment surrounding the project site is influenced by vehicular traffic along Sage Canyon Road/State Route (SR) 128, operation of off-road farming equipment at vineyards in the area, and wildlife sounds such as birds chirping. The nearest airport is the Angwin-Parrett Field, approximately 8 miles northwest of the project site.

The ambient noise environment in the project vicinity was estimated using a relationship between ambient noise levels and population density researched by the U.S. Environmental Protection Agency (EPA) (1974). EPA determined that ambient noise can be related to

population density in locations away from transportation corridors, such as airports, major roads, and railroad tracks.

Table 3.9-1 lists typical ambient noise levels from environs ranging from "Quiet Suburban" to "Very Noisy Urban." Based on field observations and review of aerial photos of the project site, existing residences near the project site are located in a rural area of Napa County, which for this analysis would meet EPA's description of "Quiet Suburban Residential." Using the typical ambient noise levels presented in **Table 3.9-1**, the estimated ambient noise levels at the residences in the vicinity of the project site are assumed to range from 48 to 52 dBA L_{dn}.

TABLE 3.9-1
TYPICAL AMBIENT NOISE LEVELS IN SUBURBAN AND URBAN ENVIRONMENTS

Description	Typical Range L_{dn}, dBA	Average L_{dn}, dBA	Average Census Tract Population Density, Number of People per Square Mile
Quiet Suburban Residential	48–52	50	630
Normal Suburban Residential	53–57	55	2,000
Urban Residential	58–62	60	6,300
Noisy Urban Residential	63–67	65	20,000
Very Noisy Urban Residential	68–72	70	63,000

NOTES: dBA = A-weighted decibels; L_{dn} = 24-hour day and night A-weighted noise exposure level

SOURCE: EPA 1974

3.9.2 REGULATORY SETTING

FEDERAL REGULATIONS

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under Code of Federal Regulations Title 40, Part 205, Subpart B. The federal noise standard for trucks passing by is 80 dBA at approximately 49 feet from the vehicle pathway's centerline. These noise limits are enforced through regulatory controls on truck manufacturers.

STATE REGULATIONS

The State of California establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks, the state pass-by standard is consistent with the federal limit of 80 dBA. The state's pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at approximately 49 feet from the centerline. These standards are enforced through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials.

LOCAL REGULATIONS

Napa County General Plan

The Agricultural Preservation and Land Use Element and the Community Character Element of the Napa County General Plan contain the following goal and policies that are relevant to the proposed project (Napa County 2008):

- **Policy AG/LU-15:** The County protects the right of agricultural operators in designated agricultural areas to commence and continue their agricultural practices (a "right to farm"), even though established urban uses in the general area may foster complaints against those agricultural practices. The "right to farm" encompasses the processing of agricultural products and other activities inherent in the definition of agriculture provided in Policy AG/LU-2.[1]

Goal CC-7: Accept those sounds which are part of the County's agricultural character while protecting the people of Napa County from exposure to excessive noise.

- **Policy CC-35:** The noises associated with agriculture, including agricultural processing, are considered an acceptable and necessary part of the community character of Napa County, and are not considered to be undesirable provided that normal and reasonable measures are taken to avoid significantly impacting adjacent uses.

- **Policy CC-38:** The following are the County's standards for maximum exterior noise levels for various types of land uses established in the County's Noise Ordinance [shown in **Table 3.9-2**]. Additional standard is provided in the Noise Ordinance for construction activities (i.e., intermittent or temporary noise).

TABLE 3.9-2
COUNTY OF NAPA EXTERIOR NOISE LEVEL STANDARDS
(LEVELS NOT TO BE EXCEEDED MORE THAN 30 MINUTES IN ANY HOUR)

Land Use Type	Time Period	Noise Level (dBA) by Noise Zone Classification		
		Rural	Suburban	Urban
Single-Family Homes and Duplexes	10 p.m. to 7 a.m.	45	45	50
	7 a.m. to 10 p.m.	50	55	60
Multiple Residential 3 or More Units Per Building (Triplex +)	10 p.m. to 7 a.m.	45	50	55
	7 a.m. to 10 p.m.	50	55	60
Office and Retail	10 p.m. to 7 a.m.	60		
	7 a.m. to 10 p.m.	65		
Industrial and Wineries	Anytime	75		

NOTE: dBA = A-weighted decibels

SOURCE: Napa County 2008

[1] Policy AG/LU-2: "Agriculture" is defined as the raising of crops, trees, and livestock; the production and processing of agricultural products; and related marketing, sales, and other accessory uses. Agriculture also includes farm management businesses and farm worker housing.

- **Policy CC-49:** Consistent with the County's Noise Ordinance, ensure that reasonable measures are taken such that temporary and intermittent noise associated with construction and other activities does not become intolerable to those in the area. Construction hours shall be limited per the requirements of the Noise Ordinance. Maximum acceptable noise limits at the sensitive receptor are defined in Policy CC-35.

Napa County Code

Section 2.94.020 of the Napa County Code (the Right to Farm Ordinance) states:

> No existing or future agricultural activity, operation or facility, or any of its appurtenances, conducted or maintained for commercial purposes in a manner consistent with proper and accepted customs and standards, as established and followed by similar agricultural operations in the same locality, shall be or become a nuisance, public or private, due to any changed condition in or about the county, after the same has been in operation for more than three years if it was not a nuisance at the time it began. Provided, however, that such agricultural operations must comply with all provisions of this code and further provided that the provisions of this section shall not apply whenever a nuisance results from the negligent or improper operation of any agricultural operation.

Section 8.16.080(B)(2) of the Napa County Code (the County Noise Ordinance) prohibits the following specific types of noise that are applicable to construction on the project site:

> *Construction or Demolition*:
>
> a. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration or demolition work between the hours of seven p.m. and seven a.m., such that the sound there from creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by variance issued by the appropriate authority. This subsection shall not apply to the use of domestic power tools, as specified in subsection (B)(3) of this section.
>
> b. *Noise Restrictions at Affected Properties*. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedule [shown in **Table 3.9-3**]:

TABLE 3.9-3
NAPA COUNTY NOISE LIMITS FOR CONSTRUCTION ACTIVITIES

Category	Residential	Commercial	Industrial
Daily: 7 a.m. to 7 p.m.	75 dBA	80 dBA	85 dBA
Daily: 7 p.m. to 7 a.m.	60 dBA	65 dBA	70 dBA

NOTE: dBA = A-weighted decibels

SOURCE: Napa County Municipal Code, Chapter 8.16.080, Table 8.16.80

Section 8.16.090(E) includes the following exemption to the noise regulations that is applicable to operation at the project site:

> *Agricultural Operations.* All mechanical devices, apparatus or equipment associated with agricultural operations conducted on agricultural property. Wineries are not included in this section.

3.9.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to noise is considered significant if the proposed project would do any of the following:

- Generate 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.
- Generate excessive groundborne vibration or groundborne noise levels.
- For a project in the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

ISSUES NOT DISCUSSED IN IMPACTS

The closest airport is located approximately 8.5 miles northwest of the project site (Parrett Field in the community of Angwin), and the project site is not within an airport land use plan. Therefore, the proposed project would result in no impact related to conflicts with an airport land use plan or a public or private airstrip, and this EIR does not evaluate these issues further. For a complete discussion, see the Initial Study Environmental Checklist in **Appendix B** of this EIR.

METHODS OF ANALYSIS

The analysis of the proposed project's temporary construction noise effects is based on estimates of construction equipment units and duration of use provided by the Applicant (Table 2-3). The analysis accounted for the attenuation of noise levels provided by the distances between construction activities and the nearest sensitive receptor. Construction noise levels at nearby sensitive receptors were estimated using FHWA's Roadway Construction Noise Model (FHWA 2006) and compared to local noise standards.

Short-term construction and operational noise impacts are the increased noise levels, relative to existing noise levels, that could result from operation of specified construction equipment. To be consistent with the Napa County Noise Ordinance, this analysis uses the 75 dBA L_{eq} daytime and 60 dBA L_{eq} nighttime noise standards in Section 8.16.080 of the Napa County Municipal Code to evaluate whether construction at the project site would cause a substantial temporary or periodic increase in ambient noise levels at nearby sensitive receptors.

For the analysis of long-term effects on the ambient noise environment, an impact would be significant if noise from project operations would increase noise exposure by more than 5 dB. This is the level of change identified as readily perceptible by the California Department of Transportation (Caltrans) *Technical Noise Supplement to the Traffic Noise Analysis Protocol* (Caltrans 2013a).

The methodology described in Caltrans's *Transportation and Construction Vibration Guidance Manual* was used for the assessment of potential vibration impacts on nearby sensitive receptors. For adverse human reaction, the analysis applied the "strongly perceptible" threshold of 0.9 in/sec PPV for transient sources (Caltrans 2013b). For risk of architectural damage to historic buildings and structures, the analysis applied a threshold of 0.1 in/sec PPV (Caltrans 2013b). A threshold of 0.3 in/sec PPV was used to assess the risk of damage for all other building types.

IMPACTS AND MITIGATION MEASURES

Table 3.9-4 summarizes the potential impacts of the proposed project related to noise and vibration and the associated significance determinations.

TABLE 3.9-4
SUMMARY OF IMPACT CONCLUSIONS—NOISE

Impacts	Significance Determinations
3.9-1: Construction of the proposed project could generate a substantial temporary 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
3.9-2: Operation of the proposed project could generate a substantial 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
3.9-3: Construction and operation of the proposed project could result in the generation of excessive groundborne vibration or groundborne noise levels.	Less than Significant

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.9-1: Construction of the proposed project could generate a substantial temporary 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.

As described in **Section 2.4.3, *Project Construction*,** construction of the proposed project would take place between April 1 and September 15 over three phases, with vineyard development complete after three years. Construction would occur during the daytime hours, typically six days a week between 7 a.m. and 5 p.m. **Table 3.9-5** shows typical noise levels produced by the types of off-road equipment that would be used during each construction phase (identified in Table 2-3).

TABLE 3.9-5
REFERENCE CONSTRUCTION EQUIPMENT NOISE LEVELS—50 FEET FROM THE SOURCE

Type of Equipment	L_{max}, dBA	Hourly L_{eq}, dBA/Percent Used[1]
Excavator	81	77/40
Bulldozer	82	78/40
Haul/Water Truck[2]	74	70/40
Loader	79	75/40
Tractor	84	80/40

NOTES:

dBA = A-weighted decibels; L_{eq} = energy-equivalent sound level; L_{max} = instantaneous maximum noise level for a specified period of time

1 "Percent used" data were obtained from the FHWA *Roadway Construction Noise Model User's Guide*.
2 Reference noise levels for dump truck were used for the on-site haul and water trucks.

SOURCE: FHWA 2008

The various pieces of equipment would not be operated constantly throughout the day, as equipment would be turned off when not in use. During a typical workday, the equipment would operate at different locations, and all equipment would not operate concurrently at the same location in the development area. To quantify exposure to construction noise at the nearest sensitive receptors, the analysis assumed that the two loudest pieces of construction equipment would operate in the closest part of the development area to the nearest on-site sensitive receptors. (Off-site residences are located farther from proposed construction activities than the nearest on-site residence.) **Table 3.9-6** presents the highest L_{eq} noise levels to which sensitive receptors could be exposed as a result of construction activities in the development area under these conditions.

TABLE 3.9-6
SUMMARY OF ESTIMATED NOISE LEVELS AT SENSITIVE RECEPTORS DURING PROJECT CONSTRUCTION

Location	Loudest Two Pieces of Construction Equipment	Combined Equipment Noise Level at 50 feet (dBA L_{eq})[1]	Attenuated Noise Level (dBA L_{eq})[2]	Exceeds the Napa Noise Standard of 75 dBA L_{eq} (yes or no)?
Residence approximately 680 feet west of proposed vineyard Block 14	Excavator, bulldozer	80	53	No
Residence approximately 300 feet south of proposed vineyard Block 1	Excavator, bulldozer	81	61	No
Residence approximately 560 feet southeast of proposed vineyard Block 6	Excavator, bulldozer	80	54	No

NOTES:

dBA = A-weighted decibels; L_{eq} = energy-equivalent sound level

1 Reference construction equipment noise levels were obtained from the California Department of Transportation's Roadway Construction Noise Level Model (FHWA 2006).
2 Assumes an attenuation rate of 7.5 dB per doubling of distance (i.e., soft site).

SOURCE: FHWA 2008

All construction activities would occur in an unincorporated area of Napa County and would be subject to the noise standards listed in the County's Noise Ordinance. According to the County's Construction Noise Ordinance (Section 8.16.080 of the Napa County Municipal Code), a significant impact would occur if construction-related noise would cause the daytime ambient noise level in the vicinity of a residence to increase above 75 dBA L_{eq}. As shown in **Table 3.9-6**, construction of the proposed project would not expose nearby sensitive receptors to noise at a level that would exceed the County's daytime noise standard. Off-site residences are located farther from the nearest on-site residence, and they also would not be exposed to construction noise at a level exceeding the Noise Ordinance's daytime construction noise standard.

Impact Conclusion

The impact of project construction with respect to exposure of persons to, or generation of, noise levels in excess of standards in the local noise ordinance would be **less than significant**.

Mitigation Measure: None required.

Impact 3.9-2: Operation of the proposed project could generate a substantial 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.

Operational activities for the proposed project would generally consist of the annual pruning of vines, manual weed control, operation of wind machines, and harvesting of grapes. These activities would not require the use of any additional off-road equipment (e.g., tractors, generators, plows). Although wind machines could operate at night, noise generated by the machines would not be audible at the nearest sensitive receptor. Consequently, on-site agricultural activities would not contribute to a permanent increase in ambient noise levels at nearby sensitive receptors.

As discussed above under *Local Regulations* in **Section 3.9.2, *Regulatory Setting***, Section 8.16.090(E) of the Napa County Municipal Code exempts agricultural activities from its noise standards. Because operational activities would be limited to those typical of an agricultural land use (e.g., annual pruning of vines, manual weed control, and harvesting of grapes), project operation would not interfere with policies of the Napa County General Plan.

As discussed in **Section 2.4.4, *Vineyard Operations and Maintenance*,** and **Section 3.10, *Transportation***, on-site agricultural activities during harvest would result in an estimated 60 daily one-way worker trips in passenger vehicles and 2 one-way grape truck trips per day along SR 128. According to Caltrans's *2016 Traffic Volumes on California State Highways* report, the existing peak-hour traffic volume along SR 128 is 210 (Caltrans 2016). According to Caltrans, traffic must double to cause a noticeable increase in traffic noise. Because project-related haul and worker trips would not double traffic volumes along SR 128, sensitive receptors adjacent to SR 128 would not be exposed to traffic noise levels that would result in a substantial

permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Impact Conclusion

Operation of the proposed project would not result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project. Therefore, this impact would be **less than significant**.

Additionally, noise levels from routine operation and maintenance activities are typical of other surrounding agricultural and compatible uses; the temporary and ongoing noise sources and levels are considered reasonable for agricultural development and operational activities, consistent with the County's "Right to Farm" ordinance (Napa County Code Chapter 2.94 and General Plan Agricultural Preservation and Land Use Policy AG/LU-15).

Mitigation Measure: None required.

Impact 3.9-3: Construction and operation of the proposed project could result in the generation of excessive groundborne vibration or groundborne noise levels.

Human annoyance and building damage are generally the primary temporary construction impacts of vibration. Construction activities that typically result in temporary vibration impacts include impact pile driving, blasting, and the use of large bulldozers. The first two phases of construction of the proposed project would require using bulldozers; the use of an impact pile driver and blasting is not proposed as part of construction activities. Operating bulldozers during project construction would cause vibration near the equipment. Operational activities in the development area (e.g., harvesting and pruning) would not require the use of off-road equipment known to generate excessive vibration.

For adverse human reaction, this analysis applied the "strongly perceptible" threshold of 0.9 in/sec PPV for transient sources. For the risk of architectural damage to historic buildings and structures, the analysis applied a threshold of 0.12 in/sec PPV (Caltrans 2013b). A threshold of 0.3 in/sec PPV was used to assess damage risk for all other buildings. For purposes of this impact discussion, sensitive receptors include both people and structures. Furthermore, as discussed further in **Section 3.4, *Cultural and Tribal Cultural Resources***, there are no historic structures near the development area that could be adversely affected by vibration from project construction.

The use of bulldozers would be expected to generate the highest vibration levels during construction. According to FTA's *Transit Noise and Vibration Impact Assessment*, bulldozers typically generate vibration levels of 0.089 in/sec PPV at a distance of 25 feet. The nearest single-family residence is located approximately 300 feet south of the proposed vineyard Block 1. This residence would be exposed to a vibration level of 0.002 in/sec PPV during project construction, well below the applied human annoyance and building damage thresholds.

Impact Conclusion

Sensitive receptors and structures near the development area would not be affected by substantial groundborne vibration during project construction or operation. This impact would be **less than significant.**

Mitigation Measure: None required.

3.10 TRANSPORTATION

This section describes the regional and local transportation setting, summarizes the regulatory setting relevant to the proposed project, and evaluates the potential for the proposed project to result in transportation impacts during construction and operation. References cited in this section are listed in **Chapter 7, *References***.

One comment letter received in response to the Notice of Preparation addressed transportation. The California Department of Transportation (Caltrans) provided the following comments, which are addressed as shown in the *italicized* text below.

- The EIR should describe the impacts of project construction and operation on State Route (SR) 128 and identify the potential impacts of increased project traffic on bicyclists using the SR 128 corridor. *These issues are discussed in this section.*
- Project work that requires movement by oversized or excessive-load vehicles on state roadways requires a Caltrans transportation permit. *This is noted under "State Regulations" in* **Section 3.10.2, *Regulatory Setting***.
- A cultural resource technical study may be required if an encroachment permit is needed for work within a Caltrans right-of-way. *This topic is discussed in* **Section 3.4, *Cultural and Tribal Cultural Resources***.
- Caltrans requires preparation of a traffic impact study if a project would generate 100 or more new peak-hour vehicle trips (Caltrans 2002). *The proposed project would not trigger this threshold; therefore, a detailed traffic impact study (such as an intersection analysis) was not prepared.*

3.10.1 ENVIRONMENTAL SETTING

REGIONAL ROADWAY NETWORK

Regional transportation access to the project site is provided by Sage Canyon Road, a two-lane conventional highway with no paved shoulders or sidewalks that connects to Silverado Trail to the west and Capell Valley Road to the east (Figures 2-1 and 2-2 in **Chapter 2, *Project Description***). Sage Canyon Road is an 11-mile-long segment of SR 128, which is designated in the Napa County General Plan (General Plan) as a two-lane rural throughway. SR 128 runs east-west through Napa and Solano Counties, beginning in Mendocino County and connecting with U.S. Highway 101 in Geyserville to the west and with Interstate 505 in Winters to the east.

In the project vicinity, Sage Canyon Road has moderate horizontal and vertical curves, and the speed limit is 45 miles per hour. Data from Caltrans (2018) indicate that the annual average daily traffic volume on Sage Canyon Road near the project site is about 1,700 vehicles (with an added 300 vehicles per day during the peak month), and about 300 vehicles per hour during the peak traffic hour (**Table 3.10-1**).

TABLE 3.10-1
TRAFFIC VOLUMES ON SAGE CANYON ROAD

Segment	Peak Hour	Daily Two-Way Volume	
		Peak Month	Annual Average
Between Lower Chiles Valley Road and Knoxville Road	300	2,000	1,700

SOURCE: Caltrans 2018

LOCAL ROADWAY NETWORK

One existing two-way, private gated driveway provides access to the project site. No public local roadways would be used to access the project site, as driveway access is provided directly from Sage Canyon Road.

BIKEWAYS, TRANSIT, AND PEDESTRIAN FACILITIES

There are no existing dedicated bicycle facilities on Sage Canyon Road near the project site. However, according to the Countywide Bicycle Plan, a Class III bike route (a signed bike route with shared roadway use) is planned to extend the entire length of Sage Canyon Road (NCTPA et al. 2012). No pedestrian facilities (paved shoulders or sidewalks) or public transit service are accessible from the project site.

3.10.2 REGULATORY SETTING

FEDERAL REGULATIONS

No federal regulations related to transportation are applicable to the proposed project.

STATE REGULATIONS

Caltrans has discretionary authority over highways under its jurisdiction. Project work or traffic control that encroaches onto the state right-of-way requires an encroachment permit issued by Caltrans. Movement of oversized or excessive load vehicles on a state roadway requires a Caltrans-issued transportation permit.

LOCAL REGULATIONS

The February 2019 update to the Circulation Element of the 2008 General Plan seeks to provide safe and efficient movement on County-maintained roads. The following transportation-related goals and policy guidelines are relevant to the proposed project:

Goal CIR-2: The County's transportation system shall provide all users with accessibility to desirable destinations on well-maintained transportation facilities throughout the County. The operation, maintenance, and expansion of the transportation system will consider the needs of Napa County residents of all income levels, ages and abilities, as well as businesses, employees, and visitors.

- **Policy CIR-31:** The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is efficient in providing local access. The following improvement has been supported by policy makers within the County and all five incorporated cities/town. Some of these routes are controlled by other agencies (such as Caltrans or a city); in those cases, the County will coordinate with the other agencies to plan and implement these improvements:

  - Consistent with the Countywide Pedestrian Plan and the Countywide Bicycle Plan, construct multimodal facilities and install safety-related improvements on rural roads and highways, such as new signals, bike lanes, multi-use paths, shoulder widening, or softening sharp curves.

- **Policy CIR-38:** The County seeks to maintain operations of roads and intersections in the unincorporated County area that minimize travel delays and promote safe access for all users. Operational analysis shall be conducted according to the latest version of the Highway Capacity Manual and as described in the current version of the County's Transportation Impact Study Guidelines. In general, the County seeks to maintain Level of Service (LOS) D on arterial roadways and at signalized intersections, as the service level that best aligns with the County's desire to balance its rural character with the needs of supporting economic vitality and growth.

  In situations where the County determines that achieving LOS D would cause an unacceptable conflict with other goals and objectives, minimizing collisions and the adequacy of local access will be the County's priorities. Mitigating operational impacts should first focus on reducing the project's vehicular trips through modifying the project definition, applying TDM strategies, and/or applying new technologies that could reduce vehicular travel and associated delays; then secondarily should consider physical infrastructure changes. Proposed mitigations will be evaluated for their effect on collisions and local access, and for their effectiveness in achieving the maximum potential reduction in the project's operational impacts.

- **Policy CIR-40:** The County shall maintain and apply consistent highway access standards regarding new driveways to minimize interference with through traffic while providing adequate local access. The County shall also maintain and apply consistent standards (though not exceeding public road standards) regarding road widths, turn lanes, and other improvements required in association with new development. When a project is proposed in a location such that County roads are needed to access the nearest fully staffed fire station, the County may require the developer to improve the County roads to meet adequate fire protection standards similar to improvements required on the developer's property.

Goal CIR-4: The County supports state, regional, and local efforts to reduce greenhouse gas emissions from the transportation system.

- **Policy CIR-7:** All applicants for development projects or modifications thereto shall be required to evaluate the vehicle miles traveled (VMT) associated with their projects, in order to determine the projects' environmental impacts pursuant to the California

Environmental Quality Act. Applicants shall specify feasible measures to reduce a proposed project's VMT and shall provide an estimate of the VMT reduction that would result from each measure. Upon the effective date of the pertinent State CEQA Guidelines, projects for which the specified VMT reduction measures would not reduce unmitigated VMT by 15 or more percent shall be considered to have a significant environmental impact.

– *Action Item CIR-7.1:* Update the County's Local Procedures for Implementation of the California Environmental Quality Act to develop screening criteria for projects that would not be considered to have a significant impact to VMT and that would not, therefore, be subject to VMT reduction requirements.

3.10.3 IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Based on Appendix G of the State CEQA Guidelines and *Napa County's Local Procedures for Implementing the California Environmental Quality Act*, an impact related to transportation is considered significant if the proposed project would do any of the following:

- Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict with or be inconsistent with State CEQA Guidelines Section 15064.3(b).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

ISSUES NOT DISCUSSED IN IMPACTS

The potential for the proposed project to conflict with General Plan Policy CIR-14 and adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities was evaluated. The project was determined to result in no impact relative to these issues:

- The project would not conflict with General Plan Policy CIR-14, which requires new uses to meet their anticipated parking demand, because parking along the proposed vineyard avenues would satisfy the parking demands of project installation and subsequent vineyard operations.
- There are no adopted policies, plans, or programs supporting alternative transportation that apply to agricultural vineyard projects.

Therefore, this EIR does not evaluate these issues further. For a complete discussion, see the Initial Study Environmental Checklist in **Appendix B** of this EIR.

METHODS OF ANALYSIS

Potential traffic and circulation impacts were evaluated on the basis of the following efforts, augmented by professional judgment:

- Field reconnaissance of the characteristics of roads that would accommodate project-generated vehicle trips (including the number of travel lanes, vertical and horizontal alignment, available sight distance, and traffic control).
- Traffic volume counts on key roadways (Caltrans 2018).
- Estimated vehicle trips that project-related activities would generate during both project construction and operations.

IMPACTS AND MITIGATION MEASURES

Table 3.10-2 summarizes the impact conclusions presented in this section.

TABLE 3.10-2
SUMMARY OF IMPACT CONCLUSIONS—TRANSPORTATION

Impact Statement	Impact Conclusion
3.10-1: Construction and operation of the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, such as General Plan Policy CIR-38, which seeks to maintain an adequate level of service at signalized and unsignalized intersections.	Less than Significant
3.10-2: Construction and operation of the proposed project could conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b).	Less than Significant
3.10-3: Construction and operation of the proposed project could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	Less than Significant
3.10-4: Construction and operation of the proposed project could result in inadequate emergency access.	Less than Significant

SOURCE: Data compiled by Environmental Science Associates in 2019

Impact 3.10-1: Construction and operation of the proposed project could conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, such as General Plan Policy CIR-38, which seeks to maintain an adequate level of service at signalized and unsignalized intersections.

The proposed project would generate vehicle trips during vineyard construction (temporary) and operations (seasonal). Installing the erosion control measures and developing the vineyard acreage would cause a temporary increase in the number of vehicles (e.g., cars, light trucks, heavy trucks carrying equipment, water trucks) using Sage Canyon Road, the only roadway that provides access to the project site.

As stated in **Section 2.4.3, *Project Construction***, proposed vineyard development activities would occur in three construction phases. These activities would include removing pasture, hayfield, grassland, brush/shrubland, and trees and woodland within the proposed clearing limits. Other construction work would involve ripping, removing rocks, cultivating soil, seeding a

cover crop, mulching, trenching for irrigation pipelines, installing a trellis system and wildlife exclusion fence, laying out vine rows, and installing temporary and permanent erosion control measures. The number of vehicle trips generated during vineyard development would be largest during the first and last two weeks of each construction phase, when heavy equipment (and infrastructure materials for delivery only) would be delivered to and removed from the project site. Approximately 24 one-way construction worker trips and two one-way truck trips per day would be required during these two 2-week periods.[1] The evaluation of these two 2-week periods of mobilization/demobilization represent a conservative analysis of potential transportation impacts, as most construction equipment would already be on-site during the remainder of project construction activities and thus would not generate new trips to and from the project site.

After preparation of the land and vineyard planting, laborers would travel between the vineyard and their homes each day. As stated in **Section 2.4.4, *Vineyard Operations and Maintenance***, the volume of vehicle traffic generated by project operations would vary seasonally; the vineyard activities (such as annual pruning, annual sulfur application, weed/vegetation control, erosion control, and harvesting) would need different numbers of workers. The most labor intensive period for vineyards, generating the most traffic, is the harvest. This period typically extends for two to three weeks within a two-month period from late summer into fall. During that peak traffic period, the project would generate about 60 daily one-way trips by workers in passenger vehicles and two one-way grape truck trips per day. Harvest activities would occur during off-peak traffic hours; workers and equipment would arrive in the early morning (typically before 6 a.m.) and depart in the early afternoon (typically between 2 and 3 p.m.).

To put the above-described number of trips into proper context, see **Table 3.10-1** for the existing traffic volume on Sage Canyon Road. Caltrans uses a capacity of 2,000 vehicles per lane per hour for conventional highways. Therefore, current peak-hour traffic volume on Sage Canyon Road is approximately 8 percent of practical capacity. Project trips would not increase that percentage substantially, defined as an increase of more than about 1.3 percent during vineyard development, or more than about 3.1 percent during the seasonal harvest. The magnitude of anticipated project-related traffic increases is within the range of typical daily variation in traffic levels (usually on the order of ±5 percent) that might be expected on the major roadways serving the project site. Operating conditions on these roadways would remain substantially similar to current conditions.

There are no existing bicycle facilities on Sage Canyon Road near the project site. The proposed project is not expected to affect a potential future bike route on Sage Canyon Road, because roadway operating conditions with the proposed project would remain substantially similar to current conditions.

[1] One-way vehicle trips are either inbound to, or outbound from, the project site(s); two one-way trips equal one round trip.

Impact Conclusion

The proposed project would not conflict with General Plan Policy CIR-38, which seeks to maintain an adequate LOS at intersections, because the effect of project-generated vehicles on traffic flow would be less than significant even during the vineyard development and peak harvest periods. The proposed project would not affect existing transit services or pedestrian facilities because there are no such services or facilities in the project vicinity. This impact would be **less than significant**.

Implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, which would reduce the project's acreage by approximately 21.73 acres, may further reduce the number of project-generated vehicles.

Mitigation Measure: None required.

Impact 3.10-2: Construction and operation of the proposed project could conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b).

In accordance with Senate Bill 743, the California Natural Resources Agency adopted the new State CEQA Guidelines Section 15064.3(b) in December 2018. These revisions to the State CEQA Guidelines' criteria for determining the significance of transportation impacts focus primarily on projects in transit priority areas. The revisions shift the focus from driver delay to reduction of greenhouse gas emissions, creation of multimodal networks, and promotion of a mix of land uses. Vehicle miles traveled, or VMT, is a measure of the total number of miles driven to or from a development and is sometimes expressed as an average per trip or per person. The newly adopted guidance provides that a lead agency may elect to be governed by the provisions of Section 15064.3(b) immediately. The provisions of Section 15064.3(b) became effective statewide on July 1, 2020.

Although General Plan Policy CIR-7 addresses VMT reduction efforts specific to development projects or modifications, Napa County has not yet formally adopted updated transportation significance thresholds or updated procedures for analyzing transportation impacts related to VMT. Because Napa County has not finalized or adopted the regulations of Senate Bill 743, this Draft EIR analysis relies on guidance from the California Governor's Office of Planning and Research's December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Guidelines) to determine the significance of transportation impacts (OPR 2018).

The transition to VMT was not required of lead agencies until July 1, 2020. However, in anticipation of the transition, the Circulation Element includes new policies that reflect this new regulatory framework for transportation impact assessment, along with a draft threshold of significance that is based on reduction of VMT compared to the unmitigated project rather than the regional average VMT (Draft Policies CIR-7 through CIR-9). Staff believes this alternative approach to determining the significance of a project's transportation impacts would be better suited to this County's rural context, while still supporting the efforts of the County to achieve the

greenhouse gas emissions goals of its pending Climate Action Plan. The reduction in VMT and, correspondingly, GHG emissions from the transportation sector, is also necessary for Napa County, the region, and the state to achieve long-term, statewide mandates targeted toward reducing GHG emissions. Such mandates include, but are not limited to Executive Orders S-3-05 and B-16-12, which respectively, set a general statewide GHG emissions reduction target of 80 percent below 1990 levels by 2050, and an 80 percent GHG emissions reduction below 1990 levels (also by 2050) specifically for the transportation sector.

As defined in State CEQA Guidelines Section 15064.3(a), VMT refers to the amount and distance of automobile travel attributable to a project. The Technical Guidelines further explain that in Section 15064.3, the "automobile" "refers to on-road passenger vehicles, specifically cars and light trucks." For this reason, the focus of this VMT analysis is on trips by passenger vehicles (i.e., cars and light trucks) generated by the proposed project. However, this Draft EIR also includes an analysis of greenhouse gas emissions associated with heavy truck traffic generated by the proposed project (as well as other traffic); it also addresses potential significant transportation impacts of all project vehicles, including heavy trucks, related to air quality, noise, and safety. (See Section 3.2, *Air Quality and Greenhouse Gas Emissions*; Section 3.9, *Noise*; and Impacts 3.10-3 and 3.10-4 below and Section 3.6, *Hazards and Hazardous Materials*, respectively.)

The Technical Guidelines provide a screening criterion that could be used to determine whether a VMT analysis is warranted for small projects, which are defined as projects that would generate fewer than 110 trips per day and may generally be assumed to cause less-than-significant transportation impacts. As indicated above in the discussion of Impact 3.10-1, construction of the proposed project would generate an anticipated maximum of 24 one-way worker trips and two one-way truck trips per day, and operation would generate an anticipated maximum of 60 one-way worker trips and two one-way truck trips per day (during the annual two- to three-week harvest). Therefore, daily passenger vehicle trips generated by the proposed project would be well below the Governor's Office of Planning and Research's recommended screening criterion threshold for small projects generating fewer than 110 trips per day. Additionally, daily trips associated with the project would be temporary and seasonal in nature, further supporting conformance and observance of this screening criterion.

Impact Conclusion

The proposed project would not conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b). This impact would be **less than significant**.

Mitigation Measure: None required.

Impact 3.10-3: Construction and operation of the proposed project could substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

Neither construction nor operation of the proposed project would require permanent modifications to existing public roadways or other transportation infrastructure. Traffic associated with installation and operation of the proposed vineyard would use the existing two-way driveway off Sage Canyon Road to access the private roadways within the project site. Sight distance at the intersection of Sage Canyon Road and the project site access driveway is not unduly restricted. This would facilitate turns by project-related vehicles, including slow trucks that would turn into and out of the driveway during construction and again during project operations (grape hauling during the annual harvest). From the driveway's connection with the road, unobstructed site distances along Sage Canyon Road extend more than 750 feet to the west and approximately 500 feet to the east. These sight distances are adequate to allow trucks and passenger vehicles to safely turn into and out of the driveway that leads to the project site.

Impact Conclusion

The proposed project would not modify Sage Canyon Road, nor does it include any other design feature that would result in hazardous conditions. The proposed construction of the vineyard is consistent with the allowed use of the property and other agricultural uses in the area. Therefore, the proposed project would not create or substantially increase hazards. This impact would be **less than significant**.

Mitigation Measure: None required.

Impact 3.10-4: Construction and operation of the proposed project could result in inadequate emergency access.

As noted above in the discussion of Impact 3.10-1, construction of the proposed project would temporarily increase vehicle traffic on Sage Canyon Road. Project construction activities would generate a maximum of 20 one-way truck trips and 24 one-way passenger vehicle trips per day, for a total of 44 daily vehicle trips. Although this traffic could affect emergency access, the construction-related increase in vehicle traffic would be minor and would not significantly affect response times. No construction work would occur within public roadways, meaning that emergency vehicle access would be preserved.

Operation and maintenance activities for the proposed project would also increase traffic volumes on Sage Canyon Road. Unlike the trips generated during construction, these vehicle trips would be permanent, albeit seasonal. Project operation and maintenance activities would generate a maximum of 62 new daily vehicle trips (60 one-way passenger vehicle trips and 2 one-way truck trips). These trips would occur during the eight-week harvest period in September and October. Although this traffic could affect emergency access, the project operation–related increase in vehicle traffic would be minor and would not significantly affect

response times. No operation and maintenance activities would occur within public roadways, meaning that emergency vehicle access would be preserved.

Impact Conclusion

Construction, operation, and maintenance of the proposed project would increase vehicle traffic on Sage Canyon Road; however, this traffic increase would be minor and would not significantly affect response times. No activities would occur within public roadways, meaning that emergency vehicle access would be preserved. Therefore, the impact of construction, operation, and maintenance of the proposed project on emergency access would be **less than significant**.

Implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, which would reduce the project acreage by approximately 21.73 acres, may further reduce the number of project-generated vehicles.

Mitigation Measure: None required.

CHAPTER 4
OTHER CEQA CONSIDERATIONS

The State CEQA Guidelines include several provisions that address issues not discussed in **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures*,** of this EIR. Specifically, the State CEQA Guidelines include the following requirements:

- *Section 15126:* An evaluation of environmental impacts must consider all aspects of a project, including planning, acquisition, development, and operation. As part of this analysis, the EIR must also identify all of the following elements:
  - Significant environmental effects of the proposed project.
  - Significant environmental effects that cannot be avoided if the proposed project is implemented.
  - Significant irreversible environmental changes that would result from implementation of the proposed project.
  - Growth-inducing impacts of the proposed project.

- *Section 15130(a):* An EIR must assess the cumulative impacts that could be associated with project implementation. This assessment is included in **Section 4.1** of this EIR.
- *Section 15126.2(b):* An EIR must mitigate energy use if analysis of the project's energy use reveals that the project may result in significant environmental effects due to wasteful, inefficient, or unnecessary consumption use of energy, or wasteful use of energy resources. The description of the project's energy use is contained in **Section 1.3** of this EIR.
- *Section 15126.2(c):* An EIR must describe any significant impacts that cannot be avoided, even with implementation of feasible mitigation measures. **Chapter 3** of this EIR presents the effects of the proposed project on various aspects of the environment. **Section 4.1** identifies any significant and unavoidable impacts identified in **Chapter 3**.
- *Section 15126.2(d):* An EIR must discuss any significant and irreversible environmental changes that would be caused by the proposed project. This analysis is included in **Section 4.2** of this EIR.
- *Section 15126.2(e):* An EIR must evaluate the growth-inducing impacts of a project. This analysis is presented in **Section 4.3**.

4.1 CUMULATIVE IMPACTS

This section discusses the requirements for assessing cumulative impacts in the CEQA analysis and provides the cumulative impact assessments for the technical sections addressed in **Chapter 3**. The State CEQA Guidelines require that an EIR assess the cumulative impacts of a

project when the project's incremental effect is "cumulatively considerable." CEQA requires that an EIR assess the cumulative impacts of a project with respect to past, current, and probable future projects in the region. State CEQA Guidelines Section 15355 defines *cumulative effects* as "two or more individual effects that, when considered together, are considerable or which compound or increase other environmental impacts."

According to Section 15130(b), the purpose of the cumulative impacts discussion shall reflect "the severity of the impacts and their likelihood of occurrence" and shall "be guided by the standards of practicality and reasonableness." The discussion of cumulative impacts should include the following elements:

- Either: (a) a list of past, present, and probable future projects producing related cumulative impacts; or (b) a summary of projections contained in an adopted general plan or similar document, or in an adopted or certified environmental document, that describes or evaluates conditions contributing to a cumulative impact.
- A discussion of the geographic scope of the area affected by the cumulative effect.
- A summary of expected environmental effects to be produced by these projects.
- Reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

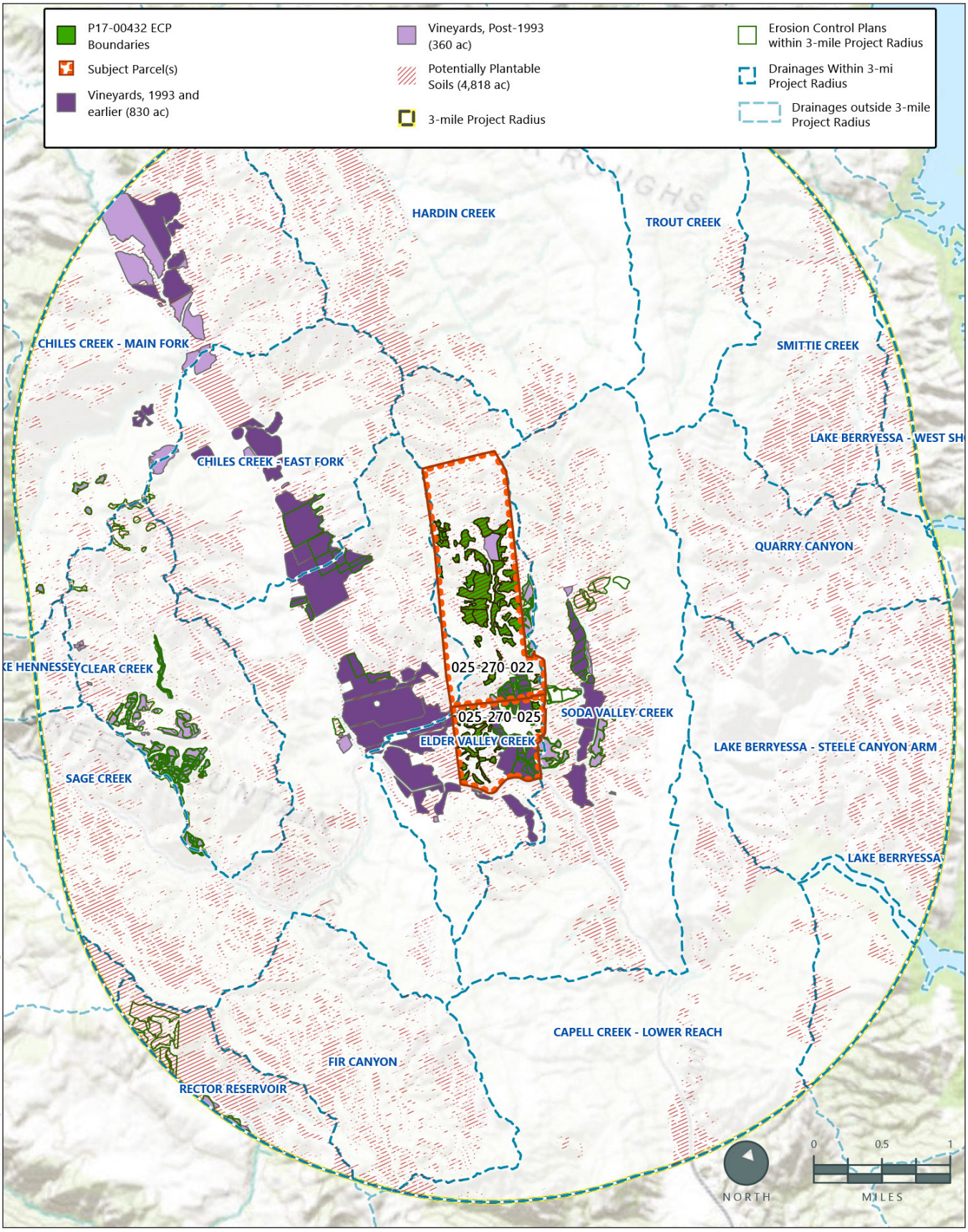
4.1.1 CUMULATIVE CONTEXT

The cumulative context considers the geographic scope of related projects relative to a proposed project. Given the nature of the proposed project, a 3-mile radius (shown in **Figure 4-1**) was generally selected as the outer limit for the general geographic scope to assess the potential extent of cumulatively considerable impacts of the proposed project.

Air quality effects must be analyzed within a larger geographic scope. However, effects on other resource areas (e.g., cultural and tribal cultural resources, geology and soils, hazards, and hydrology and water quality) are limited by the local area's topography, drainage, and other physical features. Thus, the geographic scope for these other resource areas may be reduced to the Elder Valley Creek watershed, or to the immediate vicinity of the project site for resource areas like noise.

Because of these differences, the analysis for each specific resource area further narrows the geographic scope for the cumulative analysis, where appropriate. For the cumulative context of each resource area analyzed in the individual sections of **Chapter 3**, see **Section 4.1.2**.

The context in which cumulative impacts are assessed also considers the timing of related past, present, and reasonably foreseeable projects relative to the proposed project. For the purposes of this analysis, a *past project* is a project that has been approved and has valid permits, or a project that was undertaken within approximately the last 27 years (since 1993). A *reasonably foreseeable* project is currently under environmental review, is anticipated as a later phase of a previously approved project, or has been approved as part of a plan.



SOURCE: Napa County, 2020

KJS and Sorrento Vineyard Conversion #P17-00432 ECPA

Figure 4-1
Cumulative Erosion Control Plan Projects within 3 Miles of the Proposed Project

ESA

Projects were considered for inclusion in the cumulative impact analysis based on their potential to affect resources in the project area that the proposed project could also affect. A list of such reasonably foreseeable future projects was developed based on the following criteria:

1. The project would affect a portion of the physical environment that also could be affected by the proposed project (could interact with the proposed project on a cumulative basis).
2. Sufficiently detailed information about the project is available to allow meaningful analysis without undue speculation.
3. The project is actively under development (i.e., an identified sponsor is actively pursuing project development or construction); a Notice of Preparation or Notice of Intent has been released, and/or environmental clearance documentation has been completed or substantial progress has been made toward completion; and the project is "reasonably foreseeable" given other considerations, such as the site's suitability, project funding and economic viability, and regulatory limitations.
4. The project would not be considered to be part of the proposed project.

The 3-mile radius around the project site contains approximately 29,544 acres. In 1993, approximately 830 acres (2.8 percent) of the land within this radius were developed as vineyard. As shown in **Table 4-1**, since 1993, approximately 360 additional acres (1.2 percent of the 3-mile radius) have been developed as vineyard, for a total of 4 percent (approximately 1,190 acres) of the 3-mile radius containing vineyard.

Based on an evaluation of Napa County's Geographic Information System (GIS) layer identifying potentially productive soils within the 3-mile radius, approximately 4,818 acres (16 percent) of the land within this radius have the potential to be developed as vineyard. This, in conjunction with existing and approved vineyard development (approximately 1,190 acres), results in a total potential buildout of approximately 6,008 acres, or 20 percent of the 3-mile radius. The Potentially Productive Soils layer includes lands with characteristics that have been found to be suitable for potential future vineyard development. However, this total does not consider other site-specific limitations such as watercourses requiring setbacks, wetlands, other water features, rare or special-status plants and animal species, or cultural resources. The layer also does not take into account other factors influencing vineyard development, such as sun exposure, soil type, water availability, or economic factors.

Other than the proposed project, two erosion control plan (ECP) projects within the 3-mile radius are pending (**Table 4-1**). The acreage and location of additional vineyard development that property owners may propose for these drainages in the future cannot be precisely quantified; however, it is possible to make a conservative estimate based on previous trends.

TABLE 4-1
CUMULATIVE EROSION CONTROL PLAN PROJECTS LIST WITHIN 3 MILES OF THE PROPOSED PROJECT (1993–2020)

File Number	Date Approved	Applicant Name	Vineyard Development Acres	Number	Date Approved	Applicant Name	Vineyard Development Acres
1993403	March 24, 1994	James Bushey	42	200900161	July 6, 2009	Mary Ann Gilson	11
1994295	May 18, 1995	Napa Valley Vineyard Engineering	12.4	201100114	March 31, 2011	Stagecoach Vineyards	106.8
1995126	October 14, 1995	Christina Vineyards	13	201100454	February 14, 2012	Sorrento Inc.	23.9
1996512	March 25, 1997	Patrick Kuleto	22	201200116	April 12, 2012	Somerston Vineyards	8.5
1997157	October 20, 1997	Jeffrey Gwinn	28	201300021	June 6, 2013	Fingerman	3
1997600	August 7, 1998	Priest Ranch–Orion Vineyards	20.56	201500132	May 4, 2015	Sorrento Inc. & KJS Investment Properties LLC	30.6
1996586	November 9, 1998	Stagecoach Vineyards	116	201500131	May 4, 2015	Sorrento Inc. & KJS Investment Properties LLC	30.3
1997544	March 5, 1999	Patrick Kuleto	19.29	201500256	September 2, 2015	Somerston Vineyards	31.1
2000078	August 18, 2000	Chappellet Vineyard	53	201500132	May 4, 2015	Sorrento Inc. & KJS Investment Properties LLC	30.6
1998240	August 3, 2001	Montesole/Priest	12.21	201500227	February 22, 2016	Phillip Sunseri	3.78
2001147	December 10, 2001	Lynch Ranch LLC	15.01	201600185	June 10, 2016	Somerston Vineyards	2.9
2002152	May 29, 2002	Barbour Vineyards	39.42	201700257	July 19, 2017	Sage Creek Vineyard ECP Replant II	37.35
01126	August 23, 2002	Greg Mountain Ranch LLC	3.3	201700285	August 3, 2017	Sage Canyon Track II Replant	11.9
2003490	August 23, 2005	Don DeCristo	1.4	201700242	August 15, 2017	Capra Company Track I Replant	71.84
20050359	May 5, 2006	Priest Ranch	12.3	201600337	November 27, 2017	Phelan Ranch	18.6
2000399	June 23, 2006	George Noble	5.06	201900063	March 25, 2019	Gallo/Stagecoach Vineyards	10.6
200601143	August 11. 2006	Kuleto Estates	6.5	201900500	January 27, 2020	Somerston Vineyards	15.9
2003522	March 8, 2007	Jacquelyn Joy Cordes	24	201800446	Pending	Gallo Stagecoach North	116.2
200700394	July 17, 2007	Somerston Vineyard	28.9	202000220	Pending	Prince Track I Replant	41.3
200700030	June 4, 2008	De Cristo Vineyard	0				

NOTE: ECP = Erosion Control Plan

SOURCE: Data compiled by Napa County in 2020

The acreage of vineyard development including approved vineyard projects in the cumulative environment (i.e., the 3-mile radius) over the last 27 years (1993–2020) was used to estimate reasonably foreseeable vineyard development for the next three to five years. Over the past 27 years, approximately 13.3 acres of agriculture per year (360 divided by 27) were developed within the 3-mile radius. Considering Napa County policies and other site selection factors that limit the amount of land that can be converted to vineyard, the development of approximately 40–67 acres within the 3-mile radius over the next three to five years is considered a reasonable estimate. Napa County Code Chapter 18.108 includes policies that require setbacks of 35–150 feet from watercourses (depending on slopes), and General Plan Conservation Policy CON-24c requires that oak woodland be retained at a 2:1 ratio, which limits the acreage within the 3-mile radius that could be converted to vineyard.

In the County's experience, ECP projects generally encounter site-specific concerns that further reduce the areas that can be developed to other land uses. Among these concerns are oak woodland preservation or the presence of wetlands, other water features, special-status plant and animal species, or cultural resources. In addition, the vineyard acreage projections for the next three to five years do not consider environmental factors that influence vineyard site selection, such as sun exposure, soil type, water availability, and slopes greater than 30 percent, or economic factors such as land availability, cost of development, and investment returns.

4.1.2 SUMMARY OF CUMULATIVE IMPACTS

The cumulative impact analysis takes into consideration whether the pending ECP projects and past vineyard conversion identified in **Section 4.1.1** would have the potential to affect the same resources as the proposed project. The cumulative impact analysis is presented by technical issue area in the same order as presented in **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures***.

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

The geographic scope of the cumulative air quality impact analysis consists of the San Francisco Bay Area Air Basin (SFBAAB) because air quality is managed basin-wide. The scope of the cumulative greenhouse gas (GHG) emissions impact analysis is global because GHG emissions cumulatively contribute to planet-wide atmospheric accumulations.

By definition, regional air pollution is largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project is sufficient in size to, by itself, result in nonattainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. The project-level thresholds for criteria air pollutants are based on levels that would result in a cumulatively considerable net increase in criteria air pollutants if they were exceeded.

Cumulative air quality issues in the SFBAAB are addressed through regional air quality control plans developed by the Bay Area Air Quality Management District (BAAQMD). These plans

account for project growth in the Bay Area, as embodied in the adopted general plans of the various cities and counties that compose the SFBAAB, and are therefore addressing cumulatively considerable impacts. Accordingly, there is no need to identify every specific "probable future project" that might contribute emissions within the air basin.

Construction of the proposed project concurrently with other projects in the air basin would generate emissions of criteria air pollutants, including suspended and inhalable particulate matter measuring 10 microns or less in diameter (PM_{10}) from equipment exhaust emissions. For construction-related impacts, BAAQMD has developed cumulative significance thresholds of 54 pounds per day for oxides of nitrogen (NO_X), reactive organic gases (ROG), and particulate matter measuring 2.5 microns or less in diameter ($PM_{2.5}$); and 82 pounds per day for PM_{10}. NO_X emissions during project construction would exceed BAAQMD's significance threshold (Table 3.2-5). In addition, to prevent cumulatively considerable impacts, BAAQMD recommends that all projects implement the Basic Construction Mitigation Measures, as discussed in **Section 3.2, *Air Quality and Greenhouse Gas Emissions***.

Implementing Mitigation Measure 3.2-1a would reduce NO_X emissions from project construction to below BAAQMD's significance threshold by requiring the use of Tier 3 equipment meeting more stringent emission standards than the average fleet. Implementing the BAAQMD-required Basic Construction Mitigation Measures listed in Mitigation Measure 3.2-1b would reduce the proposed project's construction-related fugitive dust impacts to a less-than-significant level.

The cumulative operational significance thresholds for NO_X, ROG, $PM_{2.5}$, and PM_{10} are provided in Table 3.2-6; as shown in that table, operational emissions of NO_X, ROG, $PM_{2.5}$, and PM_{10} would not exceed BAAQMD's significance thresholds.

With implementation of Mitigation Measures 3.2-1a and 3.2-1b, the proposed project would not result in a cumulatively considerable contribution to a regional air quality impact. Similarly, projects throughout the air basin must comply with BAAQMD requirements for reducing emissions of criteria air pollutants.

The proposed project's GHG emissions during construction, as annualized over the life of the project, combined with the project's operational emissions (including changes to carbon stock/ storage and sequestration resulting from project-related land use changes), would not exceed BAAQMD's operational GHG threshold of 1,100 metric tons of carbon dioxide equivalents per year for land use projects (Table 3.2-9). Therefore, the proposed project would not result in a cumulatively considerable contribution to GHG emissions.

BIOLOGICAL RESOURCES

The geographic scope for the biological resources cumulative impact analysis consists of a 3-mile radius around the project site, which includes the Elder Valley Creek watershed.

Federal, state, and local protections for biological resource are cumulative, in that they prevent the incremental take of special-status species or the removal of associated habitat that could cause a species to be unable to thrive.

Through project design and implementation of Mitigation Measures 3.3-1a through 3.3-5b as proposed in **Section 3.3, *Biological Resources***, the proposed project would avoid impacts on biological resources. Therefore, the proposed project would not result in cumulatively considerable impacts on sensitive species or their habitats. The County would similarly require future projects with potentially significant environmental impacts to comply with federal, state, and local regulations and ordinances, further protecting biological resources. Because the other projects in the cumulative environment—especially those under the jurisdiction of Napa County—are held to the same CEQA and County standards, cumulative impacts on biological resources would be less than significant with implementation of the mitigation measures proposed in **Section 3.3**.

Approximately 116.542 acres of upland annual grasslands and forbs formation was identified in the development area, 15 percent of which would be avoided with implementation of the mitigation measures. The conversion of approximately 99.10 acres of upland annual grasslands and forbs formation represents less than 1 percent of the total upland annual grasslands and forbs formation in Napa County. All beardless wildrye grassland, blue wildrye grassland, and purple needlegrass grassland would be excluded from the development area with implementation of Mitigation Measure 3.3-2a.

The conversion of approximately 29.88 acres of oak woodland to vineyard with the mitigated proposed project represents approximately 0.03 percent of the total oak woodland in Napa County (Table 3.3-9). Oak woodland would remain the dominant natural land cover after implementation of the proposed project. The proposed project would comply with mitigation that recommends 2:1 preservation of oak woodland (Mitigation Measure 3.3-5a), and would replace and preserve valley oak if avoidance of valley oak is infeasible for construction of the point of diversion (Mitigation Measure 3.3-5b). Other projects in the vicinity of the project site would also be required to avoid or preserve oak woodland and sensitive habitats pursuant to General Plan policies, preventing incremental removal of protected sensitive habitats from being cumulatively considerable.

The proposed project design incorporates setbacks from all drainages on the project site, with the exception of the installation of the water intake device on Elder Creek and construction of a spillway berm and overflow structure at the unnamed pond. Elder Creek and tributaries on the project site that meet the County's definition of a stream have setbacks based on slope, as outlined in Napa County Code Section 18.108.025; these setbacks also apply to other projects in Napa County. The proposed project also would maintain 50-foot buffers from other waters that are not defined by the County as streams. With implementation of Mitigation Measure 3.3-3a, impacts on waters of the United States would receive a minimum mitigation ratio of 1:1 (mitigated:affected) to comply with the U.S. Army Corps of Engineers' "no net loss" policy.

Local regulations require projects to maintain open space on properties proposed for development, to provide habitat for plants and wildlife. With implementation of Mitigation Measure 3.3-1a, the proposed project would maintain passages of at least 100 feet wide to allow for wildlife movement. In addition, vineyard blocks would be fenced individually and in clusters where appropriate; fencing would occur along the outside edge of vineyard avenues; fencing on the project site would use a design that has 6-inch-square gaps at the base to allow small mammals to move through the fence; and exit gates would be installed at the corners of deer fencing to allow trapped wildlife to escape (Mitigation Measure 3.3-4). Other projects in the project vicinity would be required to implement similar measures to comply with local policies and regulations.

With implementation of Mitigation Measure 3.3-1a, Mitigation Measure 3.3-1i, Mitigation Measure 3.3-2a, and Mitigation Measure 3.5-2, which would reduce the project's acreage by approximately 21.73 acres, the project would develop 135.41 gross acres of vineyard. This acreage represents about two times the total vineyard area expected to be developed in the 3-mile radius from the project site in the next five years. This area equals approximately 2.8 percent of the total potential vineyard area (4,818 acres) within that radius.

The proposed project and the associated watershed do not provide unique habitats that are vital to sustaining populations of special-status species; the area does not contain the only habitat required for the regionally occurring species to continue to thrive. Accordingly, developing the proposed project and other cumulative projects would not cause incremental impacts on special-status species that would be cumulatively considerable to the point of resulting in the take of special-status species and preventing a special-status species from thriving. The proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to biological resources.

CULTURAL AND TRIBAL CULTURAL RESOURCES

The geographic scope for the cultural and tribal cultural resources cumulative impact analysis is the Elder Valley Creek watershed because projects located within this watershed have the potential to affect existing cultural and tribal cultural resources.

As discussed in **Section 3.4, *Cultural and Tribal Cultural Resources***, ground-disturbing activities associated with the proposed project have the potential to affect subsurface archaeological resources, including resources that could also be considered tribal cultural resources, or human remains. However, potential impacts on subsurface archaeological resources and human remains would be reduced to less-than-significant levels by implementing Mitigation Measures 3.4-1a through 3.4-3b. Cumulative impacts in the area would also be less than significant because each project permitted by the County would address cultural resources through individual site permitting and would implement mitigation measures for impacts on any unknown resources discovered during construction activities. Therefore, the proposed project

would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to cultural resources.

GEOLOGY AND SOILS

The geographic scope for the geology and soils cumulative impact analysis is the Elder Valley Creek watershed.

Mapped landslides are located within the development area (as discussed in **Section 3.5, *Geology and Soils***). These areas would be avoided with 50-foot buffers through implementation of Mitigation Measure 3.5-2. In addition, the proposed project would implement controls to limit the concentration of surface runoff in areas susceptible to erosion. Therefore, seismic considerations and the potential for slope instability are not cumulatively considerable.

Cumulatively considerable impacts related to geology and soils would be limited to sedimentation within the Elder Valley Creek watershed and impacts on paleontological resources.

The proposed project would reduce the level of sediment delivered to the watershed by approximately 367.61 tons (43.17 percent) compared to existing conditions. Similar to the proposed project, any future development would be required to comply with General Plan Policy CON-48 for sediment. Projects must maintain pre-development sediment erosion conditions or, at minimum, must comply with state water quality pollution control (i.e., basin plan) requirements and protect the county's sensitive domestic supply watersheds. Like the proposed project, other cumulative projects with the potential to generate erosion would be required to prepare erosion control plans and/or building plans and site-specific geotechnical, soils, and hydrological reports. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to sedimentation in the watershed.

Potential impacts on paleontological resources would be reduced to less-than-significant levels by implementing Mitigation Measures 3.5-5a and 3.3-5b. Cumulative impacts in the area would also be less than significant because each project permitted by the County would address paleontological resources through individual site permitting and would implement mitigation measures for impacts on any unknown resources discovered during construction activities. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to geology and soils.

HAZARDS AND HAZARDOUS MATERIALS

The geographic scope for the analysis of cumulative impacts related to hazardous materials includes the Elder Valley Creek watershed, because any release of improperly contained hazardous materials into the environment could reach the surface water and/or groundwater of this watershed.

The proposed project and the cumulative projects in the watershed would involve the storage, use, disposal, and transport of hazardous materials to varying degrees during construction and operation. However, the proposed project would be farmed using integrated pest management techniques, would include stream setbacks, and would not include land uses that would use or require substantial volumes of hazardous materials. The potential for the proposed project and cumulative projects to result in cumulatively considerable hazardous materials impacts on the watershed is low. The projects would comply with the laws and regulations governing the transportation and management of hazardous materials to reduce potential hazards, and best management practices in the conditions of approval would limit the potential for the accidental release of hazardous materials to create hazardous conditions (**Section 3.6, *Hazards and Hazardous Materials*)**. The proposed project also would not exacerbate wildfire risks or expose people or structures to a significant risk related to wildland fires. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to the risk of hazards and hazardous materials.

HYDROLOGY AND WATER QUALITY

The geographic scope for the hydrology and water quality cumulative impact analysis consists of the Elder Valley Creek watershed.

Cumulative runoff impacts could result from the proposed project combined with the cumulative projects in the watershed if the cumulative rate and volume of runoff to receiving waters were to increase above pre-project levels. As discussed in **Section 3.7, *Hydrology and Water Quality***, the proposed project's hydrologic analysis calculated pre-project and post-project peak runoff flows for the on-site sub-watersheds under the 2-year and 100-year storm events; no net increases in peak runoff are expected as a result of the proposed project. The hydrologic analysis attributed decreases in peak discharge to increases in infiltration, vegetation cover, and time of concentration. The decreases in peak discharge would lead to a decrease in erosion, thereby reducing the delivery of sediment to receiving waters and reducing the potential for flooding. Similar to the proposed project, other projects in the watershed would be required to keep project impacts at pre-project levels, which would ensure that no effects on the cumulative environment would occur.

If approved, the proposed project would be irrigated with surface water diverted pursuant to Water Right License 9125 and Permit 18459. Water diverted under Permit 18459 would include a shortened diversion season (December 15–March 31), minimum bypass flow, and maximum rate of diversion to offstream storage restrictions to protect non-anadromous aquatic habitat from flow-related effects and comply with State Water Resources Control Board guidelines. No impacts on groundwater would occur. Therefore, the overall cumulative effect would not be considerable, and the incremental impact of the proposed project would not be significant when considered in the context of the cumulative projects.

The proposed project would not affect surface water quality through sediment or chemical loading or water temperature changes. The proposed project also would not result in a significant cumulative reduction in the water supply downstream of the diversion, and the project would incorporate vineyard irrigation use conditions of approval to further reduce water supply impacts. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to surface water.

LAND USE AND PLANNING

The geographic scope for the land use and planning cumulative impact analysis is the 3-mile radius around the project site.

The Agricultural Preservation and Land Use Element of the Napa County General Plan describes several goals geared toward preserving agricultural land uses, planning for agriculture as a primary land use, and supporting the economic viability of agriculture, including growing grapes. The cumulative impact of the proposed project and other vineyard development projects would be a net positive because the proposed project would assist the County in meeting its agricultural preservation goals.

In addition, as discussed in **Section 3.8, *Land Use***, no significant land use impacts have been identified for the proposed project. Past and pending vineyard projects, as described in **Table 4-1**, and future projects would require compliance with the General Plan, which addresses cumulative impacts of growth through land use controls. Should a future project propose to alter land use and zoning requirements, that project would be required to assess—and mitigate if necessary—the cumulative impacts associated with the requested change. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to conflicts with land use plans, policies, and regulations.

NOISE

Because of noise attenuation, the geographic scope for noise impacts is the immediate vicinity of the project site.

Cumulative impacts from short-term construction-generated noise could result if additional planned construction activities were to occur near the project site. Residences are located east of the project site; however, these residences are more than 2,000 feet from the nearest proposed vineyard block. Construction noise tends to be site specific, affecting those close to the construction activities. As stated in **Section 3.9, *Noise***, the proposed project would not expose nearby sensitive receptors to construction noise that would exceed the County's daytime noise standard, or to substantial groundborne vibration. Because of distance, topography, and attenuation, cumulative noise impacts from the proposed project would not be cumulatively considerable. Operation of the proposed project would not result in a substantial

permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

Additionally, noise levels from routine operation and maintenance activities would be typical of other surrounding agricultural and compatible uses; the temporary and ongoing noise sources and levels are considered reasonable for agricultural development and operational activities, consistent with the County's "Right to Farm" Ordinance (Napa County Code Chapter 2.94 and General Plan Agricultural Preservation and Land Use Policy AG/LU-15).

Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to noise.

TRANSPORTATION

The geographic scope for the transportation cumulative impact analysis includes the regional roadway network.

As discussed in **Section 3.10, *Transportation and Traffic***, the proposed project would be developed in three phases. The largest number of vehicle trips generated during each phase would be approximately 24 one-way construction worker trips and two one-way truck trips per day during the first and last two weeks of each construction phase. This represents an increase of no more than about 1.6 percent of the current traffic volume on Sage Canyon Road (see Table 3.10-1). This would be a minor short-term, temporary increase in traffic volumes on area roads.

During vineyard operation, harvest is the period that generates the most traffic, with approximately 60 daily one-way passenger vehicle trips by workers and two daily one-way trips by grape trucks anticipated. This additional traffic represents an increase of no more than about 3.9 percent of the current traffic volume on Sage Canyon Road (see Table 3.10-1). This would be a seasonal increase in traffic volumes on area roads that would occur during off-peak traffic hours.

Sage Canyon Road operates at approximately 11 percent of its practical traffic capacity, and daily estimated traffic generation from project development and operational activities are within the typical daily variation in traffic levels (usually on the order of ±5 percent) that might be expected on the major roadways serving the project site. Operating conditions on area roadways with the proposed project would remain substantially similar to current conditions. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to area traffic.

4.2 SIGNIFICANT AND UNAVOIDABLE IMPACTS

State CEQA Guidelines Section 15126.2(c) states that an EIR must describe the impacts identified as significant and unavoidable should a proposed project be implemented. Impacts are determined to be significant and unavoidable when either no mitigation, or only partial

mitigation, is feasible to reduce impacts to less-than-significant levels. The final determinations of impact significance and of the feasibility of mitigation measures are made by Napa County as part of the certification action. The environmental impacts that would result from implementation of the proposed project are presented in **Chapter 3** of this Draft EIR and are summarized in the Executive Summary. All impacts can be feasibly mitigated to less-than-significant levels. Therefore, there would be no significant and unavoidable adverse impacts.

The State CEQA Guidelines (Section 15126.2[d]) require an evaluation of the significant irreversible environmental changes that would be caused by a project if implemented, as described below:

> Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse there after unlikely. Primary impacts, and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also, irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

In general, the State CEQA Guidelines refer to the need to evaluate and justify the consumption of nonrenewable resources and the extent to which a project would commit future generations to similar uses of nonrenewable resources. In addition, CEQA requires the evaluation of irreversible damage resulting from an environmental accident associated with the project.

Several resources, both natural and built, would be expended during construction and operation of the proposed project. For example, the use of equipment would result in the irreversible and irretrievable commitment of energy and material resources in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for construction and operational activities. In addition, construction materials would be used, such as on-site rocks that would be used to construct erosion control features and provide road surfaces.

Using these nonrenewable resources is expected to account for a minimal portion of the region's resources and would not affect the availability of these resources for other needs in the region. Construction activities would not result in the inefficient use of energy or natural resources because the construction contractors selected would use best available engineering techniques, construction and design practices, and equipment operating procedures in accordance with vineyard installation requirements, including the mitigation measures in **Chapter 3** of this EIR. Furthermore, long-term project operation is not anticipated to result in substantial long-term consumption of energy and natural resources.

The proposed project is not proposing the development of a previously inaccessible area. Vineyard development has occurred and would continue to occur in the area with or without the proposed project, based on development allowed by the existing Napa County Land Use Plan and zoning. Thus, the proposed project would not commit future generations to a significant

irreversible change. Conversion to agricultural land is not considered an entirely irreversible type of development, which is why agricultural lands are often protected to prevent conversion to other land uses. Therefore, the proposed project would not result in substantial long-term consumption of energy and natural resources.

4.3 GROWTH-INDUCING IMPACTS

The State CEQA Guidelines require that an EIR evaluate the growth-inducing impacts of a proposed project (Section 15126.2[d]). A growth-inducing impact is described by the State CEQA Guidelines as:

> [T]he way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. Direct growth inducement would result if a project resulted in establishing a new demand for public services, facilities, or infrastructure, such as construction of new housing. A project can have indirect or secondary growth inducement potential if it would establish substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it would involve a substantial construction effort with substantial short-term employment opportunities and indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, as explained in the State CEQA Guidelines, a project would indirectly induce growth if it would remove an obstacle to additional growth and development, such as by removing a constraint or increasing the capacity of a required public service, such as increased water supply capacity.

As identified in CEQA Section 15126.2(d), growth inducement is not in and of itself an “environmental impact”; however, growth can result in adverse environmental consequences. Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and policies for the affected area. Local land use plans, typically general plans, provide for land use development patterns and growth policies that allow for the “orderly” expansion of urban development supported by adequate urban public services, such as water supply, sewer service, and new roadway infrastructure. A project that would induce “disorderly” growth (i.e., a project conflicting with local land use plans) could indirectly cause adverse environmental impacts: for example, the loss of agricultural land that has not been addressed in the planning process. To assess whether a project with the potential to

induce growth is expected to result in significant impacts, it is important to assess the degree to which the growth associated with a project would or would not be consistent with applicable land use plans.

Because of the limited amount of work that would be required at any given time, and because the proposed project would not require a substantial workforce, no new homes, businesses, or roads would be constructed and the proposed project would not have a significant effect on the local workforce. The proposed project also would not result in the demolition or displacement of homes or people, necessitating replacement homes elsewhere. Population growth and urban development in the project area are driven by local, regional, and national economic conditions. Local land use decisions are within the jurisdiction of Napa County and the various cities in the county. The County has an adopted general plan consistent with state law. The General Plan provides an overall framework for growth and development in Napa County.

The proposed project would not increase the area available for development of housing and would not result in indirect growth-inducing impacts. Further, the proposed project would not result in the construction of new housing or any other public or private services or utilities or in improvements to access roads or extension of any new transportation routes that would provide access to new areas in the project area. Therefore, the proposed project would not result in direct growth-inducing impacts.

CHAPTER 5
ALTERNATIVES ANALYSIS

5.1 INTRODUCTION

State CEQA Guidelines Section 15126.6 requires that an EIR evaluate "a range of reasonable alternatives to the project, or the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects, and evaluate the comparative merits of the alternatives." The purpose of the alternatives analysis is to determine whether a variation of the proposed project would reduce or eliminate significant project impacts in the basic framework of the proposed project's objectives. The alternatives analysis should also discuss the comparative merits of the alternatives.

The focus and definition of the alternatives evaluated in this EIR is governed by the "rule of reason" in accordance with State CEQA Guidelines Section 15126.6(f), requiring evaluation of only those alternatives "necessary to permit a reasoned choice." The feasibility of an alternative is ultimately determined by the lead agency based on a variety of factors including but not limited to site suitability, economic viability, availability of infrastructure, General Plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control (State CEQA Guidelines Section 15126.6[f][1]). Further, an EIR "need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative" (State CEQA Guidelines Section 15126.6[f][3]).

This chapter includes the following information:

- The objectives of the proposed project.
- The alternatives selected for evaluation, a comparison of the alternatives' environmental effects to the effects of the proposed project, and a discussion of the ability of the alternatives to achieve the proposed project objectives.
- As required under State CEQA Guidelines Section 15123.6(e)(2), an identified environmentally superior alternative.

5.2 PROJECT OBJECTIVES

The overall objectives of the proposed project are to:

- Develop up to 111.5 net planted acres of vineyards within approximately a 156.8-acre conversion area on those portions of the project site that are suitable for the cultivation of high-quality wine grapes, while ensuring the economic viability of the project.

- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- Maximize the beneficial use of surface water that has already been authorized by the State Water Resources Control Board, Division of Water Rights, via Water Right License 9125 (Application 13943) and Permit 18459 (Application 26165).
- Minimize impacts on riparian and aquatic resources and other environmental impacts by modifying Permit 18459 to allow construction of the storage reservoir at an offstream location rather than onstream.
- Develop new vineyards configured in such a way to maximize the use of existing infrastructure such as roads, pipelines, pump stations, and buildings that serve the existing vineyard and thereby minimize the need for additional infrastructure.
- Maximize the use of current vineyard employees' skills and create efficiencies.
- Provide opportunities for additional vineyard employment and economic development in Napa County.
- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices, participation in the Napa Green Program, and animal grazing to control weeds within the proposed vineyard blocks and to minimize fire hazards outside of the vineyard.
- Use water from the existing and proposed reservoirs efficiently.
- Preserve approximately 70 percent of the property as grasslands, oak woodlands, and other open space that has the greatest value as wildlife habitat.
- Minimize soil erosion from vineyard development and operation through vineyard design that avoids erosion-prone areas and controls erosion within the vineyard rather than capturing soil after it has been displaced.
- Design the vineyard to minimize the reduction of wildlife movement to the maximum extent feasible, in accordance with General Plan Policy CON-18(e).
- Protect water quality by protecting wetlands, seeps, springs, and streams to the maximum extent feasible through avoidance, incorporation of appropriate setbacks, and implementation of various erosion control features;
- Minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible, while providing for avoidance, preservation, and replacement in accordance with accepted protocols, including but not limited to the Napa County General Plan.

5.3 PROJECT ALTERNATIVES

5.3.1 NO PROJECT ALTERNATIVE

State CEQA Guidelines Section 15126.6(e) requires consideration of a no project alternative. The purpose of this alternative is to allow the decision makers to compare impacts of approving a project with impacts of not approving a project. Under the No Project Alternative, the development of up to 111.5 net acres of vineyards within approximately 156.8 gross acres and the erosion control features associated with #P17-00432 ECPA would not occur.

The approximately 104 acres of existing vineyard would continue to be operated on the project site and surface water would continue to be diverted and used pursuant to existing water rights. No changes to the existing fencing, stream setbacks, or approximately 12.6 miles of existing roads would occur.

ABILITY TO MEETING PROJECT OBJECTIVES

With the No Project Alternative, new vineyard would not be developed, the approximately 104 acres of existing vineyard would continue to be operated on the project site, and surface water would continue to be diverted and used pursuant to existing water rights. No changes to the grassland, chaparral/scrub, and mixed oak woodland biological communities would occur and the current vegetative cover would remain. A new diversion structure would not be constructed on Elder Creek and a new offstream reservoir would not be constructed. This alternative would not accomplish the basic objectives of the proposed project: installing and operating a new vineyard on an actively farmed property and maximizing the beneficial use of surface water authorized by Water Right License 9125 and Permit 18459.

COMPARISON OF THE NO PROJECT ALTERNATIVE TO THE PROPOSED PROJECT

Unlike the proposed project, the No Project Alternative would not require construction equipment and materials, vehicles, and crews; ground-disturbing construction activities; or operation and maintenance activities. For this reason, the No Project Alternative would result in less severe impacts than the proposed project related to air quality and greenhouse gas (GHG) emissions, biological resources, cultural and tribal cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, and transportation. Mitigation measures identified for the proposed project also would not apply to the No Project Alternative.

Vegetation removal, implementation of the Erosion Control Plan, and vineyard development would not occur under the No Project Alternative. The environmental setting would remain unchanged compared to conditions that existed at the time of the Notice of Preparation.

Unlike the proposed project, the No Project Alternative would not generate project construction emissions or result in a cumulatively considerable net increase in criteria pollutants, and this alternative would be consistent with the 2017 Clean Air Plan. Therefore, the No Project Alternative would not require implementation of Mitigation Measures 3.2-1a and 3.2-1b, as identified for the proposed project, to reduce impacts on air quality to less-than-significant levels. The No Project Alternative would not include activities that would expose sensitive receptors to substantial pollutant concentrations or result in other emissions (such as those leading to odors), adversely affecting a substantial number of people.

In addition, because this alternative would not involve any construction work or operation and maintenance activities, the No Project Alternative would not generate GHG emissions that

would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for reducing GHGs. No impacts would occur in these areas under the No Project Alternative, compared to the less-than-significant impacts that would result from the proposed project.

Because ground-disturbing activities would not occur under the No Project Alternative, impacts on biological resources, potential impacts on previously unrecorded cultural and tribal cultural resources, geology and paleontological resources, and conflicts with applicable sections of the Napa County Code and Napa County General Plan would not occur. The approximately 157.14 acres of biological communities in the development area would remain on the project site. No potential impacts on special-status wildlife species would occur, and the approximately 33.52 acres of mixed oak woodland (or 29.88 acres with the mitigated proposed project) would remain on the project site. Therefore, the No Project Alternative would not require implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-3a, 3.3-3b, 3.3-3c, 3.3-4, 3.3-5a, 3.3-5b, 3.4-1a, 3.4-1b, 3.4-2, 3.4-3, 3.5-2, 3.5-5a, and 3.5-5b as identified for the proposed project to reduce impacts on biological resources, cultural and tribal cultural resources, geology and paleontological resources, and land use and planning to less-than-significant levels.

With the No Project Alternative, proposed erosion and runoff control measures would not be implemented. Therefore, unlike the proposed project, this alternative would not cause a reduction in soil loss of approximately 43.17 percent (approximately 376.6 tons) or a net decrease in peak flow rates relative to existing conditions. The No Project Alternative would not affect water quality or surface water and groundwater supplies.

Because construction and maintenance activities for the vineyard would not occur, the No Project Alternative would avoid potential impacts of the proposed project related to hazards and the use of hazardous materials on the project site and temporary, less-than-significant impacts associated with noise and transportation-related construction activities. However, operation of the existing vineyard on the project site would remain and these impacts could occur under current conditions.

5.3.2 ALTERNATIVE 1 – REDUCED INTENSITY AND INCREASED STREAM AND WETLAND (AQUATIC RESOURCE) SETBACKS ALTERNATIVE

The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative includes the areas from the mitigated proposed project, which reduces the project acreage by 21.73 gross acres (and avoids development of Blocks 5D, 16, 24G, 25, and 27) through avoidance of biological resources and mapped landslides through implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, as described in **Section 3.3, *Biological Resources*** and **Section 3.5*, Geology and Soils***. The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative also includes setbacks from all

streams based on slope (pursuant to current Napa County Code Section 18.108.025) and 50-foot setbacks from wetlands pursuant to current Napa County Code Section 18.108.026. As a result, less vineyard area would be developed than under the proposed project.

The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would consist of approximately 134.16 gross acres of proposed vineyard, as shown in **Figure 5-1**. As described in **Table 5-1**, approximately 22.98 gross acres would not be converted to vineyard compared to the proposed project.

Like the proposed project, because the slopes in the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative's proposed blocks are steeper than 5 percent, an Erosion Control Plan would be required, and Napa County would retain approval authority.

ABILITY TO MEET PROJECT OBJECTIVES

The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would partially meet the project objectives, as it would allow for conversion of a portion of the project site (approximately 134.16 gross acres) to vineyard; beneficially use surface water through Water Right License 9125 and Permit 18459; minimize impacts on riparian and aquatic resources by modifying Permit 18459 to allow construction of the storage reservoir at an offstream location rather than onstream; minimize soil erosion; protect water quality; preserve the on-site grasslands and woodlands; minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible; and develop a vineyard on portions of the property suitable for the cultivation of high-quality wine grapes. This alternative would provide opportunities for vineyard employment and economic development in Napa County.

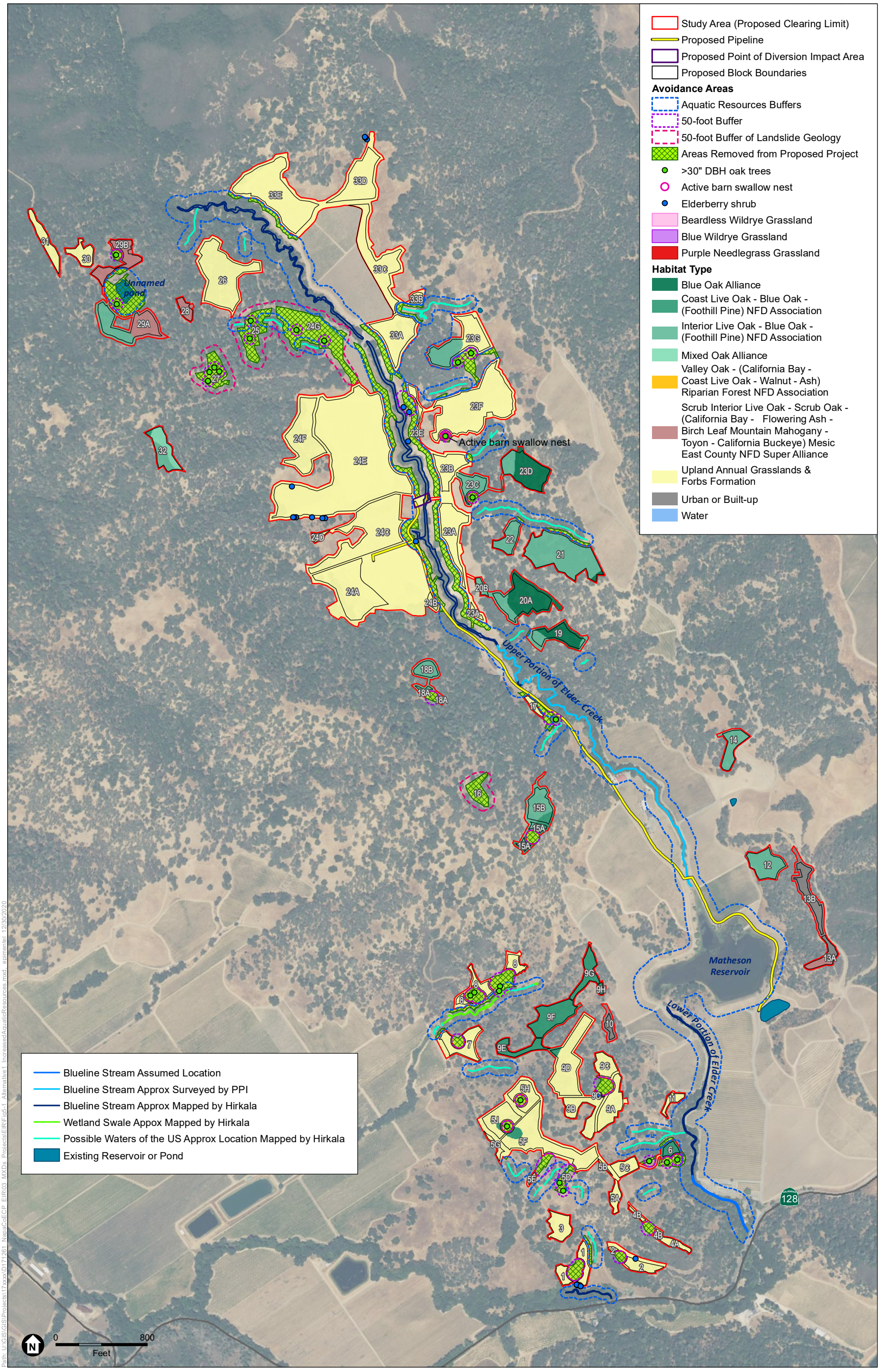
However, the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would not meet all of the project objectives, specifically the goal to develop up to approximately 111.5 net acres of vineyard within an approximately 156.8-acre conversion area on the portions of the site that are suitable for cultivation of high-quality wine grapes. The alternative would avoid an additional 1.25 acres within the project site compared to the mitigated proposed project to further minimize impacts on streams and wetland habitat to less-than-significant levels. The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would develop approximately 94.89 net acres of vineyard within an approximately 134.16-acre development area (**Table 5-2**). This would in turn slightly reduce the opportunities for vineyard employment and economic development in Napa County.

TABLE 5-1
BIOLOGICAL COMMUNITIES, PROPOSED PROJECT, MITIGATED PROPOSED PROJECT, AND REDUCED INTENSITY AND INCREASED STREAM AND WETLAND (AQUATIC RESOURCE) SETBACKS ALTERNATIVE

Biological Communities	Project Site	Proposed Project	Mitigated Proposed Project	Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative
Upland Annual Grasslands and Forbs Formation	153.2	116.22	99.10	98.23
Purple Needlegrass Grassland	Not quantified	0.19	0	0
Beardless Wildrye Grassland	Not quantified	0.05	0	0
Blue Wildrye Grassland	Not quantified	0.08	0	0
Blue Oak Alliance	35.27	5.56	5.56	5.56
Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	165.37	6.54	5.80	5.72
Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	251.89	20.71	17.81	17.51
Mixed Oak Alliance	68.77	0.71	0.71	0.71
Scrub Interior Live Oak-Scrub Oak (California Bay-Flowering Ash-Birch Leaf Mountain Mahogany-Toyon-California Buckeye) Mesic East County NFD Super Alliance	23.51	4.35	3.71	3.71
Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	17.81	0.06	0.06	0.06
Urban or Built-Up	2.64	2.64	2.64	2.64
Riverine	0.02	0.02	0.02	0.02
Total	**718.48**	**157.14**	**135.41**	**134.16**

NOTE:
GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through County GIS mapping, the values disclosed herein are considered by the County to be adequate for CEQA review and disclosure purposes of the subject application.

SOURCE: Data compiled by Environmental Science Associates in 2021



SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

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Figure 5-1

Alternative 1 - Reduced Intensity and Increased Stream and Wetlands (Aquatic Resources) Setbacks

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TABLE 5-2
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE INCREASED STREAM AND WETLAND (AQUATIC RESOURCE) SETBACKS ALTERNATIVE

Blocks	Biological Communities									
	Upland Annual Grasslands and Forbs Formation	Blue Oak Alliance	Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	Scrub Interior Live Oak - Scrub Oak - (California Bay - Flowering Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County NFD Super Alliance	Mixed Oak Alliance	Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	Riverine	Urban/Built Up	Total
1	0.78									**0.78**
2	0.61									**0.61**
3	0.85									**0.85**
4A	0.30									**0.30**
4B	0.18									**0.18**
5A	0.38									**0.38**
5B	0.06									**0.06**
5C	0.56									**0.56**
5E	0.06									**0.06**
5F	2.83		0.21							**3.03**
5G	0.17									**0.17**
5H	0.81									**0.81**
5J	1.05		0.04							**1.09**
6			0.28							**0.28**
7	0.99									**0.99**
8	0.84									**0.84**
9A	1.22									**1.22**
9B	1.15									**1.15**
9C	0.73									**0.73**
9D	2.43		0.07							**2.50**
9E			0.64							**0.64**
9F			1.58							**1.58**
9G			0.79							**0.79**
9H			0.09							**0.09**
10									0.21	**0.21**
11	0.29									**0.29**
12				1.27						**1.27**
13A					0.34				0.25	**0.58**
13B									0.95	**0.95**
14				0.89						**0.89**
15A			0.24	0.07						**0.31**
15B			0.18	0.94						**1.12**
17	0.19									**0.19**
18A				0.11						**0.11**
18B				0.51						**0.51**

TABLE 5-2
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE INCREASED STREAM AND WETLAND (AQUATIC RESOURCE) SETBACKS ALTERNATIVE

Blocks	Biological Communities									
	Upland Annual Grasslands and Forbs Formation	Blue Oak Alliance	Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	Scrub Interior Live Oak - Scrub Oak - (California Bay - Flowering Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County NFD Super Alliance	Mixed Oak Alliance	Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	Riverine	Urban/Built Up	Total
19		0.80		0.30						**1.09**
20A		1.79		0.47						**2.25**
20B				0.18						**0.18**
21		0.09		3.75						**3.84**
22				0.79						**0.79**
23A	1.78									**1.78**
23B	1.14									**1.14**
23C	0.01			0.68						**0.69**
23D		1.60		0.45						**2.05**
23E	0.26									**0.26**
23F	5.17									**5.17**
23G	1.19			0.99						**2.18**
24A	3.48									**3.48**
24B	0.17									**0.17**
24C	4.57									**4.57**
24D	0.17									**0.17**
24E	15.49									**15.49**
24F	2.74									**2.74**
26	3.60									**3.60**
28					0.35					**0.35**
29A				0.97	0.93					**1.90**
29B					1.05					**1.05**
30	0.65									**0.65**
31	0.80									**0.80**
32			0.04	0.53		0.60				**1.18**
33A	1.92									**1.92**
33B	0.20									**0.20**
33C	2.48									**2.48**
33D	2.17									**2.17**
33E	4.44									**4.44**
Clearing Limits	29.17	1.29	1.56	4.62	1.04	0.10			1.23	**39.01**
Creek Crossing/Point of Diversion	0.17						0.06	0.02		**0.26**
Total	**98.23**	**5.56**	**5.72**	**17.51**	**3.71**	**0.71**	**0.06**	**0.02**	**2.64**	**134.16**

NOTE:
GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through County GIS mapping, the values disclosed herein are considered by the County to be adequate for CEQA review and disclosure purposes of the subject application.
SOURCE: Data compiled by Environmental Science Associates in 2021

COMPARISON OF THE REDUCED INTENSITY AND INCREASED STREAM AND WETLAND (AQUATIC RESOURCE) SETBACKS ALTERNATIVE TO THE PROPOSED PROJECT

The Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would include construction and operation and maintenance activities similar to those of the proposed project, although the acreage developed would be less (approximately 94.89 net acres of vineyard within an approximately 134.16-acre development area). Therefore, this alternative would result in impacts on cultural and tribal cultural resources, hazards and hazardous materials, noise, and transportation similar to those identified for the proposed project.

Construction equipment, ground-disturbing activities, and commutes by construction workers under the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative and the proposed project would generally be similar. As under the proposed project, the potential exists for cultural or tribal cultural resources to be uncovered during construction under the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative. Implementation of Mitigation Measures 3.4-1a, 3.4-1b, 3.4-2, and 3.4-3, as identified for the proposed project in **Section 3.4, *Cultural and Tribal Cultural Resources***, would minimize potential impacts of the alternative on cultural and tribal cultural resources to a less-than-significant level.

The Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would comply with laws and regulations governing the transportation and management of hazardous materials to reduce potential hazards, and with best management practices in the conditions of approval identified for the proposed project in **Section 3.6, *Hazards and Hazardous Materials***. With this alternative, noise from construction and operation and maintenance activities and vehicles on the local roadways would generally be similar to noise generated under the proposed project because activities would be similar (though potentially less, given the reduced project footprint).

The Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would include the development of a smaller vineyard and clearing-limits area (22.98 gross acres less than under the proposed project). Therefore, impacts on air quality and GHG emissions, biological resources, geology and soils, hydrology and water quality, and land use and planning would be less than impacts identified for the proposed project.

Like the proposed project, the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative could result in a cumulatively considerable net increase in criteria pollutants and may not be consistent with the 2017 Clean Air Plan; however, project construction emissions would be less than under the proposed project because this alternative would have a smaller project footprint. Implementation of Mitigation Measures 3.2-1a and 3.2-1b, as identified for the proposed project in **Section 3.2, *Air Quality and Greenhouse Gas Emissions***, would reduce air quality impacts of the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative to a less-than-significant level.

In addition, similar to the proposed project, the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would not include activities that would expose sensitive receptors to substantial pollutant concentrations or result in other emissions (such as those leading to odors), adversely affecting a substantial number of people. Like the proposed project, this alternative also would not generate GHG emissions that would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for reducing GHGs.

Compared to the mitigated proposed project, gross acres would be reduced by approximately 1.25 acres under the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative, including approximately 0.87 acre of annual grassland and 0.80 acre of coast live oak (**Table 5-1**). Like the proposed project, the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would construct the water intake device on Elder Creek and construct a spillway berm and overflow structure at the unnamed pond, and impacts on waters of the United States, waters of the state, and areas within California Department of Fish and Wildlife jurisdiction would be the same as under the proposed project. The Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would slightly increase the wildlife movement corridors compared to the mitigated proposed project. Implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-3a through 3.3-3c, 3.3-4, and 3.3-5a and 3.3-5b, as identified for the proposed project and discussed in **Section 3.3, *Biological Resources***, would reduce impacts of the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative on biological resources to a less-than-significant level. The alternative also would not conflict with applicable sections of the Napa County Code and Napa County General Plan with implementation of the mitigation measures identified for the proposed project. Impacts on biological resources and land use and planning would be less than those identified for the proposed project given the reduced acreage.

Like the proposed project, the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would be designed to reduce annual soil loss from the development area; however, because this alternative would include less acreage than the proposed project, the reduction in annual soil loss would likely be less than under the proposed project. Risks related to a geologic unit becoming unstable or destruction of a unique paleontological resource may be less with the alternative, given the reduced acreage. Implementation of Mitigation Measures 3.5-2, 3.5-5a, and 3.5-5b and erosion and runoff control installation and operation conditions of approval identified for the proposed project in **Section 3.5, *Geology and Soils*** would minimize impacts of the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative on geology and soils to less-than-significant levels. Similar to the proposed project, no net increases in peak runoff would be anticipated with this alternative. Because the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would develop a smaller vineyard than the proposed project, annual surface water demand would also be less. The Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would require implementation of the vineyard irrigation conditions of approval identified for the proposed project in **Section 3.7, *Hydrology and Water Quality*** for surface water use. Therefore, impacts

on geology and soils and hydrology and water quality would be less than those identified for the proposed project.

Although construction and operation and maintenance activities would be similar to those for the proposed project, the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would develop fewer vineyard acres than the proposed project (approximately 94.89 net acres of vineyard within an approximately 134.16-acre development area). Because of the smaller project footprint, the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would result in less severe impacts than identified for the proposed project. Impacts would be less than significant with mitigation incorporated.

5.3.3 ALTERNATIVE 2 – REDUCED VEGETATION REMOVAL/GRADING AND ROAD USE ALTERNATIVE

The Reduced Vegetation Removal/Grading and Road Use Alternative includes the areas from the mitigated proposed project, which reduces the project acreage by 21.73 gross acres (and avoids development of vineyard Blocks 5D, 16, 24G, 25, and 27) through avoidance of biological resources and mapped landslides through implementation of Mitigation Measures 3.3-1a, 3.3-1i, 3.3-2a, and 3.5-2, as described in **Section 3.3, *Biological Resources*** and **Section 3.5*, Geology and Soils***. The Reduced Vegetation Removal/Grading and Road Use Alternative also reduces blocks and block configurations as compared to the proposed project to limit vegetation removal/grading and road use, development, maintenance, and upgrades for areas that contain minimal vineyard development. Specifically, this alternative avoids the development of vineyard Blocks 5E, 6, 8, 9H, 10, 11, 13A, 14, 15A, 15B, 18A, 18B, 20B, 23D, 24D, 28, 29A, 29B, 30, 31, 32, and 33B. As a result, less vineyard would be developed than under the proposed project.

The Reduced Vegetation Removal/Grading and Road Use Alternative would consist of approximately 111.82 gross acres of proposed vineyard, as shown in **Figure 5-2.** As described in **Table 5-3**, approximately 45.32 gross acres would not be converted to vineyard compared to the proposed project.

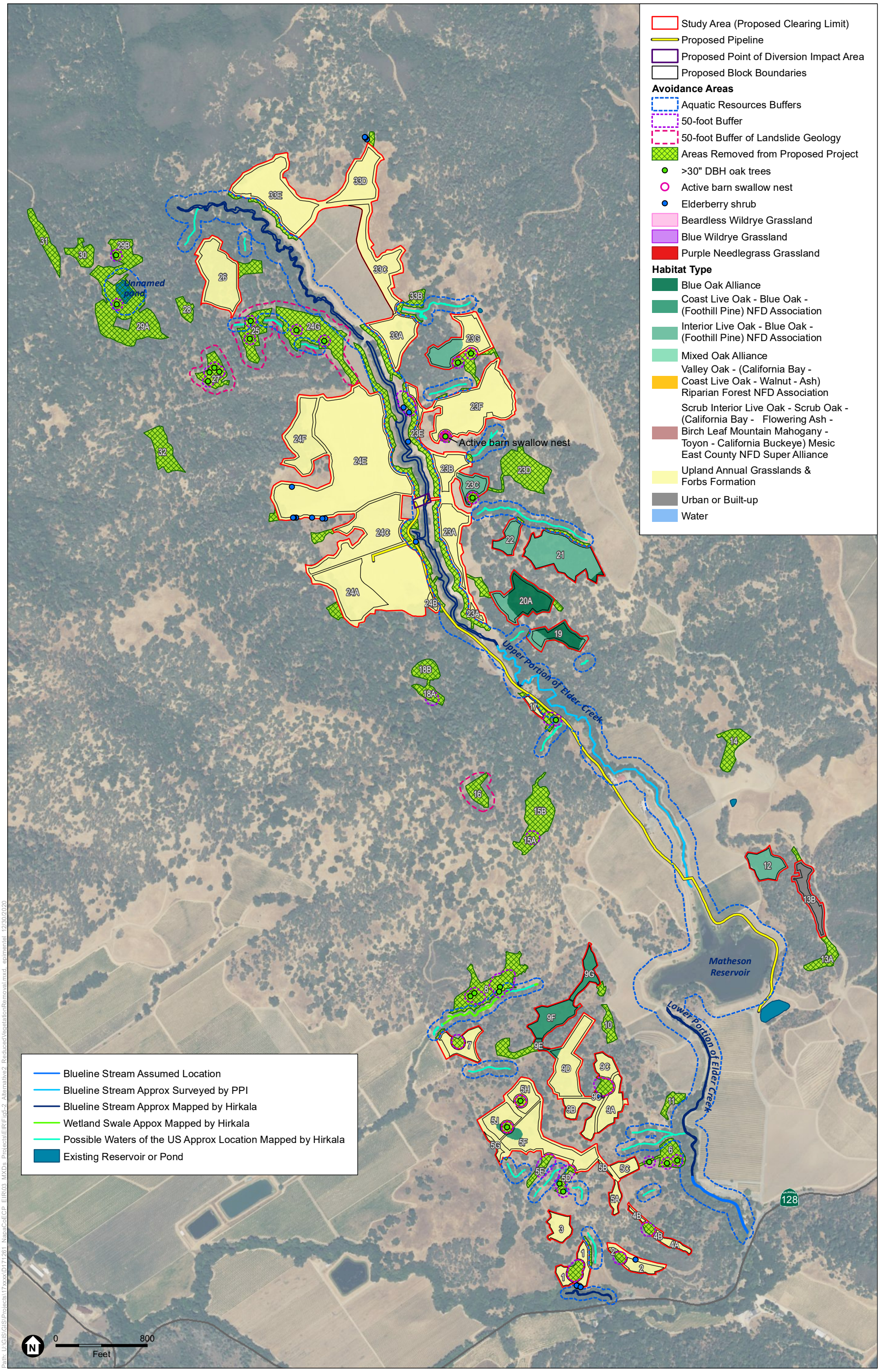
As with the proposed project, because the slopes in the Reduced Vegetation Removal/Grading and Road Use Alternative's proposed blocks are steeper than 5 percent, an Erosion Control Plan would be required, and Napa County would retain approval authority.

TABLE 5-3
BIOLOGICAL COMMUNITIES, PROPOSED PROJECT, MITIGATED PROPOSED PROJECT, AND REDUCED VEGETATION REMOVAL/GRADING AND ROAD USE ALTERNATIVE

Biological Communities	Project Site	Proposed Project	Mitigated Proposed Project	Reduced Vegetation Removal/Grading and Road Use Alternative
Upland Annual Grasslands and Forbs Formation	153.2	116.22	99.10	92.43
Purple Needlegrass Grassland	Not quantified	0.19	0	0
Beardless Wildrye Grassland	Not quantified	0.05	0	0
Blue Wildrye Grassland	Not quantified	0.08	0	0
Blue Oak Alliance	35.27	5.56	5.56	3.60
Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	165.37	6.54	5.80	3.57
Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	251.89	20.71	17.81	10.49
Mixed Oak Alliance	68.77	0.71	0.71	0.00
Scrub Interior Live Oak-Scrub Oak (California Bay-Flowering Ash-Birch Leaf Mountain Mahogany-Toyon-California Buckeye) Mesic East County NFD Super Alliance	23.51	4.35	3.71	0.00
Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	17.81	0.06	0.06	0.06
Urban or Built-Up	2.64	2.64	2.64	1.65
Riverine	0.02	0.02	0.02	0.02
Total	**718.48**	**157.14**	**135.41**	**111.82**

NOTE:
GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through County GIS mapping, the values disclosed herein are considered by the County to be adequate for CEQA review and disclosure purposes of the subject application.

SOURCE: Data compiled by Environmental Science Associates in 2021



SOURCE: NAIP, 2016; ESRI, 2012; CDFW; 2015; Napa County, 2018; ESA, 2019

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Figure 5-2
Alternative 2 - Reduced Vegetation Removal/Grading and Road Use Alternative

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ABILITY TO MEET PROJECT OBJECTIVES

The Reduced Vegetation Removal/Grading and Road Use Alternative would partially meet the project objectives, as it would allow for conversion of a portion of the project site (111.82 gross acres) to vineyard; beneficially use surface water through Water Right License 9125 and Permit 18459; minimize impacts on riparian and aquatic resources by modifying Permit 18459 to allow construction of the storage reservoir at an offstream location rather than onstream; minimize soil erosion; protect water quality; preserve the on-site grasslands and woodlands; minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible; and develop a vineyard on portions of the property suitable for the cultivation of high-quality wine grapes. This alternative would provide opportunities for vineyard employment and economic development in Napa County.

However, the Reduced Vegetation Removal/Grading and Road Use Alternative would not meet all of the project objectives, specifically the goal to develop up to approximately 111.5 net acres of vineyard within an approximately 156.8-acre conversion area on the portions of the site that are suitable for cultivation of high-quality wine grapes. The alternative would avoid an additional 23.58 acres within the project site compared to the mitigated proposed project to limit vegetation removal/grading and road use, development, maintenance, and upgrades for areas that contain minimal vineyard development. The Reduced Vegetation Removal/Grading and Road Use Alternative would develop approximately 80.15 net acres of vineyard within an approximately 111.82-acre development area (**Table 5-4**). This in turn would reduce the opportunities for vineyard employment and economic development in Napa County.

COMPARISON OF THE REDUCED VEGETATION REMOVAL/GRADING AND ROAD USE ALTERNATIVE TO THE PROPOSED PROJECT

The Reduced Vegetation Removal/Grading and Road Use Alternative would include construction and operation and maintenance activities similar to those of the proposed project, although the acreage developed would be less (approximately 80.15 net acres of vineyard within an approximately 111.82-acre development area). Therefore, this would likely result in impacts on cultural and tribal cultural resources, hazards and hazardous materials, noise, and transportation similar to those identified for the proposed project.

Construction equipment, ground-disturbing activities, and commutes by construction workers under the Reduced Vegetation Removal/Grading and Road Use Alternative and the proposed project would generally be similar. As under the proposed project, the potential exists for cultural or tribal cultural resources to be uncovered during construction under the Reduced Vegetation Removal/Grading and Road Use Alternative. Implementation of Mitigation Measures 3.4-1a, 3.4-1b, 3.4-2, and 3.4-3, as identified for the proposed project in **Section 3.4, *Cultural and Tribal Cultural Resources***, would minimize potential impacts of the alternative on cultural and tribal cultural resources to a less-than-significant level.

The Reduced Vegetation Removal/Grading and Road Use Alternative would comply with laws and regulations governing the transportation and management of hazardous materials to reduce potential hazards, and with best management practices in the conditions of approval identified for the proposed project in **Section 3.6, *Hazards and Hazardous Materials***. With this alternative, noise from construction and operation and maintenance activities and vehicles on the local roadways would generally be less than noise generated under the proposed project because activities would be similar (though potentially less, given the reduced project footprint).

The Reduced Vegetation Removal/Grading and Road Use Alternative would include the development of a smaller vineyard and clearing-limits area (45.32 gross acres less than under the proposed project). Therefore, impacts on air quality and GHG emissions, biological resources, geology and soils, hydrology and water quality, and land use and planning would be less than impacts identified for the proposed project.

Like the proposed project, the Reduced Vegetation Removal/Grading and Road Use Alternative could result in a cumulatively considerable net increase in criteria pollutants and may not be consistent with the 2017 Clean Air Plan; however, project construction emissions would be less than under the proposed project because this alternative would have a smaller project footprint. Implementation of Mitigation Measures 3.3-2a and 3.3-2b, as identified for the proposed project in **Section 3.2, *Air Quality and Greenhouse Gas Emissions***, would reduce air quality impacts of construction of the Reduced Vegetation Removal/Grading and Road Use Alternative to a less-than-significant level.

In addition, similar to the proposed project, the Reduced Intensity Stream and Wetland (Aquatic Resource) Setbacks Alternative would not include activities that would expose sensitive receptors to substantial pollutant concentrations or result in other emissions (such as those leading to odors), adversely affecting a substantial number of people. Like the proposed project, this alternative also would not generate GHG emissions that would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for reducing GHGs.

TABLE 5-4
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE REDUCED VEGETATION REMOVAL/GRADING AND ROAD USE ALTERNATIVE

Blocks	Biological Communities									
	Upland Annual Grasslands and Forbs Formation	Blue Oak Alliance	Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	Scrub Interior Live Oak - Scrub Oak - (California Bay - Flowering Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County NFD Super Alliance	Mixed Oak Alliance	Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	Riverine	Urban/Built Up	Total
1	0.78									**0.78**
2	0.61									**0.61**
3	0.85									**0.85**
4A	0.30									**0.30**
4B	0.18									**0.18**
5A	0.38									**0.38**
5B	0.06									**0.06**
5C	0.56									**0.56**
5F	2.83		0.21							**3.03**
5G	0.17									**0.17**
5H	0.81									**0.81**
5J	1.05		0.04							**1.09**
7	0.99									**0.99**
9A	1.22									**1.22**
9B	1.15									**1.15**
9C	0.73									**0.73**
9D	2.43		0.07							**2.50**
9E			0.12							**0.12**
9F			1.58							**1.58**
9G			0.79							**0.79**
12				1.27						**1.27**
13B									0.95	**0.95**
17	0.19									**0.19**
19		0.80		0.30						**1.09**
20A		1.79		0.47						**2.25**
21		0.09		3.75						**3.84**
22				0.79						**0.79**
23A	1.78									**1.78**
23B	1.14									**1.14**
23C	0.01			0.68						**0.69**
23E	0.26									**0.26**
23F	5.17									**5.17**
23G	1.19			0.99						**2.18**

TABLE 5-4
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE REDUCED VEGETATION REMOVAL/GRADING AND ROAD USE ALTERNATIVE

Blocks	Biological Communities									
	Upland Annual Grasslands and Forbs Formation	Blue Oak Alliance	Coast Live Oak-Blue Oak (Foothill Pine) NFD Association	Interior Live Oak-Blue Oak (Foothill Pine) NFD Association	Scrub Interior Live Oak - Scrub Oak - (California Bay - Flowering Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County NFD Super Alliance	Mixed Oak Alliance	Valley Oak-(California Bay-Coast Live Oak-Walnut-Ash) Riparian Forest NFD Association	Riverine	Urban/Built Up	Total
24A	3.48									**3.48**
24B	0.17									**0.17**
24C	4.57									**4.57**
24E	15.43									**15.43**
24F	2.74									**2.74**
26	3.25									**3.25**
33A	1.92									**1.92**
33C	2.48									**2.48**
33D	2.17									**2.17**
33E	4.44									**4.44**
Clearing Limits	26.78	0.92	0.77	2.25					0.70	**31.42**
Creek Crossing/Point of Diversion	0.17						0.06	0.02		**0.26**
Total	**92.43**	**3.60**	**3.57**	**10.49**	**0**	**0**	**0.06**	**0.02**	**1.65**	**111.82**

NOTE:
GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding. Because approximate plant communities and project acreages have been corroborated through County GIS mapping, the values disclosed herein are considered by the County to be adequate for CEQA review and disclosure purposes of the subject application.

SOURCE: Data compiled by Environmental Science Associates in 2021

Compared to the mitigated proposed project, gross acres would be reduced by approximately 23.58 acres under the Reduced Vegetation Removal/Grading and Road Use Alternative; biological communities are summarized in **Table 5-3**. Vegetation removal would be reduced by avoiding development of vineyard Blocks 5E, 6, 8, 9H, 10, 11, 13A, 14, 15A, 15B, 18A, 18B, 20B, 23D, 24D, 28, 29A, 29B, 30, 31, 32, and 33B. In addition, avoidance of the following vineyard blocks would further reduce impacts on biological resources:

- Block 5E: Mapped as Upland Annual Grasslands and Forbs Formation; avoidance would also protect areas around the purple needlegrass grassland that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-2a and increase the distance from mapped possible waters of the United States.
- Block 6: Mapped as Coast Live Oak-Blue Oak-(Foothill Pine) NFD Association and Interior Live Oak-Blue Oak-(Foothill Pine) NFD Association; avoidance would also protect areas around mapped oak trees greater than 30 inches diameter at breast height that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-1i and increase the wildlife corridor along Elder Creek.
- Block 8: Mapped as Upland Annual Grasslands and Forbs Formation; avoidance would also protect areas around the purple needlegrass grassland that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-2a, mapped oak trees that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-1i, and increase the distance from the wetland swale and mapped possible waters of the U.S.
- Blocks 15A and 15B: Mapped as Coast Live Oak-Blue Oak-(Foothill Pine) NFD Association and Interior Live Oak-Blue Oak-(Foothill Pine) NFD Association; avoidance would also preserve areas surrounding the blue wildrye grassland that bisects vineyard Block 15A that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-2a.
- Blocks 18A and 18B: Mapped as Interior Live Oak-Blue Oak-(Foothill Pine) NFD Association; avoidance would protect areas generally containing high biological diversity, as well as blue wildrye grassland in proposed vineyard Block 18A that would be avoided with a 50-foot buffer with implementation of Mitigation Measure 3.3-2a.
- Blocks 29A and 29B: Mapped as Interior Live Oak-Blue Oak-(Foothill Pine) NFD Association and Scrub Interior Live Oak–Scrub Oak–Mesic East County NFD Super Alliance; avoidance would increase potential wildlife habitat areas in the vicinity of the stock pond and connect it to wildlife habitat to the north.
- Blocks 30 and 31: Mapped as Upland Annual Grasslands and Forbs Formation; avoidance would protect high-quality grassland connected to wildlife habitat to the north.
- Block 33B: Mapped as Upland Annual Grasslands and Forbs Formation; avoidance would increase the distance from mapped possible waters of the United States.

Like the proposed project, the Reduced Vegetation Removal/Grading and Road Use Alternative would construct the water intake device on Elder Creek and construct a spillway berm and

overflow structure at the unnamed pond, and impacts on waters of the United States, waters of the state, and areas within California Department of Fish and Wildlife jurisdiction would be the same as under the proposed project. The Reduced Vegetation Removal/Grading and Road Use Alternative would increase the wildlife movement corridors compared to the mitigated proposed project. Implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-3a through 3.3-3c, 3.3-4, 3.3-5a, and 3.3-5b, as identified for the proposed project and discussed in **Section 3.3, *Biological Resources***, would reduce impacts of the Reduced Vegetation Removal/Grading and Road Use Alternative on biological resources to a less-than-significant level. The alternative also would not conflict with applicable sections of the Napa County Code and Napa County General Plan with implementation of the mitigation measures identified for the proposed project. Impacts on biological resources and land use and planning would be less than those identified for the proposed project given the reduced acreage.

Like the proposed project, the Reduced Vegetation Removal/Grading and Road Use Alternative would be designed to reduce annual soil loss from the development area; however, because this alternative would include less acreage than the proposed project, the reduction in annual soil loss would likely be less than under the proposed project. Risks related to a geologic unit becoming unstable or destruction of a unique paleontological resource may be less with the alternative, given the reduced acreage. Implementation of Mitigation Measures 3.5-2, 3.5-5a, and 3.5-5b and erosion and runoff control installation and operation conditions of approval identified for the proposed project in **Section 3.5, *Geology and Soils*** would minimize impacts of the Reduced Vegetation Removal/Grading and Road Use Alternative on geology and soils to less-than-significant levels. Similar to the proposed project, no net increases in peak runoff would be anticipated with this alternative. Because the Reduced Vegetation Removal/Grading and Road Use Alternative would develop a smaller vineyard than the proposed project, annual surface water demand would also be less. The Reduced Vegetation Removal/Grading and Road Use Alternative would require implementation of the vineyard irrigation conditions of approval identified for the proposed project in **Section 3.7, *Hydrology and Water Quality*** for surface water use. Therefore, impacts on geology and soils and hydrology and water quality would be less than those identified for the proposed project.

Although construction and operation and maintenance activities would be similar to those for the proposed project, the Reduced Vegetation Removal/Grading and Road Use Alternative would develop fewer vineyard acres than the proposed project (approximately 80.15 net acres of vineyard within an approximately 111.82-acre development area). Because of the smaller project footprint, the Reduced Vegetation Removal/Grading and Road Use Alternative would result in less severe impacts than identified for the proposed project. Impacts would be less than significant with mitigation incorporated.

5.4 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

State CEQA Guidelines Section 15126.6(e)(2) requires identification of an environmentally superior alternative—the alternative that has the least significant impacts on the environment. If

the No Project Alternative is the environmentally superior alternative, identification of an environmentally superior alternative among the other alternatives considered in the EIR is required. **Table 5-5** presents a comparison of impacts by resource topic addressed in **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures***, of this EIR for the proposed project and each alternative.

TABLE 5-5
SUMMARY OF KEY IMPACTS BETWEEN ALTERNATIVES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/ Grading and Road Use Alternative
3.2 Air Quality and Greenhouse Gas Emissions				
3.2-1: Construction and operation of the proposed project could conflict with or obstruct implementation of BAAQMD's 2017 Clean Air Plan.	LSM	NI	LSM-	LSM-
3.2-2: Construction and operation of the proposed project could result in a cumulatively considerable net increase of a criteria air pollutant for which the Bay Area is nonattainment under an applicable federal or state air quality standard.	LSM	NI	LSM-	LSM-
3.2-3: Construction and operation of the proposed project could expose sensitive receptors to substantial pollutant concentrations.	LS	NI	LS-	LS-
3.2-4: Construction and operation of the proposed project could result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.	LS	NI	LS-	LS-
3.2-5: Construction and operation of the proposed project could generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	LS	NI	LS-	LS-
3.3 Biological Resources				
3.3-1: Construction and operation of the proposed project could have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFW or USFWS.	LSM	NI	LSM-	LSM-
3.3-2: Construction and operation of the proposed project could have a substantial adverse effect on riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS.	LSM	NI	LSM-	LSM-

TABLE 5-5
SUMMARY OF KEY IMPACTS BETWEEN ALTERNATIVES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/ Grading and Road Use Alternative
3.3-3: Construction and operation of the proposed project could have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.	LSM	NI	LSM-	LSM-
3.3-4: Construction and operation of the proposed project could interfere substantially with the movement of native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or could impede the use of native wildlife nursery sites.	LSM	NI	LSM-	LSM-
3.3-5: Construction and operation of the proposed project could conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.	LSM	NI	LSM-	LSM-
3.4 Cultural and Tribal Resources				
3.4-1: Construction and operation of the proposed project could cause a substantial adverse change in the significance of an archaeological resource pursuant to State CEQA Guidelines Section 15064.5.	LSM	NI	LSM	LSM
3.4-2: Construction and operation of the proposed project could disturb human remains, including those interred outside of formal cemeteries**.**	LSM	NI	LSM	LSM
3.4-3: Construction and operation of the proposed project could cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code Section 21074.	LSM	NI	LSM	LSM
3.5 Geology and Soils				
3.5-1: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking.	LS	NI	LS	LS
3.5-2: Construction and operation of the proposed project could cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides.	LSM	NI	LSM	LSM
3.5-3: Construction and operation of the proposed project could result in substantial soil erosion or the loss of topsoil.	LS	NI	LS+	LS+
3.5-4: Construction and operation of the proposed project could occur on a geologic unit or soil that is unstable, or that would become unstable as a result of the project.	LSM	NI	LSM-	LSM-

TABLE 5-5
SUMMARY OF KEY IMPACTS BETWEEN ALTERNATIVES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/ Grading and Road Use Alternative
3.5-5: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LSM	NI	LSM-	LSM-
3.6 Hazards and Hazardous Materials				
3.6-1: Construction and operation of the proposed project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	LS	NI	LS-	LS-
3.7 Hydrology and Water Quality				
3.7-1: Construction and operation of the proposed project could violate water quality standards or waste discharge requirements or otherwise substantially degrade water quality.	LS	NI	LS-	LS-
3.7-2: Construction and operation of the proposed project could substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site.	LS	NI	LS	LS
3.7-3: Construction and operation of the proposed project could create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	LS	NI	LS-	LS-
3.7-4: Operation of the proposed project could change the water volume and pattern of seasonal flows in the affected watercourse, resulting in a significant cumulative reduction in the water supply downstream of the diversion or a significant reduction in water supply to downstream senior water right holders.	LS	NI	LS-	LS-
3.8 Land Use and Planning				
3.8-1: Construction and operation of the proposed project could 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.	LSM	NI	LSM-	LSM-

TABLE 5-5
SUMMARY OF KEY IMPACTS BETWEEN ALTERNATIVES

Resource Topic and Impact	Significance Before Mitigation: Proposed Project	Significance Before Mitigation: No Project Alternative	Significance Before Mitigation: Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative	Significance Before Mitigation: Reduced Vegetation Removal/ Grading and Road Use Alternative
3.9 Noise				
3.9-1: Construction of the proposed project could generate a substantial temporary 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.	LS	NI	LS	LS
3.9-2: Operation of the proposed project could generate a substantial 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.	LS	NI	LS	LS
3.9-3: Construction and operation of the proposed project could result in the generation of excessive groundborne vibration or groundborne noise levels.	LS	NI	LS	LS
3.10 Transportation				
3.10-1: Construction and operation of the proposed project could conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities, such as General Plan Policy CIR-38, which seeks to maintain an adequate level of service at signalized and unsignalized intersections.	LS	NI	LS	LS
3.10-2: Construction and operation of the proposed project could conflict or be inconsistent with State CEQA Guidelines Section 15064.3(b).	LS	NI	LS	LS
3.10-3: Construction and operation of the proposed project could substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).	LS	NI	LS	LS
3.10-4: Construction and operation of the proposed project could result in inadequate emergency access.	LS	NI	LS	LS

Notes: NI = No impact; LS = Less than significant; LSM = Less than significant after application of feasible mitigation measure(s); - = Impact is less severe than under the proposed project; + = Impact is more severe than under the proposed project

SOURCE: Data compiled by Environmental Science Associates in 2021

The proposed project would involve the development of up to approximately 111.5 net acres of vineyards within approximately a 156.8-acre conversion area on the project site.

The No Project Alternative would not accomplish the basic objective of the proposed project: installing and operating a new vineyard on the project site. Because the No Project Alternative

would not include any construction or new operation and maintenance activities, it would not result in the impacts on air quality and GHG emissions, biological resources, cultural and tribal cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, and transportation identified for the proposed project.

The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative and the Reduced Vegetation Removal/Grading and Road Use Alternative would partially meet the project objectives, though not the main objective: to develop up to approximately 111.5 net acres of vineyard within an approximately 156.8-acre conversion area.

The Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative would include the development of approximately 22.98 gross acres less than the proposed project, and the Reduced Vegetation Removal/Grading and Road Use Alternative would include the development of approximately 45.32 gross acres less than the proposed project. Under both alternatives, because less vineyard would be developed than under the proposed project, impacts on air quality and GHG emissions, biological resources, geology and soils, hydrology and water quality, and land use and planning would be less severe than the impacts identified for the proposed project. The alternatives would result in impacts on cultural and tribal cultural resources, hazards and hazardous materials, noise, and transportation similar to those identified for the proposed project because the alternatives' construction and operation and maintenance activities would be similar to those of the proposed project. Noise and transportation impacts could potentially be less with the two alternatives, given the reduced project footprint.

None of the alternatives would fully achieve the project objectives. The No Project Alternative would not involve any project construction or operation and maintenance activities and would result in no adverse environmental effects; however, identification of an environmentally superior alternative among the other alternatives considered in the EIR is required. Both the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative and the Reduced Vegetation Removal/Grading and Road Use Alternative would reduce the severity of some environmental impacts, as indicated in **Table 5-5**. However, the Reduced Vegetation Removal/Grading and Road Use Alternative would increase avoidance areas from purple needlegrass grassland and blue wildrye grassland, mapped oak trees greater than 30 inches diameter at breast height, and areas generally containing high biological diversity; increase the distance from mapped the wetland swale and possible waters of the United States; and increase potential wildlife habitat areas compared to the Reduced Intensity and Increased Stream and Wetland (Aquatic Resource) Setbacks Alternative and the proposed project. Therefore, the Reduced Vegetation Removal/Grading and Road Use Alternative is identified as the environmentally superior alternative.

Furthermore, the Reduced Vegetation Removal/Grading and Road Use Alternative would achieve greater consistency with the purpose and intent of County Conservation Regulations (NCC Chapter 18.108) which, among other things, strive to preserve the natural resources of

the county by: providing greater environmental protection for natural environmental resources (particularly forests, wildlife habitat, and water); minimizing earthmoving and grading effects in the natural terrain; encouraging development which minimizes impacts on existing land forms and preserves existing vegetation; and, reducing the loss of vegetation through increasing protections for vegetation canopy cover. The Conservation Regulations have been developed in general accord with the policies and principles of the general plan, as specified in the agricultural preservation and land use element and the conservation element.

CHAPTER 6
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CHAPTER 7
REFERENCES

CHAPTER 1: INTRODUCTION

Napa County. 2015. *Napa County's Local Procedures for Implementing the California Environmental Quality Act*. Revised February 2015. Available: https://www.countyofnapa.org/DocumentCenter/View/3341/CEQA-Guidelines-PDF?bidId=. Accessed September 12, 2018.

CHAPTER 2: PROJECT DESCRIPTION

PPI Engineering. 2018. *ECPA Application P17-00432 and Erosion Control Plan*. On file at Napa County Department of Planning, Building and Environmental Services.

Wagner & Bonsignore. 2018. License 9125 (Application 13943) and Permit 18459 (Application 26165) – Somerston Estate. Amendments to Petitions for Change. Letter to Scott Frazier, State Water Resources Control Board Division of Water Rights. June 2018.

———. 2020 (February). *KJS Investment Properties LLC and Sorrento Inc. Hydrologic Analysis for Petitions for Change and Extension of Time for Permit 18459 (Application 26165), Napa County.*

CHAPTER 3: ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

SECTION 3.1: APPROACH TO THE ENVIRONMENTAL ANALYSIS

No references cited in this section.

SECTION 3.2: AIR QUALITY AND GREENHOUSE GAS EMISSIONS

Bay Area Air Quality Management District (BAAQMD). 2011. *California Environmental Quality Act Air Quality Guidelines*. Updated May 2011. San Francisco, CA.

———. 2015. *Bay Area Emissions Inventory Summary Report: Greenhouse Gases Base Year 2011*. Updated January 2015. San Francisco, CA.

———. 2017a. Air Quality Standards and Attainment Status. Available: http://www.baaqmd.gov/research-and-data/air-quality-standards-and-attainment-status. Last updated January 5, 2017. Accessed December 18, 2018.

———. 2017b. *California Environmental Quality Act Air Quality Guidelines*. San Francisco, CA. May 2017.

———. 2017c. *Spare the Air, Cool the Climate: Final 2017 Clean Air Plan*. A Blueprint for Clean Air and Climate Protection in the Bay Area. Adopted April 19, 2017.

———. 2019. CEQA Guidelines Update Underway. Available: http://www.baaqmd.gov/plans-and-climate/california-environmental-quality-act-ceqa/updated-ceqa-guidelines. Accessed October 21, 2019.

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA & Climate Change: Evaluating and Addressing Greenhouse Gas Emissions from Projects Subject to the California Environmental Quality Act*. January 2008.

California Air Resources Board (CARB). 2009. *Climate Change Scoping Plan: A Framework for Change*. Published December 2008; amended version posted May 11, 2009 (included errata and Board-requested modifications). Available: https://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf. Accessed January 6, 2019.

———. 2011. Toxic Air Contaminant Identification List. Available: http://www.arb.ca.gov/toxics/id/taclist.htm. Last updated July 2011. Accessed January 6, 2019.

———. 2014. *First Update to the Climate Change Scoping Plan: Building on the Framework*. May 2014. Available: http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf. Accessed January 6, 2019.

———. 2017a. *California's 2017 Climate Change Scoping Plan*: *The Strategy for Achieving California's 2030 Greenhouse Gas Target*. Final. November 2017. Available: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf. Accessed January 6, 2019.

———. 2017b. *The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*. January 20, 2017. Available: https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf. Accessed January 6, 2019.

———. 2018a. Global Warming Potentials. Available: http://www.arb.ca.gov/cc/inventory/background/gwp.htm. Last updated June 22, 2018. Accessed January 6, 2019.

———. 2018b. iADAM Air Quality Data Statistics. Available: http://www.arb.ca.gov/adam/index.html. Accessed December 18, 2018.

———. 2018c. California Greenhouse Gas Inventory for 2000–2016—by Category as Defined in the 2008 Scoping Plan. Available: https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf. Accessed December 19, 2018.

Dockery, D. W., and C. A. Pope III. 2006. Health Effects of Fine Particulate Air Pollution: Lines that Connect. *Journal of the Air & Waste Management Association* 56(6):709–742.

Intergovernmental Panel on Climate Change (IPCC). 2014. *Climate Change 2014: Synthesis Report Summary for Policymakers.* Available: https://www.ipcc.ch/site/assets/uploads/2018/02/AR5_SYR_FINAL_SPM.pdf. Accessed October 16, 2019.

John Deere. 2019. Understanding Emission Regulations. Available: https://www.centraljerseyequipment.com/departments/service/engine-information/understanding-emission-regulations/. Accessed April 3, 2019.

Marquez, Ada. Principal Environmental Planner, Planning and Climate Protection, Bay Area Air Quality Management District. March 20 and March 21, 2019—emails to Jyothi Iyer of Environmental Science Associates regarding compliance with BAAQMD Regulation 5, Open Burning.

Napa County. 2009. *Napa County General Plan.* Conservation Element. June 23, 2009.

———. 2018 (July). *Revised Draft Climate Action Plan*. Planning, Building and Environmental Services Department. Available: https://www.countyofnapa.org/DocumentCenter/View/9247/Revised-Draft-CAP. Accessed February 12, 2020.

Napa Green. 2020. Napa Green Frequently Asked Questions. Available: https://napagreen.org/wp-content/uploads/2020/06/Napa-Green-Frequently-Asked-Questions.pdf. Accessed July 6, 2020.

Office of Environmental Health Hazard Assessment (OEHHA). 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines: Guidance Manual for Preparation of Health Risk Assessments*. Adopted February 2015. Available: http://oehha.ca.gov/air/hot_spots/hotspots2015.html. Accessed January 7, 2019.

Office of the Governor. 2015. Governor Brown Establishes Most Ambitious Greenhouse Gas Reduction Target in North America. April 29, 2015. Available: https://www.ca.gov/archive/gov39/2015/04/29/news18938/index.html. Accessed October 4, 2019.

San Joaquin Valley Air Pollution Control District (SJVAPCD). 2015. Application for Leave to File Amicus Curiae Brief of San Joaquin Valley Unified Air Pollution Control District in Support of Defendant and Respondent, County of Fresno and Real Party In Interest and Respondent, Friant Ranch, L.P. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, Supreme Court of California, Case No. S219783. April 2, 2015.

South Coast Air Quality Management District (SCAQMD). 2015. Application of the South Coast Air Quality Management District for Leave to File Brief of *Amicus Curiae* in Support of Neither Party and *[Proposed]* Brief of *Amicus Curiae*. *Sierra Club, Revive the San Joaquin, and League of Women Voters of Fresno v. County of Fresno*, Supreme Court of California, Case No. S2197832014. April 3, 2015.

The Climate Registry (TCR). 2017. 2017 Default Emission Factors. Table 13.7: US Default CH_4 and N_2O Emission Factors for Non-Highway Vehicles.

U.S. Environmental Protection Agency (EPA). 2010. National Clean Diesel Campaign, Technical Bulletin—Diesel Particulate Filter General Information. May 2010.

———. 2018a. Sources of Greenhouse Gas Emissions. Available: https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions. Accessed December 19, 2018.

———. 2018b. Clean Air Act Permitting for Greenhouse Gas Emissions webpage. Available: https://www.epa.gov/nsr/clean-air-act-permitting-greenhouse-gases. Accessed December 19, 2018.

SECTION 3.3: BIOLOGICAL RESOURCES

Baldwin, B., D. Goldman, D. Keil, R. Patterson, T. Rosatti, and D. Wilken. 2012. *The Jepson Manual: Vascular Plants of California*. Second Edition. Berkeley: University of California Press.

Bradbury, M., J. A. Estep, and D. Anderson. In preparation. *Migratory Patterns and Wintering Range of the Central Valley Swainson's Hawk.*

California Department of Fish and Game (CDFG). 1994. *Staff Report regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California.* November 8, 1994.

———. 2012. *Staff Report on Burrowing Owl Mitigation.* March 7, 2012.

California Department of Fish and Wildlife (CDFW). 2015. Vegetation datasets (GIS). Fine-Scale Vegetation Map for Napa County and Blue Ridge Berryessa.

———. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.* March 20, 2018.

———. 2019a. California Natural Diversity Database (CNDDB) search for the Chiles Valley U.S. Geological Survey 7.5-minute Rocklin topographic quadrangle and surrounding eight quadrangles (Aetna Springs, Walter Springs, Brooks, St. Helena, Lake Berryessa, Rutherford, Yountville, and Capell Valley). Originally accessed on March 26, 2018; updated June 3, 2018, and February 11, 2019.

———. 2019b. California Wildlife Habitat Relationships. Available: https://www.wildlife.ca.gov/data/cwhr. Accessed February 19, 2019.

Californiaherps. 2019. A Guide to the Amphibians and Reptiles of California. Available: http://californiaherps.com. Accessed April 2, 2018, and February 15, 2019.

California Native Plant Society (CNPS). 2019. Inventory of Rare and Endangered Plants (online edition, v8-01a) query for the Chiles Valley U.S. Geological Survey 7.5-minute topographic quadrangle and surrounding eight quadrangles (Aetna Springs, Walter Springs, Brooks, St. Helena, Lake Berryessa, Rutherford, Yountville, and Capell Valley). Sacramento, CA. Originally accessed on March 26, 2018; updated June 3, 2018, and February 11, 2019.

Entomological Consulting Services, Ltd. 2016. *Report on Surveys for the Threatened Valley Elderberry Longhorn Beetle at the Somerston Estate near Rutherford (Napa County), California.* Prepared by R. A. Arnold, Ph.D. June 2016.

Environmental Science Associates (ESA). 2019 (January). *Biological Resources Reconnaissance Survey Report for the KJS and Sorrento Vineyard Conversion Erosion Control Plan Application.*

Gibson & Skordal. 2015. *Jurisdictional Delineation, Somerston Estate, Napa County, California*.

Google Earth. 2018. Aerial imagery between 1993 and 2018. Approximate coordinates for the center of the project site: 38°31′7.88″ North, 121°16′45.52″ West.

Grinnell, J., and A. H. Miller. 1944. *The Distribution of the Birds of California*. Pacific Coast Avifauna No. 27.

Hilty, J., and A. Merenlender. 2002. Vineyard Landscape: Wildlife Activity along Creek Corridors. *Practical Winery & Vineyard Journal*, November/December 2002.

Jennings, Mark. 2013. Rana Resources, Davis, CA. September 18, 2013—discussion of habitat needs of California red-legged frog in the Central Valley and lower elevations.

Kjeldsen Biological Consulting. 2018. *Special-Status Bryophytes and Lichen Survey, KJS Investment Properties and Sorrento Inc. 3370 Sage Canyon Road, Napa County*.

Madrone Ecological Consulting. 2017. *Draft Aquatic Resources Delineation Additional Somerston Estate Acreage.*

Meffe, G. K., and C. R. Carroll. 1994. *Principles of Conservation Biology*. Sunderland, MA: Sinauer Associates, Inc.

Napa County. 2005. Napa County Baseline Data Report. Available: https://www.napawatersheds.org/app_pages/view/192. Accessed April 3, 2018.

———. 2007. *Napa County General Plan Draft Environmental Impact Report*. State Clearinghouse No. 200510288. Prepared by Pacific Municipal Corporation. February 2007. Volume 1, Section 5.4, *Biological Resources*.

———. 2009. *Napa County General Plan*. Conservation Element. June 23, 2009.

Nature Serve. 2019. NatureServe Explorer: An Online Encyclopedia of Life. Search for Swainson's Hawk. Available: http://explorer.natureserve.org. Accessed August 16, 2018, and February 14, 2019.

Podlech, M. 2014. *Draft Somerston Estate Stream Assessment Report*. Soquel, CA. Prepared for Stevens Consulting. April 9, 2014.

Poulin, R., L. D. Todd, E. A. Haug, B. A. Millsap, and M. S. Martell. 2011. Burrowing Owl (*Athene cunicularia*). *In* Birds of North America Online, ed. A. Poole. Ithaca, NY: Cornell Lab of Ornithology. Available: http://bna.birds.cornell.edu/bna/species/061. Accessed August 16, 2018.

Rathbun, G. B., N. J. Scott Jr., and T. G. Murphey. 2002. Terrestrial Habitat Use by Pacific Pond Turtles in a Mediterranean Climate. *The Southwestern Naturalist* 47:225–235.

Rosenberg, D., J. Gervais, and D. Vesely. 2009. *Conservation Assessment of the Western Pond Turtle in Oregon (*Actinemys marmorata*).* Version 1.0. Sponsored by U.S. Bureau of Land Management and Fish and Wildlife Service, U.S. Forest Service Region 6, Oregon Department of Fish and Wildlife, City of Portland, and Metro. November 2009.

Sawyer, J. O., T. Keeler-Wolf, and J. M. Evens. 2009. *A Manual of California Vegetation*, Second Edition. Sacramento: California Native Plant Society.

Swainson's Hawk Technical Advisory Committee. 2000. *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the Central Valley*. May 31, 2000.

U.S. Army Corps of Engineers (USACE). 2016. *Preliminary Jurisdictional Determination Letter Concurring with the Acreage of Wetlands and Waters on the 195-acre Area on the Somerston Estates.* File No. 2015-00309N. June 19, 2016.

U.S. Fish and Wildlife Service (USFWS). 2002. *Recovery Plan for the California Red-legged Frog (*Rana aurora draytonii*).* Portland, OR.

———. 2005. *Revised Guidance on Site Assessment and Field Surveys for California Red-legged Frogs*. Sacramento, CA. August 2005.

———. 2011. *California Red-legged Frog (*Rana draytonii*).* Pacific Southwest Region, Arcata Fish and Wildlife Office, Arcata, CA. Last updated April 11, 2011.

———. 2017. California Red-Legged Frog (*Rana draytonii*). Sacramento Fish and Wildlife Office, Sacramento, CA. Available: https://www.fws.gov/sacramento/es_species/Accounts/Amphibians-Reptiles/ca_red_legged_frog/. Last updated December 20, 2017. Accessed February 19, 2019.

———. 2019. Updated List of Threatened and Endangered Species that May Occur in Your Proposed Project Location, and/or May Be Affected by Your Proposed Project. Consultation Code: 08ESMF00-2018-SLI-01678. Project Name: Napa County ECP Project. Sacramento Fish and Wildlife Office, Sacramento, CA. February 11, 2019.

U.S. Geological Survey (USGS). 1958. Chiles Valley, California. 7.5-minute series topographic quadrangle. Revised 1993. Scale 1:24,000. U.S. Department of the Interior. DMZ 1561 III SE-SERIES V895.

U.S. Natural Resources Conservation Service (NRCS). 2019. Web Soil Survey. U.S. Department of Agriculture. Available: http://websoilsurvey.nrcs.usda.gov/. Accessed August 21, 2018, and February 14, 2019.

Vinnedge Environmental Consulting. 2017. *Draft Biological Resources Assessment for the KJS Investment Properties and Sorrento Inc., West Ranch, Napa County.* December 2017.

Wildlife Research Associates. 2015. *California Red-Legged Frog Focused Surveys for the Somerston Estate Winery, Napa County, California*. July 24, 2015.

SECTION 3.4: CULTURAL AND TRIBAL CULTURAL RESOURCES

Analytical Environmental Services (AES). 2007. *Cultural Resource Study: Chapman-Sage Canyon Water Right Project*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Alshuth, T., and T. M. Origer. 2016. *Historical Resources Study for the Somerston Estate West Ranch Project, Napa County, CA*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Banet, A. 1993. *Archaeological Inventory, Roadside Turnouts, State Highways 04-NAP-121 Between P.M. 13.7/21.5 and 04-NAP-128 Between P.M. 9.0/33.8, Napa County California, EA# 16350K.* On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Barrett, S. A. 1908. The Ethno-Geography of the Pomo and Neighboring Indians. *University of California Publications in American Archaeology and Ethnology* 6(1).

Bartow, J., and T. Nilson. 1990. *Review of the Great Valley Sequence, Eastern Diablo Range, and Northern San Joaquin Valley, Central California.* U.S. Geological Survey, Open-File Report 90-226.

Beck, W. A., and Y. D. Haase. 1974. *Historical Atlas of California.* Norman: University of Oklahoma Press.

Douglas, R. 2005. *P-28-001351*, California Department of Parks and Recreation 523 Form set (site record). On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Graymer, R. W., E. Brabb, D. Jones, J. Barnes, R. Nicholson, and R. Stamski. 2007*. Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California.* U.S. Geological Survey, Scientific Investigations Map SIM-2956.

Heizer, R. F., and M. A. Whipple. 1971. *The California Indians: A Source Book*. 2nd edition. Berkeley: University of California Press.

Johnson, P. J. 1978. Patwin. In *California*, ed. R. F. Heizer, 350–360. *Handbook of North American Indians*, Vol. 8, W. C. Sturtevant, gen. ed. Washington, DC: Smithsonian Institution.

Kroeber, A. L. 1925. *Handbook of the Indians of California*. Bureau of American Ethnology Bulletin 78. Washington, D.C.: Smithsonian Institution. Reprinted in 1976 by Dover, New York.

Leach-Palm, L., P. Mikkelsen, L. King, P. Brandy, L. Hartman, and B. Larson. 2007. *Cultural Resources Inventory of Caltrans District 4 Rural Conventional Highways in Alameda, Marin, Napa, San Mateo, Santa Clara, and Sonoma Counties*. Prepared by Far Western Anthropological Research Group, Inc., Davis, CA. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Levy, R. 1978. Eastern Miwok. In *California*, ed. R. F. Heizer, 398–413. *Handbook of North American Indians*, Vol. 8, gen. ed. W. C. Sturtevant. Washington, D.C.: Smithsonian Institution.

McKern, W. C. 1922. Functional Families of the Patwin. *American Archaeology and Ethnology* 13(7):235–258. Berkeley: University of California Press.

Meyer, J., and J. Rosenthal. 2007.*Geoarchaeological Overview of the Nine Bay Area Counties in Caltrans District 4*. Prepared by Far Western Anthropological Research Group, Inc., Davis, CA. Prepared for the California Department of Transportation, Oakland, CA.

———. 2008. *A Geoarchaeological Overview and Assessment of Caltrans District 3 Cultural Resources Inventory of Caltrans District 3 Rural Conventional Highways*. Prepared by Far Western Anthropological Research Group, Inc., Davis, CA. Prepared for the California Department of Transportation, Marysville, CA.

Milliken, R., R. T. Fitzgerald, M. G. Hylkema, R. Groza, T. Origer, D. G. Bieling, A. Leventhal, R. S. Wiberg, A. Gottfield, D. Gillette, V. Bellifemine, E. Strother, R. Cartier, and D. A. Fredrickson. 2007. Punctuated Culture Change in the San Francisco Bay Area. In *Prehistoric California: Colonization, Culture, and Complexity*, ed. T. L. Jones and K. A. Klar, 99–124. AltaMira Press.

Norris, R. M., and R. W. Webb. 1990. *Geology of California*. Second edition. New York: John Wiley & Sons.

Origer, T. 1999. *An Investigation of Prehistoric Resources along Sage and Elder Valley Creeks, Lower Chiles Valley, Napa County, California*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Page, B., G. Thompson, and R. Coleman. 1998. Late Cenozoic Tectonics of the Central and Southern Coast Ranges of California. *GSA Bulletin* 110:846–876.

Peak & Associates, Inc. (Peak). 2014. *Amended Cultural Resource Assessment for the Somerston Estates Water Right Application Project, Napa County, CA*. On file at Napa County Department of Planning, Building and Environmental Services, Napa, CA.

Powers, S. 1877. *Tribes of California.* Washington, D.C.: U.S. Government Printing Office.

Sawyer, J. O. 1978. Wappo. In *California*, ed. R. F. Heizer, 256–263. *Handbook of North American Indians*, Vol. 8, gen. ed. W. C. Sturtevant. Washington, D.C.: Smithsonian Institution.

Scott, E. 2010. Extinctions, Scenarios, and Assumptions: Changes in Latest Pleistocene Large Herbivore Abundance and Distribution in Western North America. *Quaternary International* 217:225–239.

Sheeders, D. 1981. *Cultural Resources Field Report, Application 26165 and 26166, Christina Vineyards, A Partnership, Napa County*. On file at the Northwest Information Center, Sonoma State University, Rohnert Park, CA.

Stevens Consulting. 2017. *Cultural Resources Assessment: Petitions for Change Related to Water Right Applications 13943 and 26165 and Erosion Control Plan for Somerston Estate, Napa County, California*. On file at Napa County Department of Planning, Building and Environmental Services, Napa, CA.

U.S. Department of Agriculture (USDA). 2018. Natural Resources Conservation Service Web Soil Survey, Version 3.1. Available: http://websoilsurvey.sc.egov.usda.gov/app/WebSoilSurvey.aspx. Accessed December 28, 2018.

SECTION 3.5: GEOLOGY AND SOILS

Association of Bay Area Governments (ABAG). 2019. *Adapted from Modified Mercalli Intensity Scale (MMI)*. Available: resilience.abag.ca.gov/shaking/mmi/. Accessed January 16, 2019.

Bartow, J. A., and T. H. Nilson. 1990. *Review of the Great Valley Sequence, Eastern Diablo Range and Northern San Joaquin Valley, Central California*. U.S. Geological Survey Open-File Report 90-226.

California Department of Conservation (DOC). 2018. EQ Zapp: California Earthquake Hazards Zone Application. Available: https://www.conservation.ca.gov/cgs/geohazards/eq-zapp. Accessed December 18, 2018.

———. 2019. Quad index of Regulatory Maps and Reports (Alquist-Priolo and Seismic Hazard Zones). Available: https://maps.conservation.ca.gov/cgs/informationwarehouse/regulatorymaps/. Accessed March 19, 2019.

California Geological Survey (CGS). 2002. *How Earthquakes and Their Effects Are Measured*, Note 32.

———. 2008. *CGS Guidelines for Evaluating and Mitigating Seismic Hazards.* Special Publication 117A.

———. 2018. Fault Activity Map of California (2010). Available: http://maps.conservation.ca.gov/cgs/fam/. Accessed May 30, 2018.

Case, J. E. 1968. *Upper Cretaceous and Lower Tertiary Rocks Berkeley and San Leandro Hills, California.* Contributions to General Geology. U.S. Geological Survey Bulletin 1251-J. Washington, D.C.: U.S. Government Printing Office.

Dietrich, W. 2002. *Napa River Basin Limiting Factors Analysis, Final Technical Report.* June 14, 2002.

Gilpin Geosciences, Inc. 2018. *Engineering Geologic Investigation Somerston Vineyard Development APN 025-270-022 & 025-270-025 3450 Sage Canyon Road St. Helena, California*. June 19, 2018.

Graham, R. W., and E. L. Lundelius. 1994. FAUNMAP: A Database Documenting the Late Quaternary Distributions of Mammal Species in the United States. *Illinois State Museum Scientific Papers* XXV(1).

Graymer, R. W., E. Brabb, D. Jones, J. Barnes, R. Nicholson, and R. Stamski. 2007. *Geologic Map and Map Database of Eastern Sonoma and Western Napa Counties, California.* U.S. Geological Survey, Scientific Investigations Map SIM-2956.

Jefferson, G. T. 1991a. *A Catalogue of Late Quaternary Vertebrates from California. Part One, Nonmarine Lower Vertebrate and Avian Taxa.* Natural History Museum of Los Angeles County Technical Reports No. 5.

———. 1991b. *A Catalogue of Late Quaternary Vertebrates from California. Part Two, Mammals.* Natural History Museum of Los Angeles County Technical Reports No. 7.

McLeod, S. 2018. Re: Paleontological resources for the proposed KJS and Sorrento Vineyard Conversion Project, Project # D171261.00, in the City of Napa, Napa County, project area. Letter response.

Napa County. 2005. *Napa County Baseline Data Report*. Napa County Conservation, Development, and Planning Department. November 30, 2005.

———. 2007 (February). *Napa County General Plan Update, Draft Environmental Impact Report.*

———. 2009. *Napa County General Plan.* June 23, 2009.

Norris, R. M., and R. W. Webb. 1990. *Geology of California*. Second edition. New York: John Wiley & Sons.

Page, B., G. Thompson, and R. Coleman. 1998. Late Cenozoic Tectonics of the Central and Southern Coast Ranges of California. *GSA Bulletin* 110:846–876.

PPI Engineering. 2018. *KJS Investment Properties and Sorrento Inc., Soil Loss Analysis.* Memorandum to Napa County Planning, Building and Environmental Services. June 25, 2018.

San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Regional Water Board). 2018. *Fact Sheet: San Francisco Bay Regional Water Quality Control Board, General Permit for Vineyard Properties in the Napa River and Sonoma Creek Watersheds*. Updated May 25, 2018.

Scott, E. 2010. Extinctions, Scenarios, and Assumptions: Changes in Latest Pleistocene Large Herbivore Abundance and Distribution in Western North America. *Quaternary International* 217:225–239.

Scott, E., and S. M. Cox. 2008. Late Pleistocene Distribution of *Bison* (Mammalia; Artiodactyla) in the Mojave Desert of Southern California and Nevada. In *Geology and Vertebrate Paleontology of Western and Southern North America, Contributions in Honor of David P. Whistler*, eds. X. Wang and L. G. Barnes, 359–382. Natural History Museum of Los Angeles County Science Series No. 41.

Society of Vertebrate Paleontology (SVP). 1995. Assessment and Mitigation of Adverse Impacts to Nonrenewable Paleontologic Resources: Standard Guidelines. *Society of Vertebrate Paleontology News Bulletin* 163:22–27.

———. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Available: http://www.vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx.

University of California Museum of Paleontology (UCMP). 2018. Collections Database Search Results. Available: www.ucmp.berkeley.edu/science/collections.php. Accessed December 2018.

U.S. Department of the Interior (USDI). 2000. *Fossils on Federal & Indian Lands.* Report of the Secretary of the Interior. May 2000.

U.S. Natural Resources Conservation Service (NRCS). 2018. Web Site for Official Soil Series Descriptions and Series Classifications. U.S. Department of Agriculture. Available: https://soilseries.sc.egov.usda.gov/. Accessed December 21, 2018.

Working Group on California Earthquake Probabilities. 2015a. *UCERF3: A New Earthquake Forecast for California's Complex Fault System.* U.S. Geological Survey Fact Sheet 2015–3009. March 2015.

———. 2015b. The Third California Earthquake Rupture Forecast (UCERF3). Output from Google Earth file with fault probabilities.

SECTION 3.6: HAZARDS AND HAZARDOUS MATERIALS

California Governor's Office of Emergency Services (Cal OES). 2020. Hazmat Business Plan. Available: https://www.caloes.ca.gov/cal-oes-divisions/fire-rescue/hazardous-materials/hazmat-business-plan. Accessed February 24, 2020.

California Highway Patrol (CHP). 2015. Hazardous Materials Transportation License—Application Instructions. August 2015.

Colquhoun, J., R. Lins, and C. Cole. 2008. *Vegetative Filter Strips: Near Surface Water in the Pacific Northwest.* Oregon State University Extension Service EM 8876-E.

Gharabaghi, B, R. P. Rudra, and P. K. Goel. 2006. Effectiveness of Vegetative Filter Strips in Removal of Sediments from Overland Flow. *Water Quality Research Journal of Canada* 41(3):275–282.

Grismer, M. E., A. T. O'Geen, and D. Lewis. 2006. *Vegetative Filter Strips for Nonpoint Source Pollution Control in Agriculture.* University of California Agriculture and Natural Resources Publication 8195.

Napa County. 2009. *Napa County General Plan.* Safety Element. Amended June 2009. Available: https://www.countyofnapa.org/DocumentCenter/View/3326/Safety-Element-PDF. Accessed December 24, 2018.

Occupational Safety and Health Administration (OSHA). 1970. Occupational Safety and Health Administration Act of 1970. Available: http://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=oshact. Accessed January 2, 2019.

Schultz, J., and R. Cruse. 1993. *Effectiveness of Vegetative Filter Strips.* Competitive Grant Report. 90-09 for Leopold Center for Sustainable Agriculture.

U.S. Department of Transportation (DOT). 1980. Motor Carrier Act of 1980 Hazardous Materials Transportation. Available: http://www.fmcsa.dot.gov/rulesregulations/administration/fmcsr/FmcsrGuideDetails.aspx?menukey=397. Accessed January 2, 2019.

U.S. Environmental Protection Agency (EPA). 2019a. Summary of the Federal Insecticide, Fungicide, and Rodenticide Act. Available: https://www.epa.gov/agriculture/laws-and-regulations-apply-your-agricultural-operation-statute#FIFRA. Accessed January 2, 2019.

———. 2019b. Summary of the Resource Conservation and Recovery Act. Available: https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act. Accessed January 2, 2019.

U.S. Natural Resources Conservation Service (NRCS). 2000. *Conservation Buffers to Reduce Pesticide Losses*. U.S. Department of Agriculture. Available: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_030970.pdf. Accessed March 11, 2020.

SECTION 3.7: HYDROLOGY AND WATER QUALITY

California Department of Water Resources (DWR). 2003. San Francisco Bay Hydrologic Region. *California's Groundwater*, Update 2003. Bulletin 118.

Gilpin Geosciences, Inc. 2018 (June 19). *Engineering Geologic Investigation Somerston Vineyard Development APN 025-270-022 & 025-270-025 3450 Sage Canyon Road St. Helena, California.*

Napa County. 2005. *Napa County Baseline Data Report*. Napa County Conservation, Development, and Planning Department. November 30, 2005.

———. 2007 (February). *Napa County General Plan Update, Draft Environmental Impact Report.*

———. 2009. *Napa County General Plan.* Safety Element and Conservation Element. Both amended June 2009.

———. 2018. Napa County Public Browser—Napa County GIS. Available: http://gis.napa.ca.gov/Html5Viewer/Index.html?viewer=Public_HTML. Accessed December 12, 2018.

Napolitano, M., S. Potter, and D. Whyte. 2009. *Napa River Sediment TMDL and Habitat Enhancement Plan.* Report prepared by the California Regional Water Quality Control Board, San Francisco Bay Region. September 2009. Available: http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napariversedimenttmdl.shtml. Accessed December 12, 2018.

PPI Engineering. 2018. *Hydrologic Analysis of Proposed Vineyard Development KJS Investment Properties and Sorrento Inc. Napa County, California*. Revised June 2018.

San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Regional Water Board). 2018. *Fact Sheet: San Francisco Bay Regional Water Quality Control Board, General Permit for Vineyard Properties in the Napa River and Sonoma Creek Watersheds*. Updated May 25, 2018.

Stillwater Sciences and W. Dietrich. 2002. *Napa River Basin Limiting Factors Analysis*. Final technical report. June 2002.

State Water Resources Control Board (State Water Board). 2018. Final 2014/2016 California Integrated Report (Clean Water Act Section 303(d) List/305(b) Report). Available: https://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2014_2016.shtml. Accessed December 12, 2018.

University of California, Division of Agricultural and Natural Resources. 2006. *Vegetative Filter Strips for Nonpoint Source Pollution Control in Agriculture*. Publication 8195.

U.S. Natural Resources Conservation Service (NRCS). 2000. *Conservation Buffers to Reduce Pesticide Losses.* U.S. Department of Agriculture. March 2000.

———. 2018. Web Soil Survey, Version 3.1. U.S. Department of Agriculture. Available: http://websoilsurvey.sc.egov.usda.gov/app/WebSoilSurvey.aspx. Accessed December 28, 2018.

Wagner & Bonsignore. 2020 (February). *KJS Investment Properties LLC and Sorrento Inc. Hydrologic Analysis for Petitions for Change and Extension of Time for Permit 18459 (Application 26165), Napa County.*

Wang, P., L. Shariq, L. Montague, R. Kwaan, and V. Kella. 2004. *Developing a Nutrient Management Plan for the Napa River Watershed.* Santa Barbara, CA: Donald Bren School of Environmental Science and Management, University of California, Santa Barbara. Available: http://www.bren.ucsb.edu/research/2004Group_Projects/napa/napa_brief.pdf. Accessed December 12, 2018.

SECTION 3.8: LAND USE AND PLANNING

Napa County. 2007. *Napa County General Plan Update Draft Environmental Impact Report.* Section 4.2, “Land Use.” Available: https://www.countyofnapa.org/DocumentCenter/View/7954/42-Land-Use-GP-DEIR. Accessed November 13, 2018.

———. 2009. *Napa County General Plan*. Safety Element and Conservation Element. Both amended June 2009.

———. 2013. *Napa County General Plan*. Agricultural Preservation and Land Use Element. Amended June 4, 2013.

———. 2017. *2017 Agricultural Crop Report*. Department of Agriculture and Weights and Measures.

———. 2019. *Napa County General Plan*. Circulation Element. February 5, 2019.

SECTION 3.9: NOISE

California Department of Transportation (Caltrans). 2013a. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013.

———. 2013b. *Transportation and Construction Vibration Guidance Manual*. September 2013.

———. 2016. *2016 Volumes on California State Highways*.

Federal Highway Administration (FHWA). 2008. *FHWA Roadway Construction Noise Model User's Guide*. U.S. Department of Transportation.

Federal Transit Administration (FTA). 2018. *Transit Noise and Vibration Impact Assessment Manual.* FTA Report No. 0123. U.S. Department of Transportation. September 2018.

Napa County. 2008. *Napa County General Plan.* Community Character Element. June 3, 2008.

U.S. Environmental Protection Agency (EPA). 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety.* March 1974.

SECTION 3.10: TRANSPORTATION

California Department of Transportation (Caltrans). 2002. *Guide for the Preparation of Traffic Impact Studies.* December 2002.

———. 2018. *2018 Traffic Volumes on California State Highways.* Division of Traffic Operations.

California Governor's Office of Planning and Research (OPR). 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. December 2018.

Napa County. 2008. *Napa County General Plan.* Circulation Element. June 3, 2008.

Napa County Transportation & Planning Agency (NCTPA). 2015. *Vision 2040: Moving Napa Forward—the Napa Countywide Transportation Plan.* September 16, 2015.

Napa County Transportation & Planning Agency, City of American Canyon, City of St. Helena, City of Calistoga, Town of Yountville, City of Napa, and County of Napa (NCTPA et al.). 2012. *NCTPA Countywide Bicycle Plan.* Submitted by Whitlock & Weinberger Transportation, Inc., and Questa Engineering Corporation. January 2012.

CHAPTER 4: OTHER CEQA CONSIDERATIONS

Bay Area Air Quality Management District (BAAQMD). 2017. *California Environmental Quality Act Air Quality Guidelines.* San Francisco, CA. May 2017.

CHAPTER 5: ALTERNATIVES ANALYSIS

No references cited in this chapter.

CHAPTER 6: LIST OF PREPARERS

No references cited in this chapter.

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