STAGECOACH NORTH VINEYARD CONVERSION EROSION CONTROL PLAN APPLICATION #P18-00446-ECPA

Draft Environmental Impact Report
State Clearinghouse #2019100250

Prepared for
Napa County

February 2021

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Prepared for
Napa County
Department of Planning, Building and Environmental Services
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February 2021

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ACRONYMS AND OTHER ABBREVIATIONS

AB	Assembly Bill
AF	acre-feet
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act of 1972
Applicant	Gallo Vineyards Inc.
AW	Agricultural Watershed zoning
AWOS	Agriculture, Watershed and Open Space designation in the Napa County General Plan
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
Business Plan	Hazardous Materials Release Response Plans and Inventory
CAAQS	California ambient air quality standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMOD	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CARB	California Air Resources Board
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
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
CRPR	California Rare Plant Rank
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibels
development area	approximately 91.3 net acres proposed for new vineyard within 116.2 gross acres on the project site

DPM	diesel particulate matter
DWR	California Department of Water Resources
ECPA	Erosion Control Plan Application
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
GPS	global positioning system
HMBP	Hazardous Materials Business Plan
Hz	hertz
IPM	integrated pest management
IS	Initial Study
LOS	level of service
MT	metric ton(s)
Mw	Moment Magnitude
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NFD	No Formal Description
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	U.S. Natural Resources Conservation Service
OPR	California Governor's Office of Planning and Research
OSHA	Occupational Safety and Health Administration
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
PPS	Potentially Productive Soils
PPV	peak particle velocity

PRC	Public Resources Code
project area	(See *development area*)
project site	the approximately 170.2-acre Stagecoach North Soda Canyon Ranch parcel
proposed project	Stagecoach North Vineyard Conversion Erosion Control Plan Application Project (#P18-00446-ECPA)
Regional Water Board	Regional Water Quality Control Board
RMS	root mean square
ROG	reactive organic gases
SB	Senate Bill
Scoping Plan	Climate Change Scoping Plan
SFBAAB	San Francisco Bay Area Air Basin
SIP	state implementation plan
SO_2	sulfur dioxide
State Water Board	State Water Resources Control Board
SVP	Society of Vertebrate Paleontology
TAC	toxic air contaminant
TDM	transportation demand management
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

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EXECUTIVE SUMMARY

ES.1 INTRODUCTION

The Napa County (County) Planning, Building and Environmental Services Department has prepared this Environmental Impact Report (EIR) to evaluate the impacts of implementing the Stagecoach North Vineyard Conversion Erosion Control Plan Application Project (#P18-00446-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 new vineyards on those portions of the site that are suitable for the cultivation of high-quality wine grapes, which are designed and sited to include up to approximately 85–91 net planted acres[1] within an approximately 116-acre development (or cleared) area, while ensuring the economic viability of the project.
- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- 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.
- Minimize changes to hydrology from vineyard development.

[1] Considering that the owner has the ability to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes, and that for the proposed vine by row spacing in areas where cross-slope exceeds 15 percent, the owner shall increase the row spacing as needed to ensure there is adequate room for equipment (PPI Engineering 2019: ECPA Narrative pages EC-5 and EC-6).

- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices and participation in the Napa Sustainable Winegrowing Group and California Sustainable Winegrowing Alliance.
- Protect water quality by protecting streams and drainages 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.
- Use water from existing and proposed water resources efficiently.
- Maximize the use of current vineyard employees' skills and create efficiencies.
- Provide opportunities for additional vineyard employment and economic development in Napa County.

ES.3 SUMMARY OF THE PROPOSED PROJECT

The project proposes vegetation removal and earthmoving activities on slopes greater than 5 percent in connection with development of approximately 91.3 net acres of new vineyard within an approximately 116.2-acre cleared (or development) area on the 170.2-acre project site.

Proposed vineyard development activities include removal of brush and trees within the proposed clearing limits, ripping, rock removal, blasting, soil cultivation, seeding of a cover crop, mulching, trenching for storm drain and irrigation pipelines, installation of a trellis system and deer fence, and layout of vine rows. In addition, temporary and permanent erosion control measures would be installed.

Vineyard development would take place between April 1 and September 15, in one phase. The development area would be winterized by September 15. Temporary erosion control measures could include installing water bars, straw wattles, and straw bale dikes and following other practices as needed.

Permanent erosion and runoff control measures described in the Erosion Control Plan (PPI Engineering 2019) include:

- Five detention basins constructed in the development area to attenuate small increases in runoff associated with vineyard development:
    - Detention Basin #1 in the northwest corner of Block Y16;
    - Detention Basin #2 in the southwest corner of Block Y16;
    - Detention Basins #3 and #4 on the south side of Block Y16; and
    - Detention Basin #5 north of Blocks V3 and V4.

- Seeding of a permanent cover crop with vegetative cover maintained according to the Erosion Control Plan.
- Surface 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 and concrete drop inlets installed at designated locations in the development area.
- Diversion ditches constructed to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet or drop inlet.
- Diversion avenues constructed to reduce slope run length and intercept runoff throughout the vineyard while directing it to a stable outlet.
- Rock level spreaders installed in designated locations at the outfall of conveyance infrastructure to uniformly spread water onto the ground surface.
- Rock-filled avenues constructed to dispose of rock generated onsite, create safer turning for equipment, and disperse and filter runoff.
- Rock energy dissipaters constructed to help disperse concentrated flow.
- Rolling dips installed in designated locations in the development area to direct water off the roadway surface and back onto the native ground surface. These designated locations include areas where the existing road runs uphill and the potential exists for runoff to run down the roadway surface and cause erosion or gullying, or areas where rolling dips are needed to ensure that roads are hydrologically disconnected from receiving waters.
- Three new rocked water crossings over waters of the United States, installed in designated locations in the development area, to be used for vineyard access during low-flow or dry conditions. Other rocked water crossings proposed in the Erosion Control Plan would cross proposed ditches, and therefore would not affect waters of the United States.
- One existing undersized culvert upgraded to a larger diameter culvert (48 inches) to minimize the potential for plugging and other issues that could be caused by an undersized culvert.
- Outsloped infield level spreader constructed to prevent surface flows from becoming concentrated through the vineyard areas.

The project site is located within the County-designated Rector Reservoir Sensitive Domestic Water Supply Drainage. Napa County Code Chapter 18.108.027, Sensitive Domestic Water Supply Drainages, outlines provisions applicable to such designated drainages, including vegetation clearing limits and winter shutdown requirements.

ES.4 ALTERNATIVES TO THE PROPOSED PROJECT

This Draft EIR evaluates the following alternatives:

- **No Project Alternative.** Under this alternative, vineyards would not be planted, operated, and maintained on the parcel and no changes to the existing network of undeveloped areas, dirt roads, and hand-cut trails would occur.

- **Increased Preservation Area Alternative.** The Increased Preservation Area Alternative would involve the development of approximately 64.46 net acres of vineyard within an approximately 84.18-acre cleared area. This alternative would include the 79.68-acre Preservation Area discussed in **Section 3.3, *Biological Resources*,** with implementation of Mitigation Measures 3.3-1a through 3.3-1i, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, supplemented by avoidance of an additional 6.31 acres of biological communities identified in and near proposed vineyard Blocks V2, V3, V4, V6, W8, X12, Z17, and Z20. The Increased Preservation Area Alternative would preserve an additional 723 green monardella individuals, 245 holly-leafed ceanothus shrubs, and 1,374 two-carpellate western flax individuals compared to the mitigated proposed project.

- **Increased Watercourse Setbacks Alternative.** The Increased Watercourse Setbacks Alternative would involve the development of approximately 63.36 net acres of vineyard within an approximately 84.26-acre cleared area. This alternative would include the 79.68-acre Preservation Area discussed in **Section 3.3, *Biological Resources*,** with implementation of Mitigation Measures 3.3-1a through 3.3-1i, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, supplemented by avoidance of an additional 6.21 acres of biological communities identified in and near proposed vineyard Blocks V1, V2, V3, V4, V6, W8, X11, X12, Y4, Y15, Z17, Z18, and Z20. The Increased Watercourse Setbacks Alternative would preserve an additional 934 green monardella individuals and 46 two-carpellate western flax individuals compared to the mitigated proposed project. The alternative also would provide increased wildlife movement corridors along the watercourses.

As discussed in **Chapter 5, *Alternatives***, and shown in **Tables 5-1a, 5-1b, 5-3a, and 5-3b**, both the Increased Preservation Area Alternative and the Increased Watercourse Setbacks Alternative would reduce the severity of some environmental impacts relative to the proposed project. Neither alternative would fully achieve the project objectives. However, the Increased Preservation Area Alternative would preserve more individuals and habitats of special-status plant species than the Increased Watercourse Setbacks Alternative and the proposed project. Therefore, the Increased Preservation Area Alternative is identified as the environmentally superior alternative.

ES.5 ISSUES TO BE RESOLVED AND AREAS OF CONTROVERSY AND CONCERN

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 October 14, 2019 (State Clearinghouse #2019100250), which was circulated for 30 days ending on November 13, 2019. 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 Yocha Dehe Wintun Nation, the State of California's Native American Heritage Commission, and PPI Engineering.

Table ES-1 summarizes 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
Yocha Dehe Wintun Nation	Isaac Bojorquez	Director of Cultural Resources	The Cultural Resources Department reviewed the project, concluded that the project site is not within the aboriginal territories of the Yocha Dehe Wintun Nation, and deferred correspondence to the Mishewal Wappo Tribe of Alexander Valley.
Native American Heritage Commission	Andrew Green	Staff Services Analyst	Information is provided regarding requirements for consultation with California Native American tribes and the Native American Heritage Commission's recommendations for conducting cultural resources assessments.
PPI Engineering	Jim Bushey, P.E.	President	The table in Section 10 on page 6 of the Initial Study contains an error listing the State Water Resources Control Board, Division of Water Rights as an agency whose approval is required; the project proposes to use groundwater to irrigate the vineyard.

ES.5.3 PUBLIC REVIEW OF THE DRAFT EIR

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/IS.

The Draft EIR is available for review online on Napa County's website at:

https://pbes.cloud/index.php/s/emaii8HkexDbyJM

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 February 12, 2021, through March 29, 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 the 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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks 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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative): All construction equipment used in project construction shall meet Tier 4 Final standards to reduce emissions of NO_X. Before initiation of the project, and annually thereafter until vineyard construction activities are complete, the permittee shall provide Napa County with a "Project Construction Equipment List" documenting compliance with this mitigation measure. The owner/permittee shall also maintain a Horsepower-Hour Log of the monthly horsepower-hours of construction equipment, and shall provide such logs at the County's request, to further document compliance. Enforcement of this mitigation measure will follow and be consistent with the Conservation Regulations (Napa County Code Section 18.108.140, Security, Violations, and Penalties). **Mitigation Measure 3.2-1b (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks 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. **Mitigation Measure 3.2-1c (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Blasting operations shall be conducted as specified below: (1) Year-round, Monday through Friday only from 10 a.m. to 3 p.m.: Blasting shall not occur outside of these hours, or on the weekends, or on any major holidays. (2) Blasting shall be prohibited during high wind conditions. High wind conditions are deemed to occur when the 2-minute average wind speed exceeds 20 miles per hour. (3) The owner/permittee shall measure and record wind speeds continually throughout the day during blast events to ensure compliance. Wind speed measurements, including average wind speeds shall be included in blasting logs. (4) The owner/permittee shall notify via email Napa County, and any agencies, businesses, and local residents requiring or requesting such notice via email, at least 48 hours in advance of any blasting events. (5) The owner/permittee shall record each blast event and maintain blasting logs for the duration of vineyard development activities. Blasting logs/records shall be submitted to Napa County upon request.	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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks 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-
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.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.2-6: Construction and operation of the proposed project could 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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** A Preservation Area (Figure 3.3-6) totaling a minimum of 79.68 acres shall be designated for preservation in a mitigation 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. The land placed in protection shall be restricted from development and other uses that would degrade the quality of the habitat (including but not limited to conversion to other land uses such as agriculture or urban development, and excessive off-road vehicle use that increases erosion) and should be otherwise restricted by the existing goals and policies of Napa County. Erosion Control Plan #P18-00446-ECPA shall be revised before approval to increase the preservation area to 79.68 acres, consistent with the modified block configurations detailed in Figure 3.3-6. The owner/permittee shall record the mitigation easement within 60 days of approval of Erosion Control Plan Application (ECPA) #P18-00446-ECPA by the County; however, in no case shall the ECPA be initiated until said mitigation easement is recorded. In accordance with Napa County Code Section 18.108.100 (Erosion Hazard Areas—Vegetation Preservation and Replacement), any special-status plants or populations inadvertently removed as part of the development authorized under #P18-00446-ECPA shall be replaced onsite at a ratio of 2:1 at locations with similar habitat, as approved by the planning director. A mitigation plan shall be prepared. At a minimum, the mitigation plan shall identify the locations where the plants will be planted in suitable habitat on the project parcel, the success criteria, and monitoring activities for the populations. The mitigation plan shall be finalized before planting and the start of construction activities. Any replaced special-status plants shall be monitored for at least three years to ensure an 80 percent survival rate.	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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
					Mitigation Measure 3.3-1b (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative): The owner/permittee shall replace the 1,595 holly-leaved ceanothus affected by the project at a 1:1 ratio (mitigated:affected). This shall be accomplished by propagating plants from seeds obtained from the plants on the project site or transplanting newly growing seedlings from the development area to the Preservation Area. Growing from seed is the preferred technique because it captures more of the genetic diversity present in the species at a given location. Seed collection shall be conducted by experienced native plant propagators from local native plant nurseries with experience in propagating native ceanothus. Propagation will include specific techniques to avoid introducing plant pathogens into the preserved area. After seedlings have been established in the nursery (generally 1 year), they shall be replanted in suitable areas in the onsite Preservation Area. To replace approximately 1,595 holly-leaved ceanothus, about 38 individuals per acre shall be planted in a 42-acre portion of the Preservation Area containing chamise alliance, mixed manzanita, and scrub interior live oak (Figure 3.3-6). If it is not feasible to replace 1,595 holly-leaved ceanothus in the Preservation Area, suitable areas on adjacent lands may need to be used, at the discretion of Napa County. Before the start of vegetation clearing and earth-disturbing activities on the project site, a qualified botanist/biologist shall prepare a detailed mitigation and monitoring plan for holly-leaved ceanothus for review and approval by the County. The plan shall include details on collection and propagation of seeds, techniques to avoid introducing plant pathogens to the replanting area, and preparation of the area for planting; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements. After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary. If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort. **Mitigation Measure 3.3-1c (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of six Franciscan onion individuals from vineyard Block Y14 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in Figure 3.3-6. These avoided populations shall be demarcated with construction flagging/fencing before the start of construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary. **Mitigation Measure 3.3-1d (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** To avoid impacts on the narrow-flowered California brodiaea to be retained, the clearing limits shall be clearly and accurately flagged by an engineer using GPS equipment. The narrow-flowered California brodiaea to be retained adjacent to the clearing limits and roadways shall be demarcated with construction flagging/fencing. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary. **Mitigation Measure 3.3-1e (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of small-flowered calycadenia within proposed vineyard Block V4 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in Figure 3.3-6. These avoided populations shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary.				

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
					Mitigation Measure 3.3-1f (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative): To mitigate impacts on two-carpellate western flax plants, the approximately 2,472 individual plants removed shall be replaced at a minimum 1:1 ratio (mitigated:affected). Replacement seeding and planting shall occur in suitable habitat in the Preservation Area (Figure 3.3-6) from two-carpellate western flax seeds collected from the project site, subject to the Mitigation and Monitoring Plan outlined below. Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring plan for two-carpellate western flax for review and approval by Napa County. The plan shall include details on collection and propagation of seeds, seed spreading and planting of propagated plants, techniques to avoid introducing plant pathogens to the replanting area, and preparation of replanting areas; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements. After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary. If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort. **Mitigation Measure 3.3-1g (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the populations of Napa lomatium located on the eastern edge of proposed vineyard Block Z19 and within proposed vineyard Blocks V1 and Y16 and to maintain a 20-foot buffer from the avoided populations, consistent with the modified block configurations detailed in Figure 3.3-6. These avoided populations shall be demarcated in the field with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any, incursions into the avoidance boundary shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance boundary. **Mitigation Measure 3.3-1h (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the green monardella populations adjacent to vineyard Blocks Z19, Z20, and V6 and maintain a 20-foot buffer from the avoided populations/areas, consistent with the modified block configurations detailed in Figure 3.3-6. These avoided populations shall be demarcated with construction flagging/fencing. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance boundary shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the boundary. Replacement of green monardella plants/populations removed shall be at a minimum 1:1 ratio (mitigated:affected) for the approximately 1,162 plants being removed. Replacement seeding and planting shall occur in suitable habitat in the Preservation Area (Figure 3.3-6) from green monardella seeds collected from the project site, subject to the Mitigation and Monitoring Plan outlined below. Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring Plan for green monardella for review and approval by the County. The plan shall include details on collection and propagation of seeds, seed spreading and planting of propagated plants, techniques to avoid introducing plant pathogens to the replanting area, and preparation of replanting areas; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements. After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary. If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort.				

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
					Mitigation Measure 3.3-1i (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative): Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of nodding harmonia located in proposed vineyard Block X12 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in Figure 3.3-6. These avoided populations shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance area shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary. **Mitigation Measure 3.3-1j (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to be implemented in two phases of approximately 40–50 acres each so that it can be demonstrated that special-status plants removed as result of the project can be successfully replaced consistent with Mitigation Measures 3.3-1b, 3.3-1f, and 3.3-1h. A Phasing Plan shall be provided to Napa County for review and approval before its incorporation into #P18-00446-ECPA. Phase 1 shall include the development of vineyard Blocks V1–V4 and Z17–Z20 (as mitigated). Vineyard Blocks V6 and W8 (in that order), or portions thereof, may be included in Phase 1 to achieve the approximately 40–50 acres of vineyard development allowed in Phase 1. The Phasing Plan shall also be considered in the plant Mitigation and Monitoring Plans specified in Mitigation Measures 3.3-1b, 3.3-1f, and 3.3 1h, and replacement plantings required for the entirety of the project shall be successfully established before the start of Phase 2 so that special-status plant mitigation can be implemented and carried out effectively. **Mitigation Measure 3.3-1k (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** For earth-disturbing activities occurring between February 1 and August 31 (coinciding with the grading season of April 1 through October 15 [Napa County Code Section 18.108.070.L] and the bird breeding and nesting seasons), a qualified biologist shall conduct a preconstruction survey for nesting birds in all suitable habitat in the development area, and where there is potential for impacts adjacent to the development area (typically within 500 feet of project activities). A qualified biologist is defined as knowledgeable and experienced in the biology and natural history of local avian resources with the potential to occur at the project site. The preconstruction survey shall be conducted no earlier than 14 days before vegetation removal and the start of ground-disturbing activities. Should ground disturbance begin later than 14 days from the survey date, the survey shall be repeated. A copy of the survey results shall be provided to the Napa County Conservation Division and CDFW before the start of work. After work begins, if there is a period of no work activity of five days or longer during the bird breeding season, the survey shall be repeated to ensure that birds have not established nests during the period of inactivity. If nesting birds are found, the owner/permittee shall identify appropriate avoidance methods and exclusion buffers in consultation with the County's Conservation Division and USFWS and/or CDFW before the start of project activities. Exclusion buffers may vary in size, depending on habitat characteristics, project activities/disturbance levels, and species, as determined by a qualified biologist in consultation with the County's Conservation Division and USFWS and/or CDFW. Exclusion buffers shall be fenced with temporary construction fencing (or the like), the installation of which shall be verified by Napa County before the start of any earthmoving and/or development activities. Exclusion buffers shall remain in effect until the young have fledged or nest(s) are otherwise determined inactive by a qualified biologist. Using alternative methods to flush out nesting birds before preconstruction surveys, whether 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) would be an impact on nesting birds and is prohibited. For any act associated with flushing birds from the project areas, consultation with USFWS and CDFW should occur before any activity that could disturb nesting birds.				

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks 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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** The owner/permittee shall enhance 10 acres of California bay forest within the 79.68-acre Preservation Area (Figure 3.3-6). This shall be accomplished by planting California bay trees at a density similar to that occurring in the California bay forest mapped on the project site (Figure 3.3-2). Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring Plan for California bay, for review and approval by Napa County. The plan shall include details on replanting, techniques to avoid introducing plant pathogens to the replanting area, and preparation of the area for planting; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements. After replanting, the area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary. If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort. **Mitigation Measure 3.3-2b (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid 14.38 acres of California bay forest from the development area, consistent with the modified block configurations detailed in Figure 3.3-6. This avoided area shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the boundary.	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 3.3-3 (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** All necessary permits shall be obtained before the construction of stream crossings and culvert replacement, and 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; however, the Regional Water Board may require a ratio of 2:1 (mitigated:affected) or more. During construction of rocked water crossings and culvert replacement, all necessary best management practices shall be implemented to ensure that no soil or other materials are discharged into the onsite stream courses. Before the construction and installation of stream crossings and culvert replacement associated with #P18-00446-ECPA, and before development of vineyard blocks reliant on those crossings, the owner/permittee shall obtain—and shall demonstrate to Napa County that it has obtained—all required authorizations and/or permits from agencies with jurisdiction over waters of the United States or the state, such as: • Water Quality Certification (Section 401 permit) from the Regional Water Board • Section 1602 Lake and Streambed Alteration Agreement from CDFW • Section 404 Nationwide Permit from USACE Alternatively, the owner/permittee may revise the plan to include clear-span crossings, with footings located outside of identified setbacks, over these drainages to minimize and mitigate potential impacts on jurisdictional waters of the United States or state.	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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks 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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** The Vineyard Fencing Plan in Erosion Control Plan #P18-00446-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 Vineyard Fencing Plan shall be subject to review and approval by Napa County before its incorporation into #P18-00446-ECPA. • The following vineyard blocks shall be fenced individually: Blocks V6, W8, Y15, Y16, Z17, Z18, and Z20. The location of new wildlife exclusion fencing shall generally be limited to the outside edge of vineyard avenues. • The following vineyard blocks shall be fenced in groups: Group 1—Blocks X10, X11, X12, and Y14; and Group 2—Blocks V1, V2, V3, and V4. To the maximum extent practical, the location of new wildlife exclusion fencing shall generally be limited to the outside edge of existing and proposed vineyard avenues and development areas. • A portion of vineyard Blocks V1, V2, and W8 shall be removed to provide and maintain a wildlife corridor at least 100 feet wide adjacent to the block(s), consistent with the modified block configurations detailed in Figure 3.3-6, to facilitate the movement of larger mammals through the area. • 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. To prevent entanglement, smooth wire instead of barbed wire shall be utilized to top wildlife exclusion fencing. • Any modifications to the location of wildlife exclusion fencing as specified in Erosion Control Plan #P18-00446-ECPA pursuant to the Vineyard Fencing Plan required by this mitigation shall be strictly prohibited, and would require County review and approval to ensure that the modified wildlife exclusion fencing location/plan would not result in potential impacts on wildlife movement.	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 3.3-5 (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the 0.75 acre of black oak forest located in the development area, consistent with the modified block configurations detailed in Figure 3.3-6. Before any earthmoving activities, temporary fencing shall be placed at the edge of the dripline of trees to be retained that are located adjacent to the development area (typically within approximately 50 feet). The precise locations of these fences shall be inspected and approved by Napa County before the start of any vegetation removal or earthmoving activities. No disturbance, such as grading, placement of fill material, and equipment storage, shall occur in the designated protection areas for the duration of erosion control plan and vineyard installation. Trees removed that are not within the boundary of the project and/or not identified for removal as part of #P18-00446-ECPA shall be replaced onsite with 15-gallon trees at a ratio of 2:1 at locations approved by the director. Replacement trees shall be monitored and maintained as necessary for a minimum of 5 years to ensure an 80 percent survival rate. If replacement plantings are not achieving this success criterion during the initial monitoring period, the permittee shall be responsible for planting replacement trees and conducting ongoing monitoring to ensure that they achieve a survival rate of at least 80 percent. The owner/permittee shall refrain from severely trimming the trees and vegetation to be retained adjacent to the vineyard conversion area.	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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks 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 provide documentation to Napa County before the start of project construction showing that an Awareness Program has been developed and appropriate project personnel have been trained, shall ensure that project personnel are made available for and attend the training, and shall retain documentation demonstrating attendance. **Mitigation Measure 3.4-1b (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks 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. Napa 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); or battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, or deposits of metal, glass, and/or ceramic refuse. If the resource is indigenous, the County shall contact a Native American representative to assess the find. If the County determines, based on recommendations from the qualified archaeologist and the Native American representative (if the resource if indigenous), 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
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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** If human remains are uncovered during project construction, all work shall immediately halt within 100 feet of the find 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 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

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
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, Increased Preservation Area Alternative, and Increased Watercourse Setbacks Alternative):** If indigenous 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. Napa 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. If the resource is indigenous, the County shall contact a Native American representative to assess the find. If the County determines, based on recommendations from a qualified archaeologist and a Native American representative, that a resource identified during project implementation may qualify as a tribal cultural resource (as defined in PRC Section 21074), the resource shall be avoided if feasible. If avoidance is not feasible, the County shall consult with the appropriate Native American tribe 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. Treatment may include, as feasible: • Avoidance and preservation of 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. • Treating 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 Protecting the cultural character and integrity of the resource. o Protecting the traditional use of the resource. o Protecting the confidentiality of the resource. o Establishing 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 Protecting the resource.	LS	NI	LS	LS
3.5 Geology and Soils									
3.5-1: 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+
3.5-2: 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.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.5-3: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	LS	NI	LS-	LS-	None required.	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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks 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 decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LS	NI	LS-	LS-	None required.	LS	NI	LS-	LS-
3.7-3: 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, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite, or impede or redirect flood flows.	LS	NI	LS	LS	None required.	LS	NI	LS	LS
3.7-4: Construction and operation of the proposed project could 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.	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 3.3-1a through 3.3-5 (proposed project, Increased Preservation Area Alternative, and Increased Watercourse Setbacks 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
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

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative	Mitigation Measure	Significance After Mitigation: Proposed Project	Significance After Mitigation: No Project Alternative	Significance After Mitigation: Increased Preservation Area Alternative	Significance After Mitigation: Increased Watercourse Setbacks Alternative
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 2020.

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CHAPTER 1
INTRODUCTION

1.1 PURPOSE OF THE ENVIRONMENTAL IMPACT REPORT

The Napa County (County) Planning, Building and Environmental Services Department has prepared this Environmental Impact Report (EIR) to evaluate the impacts of implementing the Stagecoach North Vineyard Conversion Erosion Control Plan Application Project (#P18-00446-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.

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, Gallo Vineyards Inc. filed an agricultural erosion control plan application (#P18-00446-ECPA) for vineyard development on the 170.2-acre property accessed from Soda Canyon Road in north-central Napa County (**Appendix A**).

The property includes Assessor's Parcel Number 032-010-086. See **Section 2.1, *Project Location***, and **Section 2.2, *Physical Conditions and Zoning on the Project Site***, for a more detailed discussion of the project setting.

The original submittal (December 20, 2018) 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" under the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective 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 prepared a Notice of Preparation (NOP) of an EIR and an Initial Study (IS) (State Clearinghouse #2019100250). The County provided the NOP/IS to federal, state, and local agencies. The NOP/IS was published on October 14, 2019, and circulated for 30 days ending on November 13, 2019. 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. **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.

1.3.2 CONSULTATION

The County notified the Veterans Home of California in Yountville, the water purveyor of Rector Reservoir, regarding the NOP during the NOP/IS public review period.

In June 2018, the Native American Heritage Commission (NAHC) was contacted to request a search of the NAHC Sacred Lands File. The NAHC responded in July 2018, indicating that no sacred lands are on file for the project area, and provided a list of Native American groups to contact.

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, reached out to California Native American Tribes identified on the 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.

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

Agency	Name	Title	Summary of Comments
Yocha Dehe Wintun Nation	Isaac Bojorquez	Director of Cultural Resources	The Cultural Resources Department reviewed the project, concluded that the project site is not within the aboriginal territories of the Yocha Dehe Wintun Nation, and deferred correspondence to the Mishewal Wappo Tribe of Alexander Valley.
Native American Heritage Commission	Andrew Green	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.
PPI Engineering	Jim Bushey, P.E.	President	The table in Section 10 on page 6 of the IS contains an error listing the State Water Board, Division of Water Rights, as an agency whose approval is required; the project proposes to use groundwater to irrigate the vineyard.

Notes: IS = Initial Study; NAHC = Native American Heritage Commission; State Water Board = State Water Resources Control Board

Source: Data compiled by Environmental Science Associates in 2019

On January 29, 2019, Napa County sent project notification letters to the Yocha Dehe Wintun Nation, the Mishewal Wappo Tribe of the Alexander Valley, and the Middletown Rancheria. 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. The Yocha Dehe Wintun Nation responded that the project is not within their aboriginal territory. No additional responses were received. On November 21, 2019, Napa County sent consultation closure notices to the Yocha Dehe Wintun Nation, the Mishewal Wappo Tribe of the Alexander Valley, and the Middletown Rancheria.

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 February 12, 2021 through March 29, 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 Napa County's website at:

https://pbes.cloud/index.php/s/emaii8HkexDbyJM

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 Section 21081.6(a) of the California Public Resources Code, 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 approve the proposed project, 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.

1.3 SCOPE OF THIS ENVIRONMENTAL IMPACT REPORT

The NOP/IS for the proposed project identified potentially significant impacts from 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 resource topics listed below 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 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. The project site is not located on a prominent hillside, on a major or minor ridgeline, or within a scenic corridor. Also, the project is consistent with the land use designation for the project site, Agricultural, Watershed and Open Space, and with adjacent land uses, which include other vineyards. Therefore, the proposed project would have a less-than-significant impact on scenic vistas, state scenic highways, and the existing visual character or quality of public views 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 parcel is zoned Agricultural Watershed. Therefore, the establishment of a vineyard is consistent with the parcel'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 create a need to construct new or modified utilities and service systems. Further, implementing the proposed project would not result in the construction or expansion of a water or wastewater treatment facility; the project would not generate wastewater, and existing and potential future groundwater wells would provide irrigation water to the vineyard. 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, and see **Section 3.7** for an analysis of water availability and 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.

- **Wildfire:** Project construction and operation would not require any road closures, and existing roads would continue to provide adequate emergency access to the project site and project area. The proposed project would not impair an adopted emergency plan or emergency evacuation plan. Project construction would require the presence of some vehicles and heavy equipment that could spark and ignite flammable vegetation. During construction, the risk of igniting a fire would be low because vegetation would be cleared before development of the vineyard, and the risk would be temporary because of the short duration of construction (approximately 5½ months). Operations and maintenance activities would be similar to activities already occurring in the project area, which include operation of an existing vineyard. There are no buildings or residences on the parcel and the proposed project would not construct any buildings or residences; therefore, the project would not expose people or structures to significant risks. Impacts would be less than significant. See **Section 3.7, *Hydrology and Water Quality***, for an analysis of the temporary and permanent erosion control measures proposed.

1.4 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, presents analyses of the ability of the alternatives to meet the proposed project's objectives, and identifies 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.

CHAPTER 2
PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The approximately 170.2-acre Stagecoach North Soda Canyon Ranch parcel (referred to in this EIR as the "project site") is located off Soda Canyon Road approximately 5 miles northeast of Yountville in Napa County, California. The project site lies within Section 9 of Township 7 North, Range 4 West, Mount Diablo Base and Meridian, of the Yountville U.S. Geological Survey 7.5-minute topographic quadrangle. The project site includes Assessor's Parcel Number 032-560-034. **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.

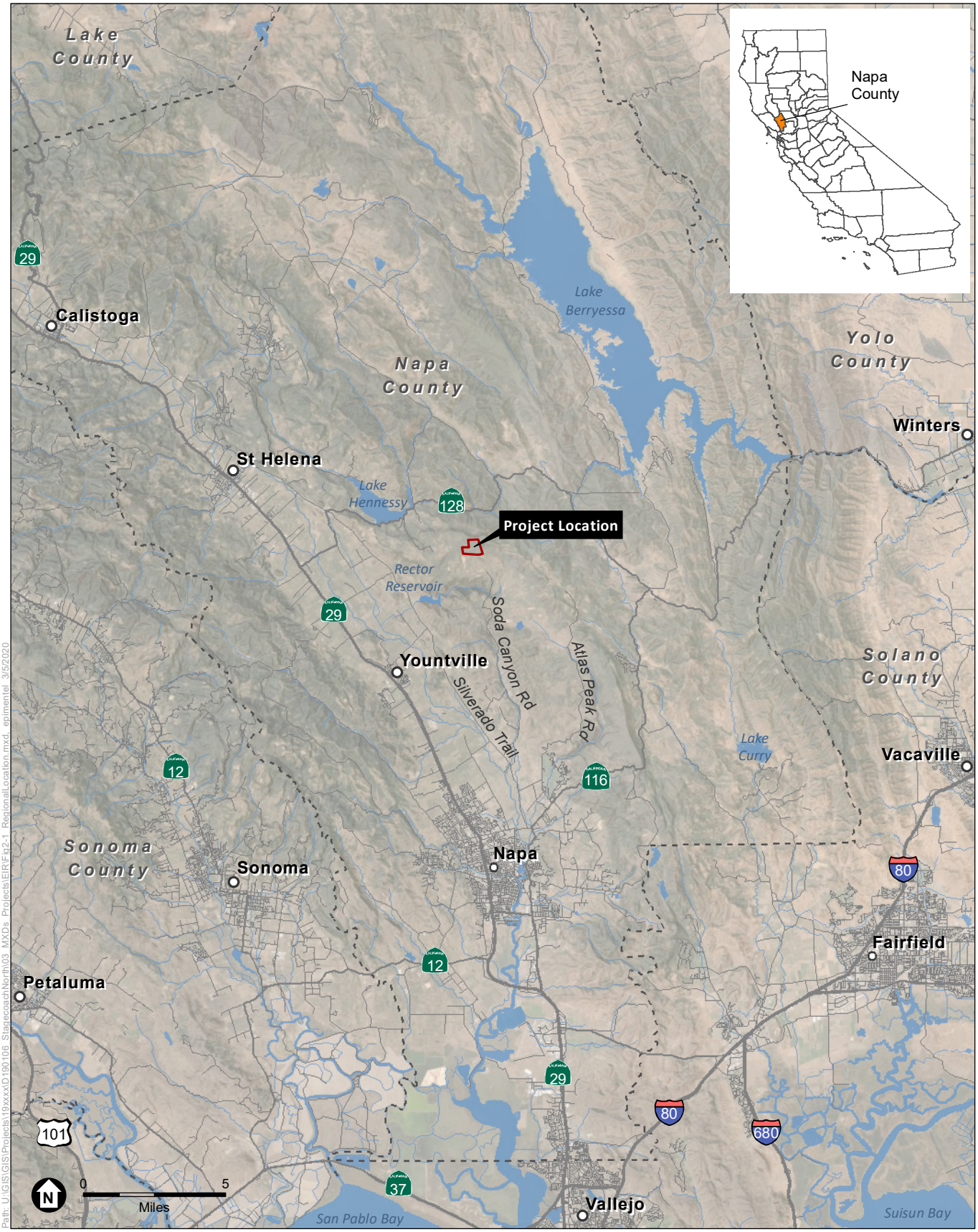
2.2 PHYSICAL CONDITIONS AND ZONING ON THE PROJECT SITE

Access to the project site is available via a private road located approximately at the terminus of Soda Canyon Road, which crosses an adjacent property owned by the Applicant, Gallo Vineyards Inc. The project site consists of undeveloped areas, dirt roads, and hand-cut trails. The southern portion of the project site is currently bounded by a wildlife exclusion fence (i.e., deer fence) (**Figure 2-4**).

The original submittal (December 20, 2018) contained the requisite application materials that were required by the County's Agricultural Erosion Control Plan Application Checklist at that time. As a result, the application was determined to be a "substantially conforming and qualified permit application" under the recently enacted Water Quality and Tree Protection Ordinance (Ordinance #1438), which became effective 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.

Vegetation types on the project site include chamise chaparral, grassland, California black oak forest, California bay forest, mixed manzanita, and scrub oak communities. Rock outcrops are also present, along with approximately 2,790 total trees on the project site with a stem diameter at breast height of 5 inches or more. Several ephemeral streams exist on the project site, including one depicted as a blue-line stream on the Yountville U.S. Geological Survey 7.5-minute topographic quadrangle map.

The project site ranges in elevation from approximately 1,660 feet to 2,140 feet above mean sea level. Ground slopes range from approximately 7 percent to 25 percent and average 18 percent.

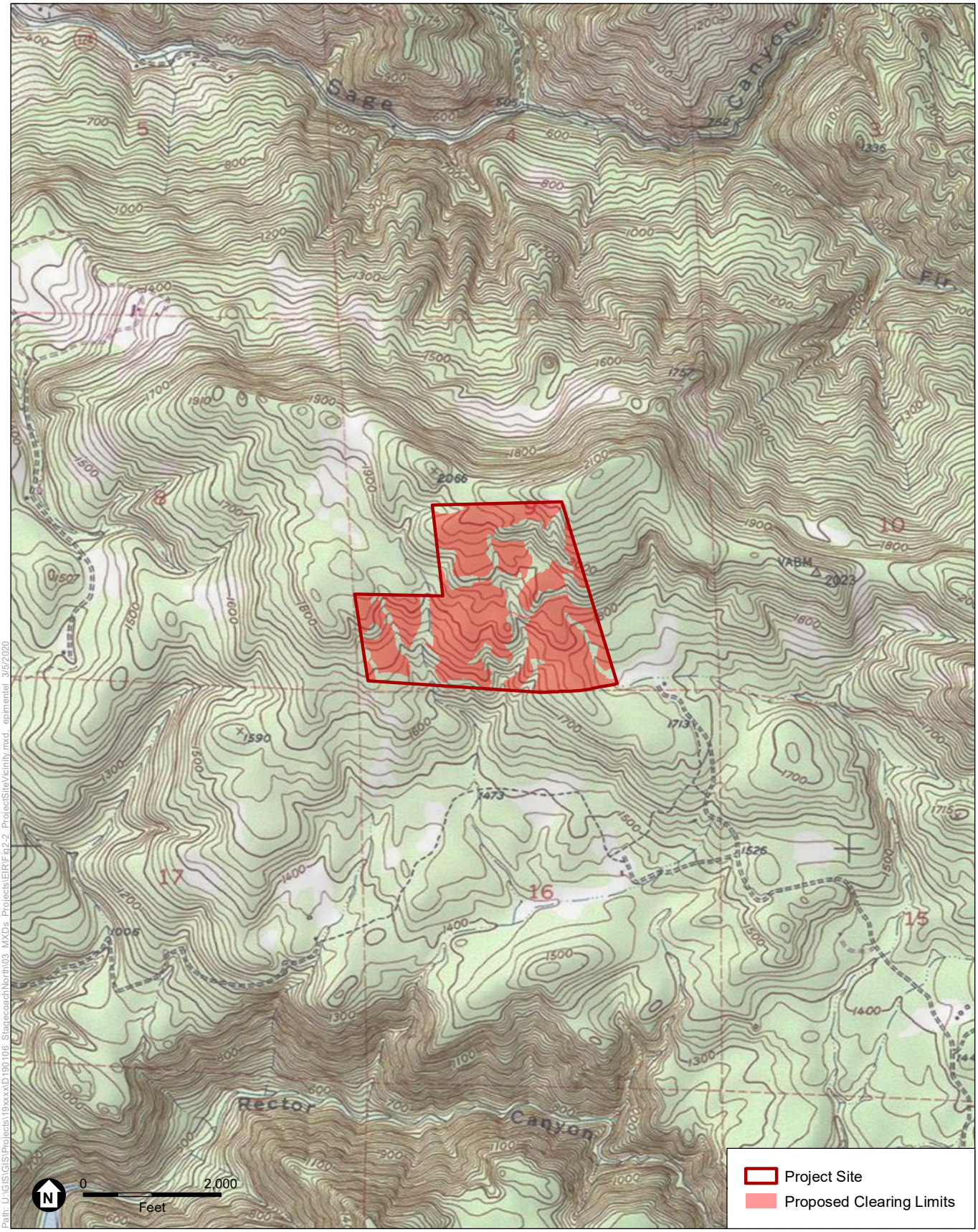


SOURCE: Esri, 2015; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 2-1
Regional Location

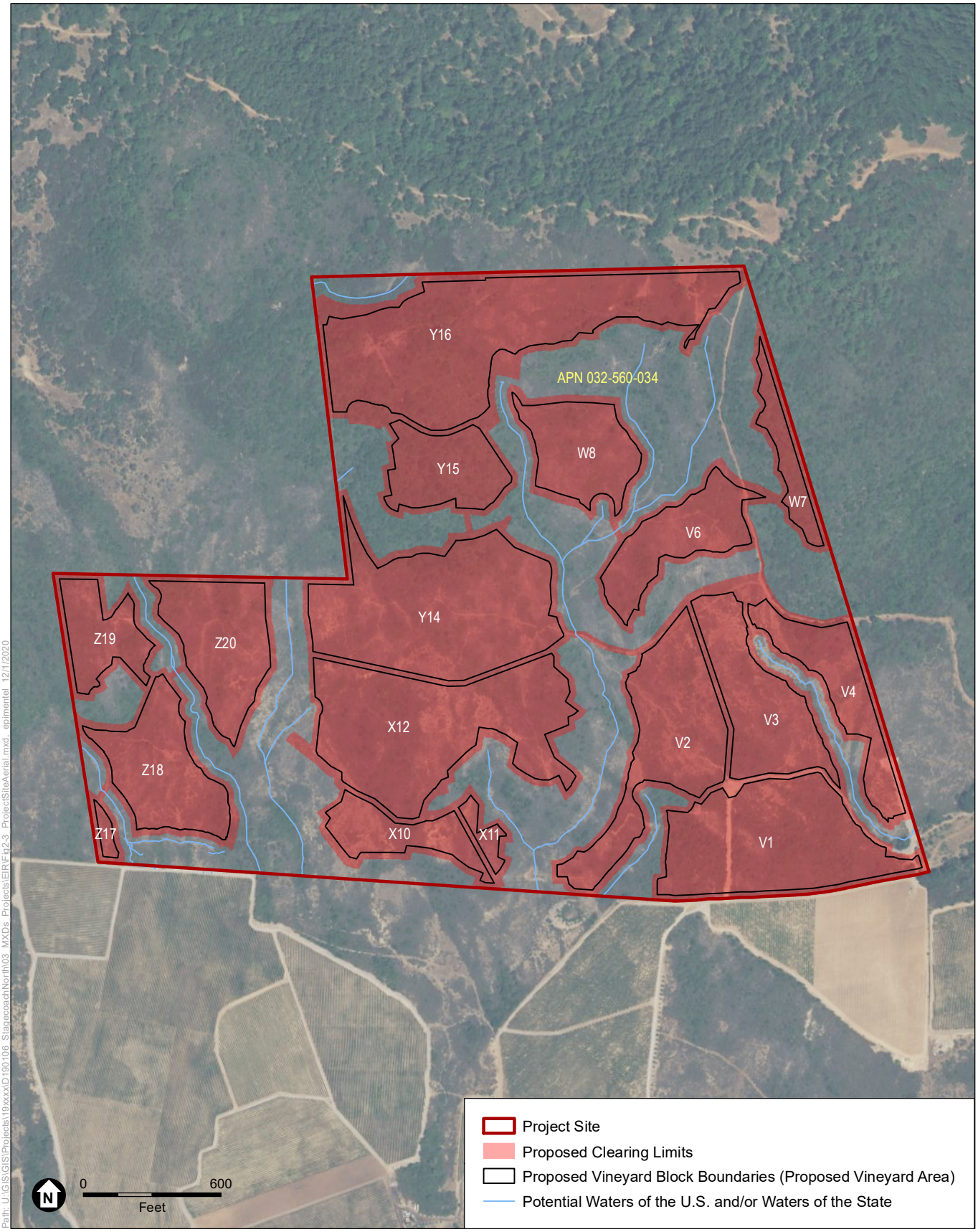
ESA



SOURCE: USGS 7.5' Topo Quad (Chiles Valley, 1951); PPI Engineering, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

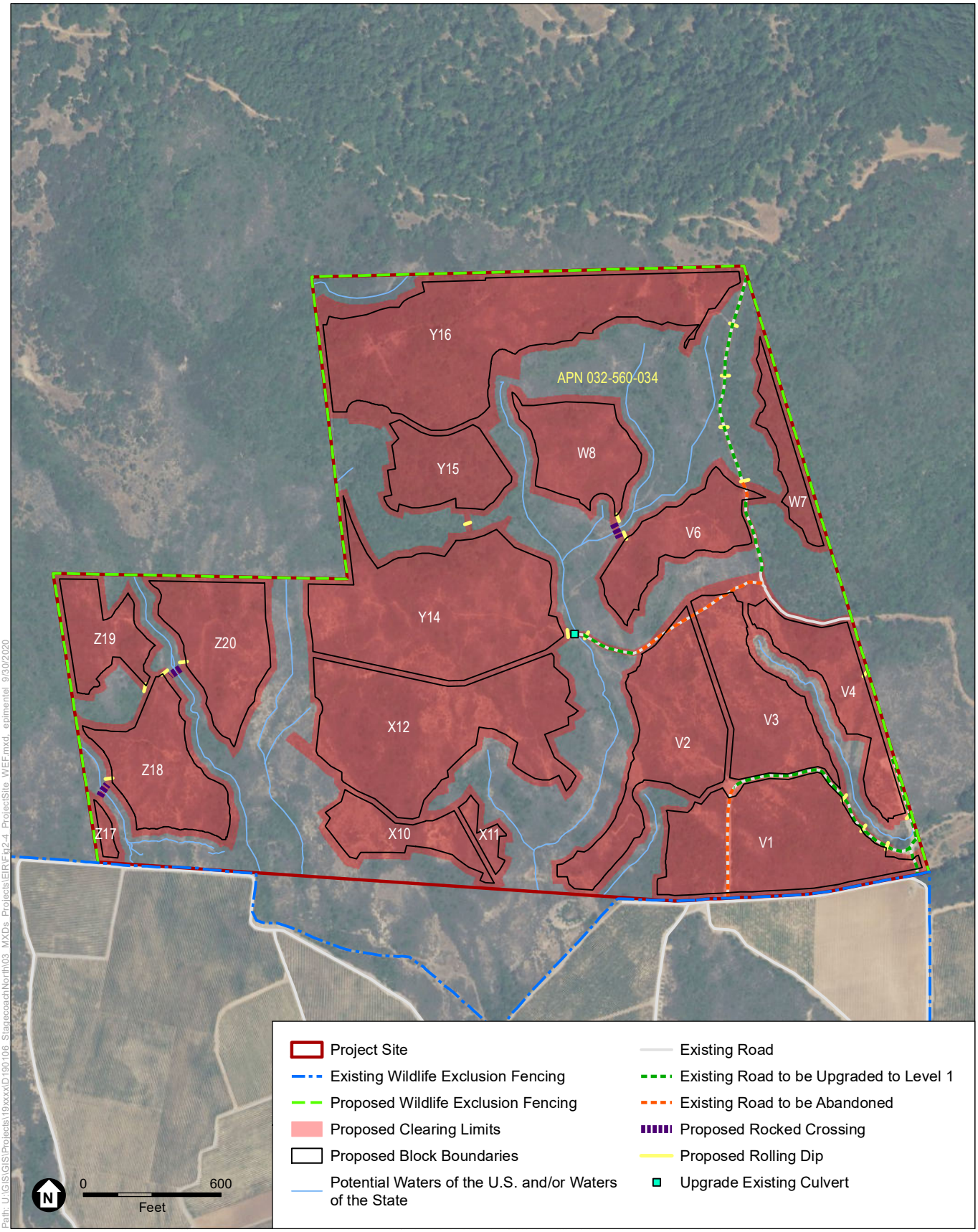
Figure 2-2
Project Site and Vicinity



SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 2-3
Project Site



SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 2-4
Wildlife Exclusion Fencing and Roads

Small areas of the proposed vineyard blocks have ground slopes of at least 30 percent; approximately 2.1 acres would be developed on slopes 30 percent or steeper. Soils in the project site include Guenoc–Rock Outcrop Complex 30 to 75 percent slopes, Hambright Rock-Outcrop Complex 30 to 75 percent slopes, Rock Outcrop–Hambright Complex 50 to 75 percent slopes, and Sobrante Loam 5 to 30 percent slopes.

The project site is located within the County-designated Rector Reservoir Sensitive Domestic Water Supply Drainage. Napa County Code Chapter 18.108.027, Sensitive Domestic Water Supply Drainages, outlines provisions applicable to such designated drainages, including vegetation clearing limits and winter shutdown requirements.

The project site is zoned Agricultural Watershed (AW) and agriculture is allowed in AW districts without use permits. As defined in Napa County Code Chapter 18.20, AW Agricultural Watershed District, the AW district classification is intended to be applied in areas of the county where:

- The predominant use is agriculturally oriented.
- Watershed areas, reservoirs, and floodplain tributaries are located.
- 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 project include:

- Develop new vineyards on those portions of the site that are suitable for the cultivation of high-quality wine grapes, which are designed and sited to include up to approximately 85–91 net planted acres[1] within an approximately 116-acre development (or cleared) area, while ensuring the economic viability of the project.
- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- 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.
- Minimize changes to hydrology from vineyard development.
- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices and participation in the Napa Sustainable Winegrowing Group and California Sustainable Winegrowing Alliance.

[1] Considering that the owner has the ability to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes, and that for the proposed vine by row spacing in areas where cross-slope exceeds 15 percent, the owner shall increase the row spacing as needed to ensure there is adequate room for equipment (PPI Engineering 2019: ECPA Narrative pages EC-5 and EC-6).

- Protect water quality by protecting streams and drainages 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.
- Use water from existing and proposed water resources efficiently.
- Maximize the use of current vineyard employees' skills and create efficiencies.
- Provide opportunities for additional vineyard employment and economic development in Napa County.

2.4 DESCRIPTION OF THE PROPOSED PROJECT

Gallo Vineyards Inc. (referred to in this EIR as "Applicant") filed an erosion control plan application (#P18-00446-ECPA) with Napa County on December 20, 2018. The Applicant filed this application for proposed vegetation removal and earthmoving activities on slopes steeper than 5 percent in connection with the development of approximately 91.3 net acres of new vineyard within 116.2 gross acres (referred to in this EIR as the "project area" or "development area") on the project site.

Vineyard avenues would be constructed around each proposed vineyard block to provide access for farming equipment and workers (**Figure 2-3**), and their acreage is included within the boundaries of the proposed clearing limits.

In total, 17 vineyard blocks are proposed. **Table 2-1** identifies the acreages of the proposed vineyard blocks and their associated clearing limits.

TABLE 2-1
ACREAGES OF PROPOSED VINEYARD BLOCKS

Block	Proposed Clearing Limits (gross acres)	Proposed Block Boundaries (net acres)	Block	Proposed Clearing Limits (gross acres)	Proposed Block Boundaries (net acres)
V1	10.5	9.0	Y14	13.7	11.8
V2	8.8	7.0	Y15	4.6	3.6
V3	6.4	5.3	Y16	17.6	14.1
V4	5.7	3.8	Z17	0.7	0.3
V6	5.4	4.0	Z18	6.3	4.9
W7	2.8	1.6	Z19	3.8	2.7
W8	5.3	4.0	Z20	6.3	5.0
X10	3.6	2.5	Avenues and Rock Disposal Areas	0.3	N/A
X11	1.1	0.5			
X12	13.3	11.2	**Total**	**116.2**	**91.3**

SOURCE: PPI Engineering 2019

Proposed vineyard development activities include removing brush and trees within the proposed clearing limits, ripping, rock removal, blasting, soil cultivation, seeding of a cover crop, mulching, trenching for storm drain and irrigation pipelines, installing a trellis system and wildlife exclusion fence, and laying out vine rows. In addition, temporary and permanent erosion control measures (as described in Section 2.5.2, *Erosion Control Measures*, below and detailed in **Appendix A**) would be installed.

Figure 2-4 shows the location of the proposed wildlife exclusion fencing. The proposed fence would match the existing deer fence and would be 7 feet tall, with smooth wire square mesh spacing of approximately 6 inches by 6 inches up to 6 feet. The top 1 foot of the fence would be made of two bare (not barbed) wire strands. Irrigation pipelines would be located within existing roadways, vineyards and vineyard avenues, and proposed clearing limits.

Approximately 0.9 mile of dirt roads exist on the project site (**Figure 2-4**); approximately 0.6 mile of the existing roads would be upgraded to Level 1 roads to provide primary access to the proposed vineyard blocks. During vineyard development, Level 1 roads[2] would receive a 3-inch minus aggregate base material that would be applied to the existing roadway width, at a depth of 3–6 inches, to ensure that vehicular traffic would not degrade the roadway surface during wet periods. The proposed project would improve roadways 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 (spaced at approximately 150-foot intervals) rolling dips or water bars where needed.

The project site has 0.1 mile of existing Level 2 roads. 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 roads would not be surfaced with crushed rock. The Level 2 roads would be part of vineyard avenues after implementation of the project and would be subject to the same vegetative cover crop requirements as the adjacent vineyard block pursuant to the Erosion Control Plan.

Approximately 0.2 mile of existing dirt roads would be decommissioned and incorporated into the proposed vineyard blocks. In these locations, the access roads would be realigned to the outer vineyard avenue. Roads proposed for decommissioning would be decompacted by a bulldozer that would rip to a depth of 42–60 inches.

In addition to the gravel and dirt roads on the project site, a network of vegetated vineyard avenues would surround the proposed vineyard blocks and provide access for farming equipment and workers. These avenues would be reseeded as needed to ensure appropriate levels of vegetative cover, as required by the engineered Erosion Control Plan that would cover these avenues.

[2] Level 1 and Level 2 roads are discussed in Appendix F of the Erosion Control Plan, included as **Appendix A** in this EIR.

The Erosion Control Plan includes a road plan that describes operational roadway use and use restrictions, maintenance practices, and improvements (see **Appendix A**).

Rock would need to be removed during land preparation and construction of the proposed project. Some of the rock would be used for erosion control features such as rock detention basins, energy dissipaters, and rock level spreaders. Crushed rock would be used on existing roads where needed and for rock-filled avenues. Rock not used immediately would be temporarily stockpiled for future use within the proposed clearing limits. Stockpiles would be less than 30 feet tall.

With the exception of crossings required for access, all drainages on the project site have setbacks incorporated into the project design. The two ephemeral streams on the project site that meet the County's definition of a stream have no-touch setbacks ranging from 55 to 105 feet based on slope, in accordance with Napa County Code Section 18.108.025. In addition, the proposed project would avoid other non-County-definitional 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 avenues would be subject to the same vegetative cover crop requirements as the adjacent vineyard block pursuant to the Erosion Control Plan.

The proposed vineyard would be irrigated entirely by groundwater from two wells located in the southeastern portion of the project site. Additional wells may be developed in the future, but the overall groundwater demand would not change. The project proposes to use approximately 54.8 acre-feet of groundwater per year to irrigate the 91.3 net acres of vineyard during the first four years while the vines are being established, and approximately 45.7 acre-feet of groundwater per year to irrigate the 91.3 net acres of vineyard after establishment (typically the fourth year after planting).

2.5 PROJECT CONSTRUCTION

2.5.1 VINEYARD DEVELOPMENT

Vineyard development would take place between April 1 and September 15, in one phase. An average of approximately 0.8 acre per day would be cleared and disturbed during construction. The proposed project has been designed so that no import or export of material would be required; approximately 1,000 cubic yards of cut would be generated and approximately 1,000 cubic yards of fill would occur on the project site. Approximately 1,636 trees with a stem diameter at breast height of 5 inches or more are present in the development area. The vegetation removed would be burned onsite in accordance with Bay Area Air Quality Management District regulations. Solid waste would be removed from the site by Napa County Recycling and Waste Services.

Four one-way truck trips per day would deliver and remove heavy equipment during the first two weeks and last two weeks of project construction. **Table 2-2** lists the typical construction equipment and the estimated quantity of equipment needed for the proposed project. All

equipment, except one D6 and one D9 bulldozer, is already on the adjacent property owned by the Applicant and would not require transport. On average, construction equipment would operate for seven hours per day during the construction period, and work would take place six days per week. Construction would typically occur between 6 a.m. and 6 p.m.

TABLE 2-2
ANTICIPATED CONSTRUCTION EQUIPMENT

Equipment	Estimated Quantity
Large Excavator	2
Medium Excavator	1
D9 Bulldozer	2
D8 Bulldozer	1
D6 Bulldozer	1
Haul Truck	2
Loader	2
Water Truck	1
Farm Tractor with Trailer	4

SOURCE: Data provided by PPI Engineering in 2019

Construction would require 8 to 10 workers daily. An estimated 10 passenger vehicle round trips per day would occur six days per week from April to September, with average round-trip mileage of 28 miles per vehicle.

All staging would be conducted within the development area. The primary staging area would be in the southeastern portion of the project site, in proposed Block V1 (see **Figure 2-3**).

Blasting would be conducted by drilling and blasting. It is conservatively estimated that five blasting events may be required during project construction.

The limits of ripping would be within the proposed vineyard clearing areas. Average ripping depth would be 42 inches, with a maximum ripping depth up to 60 inches, depending on site conditions. Vine and row spacing would be 4 feet by 6 feet; however, in areas where the cross-slope exceeds 15 percent, row spacing would be increased to provide adequate room for equipment.

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

By September 15, the 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 Erosion Control Plan.

2.5.2 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 and runoff control measures described in the Erosion Control Plan (PPI Engineering 2019) include:

- Five detention basins constructed in the development area to attenuate small increases in runoff associated with vineyard development:
  - Detention Basin #1 in the northwest corner of Block Y16;
  - Detention Basin #2 in the southwest corner of Block Y16;
  - Detention Basins #3 and #4 on the south side of Block Y16; and
  - Detention Basin #5 north of Blocks V3 and V4.
- Seeding of a permanent cover crop with vegetative cover maintained according to the Erosion Control Plan.
- Surface 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 and concrete drop inlets installed at designated locations in the development area.
- Diversion ditches constructed to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet or drop inlet.
- Diversion avenues constructed to reduce slope run length and intercept runoff throughout the vineyard while directing it to a stable outlet.
- Rock level spreaders installed in designated locations at the outfall of conveyance infrastructure to uniformly spread water onto the ground surface.
- Rock-filled avenues constructed to dispose of rock generated onsite, create safer turning for equipment, and disperse and filter runoff.
- Rock energy dissipaters constructed to help disperse concentrated flow.
- Rolling dips installed in designated locations in the development area to direct water off the roadway surface and back onto the native ground surface. These designated locations include areas where the existing road runs uphill and the potential exists for runoff to run down the roadway surface and cause erosion or gullying, or areas where rolling dips are needed to ensure that roads are hydrologically disconnected from receiving waters.
- Three new rocked water crossings over waters of the United States, installed in designated locations in the development area, to be used for vineyard access during low-flow or dry conditions. Other rocked water crossings proposed in the Erosion Control Plan would cross proposed ditches, and therefore would not affect waters of the United States.

- One existing undersized culvert upgraded to a larger diameter culvert (48 inches) to minimize the potential for plugging and other issues that could be caused by an undersized culvert.
- Outsloped infield level spreader constructed to prevent surface flows from becoming concentrated through the vineyard areas.

2.6 VINEYARD OPERATIONS AND MAINTENANCE

Table 2-3 summarizes the operations and maintenance activities that would take place after construction of the proposed vineyard.

TABLE 2-3
ANNUAL OPERATIONS SCHEDULE

Months	Activity	Approximate Number of Workers
January and February	Annual pruning of vines	20
June–August	Chemical, mechanical, and manual weed control Applications of sulfur to protect against mildew	15
September and October	Harvest Winterizing of vineyard, vineyard avenues, and vineyard roads	34
November–April	Monitoring and maintenance of erosion control measures	15

SOURCES: PPI Engineering 2019; data provided by PPI Engineering in 2019

Nighttime activities would include:

- *Frost protection,* with two wind machines operating, typically in April and May for approximately 15 hours per month.
- *Harvest* between 10 p.m. and 6 a.m., typically in October.
- *Sulfur applications* approximately 12 times per year between 9 p.m. and 6 a.m., typically in May and June.

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 plan would be implemented as part of the sustainable farming practices on the project site. No pre-emergent herbicides would be sprayed in the vine rows for weed management. Contact or systemic herbicides may be applied in the spring (no earlier than February 15). Chemicals would be stored and mixed in a shipping container that would be placed in Block V1 as shown in Figure 5 of the Erosion Control Plan (**Appendix A**).

An estimated two truck trips (12 tons each) and 12 worker round trips per day would occur during harvest (with approximately 34 workers). Grape-hauling trucks may travel an average of 8 miles to the nearest processing facility. Worker trips would average approximately 28 miles.

Approximately 12 worker round trips would occur during pruning (with 20 workers). Outside of the peak harvest and pruning periods, an average of 15 workers would carpool together.

Operation of the irrigation system would require the use of a proposed diesel generator that is anticipated to be used for approximately 714 hours per year to draw water from the groundwater wells onsite to irrigate the vineyards.

2.7 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 2-4** identifies the regulatory agencies that may have permitting approval or review authority over portions of the proposed project.

TABLE 2-4
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	Compliance with the California Endangered Species Act (Section 2081)
	Section 1602 Lake and Streambed Alteration Agreement
State Historic Preservation Office	Consultation under Section 106 of the National Historic Preservation Act
San Francisco Bay Regional Water Quality Control Board (Region 2)	General Waste Discharge Requirements for Vineyard Properties in the Napa River and Sonoma Creek Watersheds
	Clean Water Act Section 401 Water Quality Certification

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 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. Consistent with State CEQA Guidelines Section 15125, the physical environmental conditions as they existed at the time the Notice of Preparation (NOP) was published (i.e., October 14, 2019) are described in this EIR. The vegetation on the property was subsequently burned in August 2020 when a wildfire swept through the project area. The setting discussion is followed by a discussion of impacts and mitigation measures. Conducting the assessment of environmental impacts based on the physical environmental conditions that existed at the time the NOP was published allows for the most conservative assessment of impacts. For example, the calculated percent reduction in soil loss and net decrease in peak flow rates would be greater if the analysis was based on conversion from burned ground cover to vineyard with a cover crop. Similarly, for biological resources, assessing impacts on special-status plant species and habitats based vegetation communities documented to occur on the project site at the time the NOP was published provides a conservative estimate of impacts compared to assessing impacts based on burned ground cover. Additionally, the chaparral vegetation on the project site is adapted to fire and regenerates readily after fire.

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 NOP (October 14, 2019) 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 for 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 project-related woodland conversion. References cited in this section are included in **Chapter 7, *References***.

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 5 miles northeast of Yountville in Napa County, California. The area's elevation ranges from approximately 1,660 feet to 2,140 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 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) originally identified six air pollutants that are pervasive in urban environments: ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), 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" because EPA has developed specific public health- and welfare-based criteria for them as the basis for setting permissible levels.

Ozone

Short-term exposure to ozone can irritate the eyes, constrict the airways, and cause 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 periods of 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, meets 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: Older polluting vehicles are being retired from the fleet, new vehicles generate fewer emissions, and fuels have improved to reduce CO emissions.

Nitrogen Dioxide

NO_2 is a reddish-brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. NO_2 may be visible as a coloring component of a brown cloud on high-pollution days, especially in conjunction with high ozone levels.

NO_2 is an air quality concern because it is a respiratory irritant and a precursor of ozone. NO_2 is a major component of the group of gaseous nitrogen compounds commonly referred to as NO_X. NO_X is 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 NO_2 when it reacts with ozone or undergoes photochemical reactions in the atmosphere. Therefore, NO_2 emissions from combustion sources are typically evaluated based on the amount of NO_X emitted from the source.

Sulfur Dioxide

SO_2 is a colorless, acidic gas with a strong odor, and is formed as a combustion product of sulfur or sulfur-containing fuels such as coal and diesel. SO_2 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. SO_2 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.

Smaller particles, including 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 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).

In addition to causing negative health impacts, particulates 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; these large dust particles are more of a soiling nuisance than a health hazard.

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 have decreased since 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 2020a).

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 what sources and pollutants to control and the degree of control.

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, reductions in snowpack, an increased number of extreme-heat or high-ozone days per year, large forest fires, and more severe 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, by nature, a global concern because GHG emissions cumulatively contribute to planet-wide atmospheric accumulations. There are no local "hot spots" of elevated concentrations of carbon dioxide (CO_2) or any other GHG; therefore, GHG emissions, existing or future, 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 unique global warming potential, which is 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 2020b).

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 from both natural and anthropogenic (human) sources. Key anthropogenic sources include the burning of fossil fuels (e.g., oil, natural gas, and coal), solid waste, trees, wood products, and other biomass, as well as 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. Small quantities of methane are released during combustion of fossil fuels. Methane is also emitted by livestock and agricultural practices.

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 from a variety of industrial processes. Pound for pound, these fluorinated gases contribute more to the greenhouse effect than any other GHG previously described in this section. Fluorinated gases are often referred to as “ozone-depleting substances” (chlorofluorocarbons, hydrofluorocarbons, and halons). These gases are typically emitted in small quantities, but because of their potency, they are sometimes called “high global warming potential gases.” The proposed project would not include any sources of fluorinated gases.

EXISTING AIR QUALITY

The project site is located in the San Francisco Bay Area Air Basin (SFBAAB) and is under the jurisdiction of the Bay Area Air Quality Management District (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 Street monitoring station, almost 10 miles south of the project site, is the nearest station in Napa County and monitors ozone, PM_{10}, $PM_{2.5}$, and NO_2. The Jefferson Street monitoring station was closed in March 2018, and the Napa Valley College monitoring station became operational in its place in April 2018. The Napa Valley College monitoring station monitors ozone, NO_X, CO, PM_{10}, $PM_{2.5}$, and air toxics.

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 (2014 through 2018) collected at the Jefferson Avenue monitoring station for these pollutants and the ozone precursor NO_2. **Table 3.2-1** also shows monitoring data collected in 2018 at the Napa Valley College monitoring station starting in April. The table compares measured pollutant concentrations with the national and California ambient air quality standards (see **Section 3.2.2**).

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.

TABLE 3.2-1
AIR QUALITY DATA SUMMARY (2014–2018) FOR THE PROJECT AREA

Pollutant	State Standard	National Standard	Monitoring Data by Year					
			2014	2015	2016	2017	2018[a,b]	2018[c]
Ozone, Hourly								
Highest one-hour average, ppm	0.09	NA	0.074	0.079	0.080	**0.098**	0.047	0.083
Days over state standard			0	0	0	1	0	0
Ozone, Eight-hour								
Highest eight-hour average, ppm	0.070	0.070	0.066	0.069	0.067	**0.084**	0.043	0.069
Days over national standard			0	0	0	2	0	0
Days over state standard			0	0	0	2	0	0
Nitrogen Dioxide (NO_2)								
Highest 24-hour average, ppm	0.18	0.100	0.046	0.043	0.039	0.053	0.039	0.043
Estimated days over national standard			0	0	0	0	0	0
Estimated days over state standard			0	0	0	0	0	0
Annual average, ppm	0.03	0.053	0.007	0.007	0.007	0.007	–	–
Fine Particulate Matter ($PM_{2.5}$)								
Highest 24-hour average, µg/m^3	NA	35	29.9	**38.2**	24.3	**199.1**	30.2	117.9
Estimated days over national standard			0	1	0	13	–	–
Annual average, µg/m^3	12	12	12.0	10.6	8.5	13.7	–	–
Respirable Particulate Matter (PM_{10})								
State/national highest 24-hour average, µg/m^3	50	150	39.3/ 37.7	50.0/ 51.5	33.0/ 32.2	NA	–	25.5/ 26.0
Estimated days over national standard			0	0	0	NA	–	–
Estimated days over state standard			0	0	0	NA	–	–
Annual average, µg/m^3	20	NA	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.

[a] Air monitoring at the Napa station was discontinued in 2018; therefore, annual average statistics are not available.
[b] PM_{10} data were not collected at the Napa station in 2018.
[c] Air monitoring data at the Napa Valley College Station began on April 1, 2018, therefore, annual average statistics are not available.

SOURCES: BAAQMD 2017a; CARB 2020c

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 2020a).

The primary sources of GHG emissions in the United States are transportation (28.9 percent of GHG emissions in 2017), electricity production (27.5 percent), industry (22.2 percent), commercial and residential (11.6 percent), and agriculture (9.0 percent). Land use (trees in urban areas, agricultural uses, coastal wetlands) and forestry offset 11.1 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 2020a).

In 2016, California emitted approximately 424 million MT CO_2e of GHGs. Transportation was the source of 40 percent of the state's GHG emissions, followed by industrial at 21 percent, electricity generation at 15 percent, and commercial and residential sources at 10 percent. Recycling and waste, high global warming potential gases, and agriculture sources represent the remaining 14 percent (CARB 2019).

Table 3.2-2 lists California's GHG emissions by category from 2011 through 2017.

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

Emission Inventory Category	2011	2012	2013	2014	2015	2016	2017	
Transportation	159.68	159.44	158.14	160.03	164.63	169.38	169.86	40%
Electric Power	88.06	95.09	89.65	88.24	83.67	68.58	62.39	15%
Commercial and Residential	45.50	42.89	43.54	37.37	37.92	39.36	41.14	10%
Industrial	90.65	90.90	93.48	93.77	91.71	89.61	89.40	21%
Recycling and Waste	8.47	8.49	8.52	8.59	8.73	8.81	8.89	14%
High-GWP Gases	14.74	15.74	16.82	17.82	19.05	19.78	19.99	
Agriculture	35.28	36.42	34.93	36.03	34.65	33.84	32.42	
Total Gross Emissions	**442.38**	**448.97**	**445.08**	**441.85**	**440.36**	**429.36**	**424.10**	**100%**

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

SOURCE: CARB 2019

For the SFBAAB, the most recent GHG emissions inventory available is for the base year 2011. GHG emissions from the transportation sector represent the largest sources of the SFBAAB's GHG emissions, accounting for 39.7 percent of the 86.6 million MT CO_2e in 2011. The industrial and commercial sector was the second largest contributor, with 35.7 percent of total GHG emissions. Electricity/co-generation sources account for about 14 percent of the SFBAAB's GHG emissions, followed by residential fuel usage at about 7.7 percent. Off-road equipment and agricultural/farming sources currently account for approximately 1.5 percent each of the SFBAAB's total 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 were from energy used 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 Napa 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 State CEQA Guidelines recommend considering the odor impacts of any new odor sources proposed near existing receptors, and for any new sensitive receptors 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 land uses are more sensitive than others to air pollutants. BAAQMD specifically defines "sensitive receptors" as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollution, such as children, the elderly, and people with illnesses.

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 home, 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 project vicinity is agricultural; scattered residences are present. The nearest sensitive receptor is a residential property located more than 3,000 feet west of the nearest vineyard block where construction activities would take place. The closest residential community that may contain schools, hospitals, and/or convalescent homes is the town of Yountville, which is located more than 1 mile 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 controlling air pollutant emissions, and thus, general air quality. EPA implements the programs established by the federal Clean Air Act; for example, EPA establishes and reviews the national ambient air quality standards (NAAQS) and reviews state implementation plans (SIPs). However, EPA has delegated implementation of 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 (CAAQS), develops and manages California's SIPs, secures approval of these plans from EPA, and identifies TACs. CARB also regulates mobile sources of emissions in California, such as emissions from construction equipment, trucks, and automobiles. CARB oversees the activities of air quality management districts, which are organized at the county or regional level. BAAQMD is the regional agency with primary responsibility for regulating stationary emissions sources within the SFBAAB and for preparing the air quality plans required under the federal Clean Air Act and the California Clean Air Act.

Clean Air Act

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

EPA has developed NAAQS for six criteria air pollutants: ozone, CO, NO_2, SO_2, PM (including PM_{10} and $PM_{2.5}$), and lead. California has CAAQS for ozone, CO, NO_2, SO_2, PM, and lead, as well as sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. The federal and state ambient air quality standards are intended to protect public health and welfare; 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 that are somewhat above the ambient air quality standards before adverse health effects are observed.

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

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 NAAQS. The California Clean Air Act, patterned after the federal Clean Air Act, requires that areas be designated as attainment or nonattainment for the CAAQS. 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 ruled 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 air pollutants from any class 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).

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 2020b). 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.

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

Regulations for Mobile Sources of Air Pollutants

The following air quality regulations apply to mobile sources and are directly relevant to the project. Idling of commercial vehicles with a gross vehicular weight rating of 10,000 pounds or greater and off-road equipment over 25 horsepower is limited to a maximum of two minutes at any location (California Code of Regulations Title 13, Section 2449 [13 CCR Section 2449]). This restriction does not apply when vehicles remain motionless during traffic or when vehicles are queuing. Off-road equipment engines shall not idle for longer than five minutes (13 CCR Section 2449[d][3]).

Exceptions to this rule include 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 GHG 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 establishes GHG emissions goals only and does not include any specific requirements that pertain to the proposed project. However, future actions taken by the state to implement these goals may affect the proposed project, depending on the specific 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 the state's efforts to reduce GHG emissions. The law requires CARB to do all of the following:

- 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.
- 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 outlined 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 identified 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 relied on the requirements of Senate Bill (SB) 375 (discussed below) to implement the carbon emissions reductions anticipated from land use decisions.

AB 32 required 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) and adopted the most recent update on December 14, 2017.

The 2017 Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below, and proposes a 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 Update focuses on programs including Cap and Trade; the Low Carbon Fuel Standard; cleaner cars, trucks, and freight movement; renewable energy; and reduced methane emissions from agriculture and waste (CARB 2017).

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 by 40 percent from 2020 levels by 2030. The 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 Update 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 2017).

Senate Bill 97

In 2007, the California Legislature enacted SB 97, which required that the State CEQA Guidelines be amended to incorporate the analysis and mitigation of 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 California 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.

The 2017 Scoping Plan Update satisfies the requirement in Executive Order B-30-15 for CARB to update the Scoping Plan to incorporate the 2030 GHG emissions reduction target.

LOCAL REGULATIONS

Bay Area Air Quality Management District

The SFBAAB is made up of Napa, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco, and Marin Counties, as well as portions of Sonoma and Solano Counties. 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 the federal and state air quality standards. Specifically, BAAQMD monitors ambient levels of air pollutants 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.

BAAQMD CEQA Air Quality Guidelines

BAAQMD's *CEQA Air Quality Guidelines* (BAAQMD CEQA Guidelines) are a guidance document that provide lead agencies, consultants, and project proponents with uniform procedures for assessing air quality impacts and preparing the air quality sections of environmental documents for projects and plans subject to CEQA. The guidelines were first adopted in December 1999; they were updated in 2011 (BAAQMD 2011) and most recently in May 2017 (BAAQMD 2017a).

The 2017 BAAQMD CEQA Guidelines continue to provide direction on recommended analysis methodologies. However, they no longer recommend quantitative significance thresholds, instead recommending that lead agencies develop their own thresholds of significance. As possibilities, BAAQMD offers thresholds from the previous (1999) BAAQMD CEQA Guidelines; presents a table of thresholds promulgated by other California air districts; and refers to guidance from the California Air Pollution Control Officers Association and CARB. Lead agencies may also reference the BAAQMD CEQA Thresholds Options and Justification Report developed by the BAAQMD staff in 2009. This latter option provides lead agencies with justification for continuing to rely on BAAQMD's 2011 thresholds, which are used as the significance thresholds for the analysis presented below.

Bay Area 2017 Clean Air Plan

The federal Clean Air Act and the California Clean Air Act require that plans be developed for areas designated as nonattainment (with the exception of areas designated as nonattainment for the state PM_{10} standard). In April 2017, BAAQMD adopted the 2017 Clean Air Plan (BAAQMD 2017b). 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 combustion of fossil fuels, 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 state air quality planning requirements codified 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 Clean Air Plan measures intended to improve public health, air quality, and the global climate. The regulatory process involves technical research, public meetings allowing input by affected industries and communities, engagement by other stakeholders, 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 very 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 submitting 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).

BAAQMD Regulation 6, Rule 1, limits the quantity of particulate matter in the atmosphere by establishing limitations on emissions rates, emissions concentrations, and visible emissions and opacity. Blasting operations are partially exempt from this rule's requirements if such operations are conducted by certified blasters who have met the blasting ordinances and licensing and permitting requirements established by the California Department of Industrial Relations, Division of Occupational Safety and Health, or other applicable local permitting authority.

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 pollutants, GHG emissions, clean energy generation, and similar issues. The following goals and policies 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: …

  b) 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

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, one of the practices included in this checklist, 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 comprising over 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 would be significant if the proposed project would result in 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. BAAQMD has identified significance thresholds in its CEQA Guidelines, which are used in the analysis below.

BAAQMD Significance Thresholds

To evaluate the impacts of project construction, estimated construction emissions are compared to BAAQMD's 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. The BAAQMD CEQA Guidelines provide feasible control measures for fugitive dust emissions during construction. With these measures implemented, BAAQMD considers the impact of construction-related fugitive dust emissions to be less than significant.

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}.

Section 15064.4(b)(3) of the State CEQA Guidelines specifies that when determining the significance of a project's impacts, the lead agency may consider the project's consistency with the state's long-term climate goals or strategies. Substantial evidence must support the agency's analysis of how those goals or strategies address the project's incremental contribution to climate change, and its conclusion that the project's incremental contribution is consistent with those plans, goals, or strategies. Because the County has not yet adopted the Final Draft CAP and the CAP does not provide significance thresholds, this analysis uses BAAQMD's GHG emissions thresholds as the basis for determining the significance level of impacts during project operation.

Neither the final draft CAP nor BAAQMD provide numerical construction thresholds for GHG emissions. However, BAAQMD encourages the lead agency to do all of the following (BAAQMD 2017c):

- 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 BAAQMD's 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. The project's construction emissions were quantified and compared to significance thresholds recommended by BAAQMD. Emissions from construction equipment and vehicles were estimated using the California Emissions Estimator Model

(CalEEMod, Version 2016.3.2), considering project data provided by the Applicant regarding construction duration; equipment types and usage level; and the number of 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 operations and maintenance. Emissions from the operation of farming equipment were also estimated using CalEEMod. Emissions from the proposed generator were estimated outside CalEEMod, using emissions factors based on CARB's 2011 Final Regulation Order for the Air Toxics Control Measure for stationary engines.

For 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 is 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 onsite 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 offsite from energy production and water conveyance as a result of the project's energy use and water consumption. BAAQMD has provided guidance on detailed methods for modeling GHG emissions from proposed projects (BAAQMD 2017c). Construction-related and operational GHG emissions were estimated using CalEEMod.

The proposed project's GHG emissions were analyzed in the context of the goals of AB 32 and the 2017 Scoping Plan Update, SB 32, 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 the climate (BAAQMD 2017c; CAPCOA 2008). Therefore, the evaluation of the proposed project's GHG impacts also evaluates whether the 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.	Less than Significant
3.2-6: Construction and operation of the proposed project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.	Less than Significant

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

SOURCE: Data compiled by Environmental Science Associates in March 2020

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 the climate. The 2017 Clean Air Plan includes a wide range of control measures and actions to reduce combustion-related activities, decrease combustion of fossil fuels, improve energy efficiency, and reduce emissions of potent GHGs. Several measures address the reduction of multiple pollutants such as 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 is considered consistent with the Clean Air Plan.

The 2017 Clean Air Plan contains 85 control measures addressing 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 control measures intended 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 emit ozone precursors and PM in the form of fugitive dust and exhaust (e.g., from vehicle and equipment tailpipes). Project construction would take place in one phase, from April 1 to September 15 (approximately 5.5 months). This analysis assumes that construction would occur in 2021 and that the first year of operation would be 2022.

Construction at the project site would occur during the day, typically from 6 a.m. to 6 p.m., six days a week, over approximately 144 workdays. The maximum area disturbed on any day would be limited to 0.8 acre per day. The project has been designed to balance cut and fill on the project site, thereby reducing haul truck trips. The vegetation removed would be burned onsite 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.

The following project construction activities would emit air 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 onsite construction equipment

These activities would temporarily emit dust, fumes, equipment exhaust, and other air pollutants. Emissions of ozone precursors and exhaust PM result primarily from fuel combustion by both on-road vehicles and off-road vehicles and equipment. The 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 can result in a significant impact on air quality, particularly when construction extends over a long time period or when sensitive receptors are located nearby. 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 locally. PM emitted by construction activities can cause adverse health effects 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 exhaust by vehicles and equipment. 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 the project's construction schedule.

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, NOx, PM_{10} and $PM_{2.5}$, as estimated using CalEEMod. Consistent with BAAQMD guidelines, only the exhaust portion of PM emissions has been quantified, as disclosed in **Table 3.2-5**.

1 See page 3.2-3 for a definition and discussion of particulate matter.

TABLE 3.2-5
AVERAGE DAILY CONSTRUCTION EMISSIONS

	Construction Emissions (pounds/day)			
	ROG	**NO_X**	**Exhaust PM_{10}**	**Exhaust $PM_{2.5}$**
Project Average—Uncontrolled	8.8	**87.7**	3.7	3.4
BAAQMD Threshold	54	54	82	54
Exceed Threshold?	No	**Yes**	No	No
Project Average—Mitigated with Tier 4 Equipment	1.8	7.9	0.2	0.2
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

SOURCE: Data compiled by Environmental Science Associates in March 2020 (see **Appendix C**)

The table shows daily emissions of criteria air pollutants, as averaged over the entire duration of construction (approximately 144 workdays over 5.5 months), compared to the BAAQMD significance thresholds. As shown in **Table 3.2-5**, uncontrolled emissions from project construction would exceed BAAQMD's significance threshold for NO_X. Emissions of other pollutants would be less than their respective significance thresholds.

In addition, regardless of whether a project's emissions exceed BAAQMD's 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

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 generate emissions from the worker trips as well as the operation of the estimated four tractor trailers required to maintain and operate the vineyards. The approximate number of workers needed would vary between 15 to 34 throughout the year (Table 2-3). During the busiest season, the harvest season, workers would carpool to the project site generating on an average 24 one-way trips per day. Approximately two trucks per day would be needed over the harvest season to haul the harvested grapes from the vineyard. In addition to emissions from farming equipment and on-road trips, the proposed project would also include a new 75 kilowatt generator such as a portable CAT PowerPro Tier 4 generator or equivalent. The generator is anticipated to be used for approximately 714 hours per year to draw water from the groundwater wells onsite to irrigate the vineyards.

Table 3.2-6 presents average daily emissions (as averaged over a year) from the proposed project's operational activities. 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
Off-Road Equipment	0.8	7.7	0.4	0.3
Diesel Generator	0.1	1.5	<0.1	<0.1
Project Total	0.9	9.3	0.5	0.4
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

SOURCE: Data compiled by Environmental Science Associates in March 2020 (see **Appendix C**)

Impact Conclusion

NO_X emissions during project construction would exceed BAAQMD's significance threshold (**Table 3.2-5**). 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's significance thresholds (**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 4 Final standards to reduce emissions of NO_X. Before initiation of the project, and annually thereafter until vineyard construction activities are complete, the permittee shall provide Napa County with a "Project Construction Equipment List" documenting compliance with this mitigation measure. The owner/permittee shall also maintain a Horsepower-Hour Log of the monthly horsepower-hours of construction equipment, and shall provide such logs at the County's request, to further document compliance. Enforcement of this mitigation measure will follow and be consistent with the Conservation Regulations (Napa County Code Section 18.108.140, Security, Violations, and Penalties).
>
> **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 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.

Mitigation Measure 3.2-1c: Blasting operations shall be conducted as specified below:

(1) Year-round, Monday through Friday only from 10 a.m. to 3 p.m.: Blasting shall not occur outside of these hours, or on the weekends, or on any major holidays.

(2) Blasting shall be prohibited during high wind conditions. High wind conditions are deemed to occur when the 2-minute average wind speed exceeds 20 miles per hour.

(3) The owner/permittee shall measure and record wind speeds continually throughout the day during blast events to ensure compliance. Wind speed measurements, including average wind speeds shall be included in blasting logs.

(4) The owner/permittee shall notify via email Napa County, and any agencies, businesses, and local residents requiring or requesting such notice via email, at least 48 hours in advance of any blasting events.

(5) The owner/permittee shall record each blast event and maintain blasting logs for the duration of vineyard development activities. Blasting logs/records shall be submitted to Napa County upon request.

Impact Significance after Mitigation: 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 4 equipment meeting more stringent emission standards than the average fleet. Implementing the BAAQMD-required basic control

measures listed in **Mitigation Measures 3.2-1b** and **3.2-1c** would reduce the proposed project's potential construction-related fugitive dust impacts to a less-than-significant level. 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, with mitigation, 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, with implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project acreage by approximately 25.75 gross acres, NO_X and PM emissions would be further reduced during project construction and operation.

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 in size 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 2017c). 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

The proposed project's operational emissions would be below the respective BAAQMD thresholds. However, as shown in **Table 3.2-5**, unmitigated NO_X emissions from project construction would exceed the relevant BAAQMD significance threshold. Without implementation of BAAQMD's Basic Construction Mitigation Measures to address fugitive dust control, impacts from fugitive dust emissions would also be potentially significant. Therefore, without mitigation, the proposed project's contribution to a significant cumulative air quality impact would also be **significant**.

As discussed above in Impact 3.2-1, implementation of **Mitigation Measures 3.2-1a and 3.2-1b** would reduce the project's NO_X and PM emissions (or estimated emissions) to a less-than-significant level and would not exceed the project-level thresholds for criteria air pollutants.

Therefore, under the BAAQMD CEQA Guidelines, the proposed project would not result in a cumulatively considerable contribution to a regional air quality impact during construction or operation.

> **Impact Significance after Mitigation:** Implementing **Mitigation Measures 3.2-1a and 3.2-1b** would reduce this impact to a **less-than-significant** level by requiring that the project use construction equipment meeting the more stringent Tier 4 standards and implement all of BAAQMD's recommended basic control measures during construction to minimize fugitive dust emissions.
>
> With mitigation, the proposed project's estimated emissions would not exceed the project-level thresholds for criteria air pollutants. Therefore, under the BAAQMD CEQA Guidelines, the proposed project would not result in a cumulatively considerable contribution to a regional air quality impact during construction or operation.
>
> Implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project acreage by approximately 25.75 gross acres, would further reduce the proposed project's estimated emissions.

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 short-term DPM emissions 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 TAC, 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 occur for approximately 5.5 months. DPM exposure from these activities would be short term and would also vary spatially as different areas of the project site are developed. Therefore, a given receptor would not be exposed to emissions throughout the construction period. Average daily exhaust PM_{10} emissions (a surrogate for DPM emissions) during project construction would be less than

5 pounds per day (**Table 3.2-5**). Most importantly, no sensitive receptors are located within 1,000 feet of the project site. BAAQMD recommends evaluating health risks when sensitive receptors are located within 1,000 feet of the source (BAAQMD 2017c). In this case, the nearest receptor is approximately 3,000 feet from the project site boundary. Given the long distance separating construction activities from the nearest receptors and the short duration of exposure, DPM emissions generated during construction would not result in significant health risk impacts.

Operation

During operation of the proposed project, the diesel-fueled generator onsite would emit DPM while powering the pumps used to draw water from the groundwater wells to irrigate the vineyards. The generator would be subject to BAAQMD permitting requirements under Regulation 2; a health risk assessment would be required, to ensure that emissions from operation of the generator would not pose a significant health risk. Given the large distance to the nearest receptors and the use of engines meeting the Tier 4 standards, health risks are expected to be less than significant. During the 8-week harvest period, approximately two one-way truck trips per day would occur to haul the harvested grapes to the processing facility. 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 and hence daily operational worker trips would not generate DPM emissions.

Criteria Air Pollutants

The proposed project would emit criteria pollutants during both construction and operation (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 involving meteorology, the presence of sunlight, seasonal effects, 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 mass of precursor pollutants emitted that affects human health, but the concentration of the resulting ozone or particulate matter.

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* (also known as the *Friant Ranch Case*) (SCAQMD 2015; SJVAPCD 2015), the air districts' 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 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, with mitigation, neither construction nor operation of the proposed project would exceed the BAAQMD's mass emissions thresholds for ROG and NO_X emissions. 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

Because of the large distance (approximately 3,000 feet) separating construction and operational activities from the nearest sensitive receptors, the relatively short duration of exposure during project construction compared to the 30-year exposure used in health risk assessments, and the use of engines meeting the Tier 4 standards, the health risk impacts from exposure to TACs, particularly DPM emissions, would be **less than significant**. 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 in excess of health-protective levels.

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 result in temporary 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 few and far away.

Operation

The proposed project would not create major sources of odor during operation. Operational activities would include applying sulfur to the vines to prevent mildew. This work would take place approximately 12 times during the year, at night. Although sulfur is an odorous compound, the odor impact of applying sulfur to the vines is expected to be localized, not carrying over to sensitive receptors approximately 3,000 feet away. These odors would be seasonal (June through August) and would occur at substantial distances from sensitive receptors, allowing the pollutants and odors to dilute.

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**.

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.

Construction

Combustion of fossil fuels during construction of the proposed project would emit GHGs such as CO_2, methane, and nitrous oxide. Direct emissions of GHGs would be generated by the operation of construction equipment, including equipment used for planting and installation of the irrigation system; and by vehicle trips to transport workers, materials, and equipment. Indirect GHG emissions would be associated with the electricity needed to convey the water used for dust suppression and soil compaction activities during construction.

In addition, the proposed project would result in the loss of carbon sequestration and carbon storage as a result of tree removal, tillage of soil, and other such activities. *Carbon sequestration* refers to the removal of carbon (in the form of carbon dioxide) from the atmosphere through the process of photosynthesis. *Carbon storage* refers to the amount of carbon bound up in woody material above and below ground. The change in carbon sequestration is reported as an annual rate, whereas the change in carbon storage is reported as a one-time loss or gain.

CO_2e emissions from the operation of construction equipment and vehicle trips over the 5.5-month construction period were estimated using CalEEMod. **Table 3.2-7** lists construction emissions for the proposed project from both onsite and offsite emission sources. **Appendix C** presents worksheets showing the calculations.

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

Source	CO_2e (metric tons per year)
Construction Equipment and Vehicles	890.6
Water Use for Dust Suppression	0.6
Project Construction Total	891.2
Amortized Emissions over 30-Year Project Life	29.7

NOTES: CO_2e = carbon dioxide equivalents

SOURCE: Data compiled by Environmental Science Associates in 2020 (see **Appendix C**)

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. Therefore, this analysis used the South Coast Air Quality Management District's recommendation: amortize the total GHG emissions generated over the construction period over the life of the project (typically 30 years) that will then be considered with the operational GHG emissions in the comparison to the operational significance threshold (SCAQMD 2008). The proposed project's total construction emissions, amortized over a project life of 30 years, would be approximately 29.7 MT CO_2e per year. This is combined with the operational emissions listed below for comparison with the GHG threshold.

Operation

During operation of the proposed project, the primary sources of GHG emissions would be the use of motor vehicles (worker commute trips and truck trips to haul harvested grapes) and the operation of farming equipment such as diesel tractors with trailers and the proposed generator.

In addition, converting existing land uses into vineyard would result in a one-time change in carbon storage, as well as changes to carbon sequestration over the 30-year project lifetime from the removal of existing vegetation and planting of new vineyards. 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 also causes the release of soil carbon. This analysis assumes that removed vegetation would be burned onsite. 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 vineyard 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 (20,859 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 proposed project's 30-year lifetime (11,961 MT CO_2e).

The proposed project could result in a one-time emissions sink of up to 7,660 MT CO_2e (4,140 minus 11,800). Annual ongoing emissions associated with the loss of sequestration are estimated to be 552 MT CO_{2e} per year (557 minus 5). Thus, the proposed project's total 30-year lifetime emissions would be 8,899 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 297 MT CO_2e per year (8,899 divided by 30).

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, operation of the diesel generator, and the change in CO_2e emissions from changes to carbon storage and sequestration associated with the conversion of existing land to vineyards. The table also includes the amortized construction emissions calculated in **Table 3.2-7**.

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	4,140
Carbon Sequestration (annual)	557
30-Year Lifetime Emissions	20,859
Carbon Gains—New Land Use Types [a]	
Carbon Storage	-11,800
Carbon Sequestration (annual)	-5
30-Year Lifetime Emissions	-11,961
Total Project Lifetime Emissions	**8,899**
Total Project Annual Emissions	**297**

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 2020 (see **Appendix C**)

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

Source	CO_2e (metric tons per year)
Mobile Sources	23
Off-Road Farming Equipment	271
Diesel Generator	28
Net Change in Carbon Storage and Sequestration	297
Amortized Construction Emissions	30
Total	**649**
BAAQMD Operational GHG Threshold	**1,100**
Exceeds Threshold?	**No**

NOTES: BAAQMD = Bay Area Air Quality Management District; CO_2e = carbon dioxide equivalents; GHG = greenhouse gas

SOURCE: Data compiled by Environmental Science Associates in 2020

When the proposed project's operational emissions are combined with the amortized annual construction emissions, total project emissions would be less than BAAQMD's operational GHG threshold of 1,100 MT CO_2e for land use projects.

Impact Conclusion

Napa County and BAAQMD do not have an adopted 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, combined with the project's operational emissions (including changes in carbon stock/storage and sequestration resulting from project-related land use changes), would not exceed BAAQMD's operational threshold of 1,100 MT CO_2e per year for land use projects other than stationary sources (Table 3.2-9). This impact would be **less than significant**.

Additionally, implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project acreage by approximately 25.75 gross acres, would further reduce emissions and this impact would remain less than significant.

Mitigation Measure: None required.

Impact 3.2-6: Construction and operation of the proposed project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

To demonstrate how a local jurisdiction can achieve its long-term GHG goals at the community plan level, the 2017 Scoping Plan Update recommends developing a geographically specific GHG reduction plan (i.e., climate action plan). This plan must be consistent with the requirements of State CEQA Guidelines Section 15183.5(b). This demonstrates how future projects would be consistent with the state's 2030 GHG reduction target mandated by SB 32. However, although the County has prepared a CAP, it has not yet been adopted. When a

community-wide GHG reduction plan is not in place, CARB recommends "that projects incorporate design features and GHG reduction measures, to the degree feasible, to minimize GHG emissions" (CARB 2017:101).

Several beneficial aspects of the proposed project's design would reduce impacts related to climate change. Construction equipment would be kept onsite during construction, which would minimize truck trips; cut and fill onsite would be balanced, thereby avoiding truck trips; engine idling would be minimized; equipment would be maintained properly; and a cover crop would be established in all disturbed areas. These practices, which would reduce GHG emissions, are not readily quantifiable. In addition, water from groundwater wells onsite 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. Implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project acreage by approximately 25.75 gross acres, would further reduce GHG emissions from the proposed project.

As noted in **Section 2.6, *Vineyard Operations and Maintenance***, the proposed project would implement an integrated pest management plan, which would aim to promote sustainable agricultural practices. The proposed project also includes a permanent no-till cover crop for the vineyard blocks that would be maintained between 75 and 85 percent density; this 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.

The proposed project would be consistent with key state plans and regulatory requirements referenced in the 2017 Scoping Plan Update designed to reduce statewide emissions. According to the 2017 Scoping Plan Update, the reductions needed to achieve the 2030 target are expected to be achieved by increasing the Renewables Portfolio Standard to 50 percent of the state's electricity by 2030; greatly increasing the fuel economy of vehicles and the number of zero-emission or hybrid vehicles; reducing the rate of growth in vehicle miles traveled; supporting high-speed rail and other alternative transportation options; and increasing the use of high-efficiency appliances, water heaters, and heating/ventilation/air conditioning systems.

The proposed project would not impede implementation of these potential reduction strategies identified by CARB, and it would benefit from statewide and utility-provider efforts toward increasing the portion of electricity provided from renewable resources.[2] The project would also benefit from statewide efforts toward increasing the fuel economy standards of vehicles and reducing the carbon content of fuels. For these reasons, the proposed project's post-2020 emissions trajectory is expected to follow a declining trend consistent with the objectives of the 2017 Scoping Plan Update.

[2] With the passage of SB 100, California's Renewables Portfolio Standard has been increased over what is prescribed by the 2017 Scoping Plan Update, requiring retail sellers and local publicly owned electric utilities to procure eligible renewable electricity for 44 percent of retail sales by the end of 2024, 52 percent by the end of 2027, and 60 percent by the end of 2030; and requires that CARB should plan for 100 percent eligible renewable energy resources and zero-carbon resources by the end of 2045.

Executive Order S-3-05 established a goal of reducing the state's GHG emissions to 80 percent below the 1990 level by the year 2050. As described above, implementing the 2017 Scoping Plan Update would decrease emissions through implementation of the Renewables Portfolio Standard and use of more fuel-efficient vehicles, which would also result in project emissions decreasing over time toward the year 2050.

For these reasons described above, the proposed project would not conflict with the attainment of near-term and long-term plans, policies, and regulations created to achieve GHG reductions.

Impact Conclusion

The proposed project's construction-related and operational GHG emissions would be less than significant, and the project includes several components to reduce emissions consistent with the goals of the County's CAP and the 2017 Scoping Plan Update. 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**.

Mitigation Measure: None required.

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. References cited in this section are included in **Chapter 7, *References***.

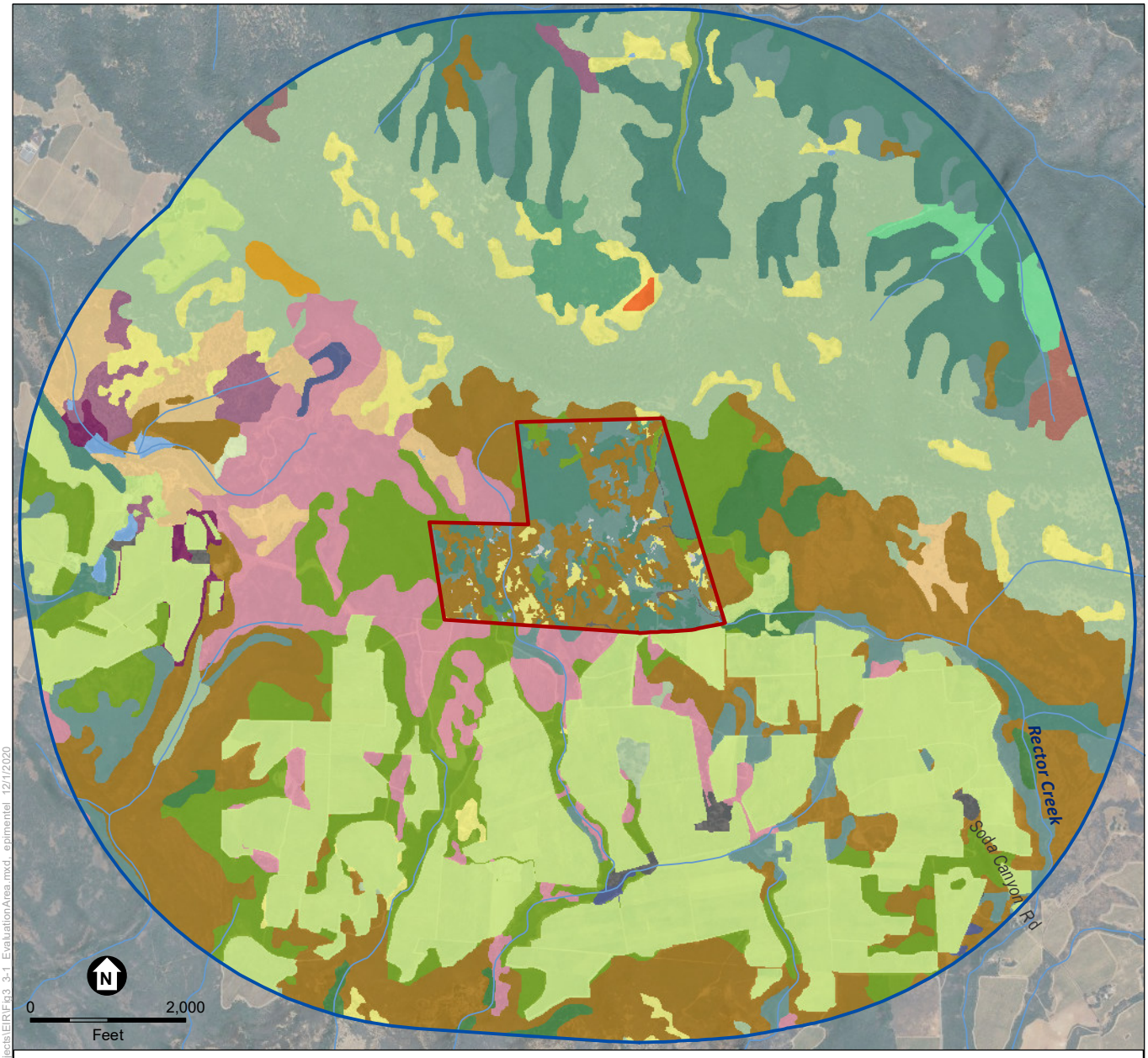
No comment letters regarding biological resources were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation comment letters.

This section uses the following site definitions:

- The *development area* occupies approximately 116.22 gross acres, including 91.31 net acres of proposed vineyard blocks (referred to here as the "vineyard area") and 24.90 acres of associated ground disturbance. The development area includes all of the proposed clearing limits (Figure 2-3).
- The *project site* consists of 170.15 acres (Figure 2-3).
- The *evaluation area* includes a 1-mile radius around the 170.15-acre project site (**Figure 3.3-1**).
- The *survey area* occupies approximately 322 acres: the 116.22-acre development area plus a 500-foot radius around the development area.

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:

- Yountville U.S. Geological Survey (USGS) 7.5-minute quadrangle map (USGS 1951)
- Historic and current aerial imagery dating from 1993 to 2020 (Google Earth 2020)
- Soil maps from the U.S. Natural Resources Conservation Service (NRCS 2020)
- *Napa County Baseline Data Report* (Napa County 2005)
- A fine-scale vegetation map for Napa County (CDFW 2015)
- The California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) list of special-status species documented on the Yountville quadrangle and eight surrounding quadrangles (CDFW 2020)
- The California Native Plant Society (CNPS) online database of special-status plant species documented on the Yountville quadrangle and eight surrounding quadrangles (CNPS 2020)
- A U.S. Fish and Wildlife Service (USFWS) list of species that may occur in the vicinity of the project site (USFWS 2020)
- *2018 Update of the Stagecoach North Vineyard Project Biological Resources Survey* (LSA 2018) (**Appendix D**)
- *2019 Stagecoach North ECPA #P18-00446 Biological Resources Memorandum* (ESA 2019) (**Appendix D**)



Project Site
1-mile Evaluation Area

Land Cover Type

- (*Carex* spp. - *Juncus* spp - Wet Meadow Grasses) NFD Super Alliance
- Agriculture
- Black Oak Alliance
- Blue Oak Alliance
- California Annual Grasslands
- California Bay - Madrone - Coast Live Oak - (Black Oak Big-Leaf Maple) NFD Super Alliance
- Canyon Live Oak Alliance
- Chamise - Wedgeleaf Ceanothus Alliance
- Chamise Alliance
- Coast Live Oak - Blue Oak - (Foothill Pine) NFD Association
- Coast Live Oak Alliance
- Leather Oak - California Bay - *Rhamnus* spp. Mesic Serpentine NFD Alliance
- Mixed Manzanita - (Interior Live Oak - California Bay - Chamise) West County NFD Alliance
- Mixed Oak Alliance
- Sclerophyllous Shrubland Formation
- Scrub Interior Live Oak - Scrub Oak - (California Bay - Flowering Ash - Birch Leaf Mountain Mahogany - Toyon - California Buckeye) Mesic East County NFD Super Alliance
- Upland Annual Grasslands and Forbs Formation
- White Alder (Mixed Willow - California Bay - Big Leaf Maple) Riparian Forest NFD Association
- White Leaf Manzanita - Leather Oak - (Chamise - *Ceanothus* spp.) Xeric Serpentine NFD Super Alliance
- Water
- Rock Outcrop
- Urban or Built-up
- Vacant
- Unknown

SOURCE: Napa County, 2018; LSA, 2018; PPI Engineering, 2019; ESA, 2019

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Figure 3.3-1
Evaluation Area

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 oceanic 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. Elevations range from 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 climate variation and topographic diversity.

EVALUATION AREA

The project site is located in the mountains flanking the east side of California's Napa Valley approximately 5 miles northeast of Yountville (Figures 2-1 and 2-2). The project site lies within Section 9 of Township 7 North, Range 4 West, Mount Diablo Base and Meridian, on the Yountville 7.5-minute topographic quadrangle. The site is in the Napa County Eastern Mountains Evaluation Area as identified by Map 4-1 in the Napa County Baseline Data Report (Napa County 2005). The project site is approximately 170.15 acres, with elevations ranging from approximately 1,660 feet to 2,140 feet above mean sea level, and is within the Rector Reservoir watershed. Access to the project site is via Soda Canyon Road off Silverado Trail.

The evaluation area includes natural habitats within 1 mile of the project site. Natural habitats are grouped by mixed oak woodland, annual grassland, chamise/scrub, human-altered/other landforms, and riparian and water. Some biological alliances that contain oaks are categorized under chamise/scrub because their characteristics are more closely related to the chamise/ scrub habitat. **Table 3.3-1** lists the acreages of biological communities in the development area, on the project site, in the evaluation area, and in Napa County. **Figure 3.3-1** depicts natural habitats in the evaluation area.

The following mixed oak woodland vegetation alliances are present in the evaluation area:

- Black oak alliance
- Blue oak alliance
- California bay–madrone–coast live oak–(black oak big-leaf maple) No Formal Description (NFD) super alliance
- Canyon live oak alliance
- Coast live oak alliance
- Coast live oak–blue oak–(foothill pine) NFD association
- Mixed oak alliance

TABLE 3.3-1
NATURAL BIOLOGICAL COMMUNITIES BY ACREAGES IN THE DEVELOPMENT AREA, ON THE PROJECT SITE, IN THE EVALUATION AREA, AND IN NAPA COUNTY

Terrestrial Biological Community	Acreage[1] in the Development Area[2]	Acreage on the Project Site[2]	Acreage in the Evaluation Area[3]	Acreage in Napa County[5]
Mixed Oak Woodland				
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)[4]	0.75	0.79	29.92	2,509.19
Blue Oak Alliance	–	–	32.30	43,603.94
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	31.63	50.24	344.48	18,114.77
Canyon Live Oak Alliance	–	–	7.03	658.30
Coast Live Oak–Blue Oak–(Foothill Pine) NFD Association	–	–	94.27	26,087.47
Coast Live Oak Alliance	–	–	46.24	12,824.12
Mixed Oak Alliance	–	–	776.80	28,303.08
Mixed Oak Woodland Total	***32.38***	***51.03***	***1,331.04***	***132,100.87***
Annual Grassland				
California Annual Grasslands Alliance	6.56	8.82	122.06	36,218.28
Upland Annual Grasslands and Forbs Formation	–	–	2.26	9,991.89
Annual Grassland Total	***6.56***	***8.82***	***124.32***	***46,210.17***
Chamise/Scrub				
Chamise-Wedgeleaf Ceanothus Alliance	–	–	23.61	7,090.74
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	48.85	71.58	599.09	30,559.71
Leather Oak–California Bay–*Rhamnus* ssp. Mesic Serpentine NFD Alliance	–	–	4.13	4,390.70
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	3.77	5.74	283.06	7,880.85
Sclerophyllous Shrubland Formation	–	–	224.21	3,091.36
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	22.55	29.86	160.21	10,934.15
White Leaf Manzanita–Leather Oak–(Chamise–*Ceanothus* spp.) Xeric Serpentine NFD Super Alliance	–	–	12.98	7,983.30
Chamise/Scrub Total	***75.17***	***107.18***	***1,307.29***	***71,930.81***
Human-Altered/Other				
Agriculture	–	–	759.01	70,018.95
Unknown	–	–	7.05	1,144.49
Urban or Built-up (Roads and Graded Areas)	1.02	1.52	10.53	28,772.92
Vacant	–	–	9.51	1,201.21
Rock Outcrop	1.09	1.60	1.60	1,671.63
Human-Altered Total	***2.11***	***3.12***	***787.70***	***102,809.20***

TABLE 3.3-1
NATURAL BIOLOGICAL COMMUNITIES BY ACREAGES IN THE DEVELOPMENT AREA, ON THE PROJECT SITE, IN THE EVALUATION AREA, AND IN NAPA COUNTY

Terrestrial Biological Community	Acreage[1] in the Development Area[2]	Acreage on the Project Site[2]	Acreage in the Evaluation Area[3]	Acreage in Napa County[5]
Riparian and Water				
(*Carex* spp.–*Juncus* spp.–Wet Meadow Grasses) NFD Super Alliance	–		2.07	271.95
White Alder (Mixed Willow–California Bay–Big Leaf Maple) Riparian Forest NFD Association	–		4.23	966.68
Water	–		7.03	31,610.09
Riparian and Water Total	**–**	**–**	***13.33***	**32,848.72**
Biological Community Total	**116.22**	**170.15**	**3,563.68**	**385,899.77**

NOTES:
GIS = geographic information system; 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 The biological communities in the development area and project site are based on ground-level habitat mapping, as documented in LSA's 2018 report.
3 The biological communities in the evaluation area were calculated as follows: The vegetation alliance identified by Napa County (2005) was used to identify biological communities within a 1-mile radius around the project site. The biological communities on the project site that were mapped by Napa County (2005) were clipped out and omitted from the acreages. The biological communities on the project site that were identified by LSA (2018) were added to the acreages in the evaluation area.
4 The biological communities listed in parentheses are the land cover types identified in the LSA (2018) report, which correspond to Napa County's 2005 data.
5 The evaluation area and the Napa County acreages were obtained from Napa County's 2005 GIS data.

SOURCES: LSA 2018; ESA 2019; Napa County 2005

Annual grassland vegetation alliances include California annual grasslands alliance and upland annual grasslands and forbs formation.

The following chamise/scrub vegetation alliances are present in the evaluation area:

- Chamise-wedgeleaf ceanothus alliance
- Chamise alliance
- Mixed manzanita–(interior live oak–California bay–chamise) west county NFD alliance
- Leather oak–California bay–*Rhamnus* ssp. mesic serpentine NFD alliance
- Sclerophyllous shrubland formation
- 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

Other human-altered habitat types and other land types in the evaluation area include agriculture, unknown, urban or built-up, vacant, and rock outcrop.

Riparian vegetation alliances include the following:

- *Carex* ssp.–*Juncus* spp. wet meadow grasses NFD super alliance
- White alder (mixed willow–California bay–big leaf maple) riparian forest NFD association

Water in the evaluation area includes wetlands, drainages (streams), and aquatic habitat (reservoirs/lakes/marsh).

BIOLOGICAL COMMUNITIES ON THE PROJECT SITE

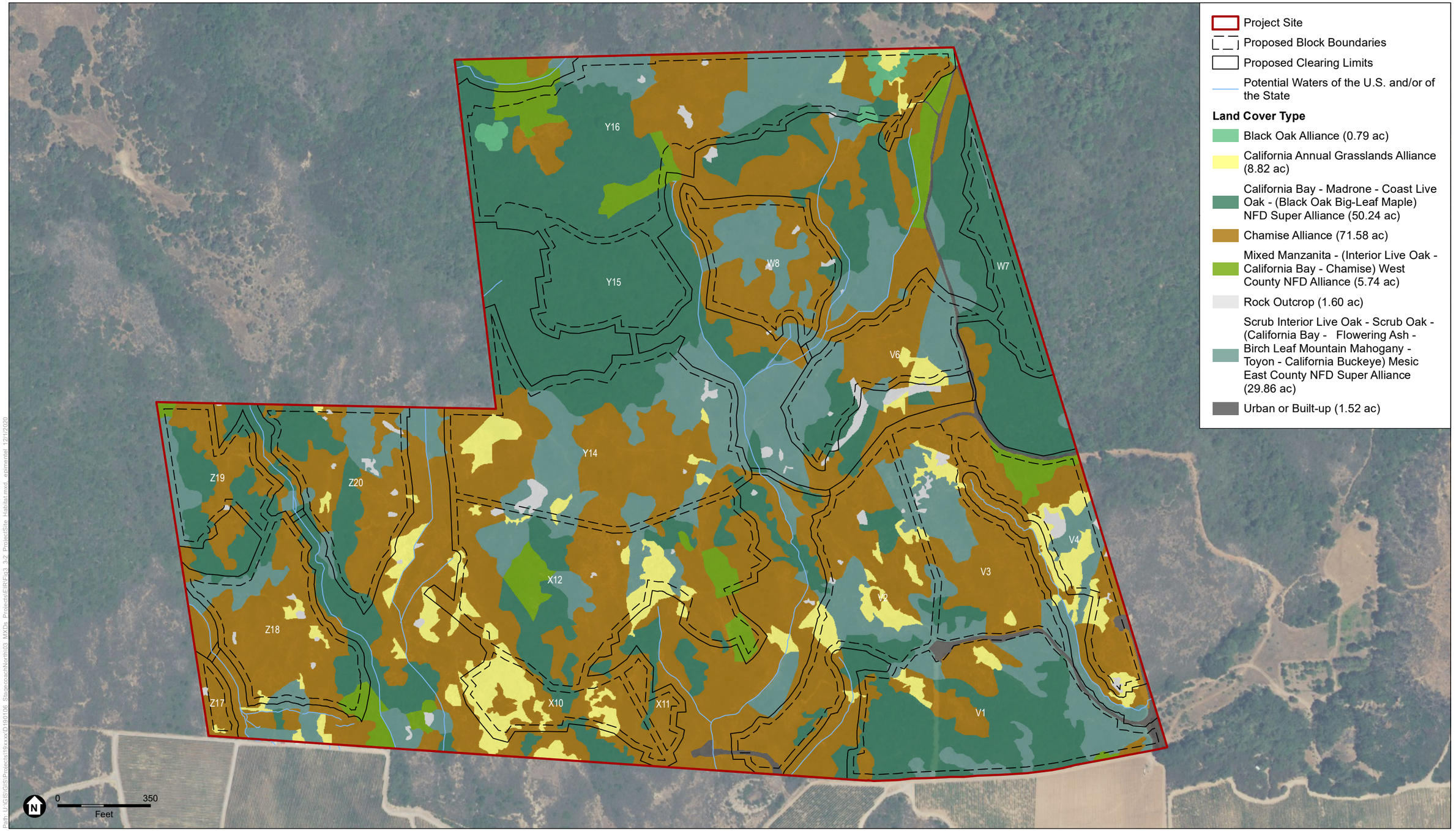
The following general terrestrial biological communities are present on the project site: annual grassland, mixed oak woodland, chamise/scrub, and human-altered/other. The general biological communities are further characterized into vegetation alliances. Dominant vegetation observed within the vegetation alliances is described below.

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

Mixed Oak Woodland

Black Oak Alliance (Quercus kelloggii Forest Alliance)
Three small stands of this forest type are present in the northeast and northwest corners of the project site. California black oaks are the tallest trees on the project site. This forest type is more common off the project site to the north, where the terrain levels off before descending steeply down the north-facing slope of Sage Canyon. Plant species include Pacific hound's tongue (*Cynoglossum grande*), Douglas iris (*Iris douglasiana*), white nemophila (*Nemophila heterophylla*), knobcone pine (*Pinus attenuata*), rusty-haired popcorn flower (*Plagiobothrys nothofulvus*), pale starwort (*Stellaria pallida*), and fringe pod (*Thysanocarpus curvipes*).

California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (Umbellularia Californica Forest Alliance)
The dense California bay forest on the project site is nearly impenetrable. Shrubs found within this land cover type include common manzanita (*Arctostaphylos manzanita* ssp. *manzanita*), Fremont's silk-tassel (*Garrya fremontii*), and toyon (*Heteromeles arbutifolia*). The herbaceous understory of California bay forest is typically sparse, yet non-vascular flora (lichens and bryophytes) are abundant. The California bay forest on the project site is composed of relatively small shrubby trees (10–15 feet high). The shrubby stature of the onsite stands is likely the result of fire, as the property is thought to have burned in the 1981 Atlas Peak Fire. California bay forest is discussed in further detail later in this section, under ***Sensitive Natural Communities***.



SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.3-2
Habitats

ESA

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

Terrestrial Biological Community	Acreage[1] in the Development Area	Acreage on the Project Site	Acreage in Napa County
Mixed Oak Woodland			
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)[4]	0.75	0.79	2,509.19
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	31.63	50.24	18,114.77
Mixed Oak Woodland Total	***32.38***	***51.03***	***20,623.96***
Annual Grassland			
California Annual Grasslands Alliance	6.56	8.82	36,218.28
Annual Grassland Total	***6.56***	***8.82***	**36,218.28**
Chaparral/Scrub			
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	48.85	71.58	30,559.71
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arctostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	3.77	5.74	7,880.85
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	22.55	29.86	10,934.15
Chaparral Scrub Total	***75.17***	***107.18***	***49,374.71***
Human-Altered/Other			
Urban or Built-up (Roads and Graded Areas)	1.02	1.52	28,772.92
Rock Outcrop	1.09	1.60	1,671.63
Human-Altered Total	***2.11***	***3.12***	***30,444.55***
Biological Community Total	**116.22**	**170.15**	**136,661.50**

NOTES:
GIS = geographic information system; 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.

SOURCE: Napa County 2005

Annual Grassland

California annual grasslands alliance occurs in patches of variable size on the project site. Dominant species include a sparse cover of annual non-native species including common wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), foxtail chess (*B. madritensis*), and bristly dogtail grass (*Cynosurus echinatus*).

Native grasses also occur, but less frequently than non-native species. Native grasses present on the project site include blue wild rye (*Elymus glaucus*), California fescue (*Festuca californica*), June grass (*Koeleria macrantha*), melic grass (*Melica torreyana*), and foothill needlegrass (*Stipa*

lepida), but these native species are not dominant to the extent that the grasslands on the site would be considered specific native stands as identified in Sawyer et al. (2009).

Native spring wildflowers also commonly occur in the grasslands. These plants include narrow-leaved onion (*Allium amplectens*), harvest brodiaea (*Brodiaea elegans* ssp. *elegans*), golden globe lily (*Calochortus amabilis*), rosinweed (*Calycadenia truncata*), soap root (*Chlorogalum pomeridianum*), purple clarkia (*Clarkia purpurea*), blue dicks (*Dichelostemma capitatum*), two-carpellate western flax (*Hesperolinon bicarpellatum*), variable linanthus (*Leptosiphon parviflorus*), wooly fruited lomatium (*Lomatium dasycarpum*), slender cottonweed (*Micropus californicus*), Hartweg's doll lily (*Odontostomum hartwegii*), foothill plantain (*Plantago erecta*), and California milkwort (*Polygala californica*).

Chamise/Scrub

Chamise Alliance
This biological community includes primarily chamise (*Adenostoma fasciculatum*) and co-dominant shrubs including common manzanita*,* wavyleaf ceanothus (*Ceanothus foliosus* var. *foliosus*), holly-leaved ceanothus (*C. purpureus*)*,* blue buckbrush (*C. cuneatus* var. *cuneatus*)*,* chaparral clematis (*Clematis lasiantha*)*,* yerba santa *(Eriodictyon californicum*)*,* hoary coffeeberry (*Frangula californica* ssp*. tomentella*)*,* Fremont's silk-tassel*,* toyon*,* chaparral honeysuckle (*Lonicera interrupta*)*,* bush monkey flower (*Mimulus aurantiacus*)*,* chaparral pea (*Pickeringia montana* var. *montana*)*,* scrub oak (*Quercus berberidifolia*)*,* and western poison oak (*Toxicodendron diversilobum*)*.*

Holly-leaved ceanothus is a CNPS California Rare Plant Rank (CRPR) 1B species; however, it is a common co-dominant shrub on the project site. Holly-leaved ceanothus is also present in areas that are dominated by a mix of oak species in their shrub form, mainly the shrub form of canyon live oak (*Quercus chrysolepis*). Openings within the chaparral vary between rocky ground with little plant cover to a diverse ground cover consisting of annual and perennial herbs, grasses, and bulbs that include narrow-leaved onion, soap root, two-carpellate western flax, variable linanthus, green monardella (*Monardella viridis*), Hartweg's doll lily, bird's-foot fern (*Pellaea mucronata* var*. mucronata*), bunchleaf penstemon (*Penstemon heterophyllus*), California milkwort, and Sonoma sage (*Salvia sonomensis*).

*Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa *and* Arctostaphylos manzanita *Provisional Shrubland Alliance)*
These two vegetation alliances are dominated by Eastwood manzanita (*Arctostaphylos glandulosa*) and common manzanita. On the project site, this vegetation type varies from relatively pure stands to stands where chamise and scrub oaks are co-dominants.

*Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus *spp. Alliance)*
This vegetation type is dominated by sclerophyllous oak species in their shrub form, including the shrub form of canyon live oak, scrub oak (*Q. berberidifolia*), interior live oak (*Q. wislizeni*) in its shrub form, and leather oak (*Q. durata*).

Human-Altered/Other

Rock Outcrop
The soils on the project site are derived from the Sonoma Volcanics and are shallow and rocky. Rock outcroppings on the project site are variable in size because of the amount of weathering and vegetation cover on the site. Low rock outcrops (at or a few feet above ground level) are extensive across the project site and have similar plant associations. Bird's-foot fern and Bigelow's moss fern (*Selaginella bigelovii*) are the most commonly associated plants that occur in the cracks of soil-level rock outcrops. A few rock outcrops on the project site rise above the surrounding chamise chaparral (10–15 feet off the ground surface). Coville's lip fern (*Myriopteris covillei*) was found only on these larger rock outcrops. Rock outcrops also support a diverse assemblage of lichens.

Urban or Built-Up
Urban or built-up areas include graded areas and roads. Minimal herbaceous vegetation has established there.

WILDLIFE OBSERVED

The wildlife species listed below were observed on the project site by LSA biologists in 2018 (**Appendix D**).

- **Foraging birds:** Oak titmouse (*Baeolophus inornatus*), California quail (*Callipepla californica*), band-tailed pigeon (*Patagioenas fasciata*), mourning dove (*Zenaida macroura*), turkey vulture (*Cathartes aura*), Cooper's hawk (*Accipiter cooperii*), Anna's hummingbird (*Calypte anna*), acorn woodpecker (*Melanerpes formicivorus*), nuttail's woodpecker (*Dryobates nuttallii*), northern flicker (*Colaptes auratus*), pileated woodpecker (*Dryocopus pileatus*), ash-throated flycatcher (*Myiarchus cinerascens*), California scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), bushtit (*Psaltriparus minimus*), Bewick's wren (*Thryomanes bewickii*), wrentit (*Chamaea fasciata*), western bluebird (*Sialia mexicana*), hermit thrush (*Catharus guttatus*), American robin (*Turdus migratorius*), varied thrush (*Ixoreus naevius*), California thrasher (*Taxostoma redivivum*), European starling (*Sturnus vulgaris*), orange-crowned warbler (*Oreothlypis celata*), spotted towhee (*Pipilo maculatus*), California towhee (*Melozone crissalis*), dark-eyed junco (*Junco hyemalis*), golden-crowned sparrow (*Zonotrihia atricapilla*), and lesser goldfinch (*Spinus psaltria*).

- **Mammals:** Mule deer (*Odocoileus hemionus*), black-tailed jackrabbit (*Lepus californicus*), dusky-footed woodrat (*Neotoma fuscipes*), Botta's pocket gopher (*Thomomys bottae*), and Sonoma chipmunk (*Tamias sonomae*).
- **Reptiles and amphibians:** Western skink (*Plestiodon skiltonianus*), Sierran tree frog (*Pseudacris sierra*), western fence lizard (*Sceloporus occidentalis*), and striped racer (*Coluber lateralis*).

SENSITIVE NATURAL COMMUNITIES

California bay forest is considered a sensitive natural (biotic) community by CDFW and is identified as such in the Napa County Baseline Data Report (Napa County 2005). California bay forest has a state rarity rank of S3, meaning that this natural community is rare and threatened throughout its range (Sawyer et al. 2009).

POTENTIAL WATERS OF THE UNITED STATES

A formal delineation has not been conducted on the project site. However, the potential waters of the United States shown in **Figure 3.3-2** are likely under the jurisdiction of the U.S. Army Corps of Engineers (USACE), the San Francisco Bay Regional Water Quality Control Board (Regional Water Board), and/or CDFW. No wetlands are present on the project site.

OAK WOODLAND HABITAT

The project site contains little to no mature oak woodland habitat. Although a variety of oak alliances occur on the project site, none contain mature trees and all are densely interspersed with other tree species and shrubs. However, Napa County considers the black oak alliance a protected habitat.

SPECIAL-STATUS SPECIES

Several species known to occur on or near the project site 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. Tables B and C of the LSA (2018) biological resources survey report (**Appendix D**) present comprehensive lists of the 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, their regulatory status (federal, state, local, CNPS), habitat

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

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 in the development area. These determinations were made because the project site either lacks suitable habitat for the species or lies outside of the species' known extant geographical or elevational ranges. Those special-status species, and the potentially occurring special-status plants that were surveyed during their evident and identifiable periods with negative findings, are not discussed further in this section.

Special-Status Plants

Holly-Leaved Ceanothus

Holly-leaved ceanothus is a shrub in the buckthorn family (Rhamnaceae). It is endemic to the inner North Coast Ranges and restricted to rocky volcanic soils. This species occurs primarily in Napa, Sonoma, and Mendocino Counties and has a CRPR of 1B. Holly-leaved ceanothus blooms from March through May. This species is in the *Ceanothus* subgenus *Cerastes*; adult plants of species in this subgenus are killed by fire (they do not have the ability to crown sprout) and reproduce only from seeds stored in the soil (Quinn and Keeley 2006). This shrub is present on the project site in varying densities as a co-dominant in chaparral (**Figure 3.3-3**).

Holly-leaved ceanothus appears to be absent from approximately 60 acres of the project site, consisting mainly of closed-canopy woodland. Where holly-leaved ceanothus is present, its densities range from only scattered, isolated individuals to small but dense patches, with calculated densities as high as 254 individual shrubs per acre. In total, 2,822 holly-leaved ceanothus individuals were observed on 109.41 acres of the project site, mainly in chaparral and sclerophyllous shrubland.

Approximately 73.6 acres of the project site have a calculated density of 0–25 individual holly-leaved ceanothus shrubs per acre, 20.4 acres have a density of 25–50 individuals per acre, 6.5 acres have a density of 50–75 individuals per acre, 5.2 acres have a density of 75–100 individuals per acre, and 3.7 acres of the project site have a density of 100–254 observations per acre (**Figure 3.3-3**).

Franciscan Onion

Franciscan onion (*Allium peninsulare* var. *franciscanum*) is a perennial herb (bulb) in the onion family (Alliaceae). This species has a CRPR of 1B. The species occurs on clay, volcanic, often serpentinite substrate in cismontane woodland and valley grassland. Six individuals of this species were observed at a single location on the project site (**Figure 3.3-4**). Franciscan onion blooms from May to June. Another onion species, the narrow-leaved onion (*A. amplectens*), was also observed throughout the project site.

Narrow-Flowered California Brodiaea

Narrow-flowered California brodiaea (*Brodiaea leptandra*), also known as narrow-anthered brodiaea, is a perennial herb in the brodiaea family (Themidaceae). This species has a CRPR of 1B. The species is found on volcanic substrate in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Approximately 29 individual plants were observed in three separate locations on the project site (**Figure 3.3-4**). Narrow-flowered California brodiaea blooms from May to July. This species occurs on sunny sites with rocky volcanic soils, often on creek sides, and in wooded or brushy areas. Harvest brodiaea, a more common species, is also present on the project site.

Small-Flowered Calycadenia

Small-flowered calycadenia (*Calycadenia micrantha*) is an annual herb in the sunflower family (Asteraceae). This species has a CRPR of 1B. The species is found on roadsides, rocky, talus, scree, sometimes serpentinite, sparsely vegetated areas of chaparral, volcanic meadows and seeps, and valley and foothill grassland. Small-flowered calycadenia blooms from June to September. Six individuals were observed on the project site at a single location (**Figure 3.3-4**).

Two-Carpellate Western Flax

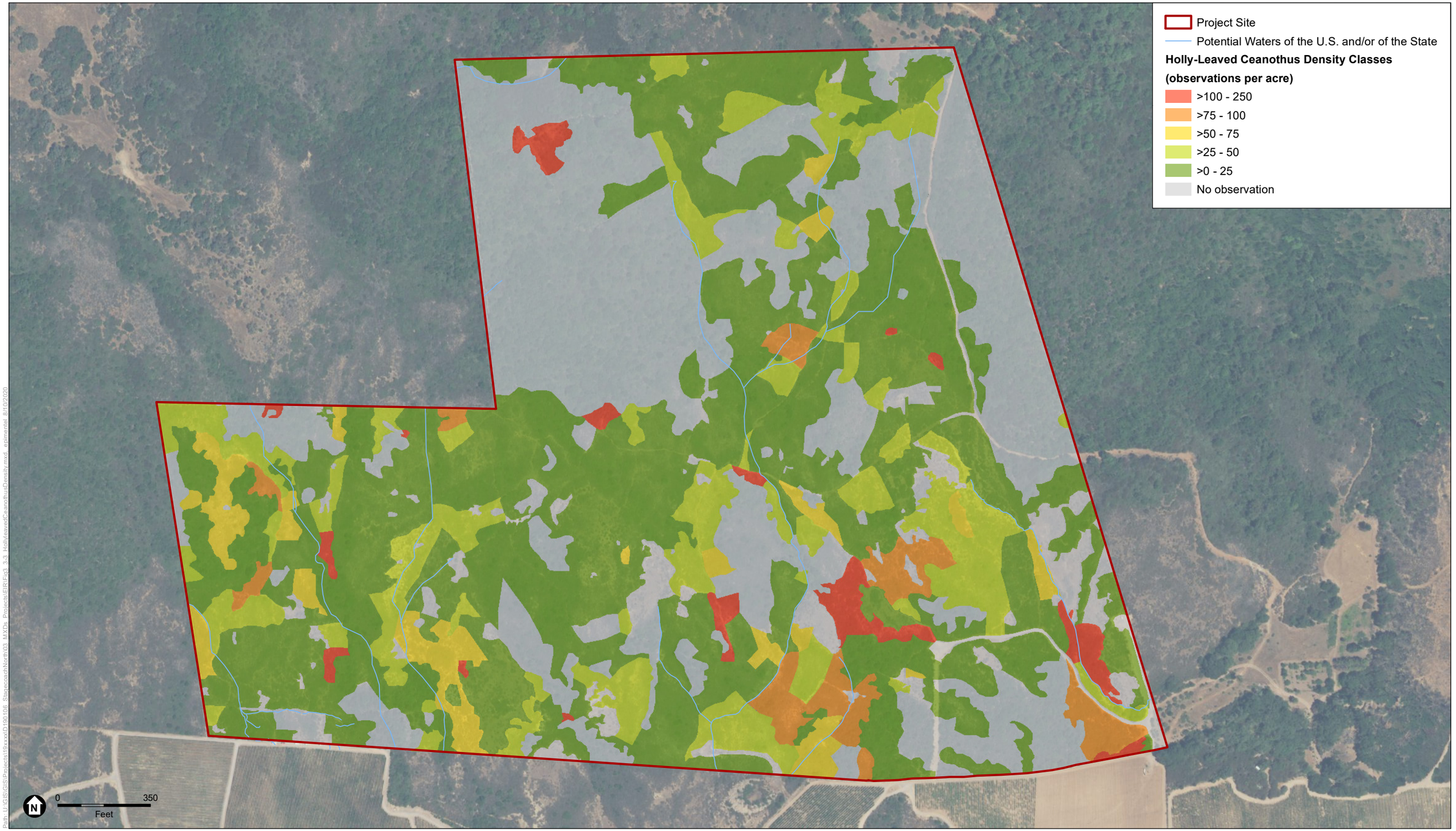
Two-carpellate western flax (*Hesperolinon bicarpellatum*) is an annual herb in the flax family (Linaceae). This species has a CRPR of 1B. The species is found on serpentinite substrate in chaparral. Two-carpellate western flax blooms from May to July. LSA observed this species throughout the project site, primarily in open areas along old trails and openings in chamise/ scrub. The size of this species varies depending on micro-location (e.g., soil depth, exposure, aspect). An area of approximately 4,030 square feet (0.09 acre) of two-carpellate western flax was mapped, with approximately 12,094 plants occurring on the project site (**Figure 3.3-4**).

Napa Lomatium

Napa lomatium (*Lomatium repostum*) is a perennial herb in the carrot family (Apiaceae). This species has a CRPR of 4. The species is found on serpentinite substrate in chaparral and cismontane woodland. Napa lomatium blooms from March to June. Approximately 18 individual plants were observed occurring in three separate locations on the project site (**Figure 3.3-4**).

Green Monardella

Green monardella (*Monardella viridis* ssp. *viridis*) is a perennial herb in the mint family (Lamiaceae). This species has a CRPR of 4. The species is found in broadleafed upland forest, chaparral, and cismontane woodland. Green monardella blooms from June through September. This species was observed throughout the project site in open areas, primarily along old trails; an area of approximately 820 square feet (0.02 acre) of green monardella was mapped on the project site (**Figure 3.3-4**), with approximately 2,707 individual green monardella plants present.



SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

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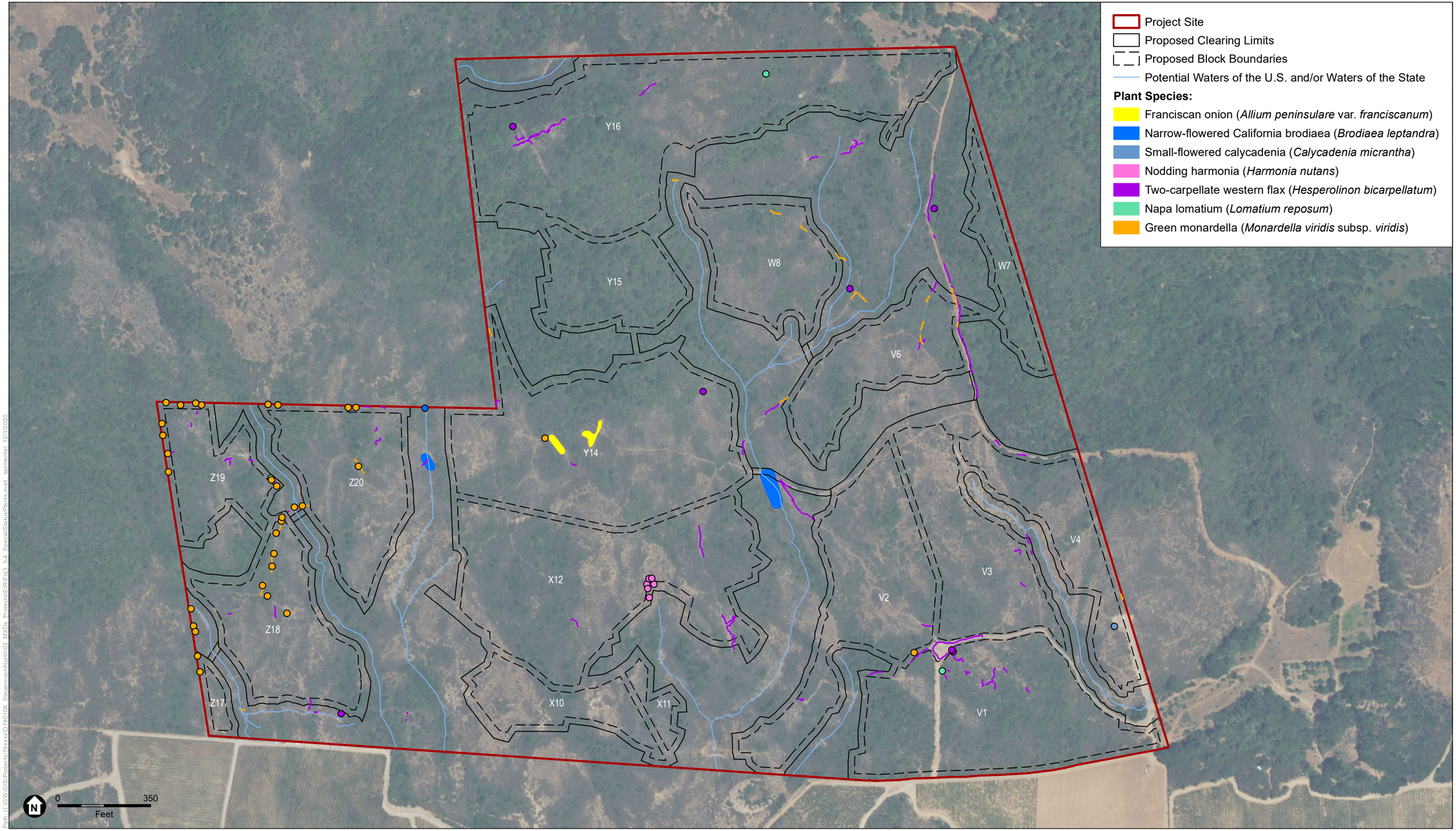
Figure 3.3-3
Holly-Leaved Ceanothus Density Classes

ESA



SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

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Figure 3.3-4
Additional Special-Status Plant Species and Proposed Clearing Limits

ESA

Nodding Harmonia

Nodding harmonia (*Harmonia nutans*) is an annual species in the sunflower family (Asteraceae). This species has a CRPR of 4. The species is found on rocky or gravelly volcanic substrate in chaparral and cismontane woodland. Nodding harmonia blooms from March through May. A total of 338 individual plants were observed in an area of approximately 2,000 square feet (**Figure 3.3-4**).

Nodding harmonia has a relatively wide distribution on rocky substrates in Napa, Lake, Sonoma, and Yolo Counties where extensive areas of potential habitat occur, much of it in state and/or regional parks and other undeveloped areas.

Special-Status Wildlife

Pallid Bat

Occurrences of pallid bat are known from within 2 miles of the project site, but high-quality day or maternity roost habitat for this species (e.g., deep tree hollows, abandoned buildings, caves) is not present on the project site. Pallid bats can also roost under exfoliating bark on trees, but this microhabitat was not observed on the trees on the project site. Scattered individuals could use shallow crevices in rock outcrops as day roosts, but such habitat is limited on the project site. Pallid bats may forage on the project site if suitable roosting sites are located nearby.

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

Nesting and 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 and shrubs in the mixed oak woodland, annual grassland, and chamise/scrub. 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 project site.

The annual grassland on the project site does not provide high-quality foraging habitat because the grassland is too patchy and small in total area to attract the wildlife species that are typical of more extensive grasslands.

STREAM SETBACKS

The Napa County Conservation Regulations require stream setbacks. The Conservation Regulations define a stream as follows:

1. A watercourse designated by a solid or dash and three dots symbol on the largest scale USGS maps most recently published, or replacement of that symbol;
2. Any watercourse with a well-defined channel with a depth greater than 4 feet and banks steeper than 3:1 and that contains hydrophilic vegetation, riparian vegetation, or woody vegetation, including tree species greater than 10 feet in height; or

3. Those watercourses listed in Resolution No. 94-19.[2]

None of the watercourses identified in Resolution No. 94-19 occur on or adjacent to the project site (Napa County Board of Supervisors 2019).

According to the Conservation Regulations, one ephemeral stream on the project site requires a stream setback because it is depicted as a dash dot ("blue line") stream course on the USGS 7.5-minute Yountville Quadrangle map (**Figure 3.3-5**). This stream course runs north-south between proposed vineyard Blocks Y14, X12, X10, and Z20; these proposed vineyard blocks have been located to comply with the required stream setbacks.

Another stream course on the project site, not depicted as a blue line stream, also meets the County's definition of a stream for purposes of the setback requirements in the Conservation Regulations. This stream course runs north-south between proposed vineyard Blocks V2, V6, X12 and Y14; these proposed vineyard blocks have been located to comply with required stream setbacks. All other ephemeral streams on the project site do not meet the County's definition of streams and thus do not require a setback; however, they would be avoided to the greatest extent practicable.

WILDLIFE MOVEMENT CORRIDORS

Wildlife movement corridors link 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 lessens 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 turtle averages 92 feet on either side of creeks (Rathbun et al. 2002). Based on the wildlife corridor data, it is assumed that corridors 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.

[2] Specifically, watercourses listed in Resolution No. 94-19 include: Adams, Bear Canyon, Bell Canyon, Burton, Butts Valley, Chiles, Conn, Cyrus, Dry, Dutch Henry, Dyer, Garnett, Hardin, Huichica, James, Maxwell, Mill, Montgomery, Moore, Murphy, Napa, Nash, Pickle, Pope, Rector, Redwood, Ritchie, Sage, Soda Canyon, St. Helena, Sulphur, Suscol, Swarz, Trout, Troutdale, Tulocay, Upper Sarco, Van Ness, Wooden Valley, Wragg, and York Creeks.

SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

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Figure 3.3-5
Project Features and Potential Waters of the U.S. and/or Waters of the State

ESA

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The project site has not been identified on the CalWild linkage map (Napa County 2005) as part of a major regional movement corridor, and the site is not located along a riparian system or other natural landscape feature that can be considered an important local wildlife movement corridor. Nonetheless, the project site is in a landscape area where resident mid-sized to large mammals such as bobcats (*Lynx rufus*), mountain lions (*Puma concolor*), and mule deer can move with relative ease. Mid-sized to large mammals are likely to pass through the project site during their local movements, although the site lacks any defined wildlife corridors. The ephemeral drainages on the project site are narrow and surrounded by dense vegetation.

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 or areas that contain features essential for the conservation of a threatened or endangered species and may require special management and protection. The project site is not within designated critical habitat for any listed plant or wildlife species.

3.3.2 REGULATORY SETTING

FEDERAL REGULATIONS

U.S. Fish and Wildlife Service

Federal Endangered Species Act

Under the FESA, the Secretary of the Interior and Secretary of Commerce have joint authority to list a species as threatened or endangered (U.S. Code Title 16, Section 1533[c] [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 (NMFS) has jurisdiction over anadromous fish and marine fish and mammals.

Section 7 of the FESA requires federal agencies to consult with USFWS and NMFS 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.

FESA Section 10 requires that an "incidental take" permit be issued before any public or private action may occur that could take an endangered or threatened species. To receive the permit, a proposed project must prepare and implement a habitat conservation plan that would offset the take of individuals that may occur, incidental to implementation of the 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 project would have a potentially significant impact on such species. In addition, the agency must determine whether the project is likely to jeopardize the continued existence of any species proposed for listing under the FESA, or to 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 of the geographic region 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 would not negatively affect the critical habitat to the extent that they would 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.

U.S. Army Corps of Engineers

The Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. The basis of the CWA was enacted in 1948 and was called the Federal Water Pollution Control Act, but the law was substantially reorganized and expanded in 1972. "Clean Water Act" became the law's common name with amendments in 1972. The term *waters of the United States* is defined as follows (33 CFR 328.3[a]):

(1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

(2) All interstate waters including interstate wetlands;

(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 including any such waters:

  (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or

  (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

  (iii) Which are used or could be used for industrial purpose 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 (a)(1) through (4) of this section;

(6) The territorial seas; and

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.

(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 Clean Water Act jurisdiction remains with EPA [the U.S. Environmental Protection Agency].

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR 423.11[m], which also meet the criteria of this definition) are not waters of the United States.

Wetlands (including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas) are also considered waters of the United States. USACE defines wetlands 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 do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (33 CFR 328.3[b]; 40 CFR 230.3[t]). For USACE to classify a site as a wetland, indicators of three wetland parameters—hydric soils, hydrophytic vegetation, and wetlands hydrology—must be present, as determined by a field investigation (Environmental Laboratory 1987).

Section 401 of the federal CWA gives the state authority to grant, deny, or waive certification of proposed federally licensed or permitted activities resulting in discharges to waters of the United States. The State Water Resources Control Board directly regulates multi-regional projects and supports the Section 401 certification and wetlands program statewide. The Regional Water Boards regulate activities under CWA Section 401(a)(1). Section 401(a)(1) specifies that any applicant requesting a federal license or permit for any activity, including construction or operation of facilities, that may result in a discharge into navigable waters must obtain state certification. The certification originates from the state or appropriate interstate water pollution control agency for the area where the discharge originates or will originate. Discharges must comply with the applicable provisions of CWA Sections 301, 302, 303, 306, and 307.

STATE REGULATIONS

California Department of Fish and Wildlife

California Fish and Game Code Section 3503

Section 3503.5 of the California Fish and Game Code prohibits the take, possession, or destruction of birds in the orders Falconiformes or Strigiformes (birds of prey) and the take, possession, or destruction of the nest or eggs of any such bird except as otherwise provided by

the code or adopted regulations. Construction activities that result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment and/or reproductive failure, are considered "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 measures 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 the FESA, 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 intent of California Fish and Game Code Sections 1900–1913, the Native Plant Protection Act, is to preserve, protect, and enhance endangered or rare native plants in California. The law directs CDFW to establish criteria for determining which native plants are rare or endangered. As defined in Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. 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 Native Plant Protection 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 assigned rankings through the California Rare Plant Rank system. CRPR lists 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 on CNPS's CRPR List 1A, 1B, or 2 are considered to meet the criteria of State CEQA Guidelines Section 15380 (discussed later in this *State Regulations* section). Effects on these species are considered "significant." In addition, plants listed on CNPS's CRPR List 1A, 1B, or 2 meet the definition of Section 1901, Chapter 10 and Sections 2062 and 2067 of the California Fish and Game Code (the Native Plant Protection Act and CESA, respectively).

Lake or Streambed Alteration Program

In accordance with Section 1600 et seq. of the Fish and Game Code, CDFW regulates diversions, obstructions, and changes to the natural flow and the beds, channels, and banks of rivers, streams, and lakes that support fish or wildlife. A notification of a Lake or Streambed Alteration Agreement must be submitted to CDFW for "any activity that may substantially change the bed, channel, or bank of any river, stream, or lake." In addition, CDFW has authority under the Fish and Game Code over wetland and riparian habitats associated with lakes and streams. CDFW reviews proposed actions and, if necessary, submits to the applicant a proposal that includes measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by CDFW and the applicant is the Lake or Streambed Alteration Agreement.

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 Act

The State Water Resources Control Board, through its nine regional water boards, regulates waters of the state through the California Clean Water Act (i.e., the Porter-Cologne Water Quality Control Act). If USACE determines that wetlands or other waters are isolated waters and not subject to regulation under the federal Clean Water Act, the regional water 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 laws 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 can 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 in the CNDDB as sensitive 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.

  c) Promote protection from overgrazing and other destructive activities.

  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:

- **Habitats/communities of limited distribution**: Natural communities in Napa County that are considered sensitive because of their limited local distribution, encompass less than 500 acres of cover in the county, and are considered by local biological experts 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 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 currently 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 18.108.025** 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.
  For example, slopes less than 1 percent slopes require a 35-foot setback, 1 to 5 percent slopes require a 45-foot setback, 5 to 15 percent slopes require a 55-foot setback, and 15 to 30 percent slopes require a 65-foot setback. Grading, vegetation removal, 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 USGS 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 (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 for 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.[3] 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 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."

[3] As noted in DEIR **Chapter 1, *Introduction***, the original Erosion Control Plan application submittal (December 20, 2018) 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.

- **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 federal or state agencies with jurisdiction and identified on the County's environmental sensitivity maps.

  (b) Existing trees 6 inches in diameter or larger, measured in diameter at breast height, or tree stands of trees 6 inches in diameter at breast height 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 vegetation removal 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 would be 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. A summary of the analysis is provided in **Chapter 1, *Introduction*.** For a complete discussion, see the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

The following analysis is based on reports prepared by LSA in 2018 and ESA in 2019 (both included in **Appendix D**).

LSA biologists and botanists conducted biological and botanical resource surveys on March 5 and 6, 2015; April 6, 8, and 22, 2015; May 8 and 20, 2015; June 17, 2015; August 8, 2015; March 16, 18, 23, 24, 25, and 29, 2016; and April 1, 4, and 5, 2016 (LSA 2018). LSA mapped potential waters of the United States on April 6 and 8, 2015. LSA conducted wildlife surveys on March 25, 2018, and June 5, 2018. LSA conducted protocol-level rare plant surveys on March 28 and 29, 2018; April 18 and 19, 2018; May 17, 2018; and June 5, 2018.

ESA conducted botanical inventories and general biological resource surveys on May 14 and 15, 2019, that focused on ground-truthing the special-status plants and biological communities mapped by LSA (2018). ESA used the global positioning system (GPS) and field maps to navigate to the mapped plants and biological communities. In addition, ESA surveyed areas within 500 feet of the project site using binoculars.

To map holly-leaved ceanothus and vegetation types, the project site was subdivided into mapping units (polygons) based on topography, land cover categories, vegetation types, and densities of holly-leaved ceanothus. Polygons were delineated using recent, high-resolution aerial imagery (Google, April 2015) along with visual cues on the ground, including breaks in topography, changes to land cover, vegetation types, streams, trails, and different densities of holly-leaved ceanothus. A minimum mapping unit of 0.05 acre was initially targeted, and some vegetation polygons were mapped as small as 0.02 acre. This smaller mapping unit was helpful to capture the patchy character of the vegetation types, specifically small but dense clusters of holly-leaved ceanothus. The minimum mapping unit for rock outcrops was even smaller, starting at 138 square feet (0.003 acre). The average area of all mapped polygons was 0.35 acre.

For each polygon, after the polygon was delineated in the field, the polygon was traversed and visually assessed from one or several vantage points above the shrub's canopy cover. Vantage

points were selected within the polygon and/or from one or several adjacent elevated vantage points, whichever method resulted in better visibility and results. To ensure that all areas were visible from at least one point elevated above the shrub canopy, each surveyor used a 6-foot stepladder and binoculars to visually assess vegetation—and specifically, occurrences of holly-leaved ceanothus—in each polygon. The ubiquitous presence of tall rock outcrops combined with the use of the 6-foot ladders enabled surveyors to get a bird's-eye view of the surrounding vegetation.

The vegetation types for each polygon were mapped to alliance level by identifying the dominant and co-dominant species, following the membership rules in *A Manual of California Vegetation*, second edition (Sawyer et al. 2009), in conjunction with the vegetation types based on the *Manual of California Vegetation* map of Napa County (Napa County 2005). The mapped vegetation types are based on Sawyer et al. (2009) and correspond directly to the vegetation types used for the *Manual of California Vegetation* map of the county (Napa County 2005, based on Thorne et al. 2004). The acreages identified in Tables 3.3-5a and 3.3-5b may differ from the acreages identified in the biological resources survey report (Appendix D) because of the mapping platforms, spatial characteristics, and rounding. Because approximate biological/ plant communities, special-status habitat, potential habitat, and project acreages have been corroborated through County GIS mapping, the County considers the values disclosed in this section to be adequate for CEQA review and disclosure purposes for the proposed project.

To survey dense woodland where the closed canopy cover was above 10 feet, a slightly modified protocol was implemented. Dense woodlands taller than 10 feet with a closed canopy were surveyed from the perimeter and the woodlands were traversed using existing trails and gaps. Woodlands were spot-checked for changes to vegetation communities and the potential presence of holly-leaved ceanothus. Closed-canopy woodlands are not suitable habitat for *Ceanothus* species for several reasons, such as interspecies competition for light, as well as allelopathy (the inhibition of one plant's growth by another) by litter from California bay laurel (*Umbellularia californica*).

After the vegetation type was determined, the number of detectable holly-leaved ceanothus individuals was determined and recorded for each polygon. Areas with high densities (clusters) of holly-leaved ceanothus were mapped as separate polygons.

Two maps depicting the results were generated from the collected field data using geographic information system (GIS) software. The map of vegetation types, land cover types, and potential waters of the United States for the project site grouped polygons based on the identified land cover and vegetation types, using color coding. For the map of holly-leaved ceanothus densities, the densities were calculated for each polygon by dividing the count of holly-leaved ceanothus for each polygon by the area of each polygon. Densities, as individual observation counts per acre, were then placed into the following categories: (1) No observations; (2) >0 to 25 observations per acre; (3) >25 to 50 observations per acre; (4) >50 to 75 observations per acre; (5) >75 to 100 observations per acre; and (6) 100 to 254 observations per acre.

To estimate numbers of two-carpellate western flax and green monardella, LSA surveyed potential habitat onsite to locate and quantify the species' populations. Potential habitat included naturally occurring openings in the chamise/grassland matrix as well as old and newly constructed trails. A population estimate was derived from the average density of observed stands, using the following protocol: For each target species, LSA determined the area of occupied habitat by multiplying linear feet by the average swath width of 1 foot. Then, the observed minimum and maximum density of individuals for each target species was determined. The final population estimate was then calculated by multiplying the area of occupied habitat by the calculated average density.

LSA used both direct measurements and counts of trees within sample plots and remote sensing (high-resolution aerial imagery) generated by drones to estimate the number of trees on the project site. For the tree count, a tree is defined as any live woody plant with a stem diameter at breast height of 5 inches or more. If multiple stems were present at breast height, the diameters at breast height of all stems were summed. For the ground surveys, surveyors used Trimble X1 GPS units to survey five 0.5-acre-square ground survey sample plots, placed within representative areas for each of the plant communities on the project site. For remote sensing, drones were flown over the project site using Map Pilot for DJI flight control software, and trees were mapped based on aerial imagery, remotely sensed vegetation heights, and direct counting.

LSA mapped potential waters of the United States and/or waters of the state using a Trimble GeoX GPS receiver with approximately 1-meter (3.3-foot) accuracy. Almost the entire lengths of the onsite stream channels were walked and mapped, using GPS points recorded along their channel centerlines. The widths of the channel segments were also recorded. These potentially jurisdictional stream channels and ordinary high-water mark channel widths were mapped following USACE jurisdictional methods and procedures.

Animals were identified in the field by their sight, sign, or call during the site inspections. Field techniques consisted of surveying the survey area with binoculars and walking throughout the project site. Aerial photographs were reviewed to analyze the habitat surrounding the site and the potential for wildlife movement. Site inspections were conducted to determine whether any wildlife corridors, bat habitat, oak woodland, or raptor foraging habitat was present on the project site. During the 2019 surveys, a 500-foot radius was surveyed where accessible by driving or using binoculars.

For the analysis and mitigation of impacts related to plant replacement, this Draft EIR acknowledges that transplanting the same species from propagated stock that was grown from seeds, or from propagules collected from the same population, typically has a greater chance of success than other means of transplanting; seed collection and banking is a pragmatic and useful method for replacing plants. Also, some plant species have life history characteristics (rhizomatous perennials, generalist habitats, robust production of propagules) that favor their success in replacement plantings. Furthermore, enhancing an existing population (i.e., planting

additional plants) is likely to be more successful because the plants have already selected the site as habitat. The impact analysis below discusses replanting holly-leaved ceanothus, two-carpellate western flax, and green monardella. Holly-leaved ceanothus has been successfully propagated, planted, and re-established in Napa County.

Little literature is available specific to replanting success for two-carpellate western flax; however, annual plants reproduce naturally by seed. Two-carpellate western flax is a short-lived annual herb found in chaparral, often in open areas. These plants grow fast and die young while there is water in the spring. Two-carpellate western flax seeds are similar to those used for erosion control; the plants will establish in bare areas in suitable habitat. Although there is no documentation, replanting should be successful as long as the seeds collected from existing populations are planted in locations with similar soils and in open areas of chaparral habitat outside of the development area.

Propagation protocols for green monardella are well established. Successful establishment can be accomplished by (1) direct seeding, (2) transplanting rooted cuttings, or (3) transplanting mature shrubs from existing populations to suitable habitat with soils and vegetation similar to those supporting the existing populations (Edwards 2015). Seeds may be collected primarily August–October. Seeds require cool, moist stratification, or need to be lightly raked into the soil outside in the fall (e.g., *M. odoratissima* requires 45 days; Western Native Seed, Coaldale, Colorado; *M. villosa* ssp. *villoscuequires* cold stratification, Gold Rush Nursery, California).

California mondardella species can be propagated from softwood or semi-woody cuttings more quickly than from seeds (Schmidt and Greenberg 2012). Propagated seeds and plants require fast-draining media to prevent root rot. Plants can also be dug up and transplanted in late fall and winter because they do not have deep taproots. At least one nursery in Northern California propagates this species for sale from cuttings and seed (Sacred Succulents, Sebastopol, California). It is also propagated by Las Palitas Nursery (Santa Margarita and Escondido, California) (Edwards 2015).

IMPACTS AND MITIGATION MEASURES

Table 3.3-3 summarizes the impact conclusions presented in this section.

The proposed project would affect the approximately 116.2-acre development area. **Table 3.3-4** summarizes the acreages of project impacts on the development area by biological community; identifies the total acreage of each biological community on the project site and in Napa County; shows the acreage of each biological community that would be preserved on the project site; and lists the percentage of the biological 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** through **3.3-5**.

TABLE 3.3-3
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

TABLE 3.3-4
PROJECT IMPACTS BY BIOLOGICAL COMMUNITY

Biological Communities	Direct Impact in the Development Area (acres[1])	Total Acreage on the Project Site	Acreage Outside the Development Area	Percent of Total Affected on the Project Site	Total Acreage in Napa County	Percentage of Total Affected in Napa County
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)	0.75	0.79	0.04	95	2,509.19	0.03
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	31.63	50.24	18.61	63	18,114.77	0.17
California Annual Grasslands Alliance	6.56	8.82	2.26	74	36,218.28	0.02
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	48.85	71.58	22.73	68	30,559.71	0.16
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	3.77	5.74	1.97	66	7,880.85	0.05
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	22.55	29.86	7.32	76	10,934.15	0.20
Urban or Built-up (Roads and Graded Areas)	1.02	1.52	0.50	67	28,772.92	0.004
Rock Outcrop	1.09	1.60	0.51	68	1,671.63	0.10

NOTES:
GIS = geographic information system; 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.

SOURCES: Napa County 2005; LSA 2018; ESA 2019

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

As identified in **Table 3.3-2**, the project site's mixed oak woodland (totaling 51.03 acres of Black Oak Alliance and California Bay–Madrone–Coast Live Oak), annual grassland (totaling 8.82 acres), and chamise/scrub (totaling 107.18 acres of Chamise Alliance, Mixed Manzanita, and Scrub Interior Live Oak) provide suitable habitat for regionally occurring special-status plants. LSA conducted three years of botanical surveys of the entire project site within the identifiable period for regionally occurring special-status plants. ESA conducted a subsequent botanical survey and confirmed that the special-status plants mapped by LSA had been mapped accurately.

Eight special-status plant species were found on the project site (**Figures 3.3-3** and **3.3-4**): holly-leaved ceanothus, Franciscan onion, narrow-flowered California brodiaea, small-flowered calycadenia, two-carpellate western flax, Napa lomatium, green monardella, and nodding harmonia.

Five of these plant species—holly-leaved ceanothus, Franciscan onion, narrow-flowered California brodiaea, small-flowered calycadenia, and two-carpellate western flax—are CNPS CRPR List 1B species. Such species are considered "Rare, Threatened, or Endangered in California and Elsewhere" and are fairly threatened in California (i.e., moderate degree/ immediacy of threat). Three additional species—Napa lomatium, green monardella, and nodding harmonia—are CNPS CRPR List 4 species ("Plants of Limited Distribution—A Watch List"), which are not considered under CEQA, but impacts on these species may be considered sensitive by Napa County.

Although these plant species are not federally or state listed at this time, plants appearing on CNPS CRPR List 1B are considered to meet the criteria of State CEQA Guidelines Section 15380. Effects on these species are considered significant, and all of these species and their associated habitats are of limited distribution locally in Napa County and warrant protection through applicable General Plan goals and policies. Napa County General Plan Goal CON-3 encourages protection of the continued presence of special-status species, including special-status plants, special-status wildlife, and their habitats. In addition, General Plan Policy CON-13 states, "The County shall require that all discretionary agricultural projects consider and address impacts to wildlife habitat and avoid impacts to habitat supporting special-status species to the extent feasible." Where such projects cannot avoid impacts on special-status species and their habitat, the projects shall include effective mitigation measures and management plans to protect habitat supporting special-status species through buffering or other means, and to enhance existing habitat values—particularly for special-status species—through restoration and replanting as part of the project or its mitigation.

The eight special-status plant species found on the project site are described in Section 3.3.1, *Environmental Setting*, and the occurrences on the project site are summarized below.

- *Holly-leaved ceanothus* is present on the project site in varying densities as a co-dominant in chaparral. This species is considered "Rare, Threatened, or Endangered in California and Elsewhere" and is fairly threatened in California (i.e., moderate degree/ immediacy of threat). In total, 2,822 holly-leaved ceanothus individuals were observed on 109.41 acres of the project site in 2016. Vegetation clearing for the proposed project would result in the loss of approximately 76.97 acres that provide habitat for approximately 1,912 of these shrubs.
- *Franciscan onion*, a perennial herb (bulb) in the onion family (Alliaceae), occurs in cismontane woodland and valley grassland. Vegetation clearing for the proposed project would result in the loss of a small population of this species. Six Franciscan onion individuals were observed at a single location on the project site: within proposed vineyard Block Y14. The proposed project would remove all six during the development of this vineyard block.
- *Narrow-flowered California brodiaea* is found in broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and valley and foothill grassland. Approximately 29 individuals of this species were observed at three locations on the project site. Construction of the proposed project would result in the loss of two narrow-flowered California brodiaea plants.
- *Small-flowered calycadenia* occurs on roadsides and in sparsely vegetated areas of chaparral, meadows and seeps, and valley and foothill grassland. Six individual plants were observed on the project site at a single location. Vegetation clearing for the proposed project would result in the loss of this population. This species is an annual plant; the number of individual plants in a given area can fluctuate widely from year to year based on environmental parameters such as rainfall and fire. Thus, the estimate of the number of individuals on the project site during the 2015 blooming season documents the presence of small-flowered calycadenia, but provides only an estimate of population size. Maximum numbers would likely be present only in years of optimal environmental conditions.
- *Two-carpellate western flax* is found in chaparral. Vegetation clearing for the proposed project would result in the loss of part of a population of this species on the project site (approximately 9,321 of 12,094 individuals, or 77 percent affected by the proposed project). This species is an annual plant; the number of individual plants in a given area can fluctuate widely from year to year based on environmental parameters such as rainfall and fire. Thus, the estimate of the number of individuals on the project site during the 2015 blooming season documents the presence of two-carpellate western flax, but provides only an estimate of population size. Maximum numbers would likely be present only in years of optimal environmental conditions.
- *Napa lomatium* is found in chaparral and cismontane woodland. The proposed project would result in the loss of approximately 18 individuals of Napa lomatium (100 percent

affected by the proposed project) in three locations: on the eastern edge of proposed vineyard Block Z19 and within proposed Blocks V1 and Y16.

- *Green monardella* is found in chaparral and cismontane woodland. This species was observed throughout the project site in open areas; approximately 2,707 individual green monardella plants are present. The proposed project could result in the loss of approximately 2,275 green monardella plants (84 percent affected by the proposed project).
- *Nodding harmonia* is found in chaparral and cismontane woodland. The proposed project could result in the loss of an estimated 338 nodding harmonia in an area of approximately 2,000 square feet (100 percent affected by the proposed project) on the central/southern edge of proposed vineyard Block X12.

The Black Oak Alliance, California Bay–Madrone–Coast Live Oak, California Annual Grassland, Chamise Alliance, Mixed Manzanita, and Scrub Interior Live Oak on the project site are considered special-status species habitats because they contain the biological and ecological characteristics necessary to support these plant species, in addition to containing populations and individuals of special-status plant species. Proposed vineyard development activities that would directly affect the special-status plant species and their habitat include removing brush and trees within the proposed clearing limits, ripping, and soil cultivation. The project as proposed would remove approximately 114.11 acres of the project site's 167.03 acres (or 68 percent) of special-status plant species habitat, approximately 77.18 acres of which contains special-status plant populations and individuals. The proposed project would also remove between 9 and 100 percent of the of the individual special-status plants and/or populations within the project parcels. **Tables 3.3-5a and 3.3-5b** list the acreages of each biological community and the approximate number of each special-status plant species to be removed within the project site.

Project-related removal of the eight special-status plant species occurring on the project site and their habitat would be inconsistent with the following goal and policies from the Napa County General Plan's Conservation Element:

- Goal CON-3, because the project would not protect the continued presence of special-status plant species or their habitat.
- Policy CON-13, in that impacts on special-status habitat cannot be avoided while allowing for up to approximately 91.31 net acres of agriculture on the project parcel.
- Policy CON-17, because the project would not prevent the removal and disturbance of a sensitive natural plant community that contains special-status plant species.

The removal of these eight special-status plant species and their habitat would also be inconsistent with the purpose and intent of the Conservation Regulations (Napa County Code, Chapter 18.108) because it would not preserve natural habitat or existing vegetation and would adversely affect sensitive, rare, threatened, or endangered plants.

Impact Conclusion

Proposed vineyard development activities would directly affect the eight special-status plant species and their habitat on the project site. The impact of project-related removal of these special-status plant species and their habitat would be **significant** for the following reasons:

- Approximately 114.11 acres of the project site's 167.03 acres (or 68 percent) of special-status plant species habitat would be removed, approximately 77.18 acres of which contain populations and individuals of special-status plants.
- Between 9 and 100 percent of the individual special-status plants and/or populations within the project parcels would be removed.
- The proposed project would result in inconsistencies with applicable General Plan goals and policies and County conservation regulations.

To reduce potential impacts on special-status plant species to a less-than-significant level, **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5** will be implemented to avoid and retain special-status plant species and associated habitat. The project would be redesigned to avoid the areas supporting the highest density and diversity of special-status plant populations (as shown in **Figure 3.3-6**).

Implementation of these mitigation measures would reduce the acreage of vineyard development by approximately 26 acres, from 116.22 gross acres (inclusive of the maximum grading limits) to approximately 90.47 gross acres. **Table 3.3-5a** provides a summary of the retention of special-status species and **Table 3.3-5b** provides a summary of the biological communities in both the original proposed project and the revised project after implementation of **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5** (i.e., the mitigated proposed project). **Figure 3.3-6** shows the mitigated proposed project and **Figure 3.3-7** shows the vineyard blocks overlain with special-status plant populations and special-status plants avoided with the mitigation measures.

Overall, implementation of **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5** would retain 43–100 percent of the special-status plant population/individuals on the project parcels (**Table 3.3-5a**) and 31–66 percent of the special-status plant species habitats (**Table 3.3-5b**).

With implementation of **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5**, the areas outside of the proposed development area (referred to as the "Preservation Area" in the mitigation measures) would increase from 53.93 acres (170.15 − 116.22) to 79.68 acres (170.15 − 90.47) (**Table 3.3-5a**) through the following:

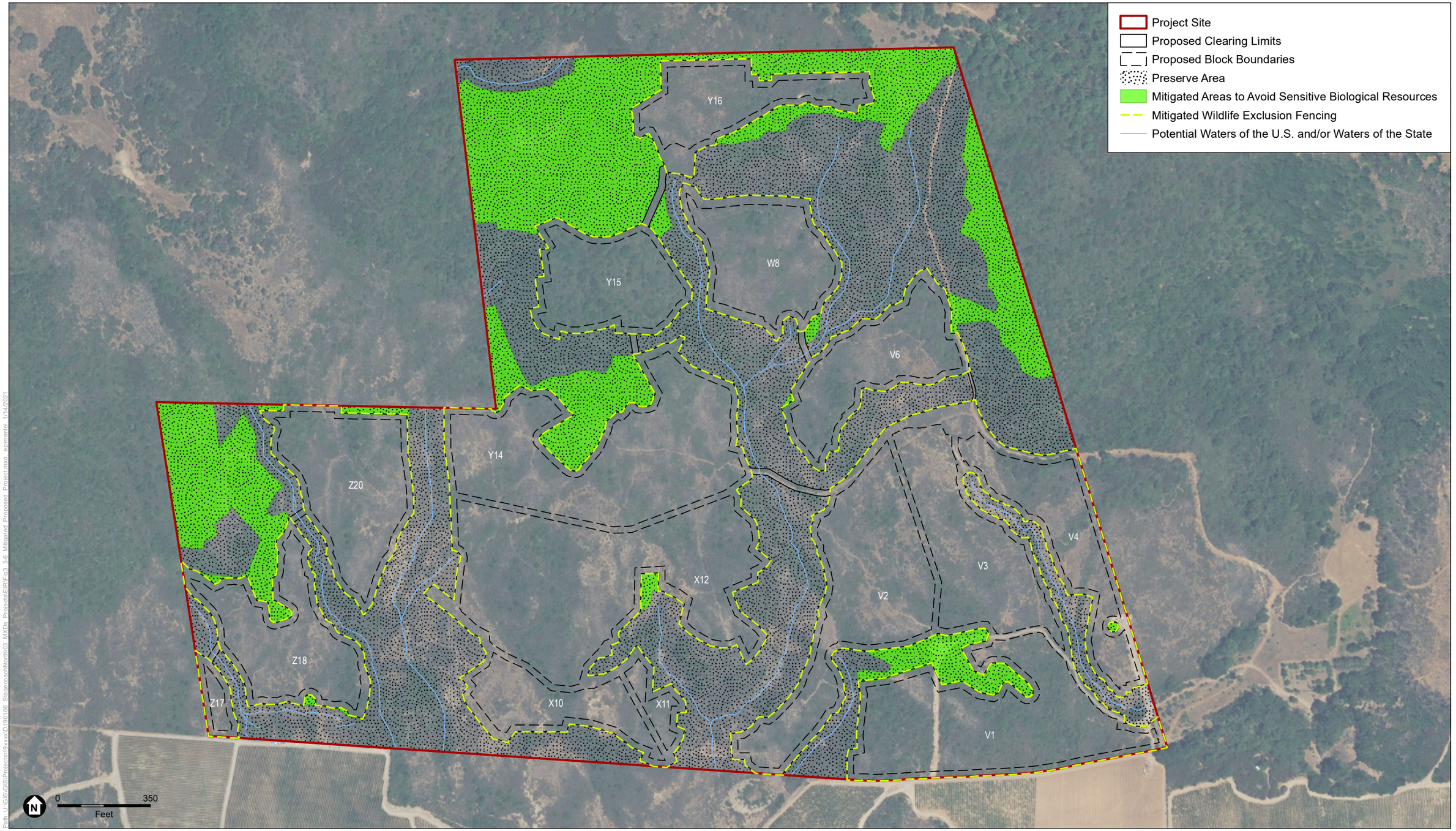
- Avoidance of California bay forest, dense holly-leaved ceanothus, and two-carpellate western flax in vineyard Block Y16 (**Mitigation Measures 3.3-1a and 3.3-1b**)
- Avoidance of California bay forest through removal of vineyard Block W7 (**Mitigation Measure 3.3-1b)**

- Increased wildlife corridors in vineyard Blocks V1, V2, and W8 (**Mitigation Measure 3.3-4**)
- Avoidance of California bay forest, holly-leaved ceanothus, two-carpellate western flax, and green monardella in vineyard Blocks V1, Y14, and Z18–Z20 (**Mitigation Measures 3.3-1a and 3.3-1h**)
- Complete avoidance of Franciscan onion, small-flowered calycadenia, Napa lomatium, nodding harmonia, and black oak forest with minimum 20-foot setbacks (**Mitigation Measures 3.3-1c, 3.3-1e, 3.3-1g, 3.3-1i, and 3.3-5**, respectively).
- Avoidance of green monardella adjacent to vineyard Block V6 (**Mitigation Measure 3.3-1h**).

With implementation of **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5**, approximately 41.94 acres in the Preservation Area of suitable habitat for holly-leaved ceanothus would be preserved in perpetuity. This area includes 27.71 acres of chamise alliance (or, from **Table 3.3-5b**, 71.58 acres − 43.87 acres), 3.22 acres of mixed manzanita (or, from **Table 3.3-5b**, 5.74 acres − 2.52 acres), and 11.01 acres of scrub interior live oak (or, from **Table 3.3-5b**, 29.86 acres − 18.85 acres). This area is estimated to include more than 1,225 holly-leaved ceanothus individuals. The mitigated proposed project would reduce impacts on approximately 317 holly-leaved ceanothus individuals compared to the proposed project.

Implementation of **Mitigation Measures 3.3-1b, 3.3-1f, and 3.3-1h** would minimize impacts on holly-leaved ceanothus, two-carpellate western flax, and green monardella, respectively, through replacement at a 1:1 ratio (mitigated:affected) in the Preservation Area. Most (approximately 91 percent) of the onsite population of narrow-flowered California brodiaea would be preserved and located in the Preservation Area; implementation of **Mitigation Measure 3.3-1d** would protect the narrow-flowered California brodiaea plants in the Preservation Area during construction.

> **Mitigation Measure 3.3-1a**: A Preservation Area (**Figure 3.3-6**) totaling a minimum of 79.68 acres shall be designated for preservation in a mitigation 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. The land placed in protection shall be restricted from development and other uses that would degrade the quality of the habitat (including but not limited to conversion to other land uses such as agriculture or urban development, and excessive off-road vehicle use that increases erosion) and should be otherwise restricted by the existing goals and policies of Napa County.

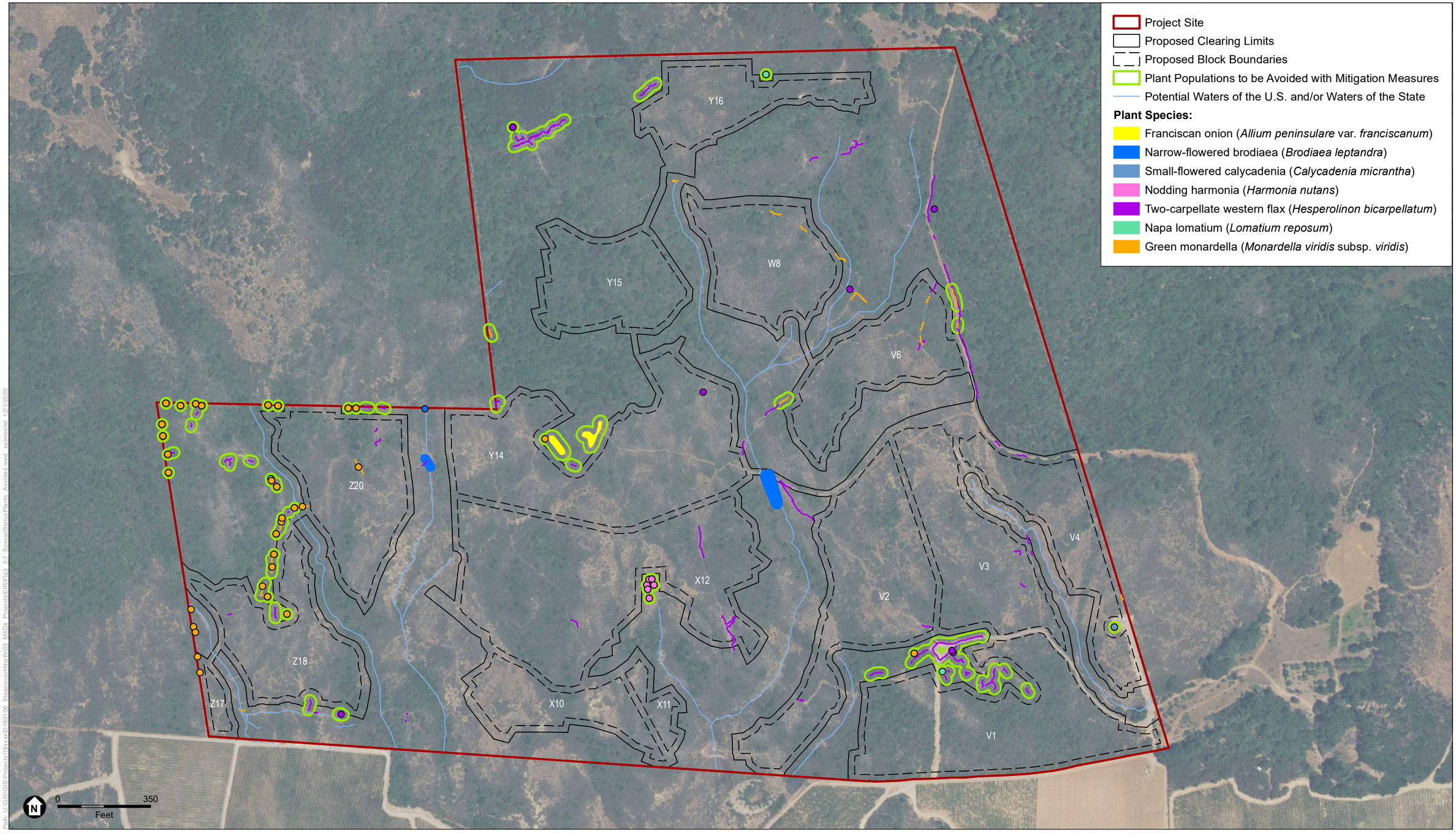


SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.3-6
Mitigated Proposed Project

ESA



SOURCE: SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.3-7
Special-Status Plant Species Avoided with Mitigation Measures

ESA

TABLE 3.3-5A
MITIGATED PROPOSED PROJECT SPECIAL-STATUS PLANTS IN PRESERVATION AREAS

Special-Status Plants	Total Acreage (and Individuals) on the Project Site	Original Proposed Vineyard Blocks			Mitigated Proposed Vineyard Blocks		
		Acreage	Individual Count	Acreage Preserved	Acreage	Individual Count	Acreage Preserved
Holly-leaved ceanothus	109.41 acres (2,822 individuals)	76.97	1,912	32%	66.26	1,595	43%
Franciscan onion	0.10 acres (6 individuals)	0.1	6	0%	0	0	100%
Narrow-flowered California brodiaea	0.23 acre (29 individuals)	0.02	2	91%	0.02	2	91%
Small-flowered calycadenia	(6 individuals)	*	6	0%	0	0	100%
Two-carpellate western flax	0.09 acre (12,094 individuals)	0.07	9,321	23%	0.02	2,472	80%
Napa lomatium	(18 individuals)	*	18	0%	0	0	100%
Green monardella	0.02 acres (2,707 individuals)	0.02	2,275	16%	0.01	1,162	57%
Nodding harmonia	(338 individuals)	*	338	0%	0	0	100%

TABLE 3.3-5B
MITIGATED PROPOSED PROJECT, PRESERVATION AREAS BY BIOLOGICAL COMMUNITY

Biological Communities	Total Acreage on the Project Site	Original Proposed Vineyard Blocks		Mitigated Proposed Vineyard Blocks				
		Acreage	Percent Removed	Acreage[1]	Percent Removed	Acreage Preserved	Total Acreage in Napa County	Percentage of Total Affected in Napa County
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)	0.79	0.75	95	0	0	0.79	2,509.19	0
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	50.24	31.63	63	17.25	34	32.99	18,114.77	0.10
California Annual Grasslands Alliance	8.82	6.56	74	6.10	69	2.72	36,218.28	0.02
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	71.58	48.85	68	43.87	61	27.71	30,559.71	0.14
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	5.74	3.77	66	2.52	44	3.22	7,880.85	0.03
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	29.86	22.55	76	18.85	63	11.01	10,934.15	0.17
Urban or Built-up (Roads and Graded Areas)	1.52	1.02	67	0.83	55	0.69	28,772.92	0.00
Rock Outcrop	1.60	1.09	68	1.06	66	0.54	1,671.63	0.06
Total	**170.15**	**116.22**		**90.47**		**79.68**		

NOTES:
GIS = geographic information system; NFD = No Formal Description

* Acres not available. Plants mapped as point locations.

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 An additional 10 acres would be enhanced with Mitigation Measure 3.3-2a to achieve 2 acres preserved/enhanced for every 1 acre affected.

SOURCES: Napa County 2005; LSA 2018; ESA 2020

Erosion Control Plan #P18-00446-ECPA shall be revised before approval to increase the Preservation Area to 79.68 acres, consistent with the modified block configurations detailed in **Figure 3.3-6**. The owner/permittee shall record the mitigation easement within 60 days of approval of Erosion Control Plan Application (ECPA) #P18-00446-ECPA by the County; however, in no case shall the ECPA be initiated until said mitigation easement is recorded.

In accordance with Napa County Code Section 18.108.100 (Erosion Hazard Areas—Vegetation Preservation and Replacement), any special-status plants or populations inadvertently removed as part of the development authorized under #P18-00446-ECPA shall be replaced onsite at a ratio of 2:1 at locations with similar habitat, as approved by the planning director. A mitigation plan shall be prepared. At a minimum, the mitigation plan shall identify the locations where the plants will be planted in suitable habitat on the project parcel, the success criteria, and monitoring activities for the populations. The mitigation plan shall be finalized before planting and the start of construction activities. Any replaced special-status plants shall be monitored for at least three years to ensure an 80 percent survival rate.

Mitigation Measure 3.3-1b: The owner/permittee shall replace the 1,595 holly-leaved ceanothus affected by the project at a 1:1 ratio (mitigated:affected). This shall be accomplished by propagating plants from seeds obtained from the plants on the project site or transplanting newly growing seedlings from the development area to the Preservation Area. Growing from seed is the preferred technique because it captures more of the genetic diversity present in the species at a given location. Seed collection shall be conducted by experienced native plant propagators from local native plant nurseries with experience in propagating native ceanothus. Propagation will include specific techniques to avoid introducing plant pathogens into the preserved area. After seedlings have been established in the nursery (generally 1 year), they shall be replanted in suitable areas in the onsite Preservation Area.

To replace approximately 1,595 holly-leaved ceanothus, about 38 individuals per acre shall be planted in a 42-acre portion of the Preservation Area containing chamise alliance, mixed manzanita, and scrub interior live oak (**Figure 3.3-6**). If it is not feasible to replace 1,595 holly-leaved ceanothus in the Preservation Area, suitable areas on adjacent lands may need to be used, at the discretion of Napa County.

Before the start of vegetation clearing and earth-disturbing activities on the project site, a qualified botanist/biologist shall prepare a detailed mitigation and monitoring plan for holly-leaved ceanothus for review and approval by the County. The plan shall include details on collection and propagation of seeds, techniques to avoid introducing plant pathogens to the replanting area, and preparation of the area for planting; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements.

After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary.

If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort.

Mitigation Measure 3.3-1c: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of six Franciscan onion individuals from vineyard Block Y14 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in **Figure 3.3-6**. These avoided populations shall be demarcated with construction flagging/fencing before the start of construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary.

Mitigation Measure 3.3-1d: To avoid impacts on the narrow-flowered California brodiaea to be retained, the clearing limits shall be clearly and accurately flagged by an engineer using GPS equipment. The narrow-flowered California brodiaea to be retained adjacent to the clearing limits and roadways shall be demarcated with construction flagging/fencing. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary.

Mitigation Measure 3.3-1e: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of small-flowered calycadenia within proposed vineyard Block V4 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in **Figure 3.3-6**. These avoided populations shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary.

Mitigation Measure 3.3-1f: To mitigate impacts on two-carpellate western flax plants, the approximately 2,472 individual plants removed shall be replaced at a minimum 1:1 ratio (mitigated:affected). Replacement seeding and planting shall occur in suitable habitat in the Preservation Area (**Figure 3.3-6**) from two-carpellate western flax seeds collected from the project site, subject to the Mitigation and Monitoring Plan outlined below.

Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring Plan for two-carpellate western flax for review and approval by Napa County. The plan shall include details on collection and propagation of seeds, seed spreading and planting of propagated plants, techniques to avoid introducing plant pathogens to the replanting area, and preparation of replanting areas; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements.

After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary.

If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort.

Mitigation Measure 3.3-1g: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the populations of Napa lomatium located on the eastern edge of proposed vineyard Block Z19 and within proposed vineyard Blocks V1 and Y16 and to maintain a 20-foot buffer from the avoided populations, consistent with the modified block configurations detailed in **Figure 3.3-6**. These avoided populations shall be demarcated in the field with construction flagging/fencing. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance boundary shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance boundary.

Mitigation Measure 3.3-1h: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the green monardella populations adjacent to vineyard Blocks Z19, Z20, and V6 and maintain a 20-foot buffer from the avoided populations/areas, consistent with the modified block configurations detailed in **Figure 3.3-6**. These avoided populations shall be demarcated with construction flagging/fencing. The precise locations of these fences shall be inspected and approved by Napa County before the

start of construction and any earthmoving activities. Any incursions into the avoidance boundary shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance boundary.

Replacement of green monardella plants/populations removed shall be at a minimum 1:1 ratio (mitigated:affected) for the approximately 1,162 plants being removed. Replacement seeding and planting shall occur in suitable habitat in the Preservation Area (**Figure 3.3-6**) from green monardella seeds collected from the project site, subject to the Mitigation and Monitoring Plan outlined below.

Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring Plan for green monardella for review and approval by the County. The plan shall include details on collection and propagation of seeds, seed spreading and planting of propagated plants, techniques to avoid introducing plant pathogens to the replanting area, and preparation of replanting areas; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements.

After replanting, the replanting area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary.

If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort.

Mitigation Measure 3.3-1i: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the population of nodding harmonia located in proposed vineyard Block X12 and maintain a 20-foot buffer from the avoided population, consistent with the modified block configurations detailed in **Figure 3.3-6**. These avoided populations shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance area shall be conducted only by qualified personnel and only at the discretion of the County. No equipment or materials shall be laid down in or near the avoidance area/boundary.

Although the mitigation measures that require plant replacement for holly-leaved ceanothus, two-carpellate western flax, and green monardella (**Mitigation Measures 3.3-1b, 3.3-1f,** and **3.3-1h**, respectively) are anticipated to reduce overall impacts on these special-status plant

species to a less-than-significant level, the potential exists for plant replacement and re-establishment to ultimately be unsuccessful. In the event plants cannot be successfully replanted or otherwise replaced after being removed, the mitigation would not be carried out effectively, and as a result, the impact would go unmitigated. This would be a potentially significant indirect impact of the project. To mitigate this impact to a less-than-significant level and ensure that replacement plants can be successfully established through reseeding, propagation, and transplanting, **Mitigation Measure 3.3-1j** would be implemented. **Mitigation Measure 3.3-1j** requires implementing the project in two phases so that plant replacement can be shown to be successful before the project's removal of all the special-status plants. The first phase would be implemented in vineyard Blocks V1–V4 and Z17–Z20 to take advantage of access provided by the existing vineyard area abutting these blocks to the south, and to provide for less fragmentation in the first phase.

Mitigation Measure 3.3-1j: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to be implemented in two phases of approximately 40–50 acres each so that it can be demonstrated that special-status plants removed as result of the project can be successfully replaced consistent with Mitigation Measures 3.3-1b, 3.3-1f, and 3.3-1h. A Phasing Plan shall be provided to Napa County for review and approval before its incorporation into #P18-00446-ECPA. Phase 1 shall include the development of vineyard Blocks V1–V4 and Z17–Z20 (as mitigated). Vineyard Blocks V6 and W8 (in that order), or portions thereof, may be included in Phase 1 to achieve the approximately 40–50 acres of vineyard development allowed in Phase 1. The Phasing Plan shall also be considered in the plant Mitigation and Monitoring Plans specified in Mitigation Measures 3.3-1b, 3.3-1f, and 3.3-1h, and replacement plantings required for the entirety of the project shall be successfully established before the start of Phase 2 so that special-status plant mitigation can be implemented and carried out effectively.

Impact Significance after Mitigation: Implementation of **Mitigation Measures 3.3-1a through 3.3-1j**, as well as **Mitigation Measures 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5**, discussed below, would reduce impacts on special-status plant species and associated habitat to a less-than-significant level because these measures would do all of the following:

- Avoid and preserve 31–65 of the project parcels' special-status plant species habitats (i.e., California Bay–Madrone–Coast Live Oak, California Annual Grassland, Chamise Alliance, Mixed Manzanita, and Scrub Interior Live Oak) and all of the Black Oak Alliance.
- Avoid and preserve approximatively 43–100 percent of the project site's special-status plant population/individuals, including all populations of Franciscan onion, small-flowered calycadenia, Napa lomatium, and nodding harmonia.
- Result in consistency with the Napa County Conservation Regulations (Napa County Code Chapter 18.108) by preserving natural habitat and minimizing adverse effects on sensitive, rare, threatened, or endangered plants through avoidance and demonstrating that replacement plants can be successfully re-established.

- Result in consistency with General Plan Goal CON-3, Policies CON-13 and CON-17, and the Conservation Regulations (Napa County Code Chapter 18.108) by preserving special-status plants and their habitat.
- Result in consistency with General Plan Goal CON-2 because the measures would assist in maintaining the existing level of biodiversity in Napa County.

The mitigation measures would establish a 79.68-acre Preservation Area to protect special-status plant species and their habitats, result in the replacement of affected special-status plants at a 1:1 ratio (mitigated:affected) in the Preservation Area, and include monitoring of the replaced plants for 5 years to ensure success.

Furthermore, implementation of **Mitigation Measures 3.3-1a through 3.3-1j**, as well as **Mitigation Measures 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5**, would not substantially affect the feasibility of the project or the continued viability of agricultural use of the project parcels, because these measures would allow the owner/permittee to develop approximately 90.5 acres of new vineyard on the 170.15-acre project site.

Pallid Bat

Suitable roosting habitat for pallid bat is generally not present on the project site; however, scattered individuals could use rock outcrops as day roosts and this species could forage on the project site, if roosts are located nearby.

Vegetation clearing for the proposed project would result in the loss of approximately 1.09 acres of rock outcrops. The rock outcrops on the project site generally lack deep crevices and cracks and therefore do not provide good bat roosting habitat. Of the total 1.6 acres of rock outcrops on the project site, 0.54 acre would be included in the Preservation Area (**Table 3.3-5a**) discussed in Mitigation Measure 3.3-1a.

Impact Conclusion

The rock outcrops on the project site do not provide quality habitat for any special-status bat species. Therefore, this impact would be **less than significant**.

Mitigation Measure: None required.

Nesting Birds Protected under the Migratory Bird Treaty Act and the California Fish and Game Code

Development of the proposed vineyards would result in the removal of trees and shrubs and other vegetation that could be used by nesting birds. Native birds may nest in the California bay forest, oak woodland, and chaparral habitats that occur on the project site and could use these habitats within the proposed development area as nest sites. If vegetation is removed during the nesting season (February 1 to August 31), impacts on nesting birds could occur. Impacts on active bird nests would violate the Migratory Bird Treaty Act and California Fish and Game Code.

Impact Conclusion

The proposed project could affect nesting birds protected under the federal Migratory Bird Treaty Act and the California Fish and Game Code during vegetation clearing, if any are nesting within or near the clearing footprint. This impact would be **significant**.

Mitigation Measure 3.3-1k: For earth-disturbing activities occurring between February 1 and August 31 (coinciding with the grading season of April 1 through October 15 [Napa County Code Section 18.108.070.L] and the bird breeding and nesting seasons), a qualified biologist shall conduct a preconstruction survey for nesting birds in all suitable habitat in the development area, and where there is potential for impacts adjacent to the development area (typically within 500 feet of project activities). A qualified biologist is defined as knowledgeable and experienced in the biology and natural history of local avian resources with the potential to occur at the project site. The preconstruction survey shall be conducted no earlier than 14 days before vegetation removal and the start of ground-disturbing activities. Should ground disturbance begin later than 14 days from the survey date, the survey shall be repeated. A copy of the survey results shall be provided to the Napa County Conservation Division and CDFW before the start of work.

After work begins, if there is a period of no work activity of five days or longer during the bird breeding season, the survey shall be repeated to ensure that birds have not established nests during the period of inactivity.

If nesting birds are found, the owner/permittee shall identify appropriate avoidance methods and exclusion buffers in consultation with the County's Conservation Division and USFWS and/or CDFW before the start of project activities. Exclusion buffers may vary in size, depending on habitat characteristics, project activities/disturbance levels, and species, as determined by a qualified biologist in consultation with the County's Conservation Division and USFWS and/or CDFW.

Exclusion buffers shall be fenced with temporary construction fencing (or the like), the installation of which shall be verified by Napa County before the start of any earthmoving and/or development activities. Exclusion buffers shall remain in effect until the young have fledged or nest(s) are otherwise determined inactive by a qualified biologist.

Using alternative methods to flush out nesting birds before preconstruction surveys, whether 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) would be an impact on nesting birds and is prohibited. For any act associated with flushing birds from the project areas, consultation with USFWS and CDFW should occur before any activity that could disturb nesting birds.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-1k** would reduce the potentially significant impact 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 observation of no-disturbance zones around nest sites.

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 crossings required for access (discussed under Impact 3.3-3). The two ephemeral streams on the project site that meet the County's definition of a stream have no-touch setbacks ranging from 55 to 105 feet based on slope, in accordance with Section 18.108.025 of the Napa County Code. 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***).

The proposed project would affect 31.63 acres (63 percent) of California bay forest through vegetation clearing (**Figure 3.3-2**). California bay forest is considered a sensitive natural (biotic) community by CDFW as identified in the Napa County Baseline Data Report (Napa County 2005). California bay forest has a state rarity rank of S3, meaning that this natural community is rare and threatened throughout its range (Sawyer et al. 2009).

Policy CON-17 of the Napa County General Plan's Conservation Element requires the preservation and protection of sensitive natural communities and habitats of limited distribution. Where avoidance, restoration, or replacement is not feasible, preservation of habitat at a 2:1 ratio or greater is required to avoid a significant cumulative loss of valuable habitats.

Impact Conclusion

The proposed project would affect 31.63 acres (63 percent) of California bay forest, a sensitive natural community. This impact would be **significant**.

A combination of restoration and preservation is proposed to comply with Policy CON-17. The project as proposed would result in the preservation of 18.61 acres of existing California bay forest (**Table 3.3-4**). With the implementation of mitigation measures, preservation of California bay forest would be increased to approximately 32.99 acres within the 79.68-acre Preservation Area. In addition, approximately 10 acres of the chamise alliance, mixed manzanita, and scrub interior live oak suitable for California bay forest enhancement and not proposed for holly-leaved ceanothus replanting (**Mitigation Measure 3.3-1b**) would be enhanced and preserved in perpetuity with **Mitigation Measure 3.3-2a** below. With implementation of **Mitigation Measure**

3.3-2a, approximately 42.99 acres (32.99 acres in the Preservation Area plus 10 acres enhanced in the Preservation Area) of California bay forest would be preserved and 17.25 acres would be developed.

Mitigation Measure 3.3-2a: The owner/permittee shall enhance 10 acres of California bay forest within the 79.68-acre Preservation Area (**Figure 3.3-6**). This shall be accomplished by planting California bay trees at a density similar to that occurring in the California bay forest mapped on the project site (**Figure 3.3-2**). Before vegetation clearing on the project site, a qualified botanist/biologist shall prepare a detailed Mitigation and Monitoring Plan for California bay, for review and approval by Napa County. The plan shall include details on replanting, techniques to avoid introducing plant pathogens to the replanting area, and preparation of the area for planting; a revegetation monitoring plan; success criteria with a minimum 80 percent survival rate; and reporting requirements.

After replanting, the area shall be monitored for a minimum of 5 years. Annual reports shall be prepared and submitted to the County, with interim success criteria included to ensure that the plan is on track to meet the mitigation goals. After the 5-year monitoring period, a report shall be prepared and submitted to the County evaluating the success of the mitigation program and recommending further actions if necessary.

If the success criteria have not been met at the conclusion of the 5-year monitoring period, monitoring shall continue until the success criteria have been achieved. An amount to be negotiated with the County shall be designated to fund the mitigation and monitoring effort.

Mitigation Measure 3.3-2b: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid 14.38 acres of California bay forest from the development area, consistent with the modified block configurations detailed in **Figure 3.3-6**. This avoided area shall be demarcated with construction flagging/fencing before construction. The precise locations of these fences shall be inspected and approved by Napa County before the start of construction and any earthmoving activities. Any incursions into the avoidance area/boundary shall be conducted only by qualified personnel and at the discretion of the County. No equipment or materials shall be laid down in or near the boundary.

Impact Significance after Mitigation: Implementing **Mitigation Measures 3.3-1a, 3.3-2a, and 3.3-2b** would reduce impacts on sensitive natural communities to a **less-than-significant** level by preserving acreage of the California bay forest at greater than a 2:1 ratio on the project site.

Implementing **Mitigation Measure 3.3-2b** would also preserve additional areas of two-carpellate western flax, Napa lomatium, and green monardella.

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 (or less-than-significant impacts) to onsite streams/waterways would result from the proposed project with the implementation of Mitigation Measure 3.3-3.

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** of the Draft EIR and the project's biological resource reports (**Appendix D**).

The construction of three proposed rocked water crossings and replacement of an existing culvert in onsite stream courses would total approximately 6,000 square feet (Figure 2-4). The proposed rocked water crossings would require placing clean field rock in streambeds within the ordinary high-water mark. This would constitute the placement of fill in waters of the United States and would require a permit from USACE under Section 404 of the CWA. In addition, this action would require a water quality certification (a Section 401 permit) from the Regional Water Board. CDFW may also take jurisdiction over the onsite streams and would thus require a Lake and Streambed Alteration Agreement (Section 1602 permit). The existing culvert is part of the streambed and its replacement would require the same set of permits as required for the rocked water crossings.

Impact Conclusion

The construction of three proposed rocked water crossings and replacement of an existing culvert in onsite stream courses totaling approximately 6,000 square feet could affect potential waters of the United States, waters of the state, and areas within CDFW jurisdiction. This impact would be **significant**.

Mitigation Measure 3.3-3: All necessary permits shall be obtained before the construction of stream crossings and culvert replacement, and 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; however, the Regional Water Board may require a ratio of 2:1 (mitigated:affected) or more. During construction of rocked water crossings and culvert replacement, all necessary best management practices shall be implemented to ensure that no soil or other materials are discharged into the onsite stream courses.

Before the construction and installation of stream crossings and culvert replacement associated with #P18-00446-ECPA, and before development of vineyard blocks reliant on those crossings, the owner/permittee shall obtain—and shall demonstrate to Napa County that it has obtained—all required authorizations and/or permits from agencies with jurisdiction over waters of the United States or the state, such as:

- Water Quality Certification (Section 401 permit) from the Regional Water Board
- Section 1602 Lake and Streambed Alteration Agreement from CDFW
- Section 404 Nationwide Permit from USACE

Alternatively, the owner/permittee may revise the plan to include clear-span crossings, with footings located outside of identified setbacks, over these drainages to minimize and mitigate potential impacts on jurisdictional waters of the United States or state.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-3** would reduce impacts on onsite waterways to a **less-than-significant** level by ensuring a no net loss by implementing a minimum 1:1 ratio replacement and implementing best management practices during construction of rocked water crossings and culvert replacement to ensure that no soil is discharged into the onsite stream courses. In addition, as discussed in **Section 3.7, *Hydrology and Water Quality***, project approval, if granted, would be subject to water quality conditions of approval that would further reduce the potential for construction-related impacts from the transport of construction equipment across stream crossings.

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 a wildlife exclusion fence around the project site, could create barriers to local wildlife movements and conflict with General Plan Policy CON-18 (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 area, 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. The stream courses on the project site, however, are not expected to be regionally important in this regard because they do not traverse an otherwise open or developed landscape, they support vegetation (i.e., chaparral) that is similar to surrounding areas, and they lack surface water for most of the year.

Installing a wildlife exclusion fence around the project site and/or vineyard blocks could restrict movement through the area of non-target wildlife such as raccoons, gray foxes, and other small to medium-sized mammals. In addition, the portion of the wildlife exclusion fence by proposed vineyard Block W8 would make the adjacent wildlife corridor slightly less than 100 feet, which is the preferred width to provide adequate movement areas for some of the passage species and corridor dwellers present in the landscape.

Impact Conclusion

The proposed project would create barriers to local wildlife movements by installing a wildlife exclusion fence. This impact would be **significant**.

> **Mitigation Measure 3.3-4**: The Vineyard Fencing Plan in Erosion Control Plan #P18-00446-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 Vineyard Fencing Plan shall be subject to review and approval by Napa County before its incorporation into #P18-00446-ECPA.
>
> - The following vineyard blocks shall be fenced individually: Blocks V6, W8, Y15, Y16, Z17, Z18, and Z20. The location of new wildlife exclusion fencing shall generally be limited to the outside edge of vineyard avenues.
>
> - The following vineyard blocks shall be fenced in groups: Group 1—Blocks X10, X11, X12, and Y14; and Group 2—Blocks V1, V2, V3, and V4. To the maximum extent practical, the location of new wildlife exclusion fencing shall generally be limited to the outside edge of existing and proposed vineyard avenues and development areas.
>
> - A portion of vineyard Blocks V1, V2, and W8 shall be removed to provide and maintain a wildlife corridor at least 100 feet wide adjacent to the block(s), consistent with the modified block configurations detailed in **Figure 3.3-6**, to facilitate the movement of larger mammals through the area.

- 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. To prevent entanglement, smooth wire instead of barbed wire shall be utilized to top wildlife exclusion fencing.

- Any modifications to the location of wildlife exclusion fencing as specified in Erosion Control Plan #P18-00446-ECPA pursuant to the Vineyard Fencing Plan required by this mitigation shall be strictly prohibited, and would require County review and approval to ensure that the modified wildlife exclusion fencing location/plan would not result in potential impacts on wildlife movement.

Impact Significance after Mitigation: Implementing **Mitigation Measure 3.3-4** would reduce impacts on wildlife corridors to a **less-than-significant** level by ensuring the maintenance of sufficiently sized wildlife corridors and the installation of fencing that would reduce potential negative effects on the movement of smaller animals while effectively excluding deer and wild pigs from the vineyard.

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.

Because the project site is located in the Rector Reservoir Sensitive Domestic Water Supply Drainage, 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 that existed on the parcel in 1993. Based on information provided by the Applicant and review of historical aerial imagery, Assessor's Parcel Number 032-010-086 consisted of 259.7 acres in 1993 (before a lot line adjustment that resulted in the current 170.15 acres), including 2 acres of developed area. The parcel contained 27.9 acres of tree canopy cover and 229.9 acres of brush/scrub cover in 1993. The project as proposed would remove approximately 0.2 acre of tree canopy cover and approximately 114.9 acres of brush/scrub canopy, which would result in the retention of approximately 99 percent tree canopy cover and approximately 50 percent of brush/shrub cover as it existed in 1993. This is within the minimum tree canopy and brush/shrub retention requirements for projects within a Sensitive Domestic Water Supply Drainage under Napa County Code Section 18.108.027(B).

In terms of the numbers of trees to be removed as part of the proposed project, approximately 1,636 of the estimated 2,790 trees on the project 5 inches in diameter at breast height or greater would be removed with the development of 116.22 gross acres of vineyard (LSA 2018; **Appendix D**). The actual number of trees removed would be less with implementation of **Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5**, which would result in the removal of 25.75 acres from the proposed project for inclusion in the Preservation Area (**Figure 3.3-6**). The distribution of trees is highly variable on the site, and generally correlates with the vegetation communities mapped (**Figure 3.3-2**).

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 woodlands may be one of the most common land covers in Napa County, their past conversion to residential and agricultural uses in conjunction with the foreseeable conversion of oak woodland to agricultural use is considered a potentially significant impact on both a project-specific level and a cumulative level (Napa County 2007). Construction of the proposed project would result in the removal of 0.75 acre of black oak forest in proposed vineyard Block Y16.

Impact Conclusion

The proposed project would be consistent with the vegetation retention requirements in Napa County Code Section 18.108.027(B). However, because 0.75 acre of black oak forest would be removed, this impact would be **significant**.

> **Mitigation Measure 3.3-5**: Erosion Control Plan #P18-00446-ECPA shall be revised before approval to avoid the 0.75 acre of black oak forest located in the development area, consistent with the modified block configurations detailed in **Figure 3.3-6**.
>
> Before any earthmoving activities, temporary fencing shall be placed at the edge of the dripline of trees to be retained that are located adjacent to the development area (typically within approximately 50 feet). The precise locations of these fences shall be inspected and approved by Napa County before the start of any vegetation removal or earthmoving activities. No disturbance, such as grading, placement of fill material, and equipment storage, shall occur in the designated protection areas for the duration of erosion control plan and vineyard installation.
>
> Trees removed that are not within the boundary of the project and/or not identified for removal as part of #P18-00446-ECPA shall be replaced onsite with 15-gallon trees at a ratio of 2:1 at locations approved by the director. Replacement trees shall be monitored and maintained as necessary for a minimum of 5 years to ensure an 80 percent survival rate. If replacement plantings are not achieving this success criterion during the initial monitoring period, the permittee shall be responsible for planting replacement trees and conducting ongoing monitoring to ensure that they achieve a survival rate of at least 80 percent.
>
> The owner/permittee shall refrain from severely trimming the trees and vegetation to be retained adjacent to the vineyard conversion area.
>
> **Impact Significance after Mitigation:** Implementing **Mitigation Measure 3.3-5** would avoid significant impacts on black oak forest by preserving all onsite acreage of the biological community.

3.4 CULTURAL AND TRIBAL CULTURAL RESOURCES

This section describes the cultural resources 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 resources and tribal cultural resources during construction, operations, and maintenance activities. Paleontological resources are described and evaluated in **Section 3.5, *Geology and Soils***. References cited in this section are listed in **Chapter 7, *References***.

The Native American Heritage Commission (NAHC) and the Yocha Dehe Wintun Nation sent comment letters regarding cultural resources 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. The Yocha Dehe Wintun Nation stated that the project site is not within the aboriginal territories of the tribe and deferred correspondence to the Mishewal Wappo Tribe of Alexander Valley. 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 archaeological 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, unique 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 Reconnaissance of 170 +/- Acres Near Foss Valley, Napa County, California* (Flaherty 2018). The confidential technical report (**Appendix E**) presents additional details regarding the background context 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 divide 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 period is the *Paleoindian Period* (11500–8000 B.C.), 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 in an area inhabited by the Yukian-speaking Wappo (Sawyer 1978). 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 are known from as early as 1849, most current cultural knowledge comes from early 20th century anthropologists (Levy 1978).

The Wappo are traditionally 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 territory 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 (Barrett 1908; Kroeber 1925). 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).

The name *Wappo* is a name derived from the Spanish term *guapo*, which means “handsome” or “brave.” This name was most likely given to the Wappo during the Mission Period, as the group was well known for its strong resistance to Spanish and Mexican expeditions of conquest and colonization within its territory (Barrett 1908; Kroeber 1925). Although the Wappo name for themselves is unknown, the western Wappo who lived along the Russian River in Alexander Valley called themselves *Mishewal*, the name still used by the present-day Mishewal-Wappo Tribe of the Alexander Valley.

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. Despite this resistance, the 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; Sawyer 1978). Today the Wappo are represented by the Mishewal-Wappo Tribe of the Alexander Valley, which has 340 living members.

Historic Setting

Napa County was first mentioned in 1795 in the records of Mission Dolores. The area was explored by Euroamericans in 1823 by Father José Altamira and Alfred Jose Sanchez. Fearing Russian encroachment, they headed north from San Francisco, passing through San Rafael and Olompali, exploring the Sonoma, Napa, and Suisun Plains for potential sites for new missions (Beck and Haase 1974). Mission San Francisco Solano, the northernmost Spanish mission, was established in 1823 in Sonoma. Following secularization of the missions in 1833, the awarding of land grants accelerated and encouraged the European and American settlement of the Napa Valley. In 1848, after a brief conflict, Mexico ceded California to the United States. With the discovery of gold that same year and the subsequent Gold Rush of the early 1850s, the population of California grew exponentially.

Napa County is historically known for its viticulture. Early pioneer George Yount planted the first grapes in the Napa Valley in 1839. Soon after, other settlers, such as John Patchett and Hamilton Walker Crabb, helped introduce the first *Vitis vinifera* grapes to the area. Charles Krug is credited with establishing the Napa Valley's first commercial winery in 1861. His success sparked a wave of new growth in the wine industry, and by 1889 there were more than 140 wineries in operation in the valley.

EXISTING ENVIRONMENT

Flaherty (2018) prepared a cultural resources technical report for the proposed project that includes the results of a records search and a surface survey. The report documents a review of ethnographic literature, archaeological base maps, site records, and prior survey reports on file at the California Historical Resources Information System Northwest Information Center, at Sonoma State University (File Nos. 14-0935 and 17-2766). The results of the background research indicate that no archaeological or ethnographic resources have been recorded within the project site and that the project area has not been subject to previous cultural resources investigation. The background research also indicates that five historic-era cultural resources have been previously recorded within a 1-mile radius of the project area: P-28-001180 (homestead), P-28-001181 (stone house), P-28-001182 (stone fence), P-28-001183 (stone fence), and P-28-001184 (stone fence). No prehistoric or indigenous cultural resources have been previously recorded within a 1-mile radius of the project area.

A mixed-strategy, on-foot surface survey was conducted of the project area. Transects varied in width from 20 meters to more than 70 meters, depending on slope and vegetation. Ground visibility was limited in many areas by heavy brush, grass, and duff cover. As a result of the survey, one isolated obsidian biface fragment was identified and documented on a Department of Parks and Recreation 523 form. The isolated artifact was left in place and not collected. No other evidence of past human use and occupation, such as midden soil with shell or faunal remains, concentrations of artifacts, or bedrock features such as mortars, was identified during the survey effort.

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 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.

In June 2018, the NAHC was contacted to request a search of the NAHC Sacred Lands File. The NAHC responded in July 2018, indicating that no sacred lands are on file for the project area and provided a list of Native American groups to contact. On January 29, 2019, Napa County sent project notification letters to the Yocha Dehe Wintun Nation, the Mishewal Wappo Tribe of the Alexander Valley, and the Middletown Rancheria. 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. The Yocha Dehe Wintun Nation responded that the project is not within their aboriginal territory. No additional responses were received. On November 21, 2019, Napa County sent consultation closure notices to the Yocha Dehe Wintun Nation, the Mishewal Wappo Tribe of the Alexander Valley, and the Middletown Rancheria.

Appendix F provides documentation of project correspondence with Native American representatives.

3.4.2 REGULATORY SETTING

For the purposes of CEQA, cultural resources are defined to include architectural resources, archaeological resources, human remains, 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 of Historical Resources (California Register). In addition, CEQA sets specifications for the evaluation of cultural resources. This subsection describes the laws, policies, and regulations that address these resources in the project area.

STATE REGULATIONS

California Environmental Quality Act

CEQA is the principal statute governing environmental review of projects occurring in the state 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 resources. Under CEQA (Section 21084.1), a project that may cause a substantial adverse change in the significance of a historical resource is a project that may have a significant effect on the environment.

The State of California implements the provisions of 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 the state's jurisdiction. 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.

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, then 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 also 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 some 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 (PRC 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 persons who unlawfully and maliciously excavate upon, remove, destroy, injure, or deface 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 disinterring, disturbing, or removing 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 policies and action items are adapted from the 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-19:** The County supports the identification and preservation of resources from the County's historic and prehistoric periods.

- **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-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-26.5:** 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.

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 and tribal cultural resources would be 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; or
- 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 **Section 3.4.2, *Regulatory Setting,*** under ***State Regulations***. 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 based on consultation with relevant California Native American tribes. 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 dependent on consultation efforts conducted between the lead agency and relevant California Native American tribes during the CEQA process.

IMPACTS AND MITIGATION MEASURES

Table 3.4-1 summarizes the impact conclusions presented in this section.

TABLE 3.4-1
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 2020

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 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 significant archaeological sites have been identified in the project area or within a 1-mile radius. A single obsidian biface fragment was identified in the project area; however, an isolated artifact does not constitute an archaeological site. 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).

While no significant archaeological resources were identified in the project area or vicinity, because of the presence of a single obsidian biface fragment and the environmental context, the potential exists for archaeological materials to be uncovered during project construction. 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 previously identified.

Impact Conclusion

If previously unrecorded archaeological materials are identified in the project area during project implementation, 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 provide documentation to Napa County before the start of project construction showing that an Awareness Program has been developed and appropriate project personnel have been trained, shall ensure that project personnel are available for and attend the training, and shall 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. Napa 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); or battered stone tools, such as hammerstones and pitted stones. Historic-era materials might include building or structure footings and walls, or deposits of metal, glass, and/or ceramic refuse.

If the resource is indigenous, the County shall contact a Native American representative to assess the find. If the County determines, based on recommendations from the qualified archaeologist and the Native American representative (if the resource if indigenous), 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 and, if an archaeological resource is inadvertently discovered, a qualified archaeologist would assess any previously unrecorded archaeological resource. If the resource is determined to potentially be significant, 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, 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 survey, 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 are discovered during ground-disturbing 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 of the find 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 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 that work in the area cease and that appropriate state law be followed 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 Public Resources Code Section 21074.

Through background research, a 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, because the proposed project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown archaeological resources that could also be considered tribal cultural resources.

Impact Conclusion

In the event that archaeological resources that are also considered tribal cultural resources are discovered during project ground-disturbing activities, impacts of the proposed project on the tribal cultural resource would be significant if impacts would result in a substantial adverse change to the significance of the resource. This impact would be **potentially significant**.

As discussed above in Impacts 3.4-1 and 3.4-2, implementation of **Mitigation Measures 3.4-1a**, **3.4-1b**, and **3.4-2** would reduce potential impacts on archaeological resources and human remains to a less-than-significant level. Specific to tribal cultural resources, **Mitigation Measure 3.4-3** would be implemented.

> **Mitigation Measure 3.4-3:** If indigenous 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. Napa 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. If the resource is indigenous, the County shall contact a Native American representative to assess the find. If the County determines, based on recommendations from a qualified archaeologist and a Native American representative, that a resource identified during project implementation may qualify as a tribal cultural resource (as defined in PRC Section 21074), the resource shall be avoided if feasible.
>
> If avoidance is not feasible, the County shall consult with the appropriate Native American tribe 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. Treatment may include, as feasible:
>
> - Avoidance and preservation of 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.

- Treating 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:
    - Protecting the cultural character and integrity of the resource.
    - Protecting the traditional use of the resource.
    - Protecting the confidentiality of the resource.
    - Establishing 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.
    - Protecting 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 resource is inadvertently discovered, a qualified archaeologist and a Native American representative would assess whether the resource would be avoided; or, if avoidance is not feasible, Native American tribes would be consulted with and treatment measures would be determined. 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. References cited in this section are listed in **Chapter 7, *References***.

No comment letters regarding geology, soils, and paleontological resources were received in response to the Notice of Preparation. See **Appendix B** for Notice of Preparation comment letters.

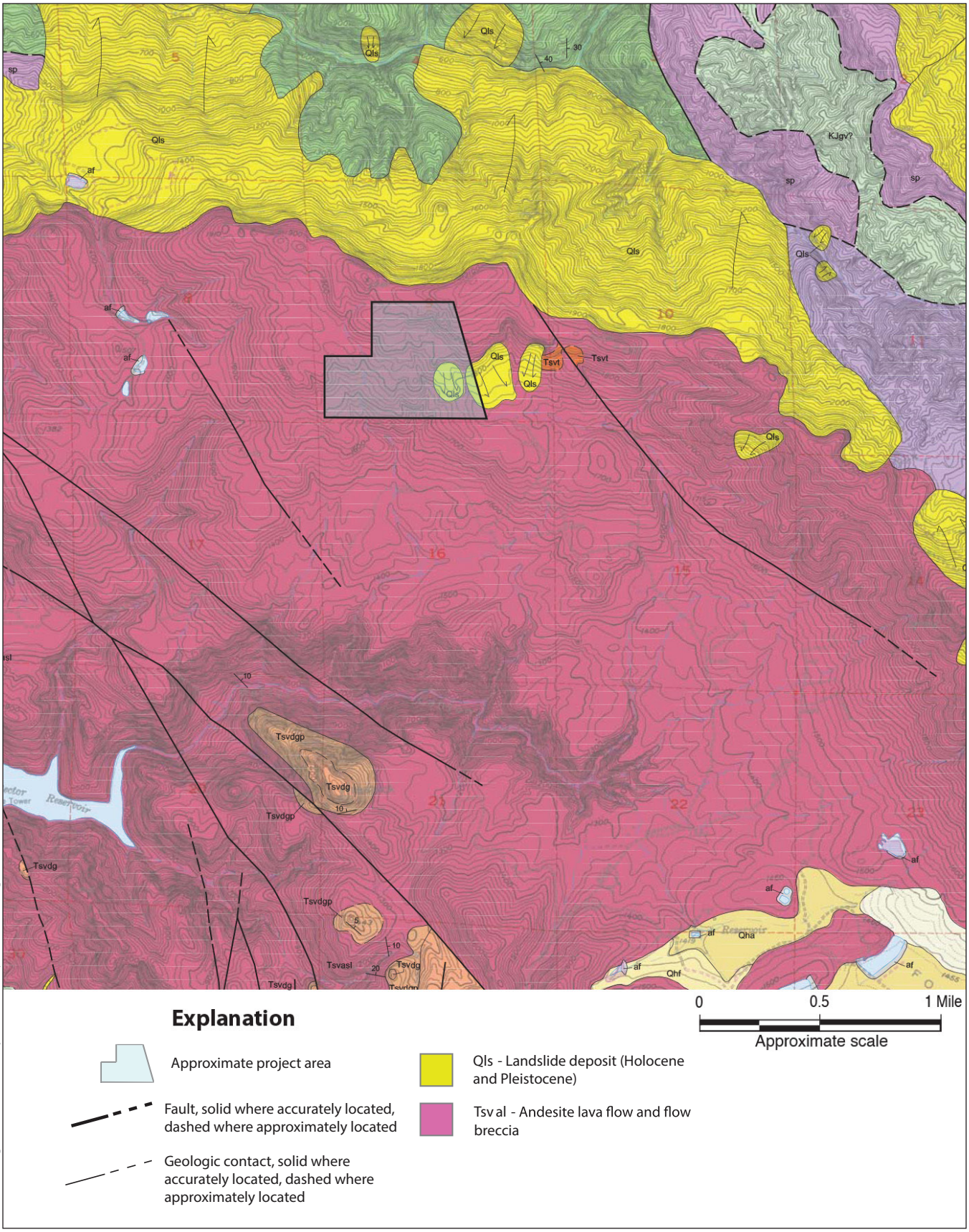
3.5.1 ENVIRONMENTAL SETTING

GEOLOGY 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 Pacific–North American plate boundary (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.

Geologic mapping indicates that the project site is underlain by Franciscan Formation basement rocks, a sequence of sheared and deformed sandstone and shale mixed with remnants of the oceanic crust from the collision between the ancient Farallon and North American Plates more than 25 million years ago (Gilpin 2018). Overlying the Franciscan Complex are Tertiary and Quaternary sedimentary rocks.

Within the project site and vicinity, the bedrock is mapped as Andesite (Sonoma Volcanics). This unit is characterized by andesitic and basaltic volcanic flows that trend northeast and dip steeply to the north and south. Surficial deposits mapped on the site include landslides along the southeastern portion of the site and young (Quaternary, 2 million years old to present) colluvium and alluvium within drainage channels and low-relief topographic zones (**Figure 3.5-1**) (Gilpin 2018).



SOURCE: Gilpin Geosciences, Inc., 2018

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.5-1
Geologic Map

ESA

In general, the project site is on a south-facing slope with ephemeral drainages, broad low-relief areas, and several small knobs where volcanic rock crops out. Alluvium was mapped in the drainage channels and colluvium was mapped in three small areas where the topography forms benches on the slope (Gilpin 2018). Slope gradients throughout the parcel vary from approximately 10 percent on the more gentle slopes to approximately 30 percent on steeper terrain (Gilpin 2018).

A project-specific engineering geologic investigation was prepared for the proposed project by Gilpin Geosciences, Inc. (**Appendix G**).

SOILS

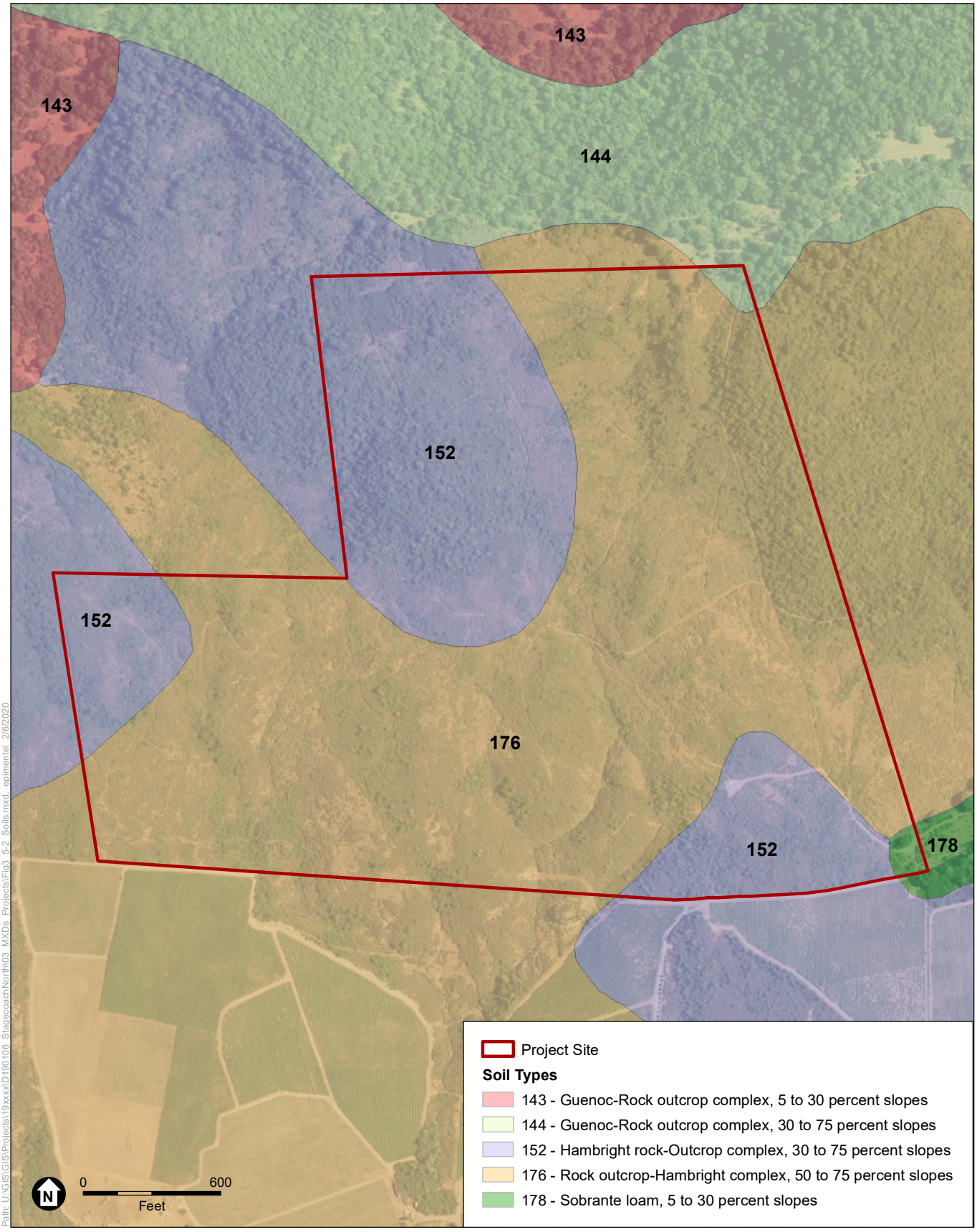
In general, the project site lies within the eastern mountains region of Napa County in an area mapped as consisting of rock outcrop complex. The rock outcrop complex is gently sloping to very steep, consisting of well-drained, very stony loams and loams on uplands. Elevations in the area range from 400 to 4,300 feet. In general, plant cover in the eastern mountains region of Napa County consists primarily of small shrubs, lichens, scattered brush, and patches of annual grasses and forbs. This soil unit makes up approximately 9 percent of Napa County. It is approximately 60 percent Rock outcrop, 15 percent Kidd soils, 15 percent Hambright soils, and 10 percent Lodo, Maymen, and Millsholm soils.

Soils on the project site consist of Guenoc–Rock Outcrop Complex with 30 to 75 percent slopes, Hambright Rock-Outcrop Complex with 30 to 75 percent slopes, Rock Outcrop–Hambright Complex with 50 to 75 percent slopes, and Sobrante Loam with 5 to 30 percent slopes. **Figure 3.5-2** shows soils on the project site and vicinity and **Table 3.5-1** summarizes their characteristics pertaining to erosion and hydrologic factors.

TABLE 3.5-1
SOILS ON THE PROJECT SITE

Soil	Slope (%)	Landform	Drainage	Surface Runoff	Erosion	Shrink-Swell
144—Guenoc–Rock Outcrop Complex	30–75	Hills	Well-drained	High to very high	High	Low to Moderate
152—Hambright Rock-Outcrop Complex	30–75	Hills	Well-drained	High to very high	High	Low
176—Rock Outcrop-Hambright Complex	50–75	Hills	Well-drained	High	High	Low
178—Sobrante Loam	5–30	Hills	Well-drained	Medium	Slight to Moderate	Low to Moderate

SOURCE: NRCS 2020



SOURCE: USDA, 2016; NRCS, 2007; ESA, 2020

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Figure 3.5-2
Soils

SOIL EROSION AND SEDIMENT YIELD

Soil Erosion

Erosion is the mechanical breakdown of rock material and the 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 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 from periods of elevated groundwater levels and high-intensity storm events.

Sediment Yield

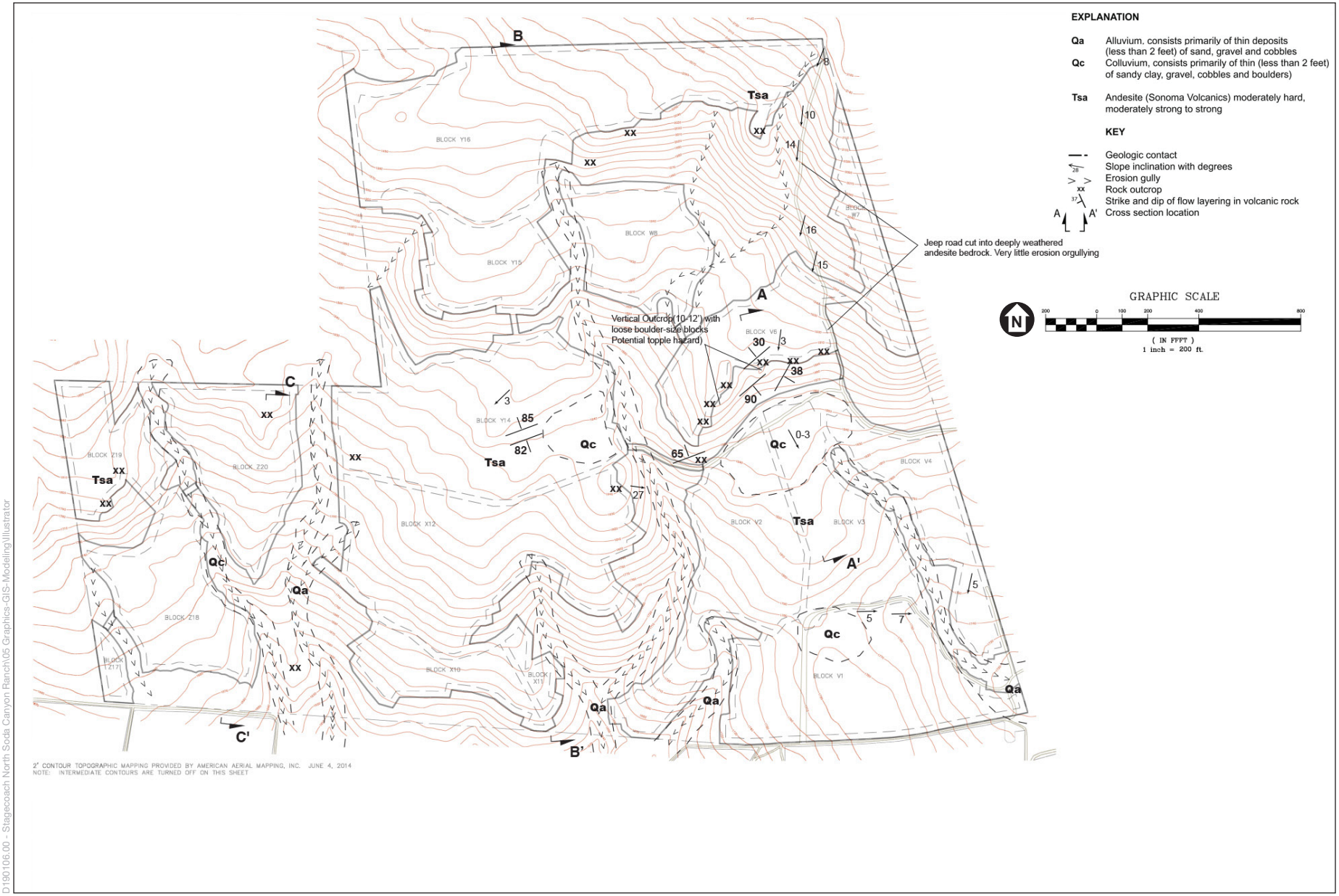
According to the *Napa County Baseline Data Report*, more than half of the sediment delivered to stream channels in the Napa River basin comes from ranch roads, and agricultural operations consisting primarily of vineyards and grazing (Napa County 2005). Notable amounts of water may flow over the surface of hill-slopes and shallow channels may be present during large storms as the 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.

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 3.5-1 and 3.5-3 depict onsite geologic conditions, including the locations of potential landslide features. The geologic map shows three landslide deposits in the area of the project site, with one of these deposits on the southeastern edge of the site (**Figure 3.5-1**). Aerial photo analysis mapped the other two questionable debris flows in the same vicinity and also show in **Figure 3.5-1**. However, based on the site reconnaissance by Gilpin Geosciences, no active landsliding was observed on the project site (Gilpin 2018). The identified landslide hazards on the eastern edge of the project site were determined to be a result of the local volcanic bedrock structure and differential erosion that is unrelated to landslides. Prominent rock exposures at the locations shown in **Figure 3.5-3** expose volcanic blocks on a vertical outcrop face that are prone



D190106.00 - Stagecoach North Soda Canyon Ranch\05 Graphics-GIS-Modeling\Illustrator

SOURCE: Gilpin Geosciences, Inc., 2018

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Figure 3.5-3
Site Plan and Geology Map

ESA

to toppling as the result of normal erosional weathering and when triggered by earthquake shaking (Gilpin 2018). This is discussed further in Impact 3.5-2 as a rock topple hazard.

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 *quaternary* 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 CGS (DOC 2020).

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 the earthquake. The Richter magnitude of an earthquake represents the highest amplitude measured by the seismograph 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 the 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.

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 PGA 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. 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 CGS, and no known active faults have been mapped on the project site; therefore, the hazard of surface rupture is low.

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.

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

NOTES:

[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 2020; CGS 2002

Numerous faults have been mapped in Napa County, but 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 faults are the West Napa Fault and the Hunting Creek–Berryessa Fault, approximately 5 miles east and west of the site, respectively. The West Napa Fault is classified as a Type B fault by the Uniform Building Code (Gilpin 2018) and is capable of generating a Mw 6.7 earthquake. The Hunting Creek–Berryessa Fault is also classified as a Type B fault by the Uniform Building Code and is capable of generating a Mw 7.1 earthquake (Gilpin 2018).

SOURCES: Esri, 2015; CGS, 2018; PPI Engineering, 2019; ESA, 2020

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Figure 3.5-4
Regional Faults

The Napa Earthquake in 2000 (Mw 5.2) was centered between Napa and Yountville, approximately 9 miles from the project site. Moderate ground shaking and minor damage were reported in the residential area west of downtown Napa (Gilpin 2018). In 2014, the Mw 6.0 South Napa Earthquake was centered approximately 17 miles southwest of the project site and produced strong to very strong shaking in downtown Napa (Gilpin 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. 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). The Napa Fault is estimated to have an approximately 2 percent chance of a Mw 6.7 or greater earthquake between 2014 and 2044 (WGCEP 2015b).

Ground failures are secondary effects of ground shaking that can extend many miles from the 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 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.

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 project site is within an area of very low liquefaction susceptibility (Napa County 2007).

PALEONTOLOGICAL RESOURCES

Paleontological resources are the fossilized remains of plants and animals: vertebrates (animals with backbones; e.g., mammals, birds, fish), invertebrates (animals without backbones; e.g., starfish, clams, coral), and microscopic plants and animals (microfossils). Paleontological resources can include mineralized body parts, body impressions, or footprints and burrows. They are valuable, nonrenewable scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived.

Paleontological Resources Potential

Geologic units of low paleontological potential are those that are not known to have produced a substantial body of significant paleontological material. As such, the sensitivity of an area with respect to paleontological resources hinges on its geologic setting and whether significant fossils have been discovered in the area or in similar geologic units.

Project-related construction activities (i.e., ground ripping) would disturb or destroy paleontological resources if the ground ripping would reach deep enough to disturb a sensitive unit. As discussed in **Chapter 2, *Project Description***, the average ripping depth is expected to be between 42 inches and 60 inches. Based on the geologic mapping by Bezore et al. (CGS 2005), and without any detailed, site-specific subsurface information, it is assumed that the ground ripping would only disturb deposits with low to no paleontological sensitivity.

Paleontological Sensitivity

Paleontological sensitivity refers to the potential for a geologic formation to produce scientifically important fossils. A geologic unit's paleontological sensitivity is determined by the 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 Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources," the Society of Vertebrate Paleontology (SVP) (2010:1–2) defines four categories of paleontological sensitivity for rock units:

- **High Potential**. Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- **Low Potential**. Rock units that are poorly represented by fossil specimens in institutional collections, or that based on general scientific consensus only preserve fossils in rare circumstances, with the presence of fossils being the exception, not the rule.
- **Undetermined Potential**. Rock units for which little information is available regarding paleontological content, geologic age, and depositional environment.
- **No Potential**. Rock units such as high-grade metamorphic rocks (e.g., gneisses and schists) and plutonic igneous rocks (e.g., granites and diorites) that will not preserve fossil resources.

Geologic Units

The Geologic Map of the Yountville 7.5-minute quadrangle (by Bezore et al., published by CGS 2005) indicates that the project site is underlain primarily by Miocene-age volcanic deposits known as Andesite lava flow breccias of Stags Leap (Tsvasl[1]) (see **Figure 3.5-2**). Also mapped in the southeast corner of the project site are Holocene- and Pleistocene-age Landslide deposits (Qls[2]). In addition, while not mapped at the surface on the project site, Jurassic- and Cretaceous-age sandstone and shale of the Franciscan Complex are mapped in the region and are present at depth (CGS 2005). The Engineering Geological and Geotechnical Evaluation prepared by Gilpin Geosciences (Gilpin 2018; **Appendix G**) references the mapping by Bezore et al., and the lithology was confirmed during a site reconnaissance. Although they are the same, the landslide deposits (Qls) of the Geologic Map of the Yountville 7.5-Minute Quadrangle are mapped in the Gilpin report as Quaternary Alluvium and Quaternary Colluvium.

Andesite Lava Flow Breccias of Stags Leap

In general, rocks of igneous origin have low to no paleontological potential and sensitivity, because of the extremely high temperatures associated with the formation of igneous rocks and the nature of lava flows. The exception to this generalization is certain volcaniclastic formations that are composed of ash or tephra, which are known to have yielded well-preserved fossil remains.

The andesite lava flow material mapped on the project site is not classified as an ash or tephra-based deposit, and therefore would have very low to no paleontological potential or sensitivity.

Landslide Deposits

Landslide deposits occur as a result of mass-wasting events in areas of steep terrain. Although landslide deposits of the correct age generally may contain paleontological resources, the likelihood of recovering fossils is largely dependent on the original source of the landslide deposits. If the original deposits have low paleontological sensitivity, the landslide deposits associated with the original deposit would also have low paleontological sensitivity. Another factor in the determination of low sensitivity is the chance that any fossil remains found within landslide deposits would likely have been removed from their original stratigraphic context, and would lose their significance.

Well-preserved paleontological resources have been recovered from landslide deposits throughout California. However, based on geologic mapping in the Geologic Map of the Yountville 7.5-minute Quadrangle, the landslide deposits on the project site are likely to have originated from the outcrops of Miocene-age andesite lava flows, and therefore would have low paleontological potential and sensitivity.

1 *Tsvasl* is the naming convention used to represent the Andesite lava flow breccias of Stags Leap on the geologic map of the Yountville quadrangle.

2 *Qls* is the naming convention used to represent the Holocene- and Pleistocene-age landslide deposits.

The landslide deposits on the project site would have low paleontological potential and sensitivity, given the volcanic origin of the deposits and the lack of previous fossil finds in the area.

Paleontological Resources Records Search

The online collections database of the University of California Museum of Paleontology was searched for fossil localities from geologic units mapped as occurring in the project site. The results of this search indicate no previously recorded vertebrate fossil discoveries within the geologic formations within the project site (UCMP 2020).

3.5.2 REGULATORY SETTING

FEDERAL REGULATIONS

Earthquake Hazards Reduction Act of 1977

In 1977, Congress enacted the Earthquake Hazards Reduction Act (U.S. Code Title 44, Section 7701 et seq.). The law created the National Earthquake Hazards Reduction Program with the goal of minimizing risks to lives and property from future earthquakes and seismic activity. In November 1990, Congress amended the program by enacting the National Earthquake Hazards Reduction Program Act, which refined the description of agency responsibilities, program goals, and objectives. The 1990 law was reauthorized in 2004.

The mission of the National Earthquake Hazards Reduction Program is to improve understanding, characterization, and prediction of vulnerabilities to hazards; 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 related responsibilities 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 buildings intended for human occupancy from being constructed 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.

The Alquist-Priolo Act requires the State Geologist to establish regulatory zones known as *earthquake fault zones* around the surface traces of active faults and to issue maps accordingly. The maps are provided to all affected cities, counties, and California agencies to assist them with planning decisions. If a project is within a designated Alquist-Priolo Earthquake Fault Zone,

the city or county must require that a geologic investigation be completed before it approves any development. The geologic investigation must prove that the proposed structures would not be constructed across any active faults. The project site is not in an area mapped within an Alquist-Priolo Earthquake Fault Zone (DOC 2020).

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. Cities, counties, and other local permitting agencies must regulate certain development projects within these zones. The applicant for any project that would locate structures for human occupancy in a designated Zone of Required Investigation must perform a site-specific geotechnical investigation identifying potential site-specific seismic hazards and corrective measures, as appropriate, before receiving a building permit.

The *CGS Guidelines for Evaluating and Mitigating Seismic Hazards* (Special Publication 117A) provide guidance for evaluating and mitigating seismic hazards (CGS 2008). CGS is in the process of producing official maps based on USGS topographic quadrangles, as required by the Seismic Hazards Mapping Act. To date, CGS has not completed delineations for any of the USGS quadrangles in which the 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 Conservation Element of the Napa County General Plan (Napa County 2009) contains the following goals and policies related to open space conservation, natural resources, water resources, and safety that provide guidance for project-related issues pertaining 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.

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 would be 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; or
  - 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 offsite landslide, lateral spreading, subsidence, liquefaction, or collapse;

- Be located on expansive soil creating substantial risks to life or property;[3]
- 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; or
- 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 use of septic tanks or alternative wastewater disposal systems were analyzed. These impacts of the proposed project were determined to be less than significant:

- The project site is not located immediately adjacent to any historically active fault, nor is the site within an Earthquake Fault Zone as designated by the Alquist-Priolo Earthquake Fault Zoning Act (CGS 2019).
- The proposed project would not include any structures, and therefore would not subject new structures or people within them to a fault rupture.
- The project site is in an area characterized as having very low susceptibility to liquefaction (Napa County 2009) and is not known to contain expansive soils.

Because the project site is in agricultural use and 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 summary of the analysis is provided in **Chapter 1, *Introduction***. A complete discussion can be found in the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

The evaluation of potential geologic and soil-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 (Gilpin 2018) and the Memorandum about Block V6 Rock Topple Hazard Mitigation (Gilpin 2019) (**Appendix G**)

[3] The California Building Code no longer includes a Table 18-1-B. Instead, California Building Code Section 1803.5.3 describes the criteria for analyzing expansive soils. Expansive soils can also be analyzed using ASTM Method 4829.

- The Soil Loss Analysis prepared for the proposed project by PPI Engineering (2018) (**Appendix H**)

To evaluate potential impacts on paleontological resources, Environmental Science Associates conducted a search of the online collections database of the University of California Museum of Paleontology for fossil localities from geologic units mapped as occurring on the project site. Data provided by the museum's online database include taxonomic identification, locality number and name, age, and county, and sometimes geologic formation. The database does not provide precise data on localities; however, in some cases, the locality name can be used to refine the general vicinity of the locality within the county.

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 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).

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 result in substantial soil erosion or loss of topsoil.	Less than Significant
3.5-2: 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
3.5-3: 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

SOURCE: Data compiled by Environmental Science Associates in 2020

Impact 3.5-1: Construction and operation of the proposed project could result in substantial soil erosion or loss of topsoil.

To quantify the effects of the proposed project related to soil loss and erosion, potential soil loss was calculated by PPI Engineering (2018), using the Universal Soil Loss Equation (USLE). 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 (PPI Engineering 2018; **Appendix H**), a site visit was conducted in December 2015 to determine the pre-project cover values for each block and/or transect area. In November 2018, a second site visit was completed to verify whether the existing cover values agreed upon during the December 2015 site visit were still accurate.

Existing conditions on the project site and in the onsite catchments reflect the effects of natural processes, ongoing land uses, and related past land uses. These natural conditions vary by generalized habitat type. Based on the hydrologic analysis prepared for the proposed project, existing hydrologic conditions for each habitat type within the development area were classified as good (greater than or equal to 75 percent ground cover).

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 onsite, increasing their susceptibility to erosion, especially in areas of overland flow. The USLE analysis of pre-project versus post-project conditions evaluated these changes to determine the potential of the proposed project to increase soil loss. The proposed project's conversion and decommissioning of existing roads could also result in sedimentation impacts, and were therefore included in the USLE calculations (**Appendix H**).

Potential soil loss and sedimentation caused by the proposed agricultural development and operations would be controlled primarily by using a no-till cover crop with vegetative cover densities ranging from 75 to 85 percent. Vineyard avenues would also include vegetative cover at densities consistent with the Erosion Control Plan. A cover crop can trap eroded soils onsite, thereby reducing soil loss and the potential for sedimentation. Hydrologic conditions after development of the proposed project are anticipated to be rated as good, based on the positive effects of soil ripping on certain soil types, and assuming that the project achieves and maintains the proposed vegetative cover specifications.

As identified in **Section 2.5.1, *Vineyard Development*** in **Chapter 2,** the Erosion Control Plan (**Appendix A**) also includes the following erosion control measures, among others, to prevent increases in erosion:

- Five detention basins in the development area to attenuate small increases in runoff resulting from vineyard development.
- Surface drainage pipelines to collect surface runoff at low points throughout the development area and transport it to protected outlets.
- Standard drop inlets and concrete drop inlets at designated locations in the development area.
- Rock energy dissipaters to help disperse concentrated flow.
- Diversion ditches to convey surface water through and/or around proposed vineyard areas and direct it to a stable outlet.

- Diversion avenues to reduce the run length of slopes and intercept runoff throughout the vineyard while directing it to a stable outlet.

Table 3.5-4 shows the results of the USLE calculations for the proposed vineyard blocks under pre- and post-project conditions. As shown, the proposed project is anticipated to reduce annual soil loss by approximately 160.01 tons (29.78 percent) relative to existing conditions. **Appendix H** presents the full USLE calculation analysis.

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 soils. Cultivating the soil may increase the number of smaller rocks at the surface level; 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 unstable slopes, further slope instability could result, which could pose the threat of erosion and sediment transport.

The proposed project would upgrade 0.6 mile of Level 2 roads on the project site to Level 1 to provide primary access to the proposed vineyard blocks. These Level 1 roads would include erosion control features, such as outsloping, the removal of berms, and construction of frequent rolling dips or water bars where needed, and would be maintained with crushed rock. The proposed project would use 0.1 mile of existing Level 2 roads that would receive the same best management practices and road shaping as the Level 1 roads, except that the roads would not be surfaced with crushed rock. In addition, the project would decommission 0.2 mile of existing dirt roads by incorporating them into the proposed vineyard blocks (see also the road plan in the Erosion Control Plan, **Appendix A**).

Impact Conclusion

Development of the proposed project would alter the rate of soil erosion and sediment yield onsite; however, the proposed project is designed to create a decrease in soil erosion and yield.

TABLE 3.5-4
PRE- AND POST-PROJECT SOIL LOSS (UNIVERSAL SOIL LOSS EQUATION) CALCULATIONS BY VINEYARD BLOCK

Proposed Block Transect[1]	Proposed Vineyard Development Acres	Pre-project Soil Loss (tons/year)	Post-project Soil Loss (tons/year)	Net Increase/ Decrease (tons/year)
A1	0.17	0.68	0.17	-0.51
A2	0.03	0.25	0.02	-0.23
A3	0.04	0.02	0.00	-0.01
A4	0.04	0.04	0.04	-0.00
A5	0.03	0.03	0.01	-0.02
A6	0.04	0.03	0.01	-0.02
V1A	4.66	5.41	3.77	-1.64
V1B	5.88	6.83	5.05	-1.78
V2A	6.61	35.58	27.75	-7.83
V2B	2.15	15.31	10.71	-4.60
V3	6.45	33.75	26.85	-6.90
V4	5.71	22.69	17.41	-5.28
V6A	3.20	12.74	9.52	-3.22
V6B	2.18	10.73	7.93	-2.80
W7	2.81	9.25	7.71	-1.54
W8	5.32	32.07	20.97	-11.10
X10	1.22	7.94	4.86	-3.08
X11	1.06	6.52	3.26	-3.26
XY1	11.23	70.12	53.83	-16.28
XY2	6.89	89.64	37.19	-52.45
XY3	9.77	45.87	43.52	-2.35
Y14	1.47	1.42	1.11	-0.31
Y15	4.50	4.58	3.48	-1.11
Y16A	2.33	0.92	0.77	-0.15
Y16B	4.39	6.62	4.28	-2.34
Y16C	4.31	3.58	3.67	0.09
Y16D	3.43	21.41	10.08	-11.33
Y16E	3.23	12.91	12.42	-0.49
Z17	0.69	1.27	1.27	0.00
Z18	6.33	28.87	22.56	-6.30
Z19	3.78	5.66	4.61	-1.05
Z20A	4.34	30.81	22.43	-8.38
Z20B	1.92	13.71	9.99	-3.73
Total	**116.21**	**537.25**	**377.24**	**-160.01**

NOTE: Individual estimates may not add to the totals due to rounding

1. See **Appendix H** for a map of transect locations.

SOURCE: PPI Engineering 2018

As detailed in **Table 3.5-4**, implementing the Erosion Control Plan would reduce annual soil loss from the development area by approximately 160.01 tons (29.78 percent) compared to existing conditions. The results of the USLE equation calculations show soil loss decreasing during post-project conditions in all individual transect areas in the proposed vineyard blocks, with the exception of block transect Y16C. As noted in the soil loss analysis, the calculated increase in soil loss at block transect Y16C (0.09 ton per year) would be more than offset by the calculated soil loss decrease at block transect Y16D (11.33 ton per year), located upstream of block transect Y16C. Therefore, the proposed project would result in no impacts related to sediment erosion and yield, and the 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 included in the Erosion Control Plan, the proposed 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**.

With implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3.-5, which would reduce the project acreage by approximately 25.75 gross acres, it is anticipated that soil loss associated with the proposed project would be further reduced than calculations provided in **Table 3.5-4**.

Mitigation Measure: None required.

Impact 3.5-2: 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 project site has favorable slope stability conditions, with low slope inclinations, and the moderately strong to strong volcanic bedrock underlying the site would not be adversely affected by the proposed vineyard (Gilpin 2018).

A rock outcrop that is located south of vineyard Block V6 and approximately 100 feet upslope of vineyard Blocks V2 and V3 presents a topple hazard. The revised Erosion Control Plan has incorporated recommendations from Gilpin Geosciences (Gilpin 2019) to avoid the rock topple hazards downslope of the rock outcrop (**Appendix A**, Sheets 2 and 3). A row of boulders measuring 3–4 feet in diameter would be placed at the upslope edge of the proposed Blocks V2 and V3 to stop any rocks that may dislodge from the rock topple hazard.

Impact Conclusion

As discussed in **Impact 3.5-1**, because the proposed project would implement controls to limit the concentration of surface runoff in areas susceptible to erosion, the project is not anticipated to adversely affect slope stability. The proposed improvements to surface drainage would also

reduce any potential project impacts compared to existing conditions. Further, recommendations from Gilpin Geosciences (Gilpin 2019) to avoid the rock topple hazards downslope of the rock outcrop upslope of vineyard Blocks V2 and V3 have been incorporated into the revised Erosion Control Plan. Therefore, the impact related to the potential for soil in the development area to become unstable would be **less than significant**.

Mitigation Measure: None required.

Impact 3.5-3: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Geologic mapping in the Geologic Map of the Yountville 7.5-minute Quadrangle indicates that the geology of the project site is largely of volcanic origin, with the exception of the Holocene and Pleistocene-age landslide deposits in the southeast corner of the site.

Development of the proposed project would involve ground disturbance in the form of ripping to till and prepare the soil for cultivation. Average ripping depth would be 42 inches, and the maximum ripping depth would be 60 inches; this ground disturbance at this depth would only disturb deposits with low to no paleontological sensitivity.

Impact Conclusion

Ground ripping would disturb the landslide deposits in the southeast corner of the project site. However, because of the igneous origins of the landslide deposits, the likelihood that project construction activities would destroy any undiscovered paleontological resources is low. Given this low potential and the sensitivity of the andesite lava flows and the landslide deposits within the project site, impacts of the proposed project on paleontological resources would be **less than significant**.

Mitigation Measure: None required.

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 operations to create significant hazards to the public or environment through the transport, use, disposal, or accidental release of hazardous materials. References cited in this section are listed in **Chapter 7, *References***.

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 ENVIRONMENT

The project site is currently undeveloped and no chemicals are stored onsite. 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***, there are no sensitive receptors within the project site. The nearest sensitive receptor is a residential property located approximately 3,000 feet to the west of the nearest vineyard block where construction activities would take place.

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 FHSZs 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 “very high” for fire hazard severity (CAL FIRE 2020).

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 before it can be manufactured for commercial use.

The Occupational Safety and Health Administration (OSHA) was created 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 2020). 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 (Code of Federal Regulations Title 49, Part 397) requires carriers of hazardous materials to demonstrate that they have adequate insurance to pay for damage sustained in accidents involving such materials. 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 the evaluation and registration of pesticide products before sale and use, environmental monitoring, testing of fresh produce for residues, and enforcement of local use 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, transportation, 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 California to establish a unified program for the management of hazardous waste and hazardous materials. 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 a function of a local environmental health or fire department. 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 the possession of a valid hazardous materials transportation license (Vehicle Code Section 32000.5) to transport hazardous materials shipments that fall into either of the following categories:

- The display of a placard is required.
- More than 500 pounds are being transported (for a fee), and the shipment would require a placard if shipped in greater amounts in the same manner.

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). Onsite 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 (Cal OES 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 (Napa County 2020).

The Napa County Division of Environmental Health began countywide implementation of the Business Plan Program in 1989. The division requires businesses to have an HMBP if they store hazardous materials at levels exceeding the minimum reportable quantities (total weight of 500 pounds for solids, 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 3 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 list the following applicable policies (Napa County 2009):

- **Policy SAF-5:** The County shall cooperate with other local jurisdictions to develop intra-county 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 would be 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; or
- 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 4.66 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 (DTSC 2020).

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 Moskowite Airport, more than 5 miles southeast of the project area.

The project site would be accessed via a private road off Soda Canyon Road. 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.

In general, the risk of fire in vineyards is very low because of the limited amount of fuel, combustibles, and ignition sources present. Vineyards are irrigated and cover crops are typically mowed in May and August, thereby reducing the vineyards' fuel loads. Also, the removal of vegetation and management of the vineyard would reduce fuel loads in the area compared to existing conditions. In addition, no structures are proposed as part of the project. The proposed project would not increase the exposure of people or structures to wildland fires.

Therefore, this EIR section does not evaluate these issues further. A summary of the analysis is provided in **Chapter 1, *Introduction***. For a complete discussion, see 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 that 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 conclusion presented in this section.

TABLE 3.6-1
SUMMARY OF IMPACT CONCLUSION—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

Source: Data compiled by Environmental Science Associates in 2020

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 operations, the proposed project would transport, use, and store hazardous materials, including fuels, pesticides, and fertilizers. Incidental spills could occur, and containers could leak or rupture, spilling chemicals during storage or fueling of agricultural equipment. Release of these chemicals could result in hazards to the public or environment.

As stated in **Chapter 2, *Project Description***, an integrated pest management (IPM) plan would be implemented and the proposed vineyards would be managed using sustainable farming practices (Stagecoach Vineyard North 2019). IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Chemical pesticides could be used as needed throughout the development area; however, with IPM, such pesticides would be used only after monitoring indicates they are needed based on established guidelines, and treatments would be made with the goal of removing only the target organism.

The proposed project would use the following IPM techniques:

- Use a monitoring program to assess levels of pests and beneficial insects.
- Correlate collected data with an economic threshold for each pest to identify the timing of treatment.
- Consider all available control techniques to determine the most appropriate control method.

The Applicant's existing certification with the California Sustainable Winegrowing Alliance already measures and tracks work in these areas and encourages constant improvement to achieve a more sustainable farming ecosystem.

Site-specific data would be collected about soils in the development area to inform decisions on rootstock selection, soil preparation, and irrigation strategy. The proposed project would use permanent cover crops that promote beneficial insect proliferation and healthy soils, minimize soil compaction to promote aerobic soil conditions, and avoid surface water runoff or evaporation. Bloom and vine tissue samples would be collected and analyzed annually to address vine nutrient needs. The proposed project would use varietals and/or rootstock that are more resistant to site-specific pests and would manage irrigation to minimize water use and promote vine health.

Proposed fertilizers (including CAN-17, K-Carb, 10-34-0, and a micronutrient blend) and herbicides (including glyphosate and gluphosinate for weed control) may be applied to the vineyard up to two times per year. Mildewcides (including wettable sulfur, quinoxyfren, and

tetraconazole) to protect against mildew may be applied to the vineyard up to three times per year. No pre-emergent herbicides would be sprayed in the vine rows for weed management. Weed control and mowing would occur between June 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 in a shipping container that would be placed in Block V1, as shown in Figure 5 of the Erosion Control Plan (**Appendix A**). The nearest water source, an ephemeral stream, is located on the east side of the project site approximately 200 feet northeast of the proposed shipping container location; this stream flows to a perennial stream (depicted with a blue line on the U.S. Geological Survey 7.5-minute Yountville Quadrangle) that eventually flows to Rector Reservoir.

As discussed in **Chapter 2, *Project Description***, the proposed project design incorporates setbacks from all drainages on the project site, with the exception of crossings required for access. The two ephemeral streams on the project site that meet the County's definition of a stream have no-touch setbacks ranging from 55 to 105 feet based on slope, in accordance with Section 18.108.025 of the Napa County Code. 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 avenues would be subject to the same vegetative cover crop requirements as the adjacent vineyard block under the Erosion Control Plan. During storms, these setbacks would filter flows and reduce the potential for petroleum products, pesticides, herbicides, mildewcides, or fertilizers to reach drainages onsite.

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 regulations 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 (see the analysis in **Section 3.7, *Hydrology and Water Quality***).

The proposed project would be required to comply with numerous hazardous materials and stormwater regulations to ensure that hazardous materials are transported, used, stored, and disposed of safely to protect worker safety, and to 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 onsite 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 conditions of approval 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 project owner/permittee shall implement the following best management practices:

- The owner/permittee shall implement the Hazardous Materials Business Plan on file (DHD Establishment #805 Permit #436369) with the Napa County Division of Environmental Health documenting all proposed hazardous materials to be used onsite 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.
- During construction and operation, best management practices consistent with recommendations from the Napa County Division of Environmental Health shall be used to reduce hazardous material contamination of surface water and groundwater. 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 and 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.
- Vehicle engines shall be shut down during refueling.
- No smoking, open flames, or welding shall be allowed in refueling or service areas.
- Service trucks shall be provided with fire extinguishers and spill containment equipment, such as absorbents.
- A spill containment kit that is recommended by the Napa County Planning, Building and Environmental Services Department or local fire department shall be onsite and available to staff if a spill occurs.

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, and the best management practices in the conditions of approval would limit the potential for creation of hazardous conditions from the accidental release of hazardous materials. Therefore, 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 related to hydrology and water quality in the project vicinity, and evaluates the potential for the proposed project to result in impacts on hydrology and water quality. References cited in this section are listed in **Chapter 7, *References***.

One comment letter regarding hydrology was received in response to the Notice of Preparation. The letter, from PPI Engineering, stated that the proposed project does not include any water rights or surface water diversions on the project site, and thus does not need the State Water Resources Control Board (State Water Board) to approve Petitions for Change on Water Right License 9125 and Permit 18459, which were inadvertently listed in the Initial Study's table of anticipated regulatory requirements and permits for project implementation. This clarification has been included in **Chapter 2, *Project Description***, **Table 2-4** of this EIR. 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 southwern part of the county. Precipitation also varies from year to year, deviating as much as 200 percent from the 85-year average.

SURFACE WATER RESOURCES

Napa County is located within the Coast Ranges 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 to the Napa River 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, the largest river in Napa County, 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).

Important surface water 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 in Napa County (Napa County 2007).

The Rector watershed above Rector Dam covers 6,972 acres. Of this area, 1,492 acres (21 percent) are planted in vineyard, with several additional vineyard conversion projects presently being considered by Napa County. A total of 1,293 acres (19 percent) are in reserve, owned by the California Department of Veterans Affairs, Napa Land Trust, U.S. Bureau of Land Management, and California Department of Fish and Wildlife.

The Rector watershed is surrounded by steep mountains that drain through alluvial fans, then across a small plateau before draining into Rector Canyon. The watershed's steep topography causes precipitation to flow quickly overland to Rector Reservoir, which is often the first reservoir in Napa County to crest its spillway. The lack of floodplains in this system means that material has nowhere to settle out before reaching the reservoir. As a result, major storms can rapidly transport large volumes of loose material from throughout the watershed to the reservoir, as occurred after the 1981 Atlas Peak fire.

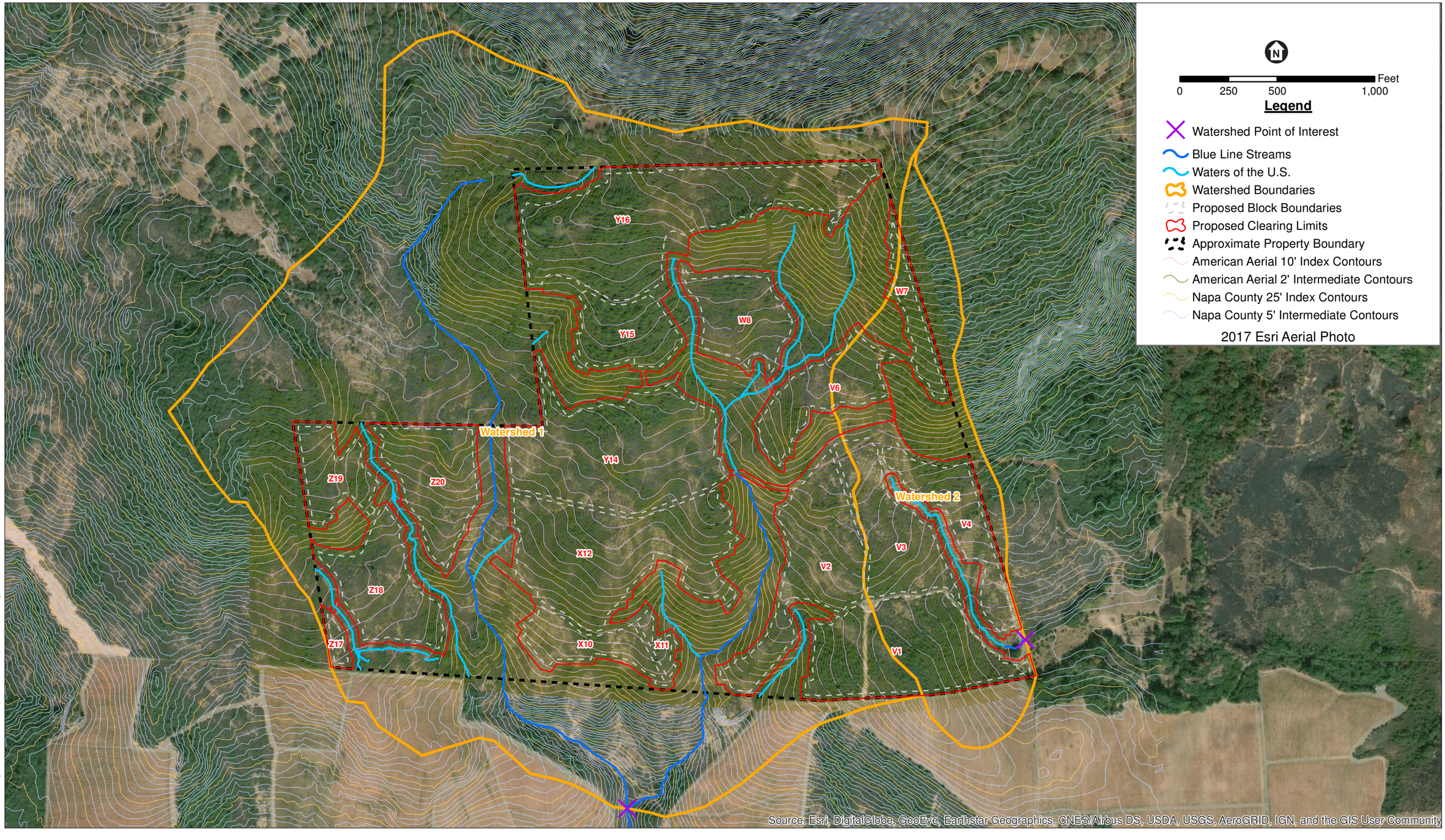
Rector Reservoir collects surface water runoff from the surrounding tributary watershed area, which is distributed downstream for various uses (e.g., the Yountville Veterans Home, the City of Napa, and the California Department of Fish and Wildlife fish hatchery). Inflow to the reservoir is primarily streamflows from Rector Creek and other tributaries, hillslope runoff in the area, and direct precipitation. Rector Reservoir fills up every year, even in dry years when the area receives less than 26 inches of rainfall (Richard C. Slade and Associates 2018).

Project Site Watersheds

A site-specific hydrologic analysis of the project site was conducted by PPI Engineering (2018) (**Appendix I**). This analysis, which used HydroCAD computer modeling software, assessed runoff from existing (pre-project) and developed (post-project) conditions. The hydrologic analysis identified two separate watersheds within the project site. Although the watersheds exit the project site at different points, they are both within the Rector Reservoir watershed. **Figure 3.7-1** shows the two watersheds (Watersheds 1 and 2), using the numbering system identified in the hydrologic analysis (**Appendix I**). Watershed 1 occupies approximately 234 acres and is located on the west side of the project site; it was divided into five sub-watersheds (1A, 1B, 1C, 1D, and 1E) during the hydrologic analysis. Watershed 2 occupies approximately 37 acres and is located on the east side of the project site.

Project Site Drainage

Watershed 1, on the west side of the project site, exits the project site via a "blue-line" stream. A blue-line stream is a stream that appears as a dashed or solid blue line on a U.S. Geological Survey topographic map. Watershed 2, on the east side of the project site, exits the project site via a blue-line stream that differs from than the Watershed 1 blue-line stream. Both blue-line streams flow to Rector Reservoir (PPI Engineering 2018).



D190106.00 - Stagecoach North Soda Canyon Ranch\05 Graphics-GIS-Modeling\Illustrator

SOURCE: PPI, 2018

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.7-1
Watersheds and Proposed Vineyard Block Locations

ESA

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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 on the project site consist of Guenoc–Rock Outcrop Complex, Hambright Rock-Outcrop, Rock Outcrop–Hambright, and Sobrante Loam, which are classified as being well-drained and having moderate to very high runoff and moderately slow to moderate permeability (**Table 3.5-1**) (NRCS 2020).

The U.S. Natural Resources Conservation Service (NRCS) Web Soil Survey for Napa County was used to delineate soil boundaries in 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 2 percent of the project site is mapped as Hydrologic Soil Group C and 98 percent is mapped as Hydrologic Soil Group D (PPI Engineering 2018).

Chapter 9 of the NRCS National Engineering Handbook defines the following land use cover types in the watersheds:

- Vineyard (annual grass)
- Pasture/grass
- Brush
- Woods-grass
- Woods
- Farmstead
- Fallow/bare
- Dirt road
- Gravel road

Areas in 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 I**) 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 indicates reduced infiltration and is generally associated with higher runoff potential, while a decrease indicates increased infiltration and lower runoff potential.

As stated in **Chapter 2, *Project Description***, the proposed project would rip to an average depth of 42 inches, with a maximum of 60 inches depending on site conditions, in preparation for installation of the vineyard. The proposed project would involve removing brush and trees within the proposed clearing limits, ripping, removing rocks, blasting, cultivating the soil, seeding a cover crop, mulching, trenching for the storm drain and irrigation pipelines, installing a trellis system and deer fence, and laying out vine rows. These activities that would change the land use characteristics would inherently modify the runoff curve numbers. For example, removing brush and trees could 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 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 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

Over about the last century, human development has affected and changed sediment delivery and transport processes in the Napa River watershed. 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 river has become increasingly dominated by finer sediments. The sources of these finer sediments include a variety of land use changes, construction of infrastructure, 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 mainstem 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 deposited into the watershed to improve water quality and maintain the river's beneficial uses, 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 concentrations naturally present 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 nutrient levels 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—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 onsite 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 site is approximately 10 miles south of the Pope Valley regional groundwater basin and is within the Eastern Mountain Subarea (Napa County 2019).

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, 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 Rector Creek may recharge the North Napa Valley Basin.

The proposed vineyard would be irrigated entirely by groundwater from two existing wells located in the southeastern portion of the project site. Additional wells may be developed in the future, but the overall groundwater demand would not change.[1] Richard C. Slade and Associates conducted an analysis to comply with Napa County's guidelines for a "Tier 1" Water Availability Analysis (an estimate of groundwater recharge) and provide a hydrogeologic analysis (**Appendix J**). They also provided groundwater monitoring data in a memorandum (**Appendix K**; Richard C. Slade and Associates 2020). This memo, dated January 31, 2020, updated the information presented in two previous monitoring summary memoranda, issued July 29, 2016, and April 2, 2018. The groundwater monitoring data include water levels and groundwater extraction records for specific wells on the project site and the adjacent vineyard to the south (the Stagecoach Vineyard) that is operated by the Applicant. Data were provided from Wells 3, 4, 7, and 12 on the Stagecoach Vineyard parcels (see Figure 1 in **Appendix J** for a map of the well locations). Well 7 is presented as an alternative monitoring point to Well 3 because Well 3 is no longer used for irrigation purposes. The memorandum notes that reported groundwater production was likely underestimated because of errors and inconsistencies in the records predating 2015.

Hydrographs were prepared to show the water levels recorded in each well over time and the rainfall totals for two rain gages for each water year[2] over periods of record that ranged from

[1] Should additional wells be developed in the future, they would undergo separate review and further CEQA evaluation as needed.
[2] A water year runs from October 1 through September 30 of the subsequent year.

1989 to 2019 and 2011 to 2019. (See Figures 2A through 5A, *Water Levels vs Water Year Rainfall Totals*, in **Appendix K**.)

The groundwater monitoring data in **Appendix K** show that groundwater levels are loosely correlated to the water-year rainfall totals. The data show that single-year increases or decreases in water-year rainfall totals may not necessarily result in a raising or lowering of water levels for that same year (Figures 2A through 5A in **Appendix K**). Water levels were compared to curves depicting the cumulative departure from mean water-year rainfall to help define rainfall trends at the gages over the periods of record (Figures 2B through 5B in **Appendix K**). In general, when the slope of a cumulative departure from the mean rainfall curve is negative, the total rainfall in each water year during that period was at or below the long-term mean water-year rainfall. When the slope of the departure curve is positive, the total rainfall in each water year during that period tended to be at or above the long-term mean water-year rainfall.

The Water Availability Analysis and the groundwater monitoring memorandum from 2020 that included updated and additional well data through November 14, 2019 (Richard C. Slade and Associates 2018, 2020), show that changes to groundwater levels in the project area appear to be heavily influenced by changes in rainfall over time. This finding is based on the apparent correlation between groundwater level trends and rainfall accumulation trends in the period of record. 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/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

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 affect 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 to surface waters during construction work (demolition, clearing, grading, excavation, and other land disturbance). 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 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 must 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 includes requirements to use standard erosion control measures, provisions for intermittent or perennial streams, and requirements 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 18.108.027* requires that uses involving earth-disturbing activity in sensitive domestic water supply drainages meet the following vegetation retention 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.[3]
  - 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 be avoided, wherever feasible, and drainage facilities and outfalls shall be sized and designed to handle the runoff from a 100-year storm event without failure or unintentional bypass.
  - 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 is granted through the permit process, or unless the project is exempt under Section 18.108.050 or Section 18.108.055.

[3] As noted in DEIR **Chapter 1, *Introduction***, the original Erosion Control Plan application submittal (December 20, 2018) 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.

- *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.

ISSUES NOT DISCUSSED IN IMPACTS

The potential for the project to release pollutants as a result of inundation within a flood hazard, tsunami, or seiche zone was evaluated, but was determined to result in no impact because the project site is not located in a 100-year flood hazard area, tsunami zone, or seiche zone:

- The Federal Emergency Management Agency (FEMA) has mapped flood zones in Napa County for the 100- and 500-year flood events. The site is not within a FEMA-designated flood zone (Napa County 2018).
- The project site is located more than 35 miles from the Pacific Ocean and more than 20 miles from San Pablo Bay; therefore, the site would not be susceptible to tsunami.
- The potential for a seiche in Napa County exists from the county's 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.

Therefore, these issues are not evaluated further in this EIR. A summary of the analysis is provided in **Chapter 1, *Introduction*.** 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 Conservation and Safety Elements of the Napa County General Plan (Napa County 2009) and the Napa County zoning ordinance.

To evaluate the effects of the proposed project on runoff, PPI Engineering prepared a hydrologic analysis (**Appendix I**). The analysis modeled existing (pre-project) and developed (post-project) conditions to predict runoff values under each scenario. The primary goal of the proposed project with regard to runoff is to keep the project "flood neutral," with no net increase in peak runoff post-project. Increases in peak runoff could cause negative effects on natural drainages such as hydromodification or increased sedimentation.

To determine the potential for runoff from different land uses, the uses were assigned land use curve numbers. In this type of analysis, runoff curve numbers are assigned to different land uses to indicate a soil's runoff potential by measuring the influence of land cover on infiltration and runoff rates. The curve number assigned depends on the type, amount, and condition of vegetative ground cover; the land's hydrologic condition and hydrologic soil group; and the land use practice. The higher the curve number, the higher the potential for runoff.

As discussed in the ***Runoff Potential*** section above, soils are classified into four hydrologic soil groups—A, B, C, and D—according to their infiltration rates 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 change the land use characteristics and inherently modify the runoff curve numbers. Removing brush and trees may have the potential to increase runoff when an equivalent vegetative cover is not planted and no additional measures are taken (**Appendix I**).

For the hydrologic analysis for the proposed project, input data were separated into and evaluated in terms of sub-watersheds and reaches, as shown in **Figure 3.7-1** (adapted from Figure 2 of **Appendix I**). As discussed in the ***Project Site Watersheds*** section above, the project site was divided into two watersheds. Watershed 1 was divided into five sub-watersheds: 1A, 1B, 1C, 1D, and 1E. Watershed 2 was not broken down into sub-watersheds for analysis. In the analysis, the onsite watersheds account for the factors of land use and runoff curve numbers, initial loss, and lag time:

- *Initial loss* accounts for the water unavailable for runoff because of factors other than land use, such as evaporation.

- *Lag time* accounts for the time it takes to route flows through the watersheds. This factor was calculated using Manning's equation[4] roughness values[5] 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.

The Manning's equation was used in conjunction with the Continuity equation[6] 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 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 Technical Release No. 20: Computer Program for Project Formulation Hydrology (TR-20[7]) approach to runoff modeling along with standard routing and hydraulic procedures.

HydroCAD is a hydrologic model that depicts rainfall and runoff from single storm events in small watersheds. 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 about hydrology and the NRCS curve number methodology.

The proposed stormwater conveyance infrastructure was modeled to ensure that no local increases in peak runoff would occur at points of discharge. All pipes, inlets, diversion ditches, and level spreaders proposed by the Erosion Control Plan were designed to handle a 100-year storm event, as required by Napa County Code Section 18.108 (Conservation Regulations). A pre-project and post-project analysis 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 I** includes maps of pre-project and post-project infrastructure modeling for the watersheds, land uses, times of concentrations, defined reaches, and full modeling results.

4 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.

5 The Manning's roughness value (n) is a coefficient that represents the roughness or friction applied to the flow by the channel.

6 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.

7 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.

The peak discharge for each designated watershed and sub-watershed in the overall basin model and the stormwater conveyance infrastructure modeling were computed using the HydroCAD computer software. Reaches were used where applicable to route inflows and outflows 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 uses
- 24-hour rainfall data for each modeled storm
- Rainfall distribution—Type 1A (a pre-defined rainfall distribution for use with HydroCAD)
- Watershed time of concentration
- Reach data
- Detention basin data (if required)

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 decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	Less than Significant
3.7-3: 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, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite, or impede or redirect flood flows.	Less than Significant
3.7-4: Construction and operation of the proposed project could create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.	Less than Significant

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 the removal of existing vegetation (brush and trees), soil ripping (to an average of 42 inches deep, with maximum ripping depths of up to 60 inches depending on site conditions), and earthmoving activities. Soil types on the project site include Guenoc–Rock Outcrop Complex, Hambright Rock Outcrop Complex, Rock Outcrop Hambright Complex with high erosion rates, and Sobrante Loam with slight to moderate erosion rates.

Project construction activities could expose soils on the project site 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 onsite watersheds, Rector Creek, Rector Reservoir, and the Napa River. The increased accumulation of sediments in these 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 chemicals applied to vineyard areas, could result in eutrophication and toxic conditions in receiving waters and groundwater quality impacts. (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 exists for project construction and operation to adversely affect water quality and beneficial uses established for the onsite watersheds, Rector Reservoir, and downstream areas, as discussed further below.

Sediment Loading

The mainstem 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 Section 13242 of the California Water Code, the Regional Water Board is also authorized to develop an implementation program to meet the TMDL. To meet the TMDL standard, it is County policy (Napa General Plan Policy CON-48) that post-project conditions should not reflect 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 mobilized. To achieve this goal, the project's Erosion Control Plan includes the use of diversion ditches and other measures for controlling 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 for the prevention of erosion and control of sediment. These measures include specified methods for the installation of irrigation piping, as well as erosion control features such as level spreaders, rolling dips, energy dissipaters, outsloped roads, and vegetative cover in the proposed vineyard blocks. The proposed project would retain existing onsite drainage patterns by including features to improve onsite drainage once the vineyard blocks are developed. Among these features would be five detention basins; drainage pipelines; and rock-filled avenues.

As described in the Erosion Control Plan (**Appendix A**), surface drainage pipelines would be installed to collect surface runoff at low points in the development area and transport it to protected outlets. Standard diversion ditches would be constructed to convey surface water through and/or around the proposed vineyard areas and direct it to a stable outlet or drop inlet. Concrete cutoff collars and other erosion prevention features would be installed in some areas.

Rock level spreaders would return concentrated runoff at the end of conveyance infrastructure to sheet flow to avoid concentrating runoff that could gain additional velocity and increase the potential for erosion.

In addition, temporary erosion control measures such as straw wattles, straw bale dikes, and waterbars would be installed as needed to help reduce surface erosion and promote high infiltration rates and settling of soil sediment particulates. These measures would reduce the velocity of overland flow by increasing surface roughness and adding breaks in slope. Five detention basins would be constructed in the development area to attenuate small increases in runoff associated with vineyard development.

Maintaining a permanent vegetative cover crop as described in the Erosion Control Plan (**Appendix A**) would provide surface roughness to help prevent concentration of runoff, collect moisture, and help prevent the loosening of soil that would be susceptible to erosion. Disturbed areas would be seeded and mulched before September 15. The cover crop would be managed each year so that 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, not disked. The permanent no-till cover crop for the vineyard blocks would be maintained between 75 and 85 percent density (see **Appendix A** for cover crop densities).

The tributaries in the development area that meet the County's definition of a stream (Napa County Code Section 18.108.030) have required setbacks of 55–150 feet depending on slope, as outlined in Napa County Code Section 18.108.025 and discussed in **Chapter 2, *Project Description,*** and shown in Figure 2-4. All waters of the United States not requiring a 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. The U.S. Natural Resources Conservation Service (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 adequate 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 3.7-3, incorporating the erosion and runoff control measures proposed in the Erosion Control Plan would result in an overall decrease in the volume and rate of runoff from project site watersheds during post-project conditions. Further, as stated in Impact 3.5-1 in **Section 3.5, *Geology and Soils***, post-project soil loss from the development area would be reduced by 29.78 percent, and only one block transect (Y16C) showed an increase in sedimentation (Table 3.5-4). As also noted in Section 3.5, the calculated increase in soil loss at block transect Y16C (0.09 ton per year) would be more than offset by the calculated soil loss decrease at block transect Y16D (11.33 tons per year), upstream of block transect Y16C. All other individual proposed vineyard blocks would result in a decrease in sedimentation with the erosion and runoff control measures proposed in the Erosion Control Plan, as shown in the

Universal Soil Loss Equation (USLE) calculations discussed in Impact 3.5-1, Table 3.5-4 in **Section 3.5, *Geology and Soils***.

The proposed project conforms to the Regional Water Board's waste discharge requirements for vineyards 5 acres or larger located in the Napa River watershed by achieving the performance standards for soil erosion in the farm area. 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**). 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 from the transport of construction equipment across stream crossings.

Project approval, if granted, would be subject to the following condition of approval, which would further reduce the potential for construction-related sedimentation from the transport of construction equipment across stream crossings.

> **Water Quality—Condition of Approval:**
>
> The project owner/permittee shall construct rocked water crossings first, before conducting other vegetation removal, earth-disturbing, or construction activities that require the transport of construction equipment across streams. Before the construction and installation of stream crossings associated with #P18-00446-ECPA, and development of vineyard blocks reliant on those crossings, the owner/permittee shall obtain and demonstrate to the County that all required authorizations and/or permits from agencies with jurisdiction over waters of the United States or the state, such as:
>
> - Water Quality Certification (Section 401 permit) from the Regional Water Board
> - Section 1602 Lake and Streambed Alteration Agreement) from the California Department of Fish and Wildlife
> - Section 404 Nationwide Permit from the U.S. Army Corps of Engineers
>
> Alternatively, the owner/permittee may revise the plan to include clear-span crossings, with footings located outside of identified setbacks, over these drainages to minimize and mitigate potential impacts on jurisdictional waters of the United States or state.

As discussed in Impact 3.3-5 in **Section 3.3, *Biological Resources***, the proposed project would retain approximately 99 percent of the tree canopy cover and 50 percent of the brush/shrub cover as it existed in 1993. These amounts of cover are within the County's minimum tree canopy and brush/shrub retention requirements for projects within a Sensitive Domestic Water Supply Drainage (Napa County Code Section 18.108.027[B]). The proposed

project would also limit all construction earth-disturbing activities to April 1 through September 15 of each year, and all winterization measures would be in place by September 15.

In addition, the public-trust doctrine requires the state and its legal subdivisions to "consider," give "due regard" to, 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 discussed previously and in **Section 3.3, *Biological Resources***, the impacts on onsite stream courses of constructing the three proposed rocked water crossings and replacing an existing culvert would be mitigated by a minimum 1:1 ratio replacement and implementation of best management practices to ensure that no soil or other materials are discharged into the on-site stream courses.

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 v. State Lands Com.*, 24 Cal.App.5th at p. 509.)

Chemical Loading

Using fertilizers can cause runoff to become laden with excessive plant nutrients, which can lead to eutrophication and algal growth in receiving waters. Pesticide use can cause runoff to contribute to toxic conditions in receiving waters. The proposed project would be required to conform with federal and state laws enforced by EPA and the California Department of Pesticide Regulation. The project also must achieve performance standards for the discharge of nutrients and pesticides established by the Regional Water Board's waste discharge requirements for vineyards 5 acres or larger that are located in the Napa River watershed. During vineyard operation, the proposed project would use integrated pest management techniques (see **Section 3.6, *Hazards and Hazardous Materials*, Impact 3.6-1**) and best management practices to minimize impacts on the environment from chemicals. For example, pesticides would be used only after monitoring indicates they are needed based on established guidelines, and treatments would be made with the goal of removing only the target organism. As also discussed in Section 3.6, Impact 3.6-1, no pre-emergent herbicides would be sprayed in the vine rows for weed management. 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 reducing the potential for pollutants to reach both onsite and offsite 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 onsite drainage features; adhere to the integrated pest management 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, *Hazards and Hazardous Materials*, Impact 3.6-1**. Through these actions, the project would minimize the potential for pesticides to enter receiving waters on the project site, and would adequately protect groundwater quality by reducing the likelihood that these constituents would enter the groundwater supply.

Temperature
Water temperature influences several 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 onsite creeks or remove any riparian vegetation that provides shade. All proposed stream setbacks maintained onsite would also help to preserve natural stream function. As determined by the USLE calculations discussed in **Section 3.5, *Geology and Soils*, Impact 3.5-1**, sediment yield from the proposed vineyard and sediment accumulation in receiving waters with the proposed project would decrease by approximately 160.01 tons (29.78 percent) relative to existing conditions. 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 water quality entering waterways or groundwater, and would not result in water temperature changes. As a result, the 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 decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

The County requires that all erosion control plan applications include necessary water analyses to document that sufficient water supplies are available for proposed projects. On June 28, 2011, the Napa County Board of Supervisors approved the creation of a Groundwater Resources Advisory Committee. The committee's purpose was to assist County staff and

technical consultants with recommendations regarding groundwater, including data collection, monitoring, well pump test protocols, management objectives, and community support. The County completed a county-wide assessment of groundwater resources (Napa County 2011) and developed a groundwater monitoring program (Napa County 2013a). The County also completed the 2013 Updated Hydrogeologic Conceptualization and Characterization of Groundwater Conditions (Napa County 2013b).

Recent studies have found that groundwater levels on the Napa Valley floor exhibit stable long-term trends, with a shallow depth to water. However, the availability, recharge, storage, and yield of groundwater is not consistent across the county. More is known about the resource where historical data have been collected; less is known in areas with limited data or unknown geology. To fill existing data gaps and improve understanding of Napa County's groundwater resources, the Napa County Groundwater Monitoring Plan recommended 18 Areas of Interest for additional monitoring of groundwater levels and water quality. As a result of the Groundwater Resources Advisory Committee's outreach to well owners and the public, approximately 40 new wells have been added to the monitoring program in these areas. Groundwater sustainability objectives were developed and recommended by the Groundwater Resources Advisory Committee and adopted by the Board of Supervisors. The recommendations included the goal of developing sustainability objectives, defined sustainability, and explained the shared responsibility for groundwater sustainability and the important role of monitoring in achieving groundwater sustainability.

A Water Availability Analysis was prepared to determine whether the potential increase in water demand from the proposed project would result in a significant impact on groundwater supplies (Richard C. Slade and Associates 2018; **Appendix J**). The Water Availability Analysis estimates onsite groundwater recharge, overall availability, and use—both existing and proposed—to assess the potential impact on groundwater. No known non-project wells are located within 500 feet of the project wells (Richard C. Slade and Associates 2018).

The proposed project would be irrigated entirely from the existing vineyard's two groundwater wells in the southeastern portion of the project site. Additional wells may be developed in the future, but overall groundwater demand would not change. The project proposes to use approximately 54.8 acre-feet (AF) of groundwater per year to irrigate the 91.3 net acres of vineyard during the first 4 years while the vines are established, and approximately 45.7 AF of groundwater per year to irrigate the 91.3 net acres of vineyard after the fourth year. Typically, the annual irrigation season ranges from late May to September. The project does not propose water use for frost protection. No groundwater is currently used on the project site.

Groundwater Recharge

Long-term average groundwater recharge can be estimated as the percentage of the rain falling on the parcel that percolates into the underlying aquifer. The percentage of rain that may infiltrate the aquifer varies depending on such factors as evaporation and transpiration rates, existing soil types and geology at the site, and average annual rainfall.

Based on available climatological data, site-specific information, and other available data and analysis relevant to potential recharge, the Water Availability Analysis estimates the project site's average annual groundwater recharge to be approximately 84.1 AF per year. (See **Appendix J** for specific details and calculations.) This is based on an average annual rainfall of 35 inches per year over the project site and a deep percolation rate of 17 percent. As proposed, the project is estimated to have an annual onsite future groundwater demand of 54.8 AF/year during the first 4 years and 45.7 AF/year after the fourth year, which is below the estimated average annual recharge volume of 84.1 AF/year.

The average annual rainfall used for the recharge analysis includes times of below-average and above-average rainfall, and therefore inherently includes drought-year conditions. However, the Water Availability Analysis also specifically analyzes how below-average rainfall (or drought conditions) may affect potential groundwater recharge. Currently, no universal or specific definition exists for when a drought begins or ends. Using a conservative estimate for a theoretical drought period—approximately 48 percent of annual average rainfall in the project area for 6 years—results in a total recharge of approximately 199.8 AF during this period. Therefore, the proposed vineyard's water demand during the same 6-year period (54.8 AF/year times 4 years plus 45.7 AF/year times 2 years = 310.6 AF) would exceed the potential recharge during the theoretical drought period (199.8 AF). With those estimated water demands, a total recharge "deficit" of about 111 AF might occur (calculated by subtracting the 199.8 AF of groundwater recharge over the entire 6-year period from the 310.6 AF of total onsite groundwater extractions over the entire 6-year period).

The groundwater monitoring data (**Appendix K**; Richard C. Slade and Associates 2020) also showed that groundwater levels may not necessarily correspond to single years of increased or decreased rainfall totals, but that a cumulative departure from mean water-year rainfall (increase or decrease) is likely to result in corresponding changes to the groundwater levels. As discussed previously, the groundwater monitoring data presented in **Appendix K** show that groundwater levels are loosely correlated to the water year rainfall totals. Single-year increases or decreases in water-year rainfall totals may not necessarily result in a raising or lowering of water levels for that same year (Figures 2A through 5A in **Appendix K**). Instead, changes to groundwater levels in the project area appear to be heavily influenced by changes in rainfall over time. As conservatively estimated, 1,052 AF of groundwater is currently in storage beneath the project site (using water levels measured in April 2018). A groundwater "recharge deficit" of 111 AF during a potential 6-year drought period would represent about 11 percent of the volume of groundwater calculated as currently being stored beneath the property. Temporarily removing an average of 18.5 AF of groundwater from storage for 6 consecutive drought years (approximately 111 AF of "deficit" over the entire 6-year period) may cause water levels to decrease somewhat beneath the project site. However, removing such a relatively small percentage of groundwater from storage over the 6-year time period is not expected to significantly affect groundwater levels beneath the project site.

Furthermore, the County has no record of problems with or complaints about diminished groundwater supplies in the general vicinity of the project site. Therefore, the proposed project is anticipated to result in less-than-significant impacts on groundwater supplies, groundwater recharge, local groundwater aquifer levels, and well interference or drawdown effects on nearby wells.

Project approval, if granted, also would be subject to the following condition of approval, which would further reduce potential impacts associated with groundwater use as a result of vineyard establishment and ongoing vineyard operations and maintenance.

> **Groundwater Management, Wells—Condition of Approval:**
>
> This condition is implemented jointly by the Napa County Public Works and Planning, Building, and Environmental Services Departments:
>
> The owner/permittee shall be required (at the permittee's expense) to record well monitoring data (specifically, static water level no less than quarterly, and the volume of water no less than monthly). Such data will be provided to the County, if the PBES [Planning, Building, and Environmental Services Department] Director determines that substantial evidence indicates that water usage at the vineyard is affecting, or would potentially affect, groundwater supplies or nearby wells. If data indicate the need for additional monitoring, and if the owner/permittee is unable to secure monitoring access to neighboring wells, onsite monitoring wells may need to be established to gauge potential impacts on the groundwater resource utilized for the project. Water usage shall be minimized by use of best available control technology and best water management conservation practices.
>
> To support the County's groundwater monitoring program, well monitoring data as discussed above will be provided to the County if the Director of Public Works determines that such data could be useful in supporting the County's groundwater monitoring program. The project well will be made available for inclusion in the groundwater monitoring network if the Director of Public Works determines that the well could be useful in supporting the program.
>
> In the event that changed circumstances or significant new information provide substantial evidence that the groundwater system referenced in the Erosion Control Plan would significantly affect the groundwater basin, the PBES Director shall be authorized to recommend additional reasonable conditions on the permittee, or revocation of this permit, as necessary to meet the requirements of the County Code and to protect public health, safety, and welfare.

Impact Conclusion

The anticipated annual water use by the proposed project is below the project site's anticipated annual groundwater recharge rate. In addition, to date, no evidence exists of groundwater problems or declining well production in this area of Napa County, and the proposed project would incorporate the standard groundwater use condition. Therefore, construction and operation of the proposed project would not substantially decrease groundwater supplies or

interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. This impact would be **less than significant**.

With implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project's acreage by approximately 25.75 gross acres (22.3 net acres), anticipated long-term overall groundwater demand would decrease by approximately 11.15 AF/year.

Mitigation Measure: None required.

Impact 3.7-3: 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 offsite, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite, or impede or redirect flood flows.

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 the 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, more impervious surfaces, and poorly drained soils. As discussed under **Impact 3.7-1**, development of the proposed project would involve the removal of existing vegetation, soil ripping, and earthmoving activities. These activities would alter the project site's existing drainage pattern, which could change the rainfall-runoff relationship relative to existing site conditions.

If alterations of existing drainage patterns were to increase the volume and rate of runoff to onsite drainages, hydrologic changes could occur in the onsite watersheds, Rector Creek, Rector Reservoir, and the Napa River, potentially resulting in on- and offsite flooding. The results of the hydrologic analysis of effects on pre- and post-project runoff conditions are presented below. An increased volume and rate of runoff could result in bank erosion in unstable channels and increase 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 onsite watershed and infrastructure model (**Appendix I**). The hydrology of each watershed is representative of the size and land uses of that particular watershed. Therefore, considered collectively, these results provide a perspective on surface runoff throughout the project site.

Watersheds 1 and 2
The hydrologic model calculated the pre-project and post-project discharges for the onsite sub-watersheds under the 2-year and 100-year storm events (**Tables 3.7-2** and **3.7-3**, respectively). Modeling results for the onsite watersheds predict modest decreases for the majority of watersheds analyzed. Reductions in peak runoff from individual watersheds range from 2.6 percent to 6.8 percent for the 100-year event.

TABLE 3.7-2
EXISTING AND DEVELOPED PEAK RUNOFF FOR THE 2-YEAR STORM

Watershed	Sub-watershed/Reach	Existing Peak Runoff (cfs)	Developed Peak Runoff (cfs)	Net (cfs)	Percent Change
1	1A	17.05	16.54	-0.51	-3.0
	1B	16.91	16.59	-0.32	-1.9
	1C	23.35	22.53	-0.82	-3.5
	1D	18.66	18.48	-0.18	-1.0
	1E	21.23	25.22	3.99	18.8
	Reach 1—Inflow	38.96	38.75	-0.21	-0.5
	Reach 1—Outflow	38.71	38.54	-0.17	-0.4
	Reach 2—Inflow	17.05	16.54	-0.51	-3.0
	Reach 2—Outflow	16.74	16.25	-0.49	-2.9
	Reach 3—Inflow	16.91	16.59	-0.32	-1.9
	Reach 3—Outflow	16.18	16.12	-0.06	-0.4
	Watershed 1 Outlet	90.82	87.81	-3.01	-3.3
2	N/A	15.69	15.50	-0.19	-1.2

NOTES:
cfs = cubic feet per second; N/A = not applicable
Estimates may not add to the totals due to rounding.

SOURCE: PPI Engineering 2018; Appendix I

TABLE 3.7-3
EXISTING AND DEVELOPED PEAK RUNOFF FOR THE 100-YEAR STORM

Watershed	Sub-watershed/Reach	Existing Peak Runoff (cfs)	Developed Peak Runoff (cfs)	Net (cfs)	Percent Change
1	1A	68.61	66.00	-2.61	-3.8
	1B	67.68	65.75	-1.93	-2.9
	1C	87.49	82.64	-4.85	-5.5
	1D	67.67	65.42	-2.25	-3.3
	1E	76.62	82.71	6.09	7.9
	Reach 1—Inflow	154.16	148.08	-6.08	-3.9
	Reach 1—Outflow	153.53	147.47	-6.06	-3.9
	Reach 2—Inflow	68.61	66.00	-2.61	-3.8
	Reach 2—Outflow	68.11	65.52	-2.59	-3.8
	Reach 3—Inflow	67.68	65.75	-1.93	-2.9
	Reach 3—Outflow	66.62	64.66	-1.96	-2.9
	Watershed 1 Outlet	358.28	333.92	-24.36	-6.8
2	N/A	58.76	57.22	-1.54	-2.6

NOTES:
cfs = cubic feet per second; N/A = not applicable
Estimates may not add to the totals due to rounding.
SOURCE: PPI Engineering 2018; Appendix I

The runoff curve number initially increased for all sub-watersheds in Watershed 1, while the time of concentration either increased or stayed the same for pre- and post-project conditions. Most 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. In some cases, the increase in the time of concentration was enough to offset the increase in the runoff curve number; however, in other cases, it was not. For the cases in which the time of concentration was not enough to offset the increase in the runoff curve number, the four detention basins proposed in Watershed 1 are designed to detain excess runoff and release it at or below pre-project levels. Based on the analysis, Sub-watershed 1E shows an increase post-project runoff at the sub-watershed level, but this increase is offset by reduced runoff from other sub-watersheds upstream (as evidenced by an overall runoff reduction modeled at the Watershed 1 outlet).

Watershed 2 demonstrates no runoff increases post-project with the inclusion of the one detention basin in this watershed. The hydrologic analysis also includes 10-year and 50-year peak runoff calculations, which can be found in **Appendix I**.

Based on this analysis, there are no predicted net increases in peak runoff and no negative hydrologic impacts are expected as a result of the proposed project.

Drainage System Capacity and Flooding
The proposed project would construct stormwater conveyance infrastructure such as diversion ditches, drop inlets, and rock level spreaders 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 potential effects of conveyance infrastructure on the individual watersheds and sub-watersheds were determined via the time of concentration. The time-of-concentration flow paths were purposely routed through proposed infrastructure to allow the model to analyze their individual hydrologic effects on the surrounding watershed/sub-watershed (**Appendix I**). With implementation of the proposed project, runoff and flooding onsite would be expected to decrease, thus reducing impacts on drainage system capacity.

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. The proposed stormwater conveyance infrastructure was determined to be appropriate for local hydrologic conditions during development of the Erosion Control Plan.

Further, as discussed in Impact 3.5-1 in **Section 3.5, *Geology and Soils***, onsite sediment loading from erosion would decrease with incorporation of the erosion and runoff control measures proposed in the Erosion Control Plan, and 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 to use existing roads. Some roads would be improved through the proposed Road Plan, which is consistent with recent road management plans

prepared by the Napa County Resource Conservation District (see Appendix G of the Erosion Control Plan, in **Appendix A**). As discussed in Section 3.5, Impact 3.5-1, by implementing the road plan included in the Erosion Control Plan, the proposed project would comply with the requirements of the San Francisco Bay Regional Water Board's Farm Plan for vineyard properties in the Napa River watershed. Therefore, the proposed project would not substantially alter the existing drainage pattern of the site or area in a manner which would result in erosion or siltation on- or offsite, substantial flooding, or impede or redirect flood flows. This impact would be **less than significant**.

Implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, which would reduce the project acreage by approximately 25.75 gross acres, is anticipated to result in similar hydrologic effects and rates of runoff.

Mitigation Measure: None required.

Impact 3.7-4: Construction and operation of the proposed project could 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.

As discussed under Impact 3.7-3, the results of hydrologic modeling for the proposed project predicted net decreases in peak-flow rates for almost all watersheds in the overall basin model. Sub-watershed 1E was the only watershed for which a slight increase in peak runoff was predicted. However, this increase would be offset by reduced runoff from other sub-watersheds upstream, and peak runoff would be below pre-project levels.

As discussed previously, the reductions in runoff for Watersheds 1 and 2 under the 2-year and 100-year storm events can be attributed primarily to either a decrease in the runoff curve number after development or an increase in the time of concentration after development. In some cases, the increase in the time of concentration was enough to offset the increase in the runoff curve number; however, in other cases, it was not. For the cases in which the time of concentration was not enough to offset the increase in the runoff curve number, the four detention basins proposed in Watershed 1 would be designed to detain excess runoff and release it at or below pre-project. Watershed 2 demonstrates no runoff increases post-project with the inclusion of the one detention basin in this watershed.

Constructing stormwater conveyance infrastructure designed to handle a 100-year storm event, such as diversion ditches, drop inlets, and rock level spreaders in some locations (see **Chapter 2, *Project Description,*** and the Erosion Control Plan in **Appendix A**), also would help decrease runoff and flooding onsite, thus reducing impacts on drainage system capacity. Decreases in runoff would lead to a decrease in sedimentation (Table 3.5-4 in **Section 3.5, *Geology and Soils***). Lastly, erosion control measures implemented as part of the proposed project (discussed in Impact 3.7-1) would reduce project impacts 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.

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. References cited in this section are listed in **Chapter 7, *References***.

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 an area of 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 5 miles northeast of Yountville, 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 5 miles northeast of the project site and Lake Hennessey is approximately 2.4 miles northwest of the site. Lands in the area are mostly rural; surrounding land uses consist primarily of vineyards and wineries, rural residential uses, and open space. The project site consists of undeveloped land, dirt roads, and hand-cut trails. The dominant land cover types in the development area include chamise chaparral, grassland, California black oak forest, California bay forest, and intermixed scrub oak communities. Elevations range from approximately 1,660 feet to 2,140 feet above mean sea level. There are no residences or structures on the project site. See **Section 2.2, *Physical Conditions and Zoning on the Project Site***, in **Chapter 2, *Project Description*,** for additional information about the project site and vicinity.

The project parcel (Assessor's Parcel Number 032-010-086) has a designation of Agriculture, Watershed and Open Space (AWOS) in the Napa County 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 (about 46,000 acres) is in wine grape production (Napa County 2017).

The project parcel is 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 in 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 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 describes 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.

Because the original submittal (December 20, 2018) contained the requisite application materials that were required by the County's Erosion Control Plan Application Checklist at that time, 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 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 would be significant if the proposed project would do any of the following:

- Physically divide an established community; or
- 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 summary of the analysis is provided in **Chapter 1, *Introduction***. 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 CONCLUSION—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 2020

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. **Minimum Parcel Size**: 160 acres, except that parcels with a minimum size of 2 acres may be created for the sole purpose of developing farm labor camps by a local government agency authorized to own or operate farm labor camps, so long as the division is accomplished by securing the written consent of a local government agency authorized to own or operate farm labor camps that it will accept a conveyance of the fee interest of the parcel to be created and thereafter conveying the fee interest of such parcel directly to said local government agency, or entering into a long-term lease of such parcels directly with said local government agency. Every lease or deed creating such parcels must contain language ensuring that if the parcel is not used as a farm labor camp within three years of the conveyance or lease being executed or permanently ceases to be used as a farm labor camp by a local government agency authorized to develop farm labor camps, the parcel will automatically revert to, and merge into, the original parent parcel.	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 both safe and efficient in terms of 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	Yes	Impacts 3.10-1 and 3.10-2	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)
	aligns with the County's desire to balance its rural character with the needs of supporting economic vitality and growth.			
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
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 3.3-5
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 3.3-5
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 3.3-2, 3.3-3, and 3.5-2	Mitigation Measure 3.3-3
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, 3.3-4, and 3.3-5	Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5

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-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 3.3-5
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 3.5-1	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. … 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.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5	Mitigation Measures 3.3-1a through 3.3-5

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-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 3.3-3 and 3.3-4	Mitigation Measures 3.3-3 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, *Biological Resources*; Appendix D	N/A
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. c) Promote protection from overgrazing and other destructive activities. 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 through 3.3-1j, 3.3-2a, 3.3-2b, and 3.3-5
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.	Yes, with mitigation	Impacts 3.3-1 through 3.3-5, and Impact 3.8-1	Mitigation Measures 3.3-1a through 3.3-5, and Mitigation Measure 3.8-1

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)
	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.			
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 3.3-5
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 3.3-5
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 through 3.3-1j, 3.3-4, and 3.3-5

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)
	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.			
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.	Yes, with mitigation	Chapter 2, *Project Description*; Appendix A; Impacts 3.3-2 and 3.3-3	Mitigation Measures 3.3-2a, 3.3-2b 3.3-3
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 3.3-2	Mitigation Measures 3.3-2a and 3.3-2b
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 3.3-3	Mitigation Measure 3.3-3
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; Impact 3.3-2	Mitigation Measures 3.3-2a and 3.3-2b
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 Measure 3.3-3

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-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 3.7-4	N/A
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; Impact 3.3-5; and Impact 3.7-1	N/A
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-49	The County shall develop and implement a water quality monitoring program (or programs) to track the effectiveness of temporary and permanent Best Management Practices (BMPs) 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 TMDLs) identified during monitoring.	Yes	Impacts 3.7-1 and 3.7-4	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-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. 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. …	Yes	Chapter 2, *Project Description;* Appendix A; and Impacts 3.7-1 through 3.7-4	N/A
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	Impact 3.7-2	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	Impacts 3.2-5 and 3.2-6	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)
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	Impact 3.5-2	N/A
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	Chapter 2, *Project Description*; Appendix A; Impact 3.5-2	N/A
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

SOURCE: Data compiled by Environmental Science Associates in 2020

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 the Napa County General Plan. This impact would be **significant**.

As discussed in Table 3.8-2 and in this EIR, implementation of **Mitigation Measures 3.3-1a** through **3.3-5** would reduce potential land use impacts to a less-than-significant level.

> **Impact Significance after Mitigation**: Implementing **Mitigation Measures 3.3-1a** through **3.3-5** 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 and vibration in the project vicinity, summarizes the regulatory setting relevant to the proposed project, and evaluates the potential for construction and operation of the proposed project to result in adverse noise and vibration impacts. The analysis in this section was developed based on information obtained from the Napa County General Plan (Napa County 2008) and local noise ordinances, the Federal Highway Administration (FHWA) *Road Construction Noise Model User's Guide* (FHWA 2006), and the Federal Transit Administration (FTA) *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018). References cited in this section are listed in **Chapter 7, *References***.

No scoping 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

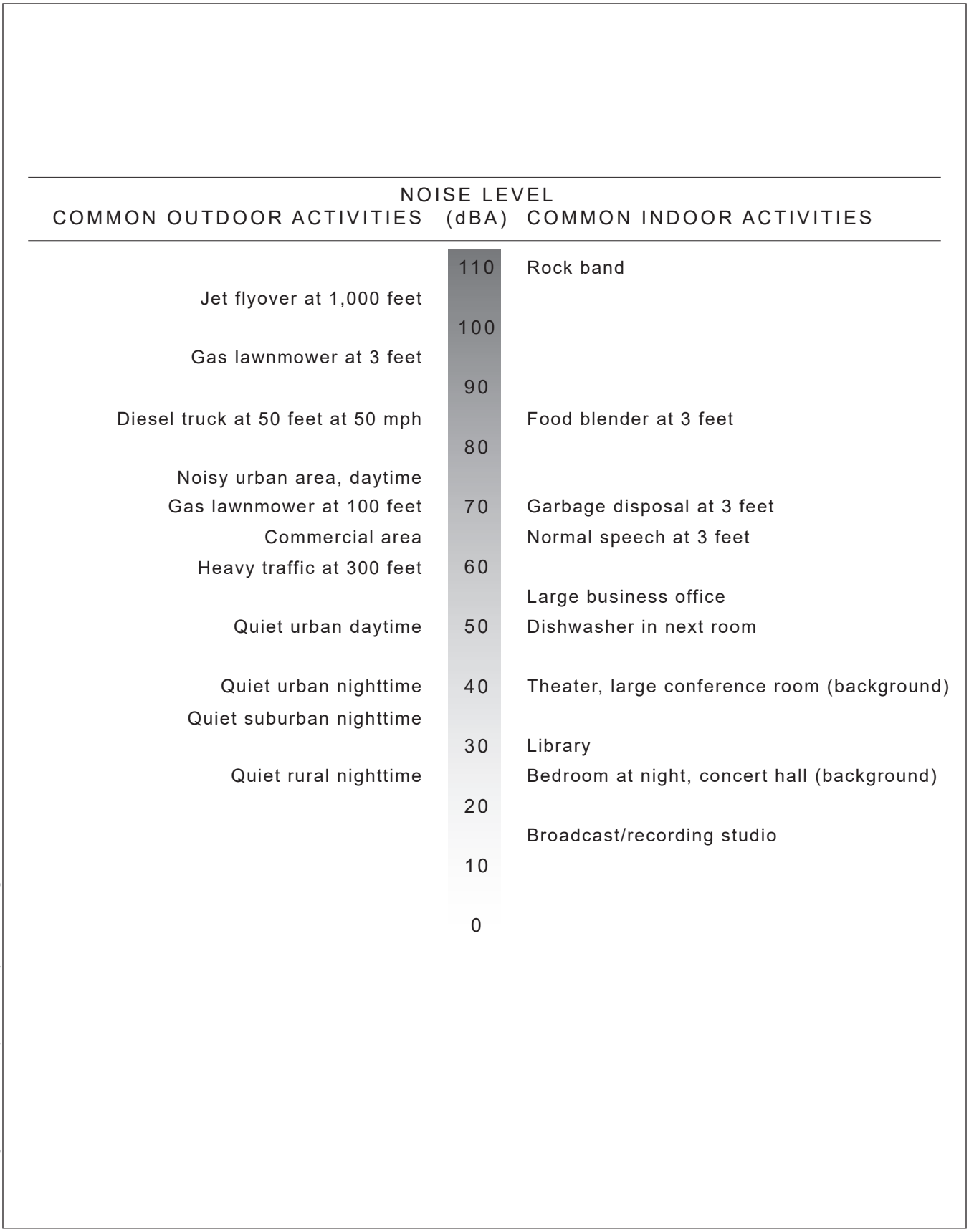
TECHNICAL BACKGROUND AND NOISE TERMINOLOGY

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), measured in decibels (dB). Zero dB corresponds roughly to the threshold of human hearing and 120–140 dB corresponds to the pain threshold.

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 varying in levels of magnitude (sound power). Therefore, the sound pressure level constitutes the additive force exerted by a sound corresponding to the frequency/sound power level spectrum.

The typical human ear is not equally sensitive to all frequencies of the audible sound spectrum. As a consequence, in assessments of potential noise impacts, sound is measured using an electronic filter that deemphasizes frequencies below 1,000 Hz and above 5,000 Hz, in a manner that corresponds to the human ear's decreased sensitivity to low and extremely high frequencies instead of the frequency mid-range. This method of frequency weighting is referred to as A-weighting and is expressed in units of A-weighted decibels (dBA). Frequency A-weighting follows an international standard methodology for frequency deemphasis and is typically applied to community noise measurements.

Figure 3.9-1 shows some representative noise sources and their corresponding A-weighted noise levels.



SOURCE: Caltrans, 2013a

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 3.9-1
Typical Noise Levels

ESA

Noise exposure is a measure of noise over a period of time, while the noise level is a measure of noise at a given instant. Community noise varies continuously over a period of time relative to the contributing sound sources of the community noise environment. Community noise results primarily from many distant noise sources, which together generate relatively stable background noise, with individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, as distant noise sources such as traffic are added and subtracted and atmospheric conditions change. What causes community noise to constantly vary 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 individual receptors can readily identify. As these sounds are added 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 a community noise environment and evaluate cumulative noise impacts.

This time-varying characteristic of environmental noise is described using statistical noise descriptors. The noise descriptors used in this analysis are defined below.

L_{eq}: The energy-equivalent sound level, which is 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 containing the same acoustic energy as the varying sound level during the same time period (i.e., the average noise exposure level for a 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 by weighting noise levels at night (“penalizing” nighttime noise). Noise generated between 10 p.m. and 7 a.m. is weighted (penalized) by adding 10 dB to account for the greater annoyance caused by nighttime noise.

As a general rule, in areas where traffic dominates the noise environment, the L_{eq} during the peak hour is generally within 1–2 decibels of the L_{dn} at that location (Caltrans 2013a).

EFFECTS OF NOISE ON PEOPLE

When a new noise is introduced to an environment, the human reaction can be predicted by comparing the new noise to the ambient noise level, which is the existing noise level from all sources of noise in a given location. In general, the more a new noise exceeds the ambient noise level, the less acceptable the new noise will be judged to be by those hearing it. With regard to increases in A-weighted noise levels, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived.
- Outside of the laboratory, a 3-dB change is considered a just-perceivable difference.

- A change in level of at least 5 dB is required before any noticeable change in human response would be expected.
- A 10-dB change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

These perceived increases in noise levels apply to both mobile and stationary noise sources. Such relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear perceives sound in a non-linear fashion; hence, the decibel scale was developed. Because the decibel scale is based on logarithms, 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 temporarily stationary mobile sources 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. Hard sites are those with a reflective surface between the source and the receiver, such as a parking lot or smooth body of water. No excess ground attenuation is assumed for hard sites; the change in the noise level with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have 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.

Line sources (such as traffic noise from vehicles) attenuate 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).

Noise levels may also be reduced by intervening structures, such as a row of buildings, a solid wall, or a berm located between the receptor and the noise source.

FUNDAMENTALS OF VIBRATION

As described in FTA's *Transit Noise and Vibration Impact Assessment*, groundborne vibration can be a serious concern for nearby neighbors, causing buildings to shake and rumbling sounds to be heard (FTA 2018). In contrast to 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 in locations close to 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.

The effects of groundborne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme

cases, 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 when the vibration exceeds the threshold of perception by only a small margin. Typically, groundborne vibration generated by 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 people), and vibration-sensitive equipment such as hospital analytical equipment and equipment used in computer chip manufacturing.

This analysis quantifies vibration using peak particle velocity (PPV) and the root mean square (RMS). PPV is defined as the maximum instantaneous peak of the vibration signal, measured in inches per second. The PPV is most frequently used to describe vibration impacts on buildings. The RMS amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (VdB) is commonly used to express RMS. The decibel notation acts to compress the range of numbers required to describe vibration.

EXISTING NOISE-SENSITIVE LAND USES

The human response to noise varies considerably from one individual to another. Effects of noise at various levels can include interference with sleep, concentration, and communication, and noise can cause physiological and psychological stress and hearing loss.

Some land uses are considered more sensitive to noise than others because of the duration and nature of time people spend at these uses. In general, residences are considered most sensitive to noise because people spend extended periods of time in them, 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. Surrounding land uses consist primarily of vineyards and wineries, rural residential uses, and open space. There are no noise-sensitive receptors on the project site; the nearest sensitive receptor is more than 3,000 feet west of the nearest vineyard block where construction activities would take place. In addition, the nearest residential community, the town of Yountville, is more than a mile southwest of the project site.

EXISTING NOISE ENVIRONMENT

The noise environment surrounding the project site is influenced by the operation of off-road farming equipment at the existing vineyards south of the project site, which has included periodic rock-crushing activities; and by the sounds of nature and wildlife, such as the wind blowing through vegetation and birds chirping. The nearest airport is Angwin-Parrett Field, approximately 9.7 miles northwest of the project site.

The ambient noise environment in the vicinity of the project site 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. Based on a review of aerial images of the project area, existing residences in the project vicinity 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 identified by EPA for this land use description, the estimated ambient L_{dn} noise levels at the residences in the vicinity of the project site are assumed to range from 48 dBA to 52 dBA L_{dn}.

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 truck pass-by noise standard is 80 dBA at approximately 49 feet from the vehicle pathway centerline. These controls are implemented 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's pass-by standard is consistent with the federal limit of 80 dBA. The state 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 implemented 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 Community Character Element of the Napa County General Plan contains the following goal and policies relevant to the proposed project (Napa County 2008):

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 below as **Table 3.9-1**]. Additional standards are provided in the Noise Ordinance for construction activities (i.e., intermittent or temporary noise).

TABLE 3.9-1
NAPA COUNTY 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		

SOURCE: Napa County 2008:Policy CC-38

- **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 Noise Ordinance

Section 8.16.080 of the Napa County Code identifies the following specific types of noise prohibited under the County's noise ordinance that are applicable to construction on the project site:

> *Construction or Demolition:*
> 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.
>
> *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 [see **Table 3.9-2**]:

TABLE 3.9-2
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

SOURCE: Napa County Code, Section 8.16.080, Table 8.16.80

Napa County Code Section 8.16.090 provides the following exemption to noise regulations, which 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 CEQA*, a noise impact 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

Because the closest airport is located more than 9 miles northwest of the project site and the site is not located within an airport land use plan, there would be no conflicts with an airport land use plan or a public or private airstrip, and no impact would occur; therefore, these issues are not evaluated further in this EIR section. For a complete discussion, see the Initial Study Environmental Checklist (**Appendix B**).

METHODS OF ANALYSIS

The analysis of the proposed project's temporary construction noise effects was conducted based on estimates of project construction equipment (Table 2-2) and duration of use provided by the Applicant. The analysis accounted for attenuation of noise levels by the distances separating the construction activity from 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 noise levels from the operation of specified construction equipment were compared to the Napa County Noise Ordinance's daytime and nighttime construction noise standards as shown in **Table 3.9-2**. The 75 dBA L_{eq} daytime and 60 dBA L_{eq} nighttime noise standards in Section 8.16.080 of the Napa County Code were used to evaluate whether project construction would cause a substantial temporary or periodic increase in ambient noise levels at nearby sensitive receptors. Long-term impacts would be considered significant if project operation were to increase ambient noise exposure by more than 5 dB. In the *Technical Noise Supplement to the Traffic Noise Analysis Protocol*, the California Department of Transportation (Caltrans) identifies this level of change as readily perceptible (Caltrans 2013a).

The assessment of potential vibration impacts on nearby sensitive receptors used the methodology described in Caltrans's *Transportation and Construction Vibration Guidance Manual*. For adverse human reaction, the analysis applied the vibration impact level of 80 VdB for residences and buildings where people normally sleep (Caltrans 2013b). For the risk of architectural damage to historic buildings and structures, the analysis applied a threshold of 0.1 inch per second PPV (Caltrans 2013b). A threshold of 0.3 inch per second PPV was used to assess the risks of damage for all other building types.

IMPACTS AND MITIGATION MEASURES

Table 3.9-3 summarizes the impact conclusions presented in this section.

TABLE 3.9-3
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 2020

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.

Construction of the proposed project would take place in one phase, between April 1 and September 15 (approximately 5.5 months). Construction would occur during the day, between 6 a.m. and 6 p.m., typically six days a week. On an average, construction equipment would be used for seven hours a day. **Table 3.9-4** shows typical noise levels produced by the types of off-road equipment that would be used during the construction phase.

TABLE 3.9-4
REFERENCE CONSTRUCTION EQUIPMENT NOISE LEVELS—50 FEET FROM 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
Blasting	94	74/1

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" information was obtained from the Federal Highway Administration *Roadway Construction Noise Model User's Guide.*
2 Reference noise levels for dump truck were used for the onsite haul and water trucks.

SOURCE: FHWA 2006

The operation of each piece of equipment would not be constant throughout the day, as equipment would be turned off when not in use. Over a typical workday, the equipment would operate in different locations and all equipment would not operate concurrently at the same location in the development area. To quantify construction-related noise exposure at the nearest sensitive receptors, it was assumed that the two loudest pieces of construction equipment would operate at the closest location of the development area to the nearest onsite sensitive

receptors. **Table 3.9-5** presents the highest L_{eq} noise levels to which sensitive receptors could be exposed by construction activities in the development area.

TABLE 3.9-5
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 at the Nearest Receptor (dBA L_{eq})[2]	Exceeds the Napa Noise Standard of 75 dBA L_{eq} (yes or no)?
Residence more than 3,000 feet west of the project site	Excavator, Bulldozer	80	45	No
Residence more than 3,000 feet west of the project site	Blasting	74	38	No

NOTES:
dBA = A-weighted decibels; L_{eq} = energy-equivalent sound level

[1] Reference construction equipment noise levels were obtained from the Federal Highway Administration's *Roadway Construction Noise Level Model User's Guide* (FHWA 2006).

[2] Assumes an attenuation rate of 7.5 decibels per doubling of distance (i.e., soft site).

SOURCE: Data compiled by Environmental Science Associates in 2020

Blasting is anticipated to be required to remove rock during construction. Blasting would be conducted by drilling and blasting during the day. It is conservatively estimated that project construction may require five blasting events. Although rock blasting produces high instantaneous noise levels, this procedure would substantially reduce the construction time at any one location because extensive digging in hard rock would not be required. Like impact equipment, blasting generates impulsive noise, which is defined as noise of short duration (generally less than one second), high intensity, abrupt onset, and rapid decay. Because of the very short duration of impact noise generated by blasting, blasting activities when spaced out temporally are not likely to exceed the County's noise standards for construction, which are specified in terms of hourly L_{eq}.

The County's Construction Noise Ordinance (Napa County Code Section 8.16.080) limits construction noise to an hourly L_{eq} sound level of 75 dBA at any residential property. Because blasting would be impulsive and infrequent (occurring once or twice a day), receptors near blast sites would not be exposed to noise levels that would exceed the County's 75 dBA L_{eq} construction noise standard. According to FHWA's Roadway Construction Noise Model, blasting operations generate maximum noise levels of 94 dBA (FHWA 2006). Because the nearest receptors that could be affected are located more than 3,000 feet from the project site, instantaneous noise levels from blasting would also attenuate to less than 40 dBA L_{max} at these receptors, well below the County's 75 dBA standard.

All construction activities would occur in an unincorporated area of Napa County and would be subject to the noise standards in the County's noise ordinance. According to the County's Construction Noise Ordinance (Napa County Code Section 8.16.080), if construction-related noise would increase the daytime ambient noise level above 75 dBA L_{eq} in the vicinity of a residence, a significant impact would occur. As shown in **Table 3.9-5**, construction of the

proposed project would not expose nearby sensitive receptors to construction noise that would exceed the County's daytime 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; chemical, mechanical, and manual weed control; operation of wind machines to protect the vineyards from frost; harvesting of grapes; and monitoring and maintenance of erosion control measures. Some of these activities would take place at night, including the use of wind machines for frost protection, sulfur application approximately 12 times a year (typically in May and June), and harvesting of grapes (in September and October). However, because of the distance to the nearest receptor, operational noise from these activities would not be audible at the nearest sensitive receptor, which is more than 3,000 feet away. Consequently, onsite agricultural activities would not contribute to a permanent increase in ambient noise levels at nearby sensitive receptors.

The Napa County Code exempts agricultural activities from its noise standards, as discussed in the description of the Noise Ordinance in **Section 3.9.2, *Regulatory Setting***, *Local Regulations*. 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), operational activities for the proposed project would not interfere with policies of the Napa County General Plan.

As discussed in **Section 2.6, *Vineyard Operations and Maintenance***, and **Section 3.10, *Transportation***, onsite operations and maintenance activities for the proposed project would also result in a permanent, albeit seasonal, increase in traffic volumes on Soda Canyon Road. Project operations and maintenance activities are expected to generate a maximum of 28 new daily vehicle trips (24 one-way passenger vehicle trips and four one-way truck trips). These trips would occur during the eight-week harvest period in September and October. This increase in project operation–related vehicle traffic would be minor and would not substantially affect noise levels along affected roadways.

Rural roadways have a capacity of at least 5,000 vehicles per day, and current traffic volume on Soda Canyon Road is at approximately 47 percent of practical capacity near Silverado Trail and 13 percent of practical capacity near the driveway leading to the project site (**Section 3.10,**

Transportation). This amounts to approximately 2,350 and 650 vehicles per day along the two segments of Soda Canyon Road leading up to the project site. According to Caltrans, a doubling of traffic is required to result in a noticeable increase in traffic noise. Because project-related haul and worker trips would be less than 4 percent of existing traffic volumes along Soda Canyon Road, the roadway most affected by project traffic, sensitive receptors along this route 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. This impact would be **less than significant**.

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 typically the primary issues underlying temporary construction impacts from vibration. The construction activities that result in the most substantial vibration impacts include impact pile driving, drilling, blasting, and the use of large bulldozers. Project construction would not require pile driving, but is anticipated to require drilling and blasting for the removal of rock. As a conservative estimate, project construction may require five blasting events. Other construction equipment such as excavators would generate much lower levels of vibration, but for a longer duration than blasting. 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, the analysis applies the “strongly perceptible” threshold of 0.9 inch per second PPV for transient sources. For risks of architectural damage to historic buildings and structures, the analysis applies a threshold of 0.12 inch per second PPV (Caltrans 2013b). A threshold of 0.3 inch per second PPV is 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 in **Section 3.4, *Cultural and Tribal Cultural Resources***, there are no historic structures in the vicinity of the development area that could be adversely affected by project construction–related vibration.

Ground vibration caused by blasting is dependent on the type of rock, the type of explosive, and the depth below ground at which the explosives are placed. Various industries use different techniques for blasting, potentially resulting in different PPV. Using Oriard’s basic formula for predicting blast vibration found in Caltrans’s *Transportation and Construction Vibration Guidance Manual*, vibration levels were estimated for blasting with various charge weights at different distances. The estimates are presented in **Table 3.9-6** (Caltrans 2013b). Because the

ground type and explosive yield for the project are not known, the table shows the worst-case vibration levels that could be experienced at these distances.

Human response to blasting is subjective; two people will react differently to the same vibration event depending on where they are in a structure. When residents feel a blast, they may become concerned about damage to their homes. As shown in **Table 3.9-6**, for the highest charge weight included in the table, vibration from blasting would exceed the thresholds if structures would be located within 300 feet, and/or if sensitive receptors would be located within 800 feet from the blast site. As discussed previously, there are no sensitive receptors or structures within these distances from the project site that could be affected. Furthermore, Mitigation Measure 3.2-1c would be implemented, which limits blasting operations to the hours of Monday through Friday from 10 a.m. to 3 p.m. year-round. Therefore, the vibration impact from blasting would be less than significant.

TABLE 3.9-6
VIBRATION SOURCE LEVELS FROM BLASTING

	Building Damage Criterion Peak Particle Velocity (in/sec) by Pounds of Explosives			Human Annoyance Criterion Vibration Level (VdB) by Pounds of Explosives		
Distance (feet)	1	5	10	1	5	10
50	**0.46**	**1.68**	**2.92**	**101**	**112**	**117**
75	**0.24**	**0.88**	**1.53**	**96**	**107**	**112**
100	0.15	**0.55**	**0.96**	**92**	**103**	**108**
125	0.11	**0.39**	**0.67**	**89**	**100**	**105**
150	0.08	**0.29**	**0.50**	**86**	**97**	**102**
175	0.06	**0.23**	**0.39**	**84**	**95**	**100**
200	0.05	0.18	**0.32**	**82**	**93**	**98**
300	0.03	0.10	0.17	76	**88**	**92**
400	0.02	0.06	0.10	72	**84**	**88**
500	0.01	0.04	0.07	69	**80**	**85**
600	0.01	0.03	0.05	67	78	**83**
700	0.01	0.02	0.04	65	76	**81**
800	0.01	0.02	0.03	63	74	79

NOTES:
in/sec = inches per second; PPV = peak particle velocity; VdB = vibration decibels

Bold = Exceeds 0.2 PPV for building damage threshold or 80 VdB human annoyance threshold.

[1] $PPV = K(Ds)^{-1.6}$

K = K Factor, the combined K factor for Oriard's upper and lower bounds are 242 and 24, respectively. Assumed a K factor of 242.
Ds = Square-root scaled distance (distance to receiver in feet divided by square root of charge weight in pounds).

SOURCE: Caltrans 2013b

The use of bulldozers and other construction equipment would also generate localized vibration, which would not carry over to receptors located more than 3,000 feet away. Therefore, vibration

impacts from these sources would be below the applied human annoyance and building damage thresholds.

Impact Conclusion

Existing 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.

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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***.

No comment letters regarding transportation were received in response to the Notice of Preparation.

3.10.1 ENVIRONMENTAL SETTING

REGIONAL ROADWAY NETWORK

Regional transportation access to the project site is provided by Soda Canyon Road, a two-lane roadway with no paved shoulders or sidewalks that begins at Silverado Trail to the west and dead-ends at Antica Winery, approximately 0.4 mile east of the driveway leading to the project site (Figure 2-2 in **Chapter 2, *Project Description***). Soda Canyon Road is approximately 6 miles long, and is designated in the Napa County General Plan as a two-lane collector.

In the project vicinity, Soda Canyon Road has moderate horizontal and vertical curves, and the speed limit is 25 miles per hour. Average daily traffic counts were collected at two locations on Soda Canyon Road: approximately 200 feet east of Silverado Trail and approximately 200 feet west of the driveway leading to the project site. Average daily traffic counts were collected on two consecutive fall weekends (Friday and Saturday) in 2019 to reflect peak harvest conditions: October 4 and 5, and October 11 and 12. **Table 3.10-1** reports the highest peak-hour and daily volumes.

TABLE 3.10-1
TRAFFIC VOLUMES ON SODA CANYON ROAD

Segment	Peak Hour	Daily
East of Silverado Trail	279	2,336
West of Project Site Driveway	119	664

SOURCE: Data compiled by Environmental Science Associates in 2019

LOCAL ROADWAY NETWORK

Access to the project site is available via a private road accessed from Soda Canyon Road, which crosses an adjacent property owned by the Applicant, Gallo Vineyards Inc. No public local roadways would be used to access the project site, as driveway access is provided directly from Soda Canyon Road.

BIKEWAYS, TRANSIT, AND PEDESTRIAN FACILITIES

There are no existing dedicated bicycle facilities on Soda 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 Soda Canyon Road (NVTA 2019). 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

The California Department of Transportation (Caltrans) has discretionary authority with respect to highways under its jurisdiction. 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 state roadways requires a Caltrans transportation permit.

LOCAL REGULATIONS

The February 2019 update to the Circulation Element of the 2008 Napa County General Plan (Napa County 2019) 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 [transportation demand management] 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 would be 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 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); or
- Result in inadequate emergency access.

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 (Traffic Counts Plus 2019).
- 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 2020

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 Soda Canyon Road, the only roadway that provides access to the project site.

As stated in **Section 2.5, *Project Construction***, proposed vineyard development activities would occur in one phase, between April 1 and September 15 (approximately 5.5 months). These activities would include removing brush and trees within the proposed clearing limits. Other construction work would involve ripping, removing rocks, blasting, cultivating soil, seeding a cover crop, mulching, trenching for irrigation pipelines, installing a trellis system and deer fence, laying out vine rows, and installing temporary and permanent erosion control measures. The number of vehicle trips generated during vineyard development would be highest during the first two weeks and last two weeks of project construction, when heavy equipment (and infrastructure materials for delivery only) would be delivered to and removed from the project site. Approximately 20 one-way construction worker trips and four 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 onsite during the remainder of project construction activities and therefore would not generate new trips to and from the project site.

After preparing the land and planting the vineyard, laborers would travel between the vineyard and their homes each day. As stated in **Section 2.6, *Vineyard Operations and Maintenance***, the volume of vehicular 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 24 daily one-way trips by workers in passenger vehicles and four one-way grape truck trips per day.[2] 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.).

1 One-way vehicle trips are either inbound to or outbound from the project site(s); two one-way trips equal one round trip.

2 The Applicant has indicated that six one-way worker vehicle trips would be generated by harvest activities, during which up to 34 workers would be onsite. However, to provide a conservative analysis, this Draft EIR assumes that 24 one-way trips would be generated.

To put the above-described number of trips into proper context, see **Table 3.10-1** for the existing traffic volume on Soda Canyon Road. General rule-of-thumb estimates are that two-lane rural roadways have a capacity of at least 5,000 vehicles per day. Therefore, current traffic volume on Soda Canyon Road is approximately 47 percent of practical capacity near Silverado Trail and approximately 13 percent of practical capacity near the driveway leading to the project site. Project trips would not increase that percentage substantially; during both vineyard development and the seasonal harvest, the increase in roadway traffic volumes on Soda Canyon Road would be less than 1 percent for both study roadway segments. 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 Soda Canyon Road near the project site. The proposed project is not expected to affect a potential future bike route on Soda Canyon Road, because roadway operating conditions with the proposed project would remain substantially similar to current conditions.

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 through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3.-5, which would reduce the project acreage by approximately 25.75 gross 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) apply statewide beginning 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, guidance from the California Governor's Office of Planning and Research's (OPR's) December 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Guidelines) was relied upon in this Draft EIR to determine the significance of transportation impacts (OPR 2018).

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 the automobile in Section 15064.3 "refers to on-road passenger vehicles, specifically cars and light trucks." For this reason, the focus of this VMT analysis is on passenger vehicle (i.e., car and light truck) trips 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), and 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 a maximum of 20 worker trips per day, and operation would generate a maximum of 24 worker 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 OPR's recommended small-project screening criterion threshold of 110 trips per day.

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 related to installation and operation of the proposed vineyard would use the existing two-way driveway off Soda Canyon Road to access the private roadways within the project site. Sight distance at the intersection of Soda 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 sight distances along Soda Canyon Road extend approximately than 350 feet to the west and approximately 250 feet to the east. Considering the low volumes of existing vehicles at this location and the 25-mile-per hour posted speed limit, 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 Soda 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 in the discussion of Impact 3.10-1, construction of the proposed project would temporarily increase vehicular traffic on Soda Canyon Road. Project construction activities would generate a maximum of four one-way truck trips and 20 one-way passenger vehicle trips per day, for a total of 24 daily vehicle trips. Although this traffic could affect emergency access, the construction-related increase in vehicle traffic would be minor and would not substantially affect response times. No construction work would occur within public roadways, meaning that emergency vehicle access would be preserved.

Operations and maintenance activities for the proposed project would also increase traffic volumes on Soda Canyon Road. Unlike the trips generated during construction, these vehicle trips would be permanent, albeit seasonal. Project operations and maintenance activities would generate a maximum of 28 new daily vehicle trips (24 one-way passenger vehicle trips and four 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 substantially affect response times. No operations and maintenance activities would occur within public roadways, meaning that emergency vehicle access would be preserved.

Impact Conclusion

Construction, operations, and maintenance of the proposed project would increase vehicular traffic on Soda Canyon Road; however, this traffic increase would be minor and would not substantially affect response times. No activities would occur within public roadways, meaning that emergency vehicle access would be preserved. Therefore, the impact of construction, operations, and maintenance of the proposed project on emergency access would be **less than significant**.

Implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3.-5, which would reduce the project acreage by approximately 25.75 gross acres, may further reduce the number of project-generated vehicles.

Mitigation Measure: None required.

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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 analysis of the project's energy use is contained in Initial Study Section 6, *Energy* (**Appendix B**).
- *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.

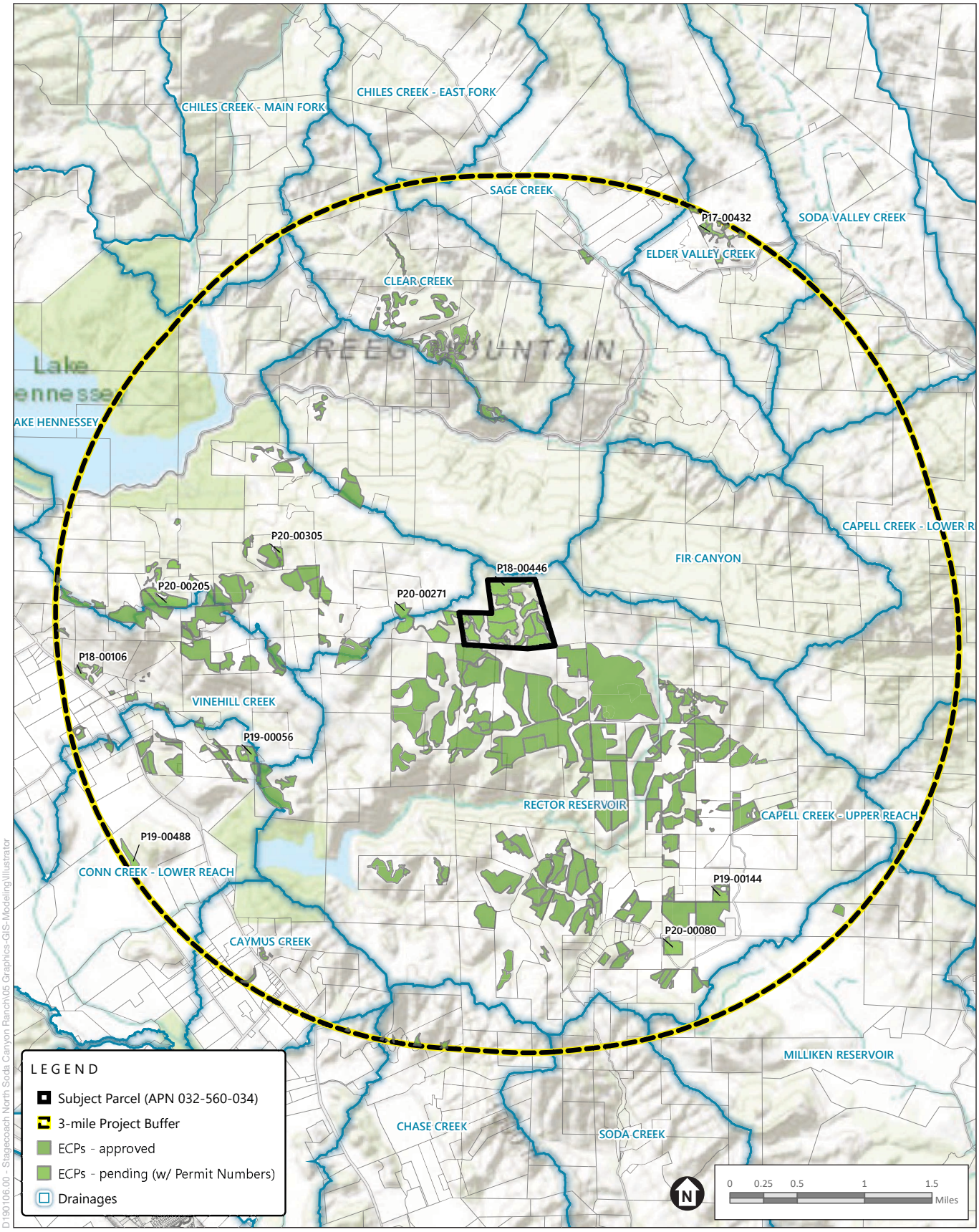
4.1.1 CUMULATIVE CONTEXT

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 geographic limit for assessing 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 Rector Reservoir 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 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 2021

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 4-1
Cumulative ECP Projects within Three 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 contains approximately 22,140 acres. In 1993, approximately 1,548 acres (7 percent) of the land within this radius were developed as vineyard. As shown in **Table 4-1**, since 1993, approximately 1,619 additional acres (7 percent of the 3-mile radius) have been developed as vineyard, for a total of 14 percent (approximately 3,167 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 5,113 acres (23 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 3,167 acres), results in a total potential buildout of approximately 8,280 acres, or 37 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, nine 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)

Number	Date Approved	Applicant Name	Vineyard Development Acres	Number	Date Approved	Applicant Name	Vineyard Development Acres
1993105	September 13, 1993	Winegrowers Farming Co.	3.30	2002257	April 21, 2008	George Gaskins	10.40
1993024	October 8, 1993	Weitz Vineyard	8.30	200601441	April 29, 2008	David McBride	2.90
1993403	March 24, 1994	James Bushey	42.00	200700058	July 8, 2008	Lake Ridge Vineyards	6.30
1993224	September 30, 1994	Charles Saunders	2.20	200800460	August 15, 2008	Silverado Farming Co.– Del Dotto	16.30
1994364	July 17, 1995	Leighton Taylor	14.50	20060042	October 7, 2008	Stagecoach Vineyards	101.30
1995012	July 28, 1995	Weitz Vineyard	4.20	200800478	October 7, 2008	Joseph Phelps Vineyards	22.98
1995024	August 16, 1995	Jan Krupp–PPI Eng.	51.50	1998581	January 6, 2009	Jay Caldwell	38.30
1995126	October 14, 1995	Christina Vineyards	13.00	200900122	April 14, 2009	Stagecoach Vineyards	17.12
1995131	October 18, 1995	Michael Neal	0.75	200900167	April 28, 2009	Taylor Leighton	24.70
1996512	March 25, 1997	Patrick Kuleto	22.00	200900010	June 19, 2009	Sage Hill Vineyards	2.10
1996121	May 8, 1997	David Abreu Vineyard Management	2.70	200900161	July 6, 2009	Mary Ann Gilson	11.00
1996686	July 2, 1997	Grandview Vineyards	18.00	200900368	September 11, 2009	Chappellet Vineyard	28.30
1997014	August 8, 1997	Davie Pine	2.18	201000113	March 26, 2010	Stagecoach Vineyards	22.70
1996665	August 14, 1997	Kenneth Myers	10.60	201000112	March 29, 2010	Jan Krupp	15.60
1997054	August 22, 1997	Chris Willis	1.00	201000152	April 28, 2010	Timar LLC	7.40
1997092	September 4, 1997	Levine	15.00	201000187	June 10, 2010	Sugarloaf Farming Corp.	26.90
1997112	September 12, 1997	Debb Family Vineyards	24.10	200900226	August 13, 2010	Probst Family Vineyards	15.20
1997120	September 12, 1997	Stephen Girard	20.00	200900396	March 22, 2011	Richard Leff	20.70
96681	December 29, 1997	Joseph Phelps Vineyards	22.98	201100093	March 23, 2011	Naoko DallaValle	8.06
1997386	March 11, 1998	George Gaskins	7.10	201100114	March 31, 2011	Stagecoach Vineyards	106.80
1998008	July 24, 1998	Chappellet Winery Inc.	18.45	201100104	April 26, 2011	Martinez Vineyard	13.61
1998042	August 25, 1998	Michael Neal	3.50	201100137	April 28, 2011	Melanson Vineyard	10.20

TABLE 4-1
CUMULATIVE EROSION CONTROL PLAN PROJECTS LIST WITHIN 3 MILES OF THE PROPOSED PROJECT (1993–2020)

Number	Date Approved	Applicant Name	Vineyard Development Acres	Number	Date Approved	Applicant Name	Vineyard Development Acres
1996138	August 31, 1998	Oakville Ranch Vineyards	28.00	201000203	July 19, 2011	Davidowski	16.60
1995614	September 29, 1998	Dick Martin–David Pirio	2.00	201100266	August 11, 2011	Montagana Napa Valley	19.50
1996586	November 9, 1998	Stagecoach Vineyards	116.00	200200454	February 14, 2012	Rodgers Land & Development	157.00
1998159	February 22, 1999	Weitz Vineyard	1.72	201200021	April 12, 2012	Sugarloaf Farming Corp.	1.60
1997544	March 5, 1999	Patrick Kuleto	19.29	201200147	May 11, 2012	Chappellet Vineyard	14.40
199800129	March 30, 1999	Colgin Family Partners	58.20	201200321	October 8, 2012	Joseph Phelps Trust	2.40
1998320	April 2, 1999	Jan Krupp	28.79	201300132	May 14, 2013	Phillips Vineyard	1.74
1998322	April 21, 1999	Peter Murphy	9.70	201300144	June 14, 2013	Mountain Peak Vineyards	31.90
1998280	April 21, 1999	Drew Aspegren	7.10	201400075	April 25, 2014	Krupp Brothers	31.20
1998422	April 22, 1999	John Moynier	2.00	201300133	April 28, 2014	Lumbert Vineyard Development	26.68
1998267	April 22, 1999	Beth Painter	17.00	201400142	May 15, 2014	Stagecoach Vineyards	16.60
1998247	May 6, 1999	Shafer Vineyards	14.10	201400140	May 27, 2014	Antinori Napa Valley	13.80
1998201	May 18, 1999	Soda Canyon Real Estate Investment	23.60	201300263	June 6, 2014	Mountain Peak Vineyards	4.60
1998051	May 28, 1999	June Townsend	25.00	201300390	September 22, 2014	Nine Suns Vineyard	0.90
1995374	June 4, 1999	Jan Krupp–PPI Eng.	374.00	201400309	October 22, 2014	Rodgers Land & Development	157.00
1998509	June 28, 1999	Gerald Warman	17.25	201000102	March 25, 2015	Arthur Havenner	25.60
1998563	July 13, 1999	David Ilsley	3.29	201500066	July 20, 2015	Gary Raugh	0.51
1998218	July 21, 1999	Gregory Melanson	9.30	201500343	October 19, 2015	Bevan and DeCrescenzo	2.00
1998210	July 30, 1999	Robert Long	19.50	201500227	February 22, 2016	Phillip Sunseri	3.78
1998340	August 16, 1999	Henry Martinez	25.00	201500320	March 11, 2016	Antica Napa Valley	77.00
1998564	August 17, 1999	Drew Aspegren	15.70	201600207	May 20, 2016	Fossil Partners, LP	2.20
1998603	August 27, 1999	Rombauer Atlas Peak Vineyard	27.70	201600157	May 25, 2016	Meadowrock Rock Vineyard	34.60
1999527	July 7, 2000	Lyndsey Harrison	16.00	201700118	April 11, 2017	Stagecoach Track II Replant	70.30

TABLE 4-1
CUMULATIVE EROSION CONTROL PLAN PROJECTS LIST WITHIN 3 MILES OF THE PROPOSED PROJECT (1993–2020)

Number	Date Approved	Applicant Name	Vineyard Development Acres	Number	Date Approved	Applicant Name	Vineyard Development Acres
2000078	August 18, 2000	Chappellet Vineyard	53.00	201600059	May 10, 2017	Antica California	53.50
1999514	June 13, 2001	J. Delong	7.90	201700228	June 7, 2017	Pritchard Hill Track II ECP	4.30
1998330	August 6, 2001	David Long	1.00	201700254	July 25, 2017	Chappellet Track II Replant	6.10
1999369	August 16, 2001	Dalla Valle Naoko	1.97	201700242	August 15, 2017	Capra Company Track I Replant	71.84
2001072	September 12, 2001	Jeffrey Gargiulo	16.20	201700272	August 18, 2017	Edcora Track II Replant	15.83
1998544	September 14, 2001	Gary Lencioni	6.37	201700328	September 15, 2017	RUDD Track II ECP	8.50
1999252	September 18, 2001	Pina Vineyard Management	3.23	201500399	December 15, 2017	Vangone Vineyards	6.20
2001108	October 4, 2001	Naoko Dalla Valla	4.98	201800082	March 29, 2018	Sweeney Track II Replant	8.00
2001118	October 8, 2001	Douglas Shafer	6.70	201800052	March 29, 2018	Animo LP Track II ECP	15.60
2002140	May 29, 2002	Linda Taylor	4.90	201800062	March 29, 2018	Gallo Track II ECP	2.30
2001238	September 18, 2002	Jeff Gargiulo	7.70	201700348	April 20, 2018	Promise Wine LLC Track I ECP (McPherson)	4.46
1998328	April 22, 2003	David Long	27.70	201800261	July 20, 2018	Sinskey Family LLC	4.30
2003256	January 21, 2004	Buena Tierra Vineyards	75.00	201800029	November 16, 2018	Continuum Estate Track I ECP	5.50
2004064	February 3, 2004	Dalla Valle Naoko	12.70	201900389	January 17, 2019	Edcora Vineyards	73.48
2002368	February 17, 2004	Alan Vincent Giacosa	2.19	201900063	March 25, 2019	Gallo/ Stagecoach Vineyards	10.60
20040440	September 21, 2004	Cliff Lede	3.20	201900199	May 17, 2019	Houyi Vineyard	26.00
2002188	May 26, 2005	Steven Rivera	0.99	201900222	May 21, 2019	Shafer Family Vineyard	2.10
20050367	October 11, 2005	Shafer Vineyards	24.40	201500342	July 10, 2019	Hendrickson Family Vineyards	36.00
2001226	October 26, 2005	Codorniu Napa Inc.	76.00	201900275	July 12, 2019	Ilsley Trust et al.	21.70
2000399	June 23, 2006	George Noble	5.06	201900351	September 20, 2019	Odyssey Vineyard LLC	20.40
200601001	June 27, 2006	Sage Hill Vineyards	15.10	201800275	November 25, 2019	Metamorphosis –Ovid Vineyards	25.60

TABLE 4-1
CUMULATIVE EROSION CONTROL PLAN PROJECTS LIST WITHIN 3 MILES OF THE PROPOSED PROJECT (1993–2020)

Number	Date Approved	Applicant Name	Vineyard Development Acres	Number	Date Approved	Applicant Name	Vineyard Development Acres
200601143	August 11, 2006	Kuleto Estates	6.50	201600323	December 4, 2019	Bloodlines, LLC	86.20
200601152	August 17, 2006	Screaming Eagle	4.70	201900037	March 11, 2020	Wappo Land Co. Track I ECP	13.10
1992382	November 9, 2006	Sam Gaskins	10.40	201700432	Pending	KJS Sorrento Track I ECP	156.80
2003522	March 8, 2007	Jacquelyn Joy Cordes	24.00	201900144	Pending	Stags Ridge	9.00
200700274	April 26, 2007	Martinez Vineyard	3.40	201800106	Pending	Oakville Farms Track I ECP	7.70
200601007	May 31, 2007	Colgin Family Partners	58.20	201900056	Pending	Bevan & DeCrescenzo	15.00
200700360	July 17, 2007	Bryant Vineyards Ltd.	6.10	202000205	Pending	Prichard Hill	29.10
200700456	July 24, 2007	Backus Ranch	3.00	201900488	Pending	State Farm Gamble Ranch	8.30
200700508	August 8, 2007	Poetry Vineyard	12.80	202000080	Pending	Antinori California	9.70
2003020	August 10, 2007	Doug Hill	15.60	202000271	Pending	Chappellet Vineyard	41.9
2004086	August 10, 2007	Richard & Marlene Mansfield	8.15	202000305	Pending	Melanson Vineyard	4.1
200800227	April 2, 2008	Diane Miller	19.90				

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 117 acres of agriculture per year (3,167 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 351–585 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 CUMULATIVE IMPACTS

The analysis of cumulative impacts considers 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 order in which these issues are analyzed in **Chapter 3, *Environmental Setting, Impacts, and Mitigation Measures***.

AIR QUALITY AND GREENHOUSE GAS EMISSIONS

The geographic scope of the analysis of cumulative air quality impacts consists of the San Francisco Bay Area Air Basin (SFBAAB) because air quality is managed basin-wide. The scope of the cumulative impact analysis for greenhouse gas (GHG) emissions is global because such emissions cumulatively contribute to planet-wide accumulations of GHGs in the atmosphere.

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, by itself, is sufficient in size to 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 emissions levels that would result in a cumulatively considerable net increase in criteria air pollutants if they were exceeded.

Regional air quality control plans developed by the Bay Area Air Quality Management District (BAAQMD) address cumulative air quality issues in the SFBAAB. Because these plans account for project growth in the Bay Area, as embodied in the adopted general plans of the cities and counties within the SFBAAB, they address 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 emit criteria air pollutants, including suspended and inhalable particulate matter measuring 10 microns or less in diameter (PM_{10}) from equipment exhaust. 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 4 equipment meeting more stringent emission standards than the average fleet. Implementing the BAAQMD-required Basic Construction Mitigation Measures listed in Mitigation Measures 3.2-1b and 3.2-1c would reduce the proposed project's construction-related fugitive dust impacts to a less-than-significant level. Implementing the open burning condition of approval would ensure that impacts from open burning would be less than significant.

Operational emissions of NO_X, ROG, $PM_{2.5}$, and PM_{10} would not exceed BAAQMD's cumulative significance thresholds, shown in Table 3.2-6.

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 construction-related GHG emissions, 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: 1,100 metric tons of carbon dioxide equivalents ($MTCO_2e$) 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 analysis of cumulative biological resources impacts consists of a 3-mile radius around the project site, which includes the Rector Reservoir watershed.

Federal, state, and local protections for biological resources are by nature cumulative: They prevent the incremental take of special-status species or the removal of associated habitat that could prevent a species from thriving.

Through project design and implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-3, 3.3-4, and 3.3-5 as proposed in **Section 3.3, *Biological Resources***, the proposed project would avoid significant impacts on biological resources. These measures would require establishment of a 79.68-acre Preservation Area that would allow the retention of individuals of multiple special-status plants: holly-leaved ceanothus, Franciscan onion, narrow-flowered California brodiaea, small-flowered calycadenia, two-carpellate western flax, nodding harmonia, Napa lomatium, and green monardella. The measures would also support the replacement of affected special-status plants at a 1:1 ratio (mitigated:affected) and ensure the successful establishment of the replacement plants through monitoring for five years. No net loss of these special-status plants would occur following avoidance and replanting; therefore, impacts regarding these special-status plants would not be cumulatively considerable.

Preconstruction surveys would identify any nesting birds. Should any such birds be found, the proposed project would require observation of no-disturbance zones around nest sites. Therefore, no impacts on existing populations would occur, and impacts regarding these species would not be cumulatively considerable.

Approximately 107.18 acres of potential holly-leaved ceanothus habitat (chaparral and scrub) was identified on the project site, consisting of 71.58 acres of chamise alliance, 5.74 acres of mixed manzanita, and 29.86 acres of scrub interior live oak. The proposed project would avoid about 39 percent of this habitat with implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5 (Table 3.3-5b). The approximately 69.62 acres of chaparral and scrub that would be converted represent less than 0.2 percent of the total chaparral and scrub in Napa County. To ensure no net loss, the same amount of holly-leaved ceanothus converted would be replanted in the Preservation Area with the implementation of Mitigation Measure 3.3-1b.

The amount of potentially suitable habitat for holly-leaved ceanothus (chaparral and scrub) within a 3-mile radius around the project site was calculated. This calculation excluded the project site itself. An accurate assessment requires the exploration of soil types and other factors key to the survival of holly-leaved ceanothus. For this reason, the total acreage of vegetation alliances that typically exhibit conditions consistent with the habitat requirements of holly-leaved ceanothus was assessed. Considering these factors, approximately 6,894 acres of potentially suitable holly-leaved ceanothus habitat are present within a 3-mile radius of the project site (excluding the 107.18 acres of suitable habitat within the project site).

To conservatively estimate the acreage of potential habitat in the cumulative setting, the vineyard acreage developed and approved in the 3-mile radius since 1993 was assumed to consist entirely of potential habitat that would be fully developed, leaving these areas unavailable for propagation by holly-leaved ceanothus populations (3,167 acres of vineyard within 3 miles of the project site). The results of the calculations indicate that approximately 3,727 acres of potential holly-leaved ceanothus habitat are present within the 3-mile radius that constitutes the cumulative setting for the proposed project. Within the project site itself, 107.18 acres of suitable habitat are present. Approximately 65.24 of those acres are within the clearing limits of the mitigated proposed project. Removing vegetation from within the clearing limits would result in the loss of approximately 1.8 percent of the potentially suitable holly-leaved ceanothus habitat within the 3-mile radius that constitutes the cumulative setting. The percentage would be reduced further with implementation of Mitigation Measure 3.3-1b in Section 3.3, which requires replanting of the removed holly-leaved ceanothus individuals at a 1:1 ratio. Thus, a *de minimis* loss of potential habitat would occur with the proposed project.

Therefore, the project would not result in cumulatively considerable incremental contribution to a significant cumulative impact related to 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 8.82 acres of upland annual grasslands were identified on the project site. The proposed project would avoid about 31 percent of this acreage with implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5 (Table 3.3-5b). The approximately 6.1 acres of upland annual grasslands that would be converted represent less than 0.02 percent of the total upland annual grasslands in Napa County.

The proposed project would preserve the entire 0.79 acre of black oak forest on the project site, would not affect any of the total black forest alliance in Napa County, and would comply with General Plan Policy CON-17 by preserving the California bay forest acreage on the project site at a 2:1 ratio. Other projects in the vicinity would also be required to avoid or preserve oak woodland and sensitive habitats pursuant to General Plan policies, preventing the 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 crossings required for access. The two ephemeral streams on the project site that meet the County's definition of a stream have no-touch setbacks ranging from 55 feet to 105 feet based on slope, in accordance with Section 18.108.025 of the Napa County Code; these setbacks also apply to other projects in Napa County. The proposed project also would maintain 50-foot buffers from other waters not defined by the County as streams. With implementation of Mitigation Measure 3.3-3, 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 3.3-4, the proposed project would maintain passages more than 100 feet wide to allow for wildlife movement. In addition, vineyard blocks would be fenced in clusters; fencing on the project site would use a design containing 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; and exit gates would be installed at the corners of deer fencing to allow trapped wildlife to escape. Other projects in the project vicinity would be required to implement similar measures to comply with local policies and regulations.

With implementation of Mitigation Measures 3.3-1a through 3.3-1j, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, the project would develop 90.47 gross acres of vineyard (Table 3.3-5b). This acreage represents about 15 percent of the total expected to be developed within the 3-mile radius in the next five years, and approximately 1.8 percent of the total potential vineyard area (5,113 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 areas do not contain the only habitat required for the regionally occurring species to continue to thrive. Thus, 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 on biological resources.

CULTURAL AND TRIBAL CULTURAL RESOURCES

The geographic scope for the analysis of cumulative impacts on cultural and tribal cultural resources is the Rector Reservoir 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 for the proposed project could affect as-yet-unidentified subsurface archaeological resources, including those that could also be considered tribal cultural resources. Such activities could also affect human remains. However, as stated in **Section 3.4**, potential impacts on subsurface archaeological resources and human remains would be reduced to less-than-significant levels with implementation of Mitigation Measures 3.4-1a, 3.4-1b, 3.4-2, and 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 by obtaining an individual site permit and would implement mitigation measures for impacts on any unknown resources discovered during construction. Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact on cultural resources.

GEOLOGY AND SOILS

The geographic scope for the analysis of cumulative geology and soils impacts is the Rector Reservoir watershed.

The project site has favorable slope stability conditions, with low slope inclines, and the proposed vineyard would not adversely affect the moderately strong to strong volcanic bedrock underlying the site (as discussed in **Section 3.5, *Geology and Soils***). Because the proposed project would implement controls to limit the concentration of surface runoff in areas susceptible to erosion, the project is not anticipated to adversely affect slope stability. The project site has low potential to contain paleontological resources. Therefore, cumulatively considerable impacts related to geology and soils would be limited to sedimentation within the Rector Reservoir watershed.

Cumulative effects would be considered significant if cumulative sedimentation from past, present, and reasonably foreseeable projects and the proposed project in the watershed is considerable, or if the incremental impact of the proposed project within the cumulative environment would be considerable.

The proposed project would reduce the level of sediment delivered to the watershed by approximately 160.01 tons (29.78 percent) compared to existing conditions. Like 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 hydrologic 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.

HAZARDS AND HAZARDOUS MATERIALS

The geographic scope for the analysis of cumulative impacts related to hazardous materials includes the Rector Reservoir 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. Best management practices in the conditions of approval would limit the potential for the accidental release of hazardous materials to create hazardous conditions (as discussed in **Section 3.6, *Hazardous Materials***). Therefore, the proposed project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to the risk of hazardous materials.

HYDROLOGY AND WATER QUALITY

The geographic scope for the analysis of cumulative hydrology and water quality impacts consists of the Rector Reservoir 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 onsite 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, vegetative cover, and time of concentration, and to the five proposed detention basins. 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. Like 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.

The proposed project would be irrigated with groundwater. It is anticipated that the proposed project would use 54.8 acre-feet of groundwater per year during the first four years, while the vines become established, and approximately 45.7 acre-feet of groundwater per year after the fourth year. These amounts are less than the project site's anticipated annual groundwater recharge rate of approximately 84.1 acre-feet per year, and the proposed project would incorporate the County's standard groundwater use condition (as discussed in **Section 3.7, *Hydrology and Water Quality***). Accordingly, groundwater use on the project site would not be cumulatively considerable, as no net decrease in the groundwater table would occur. The Water Availability Analysis demonstrates that under the worst-case scenario (maximum groundwater pumping for the maximum amount of vineyard planting proposed), groundwater recharge would be adequate to meet project demand. Therefore, the overall cumulative effect is not 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. 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 analysis of cumulative land use and planning impacts is the 3-mile radius.

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 and Planning***, no significant land use impacts have been identified for the proposed project with implementation of Mitigation Measures 3.3-1a through 3.3-5. Approved 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. The Chappellet Vineyard project, west of the project site, is the nearest proposed development to the proposed project. Construction noise tends to be site specific and affects 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 ground-borne vibration. Because of distance, topography, and attenuation, cumulative noise impacts from both the Chappellet Vineyard project and the proposed project would not be cumulatively considerable. In addition, 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, 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 analysis of cumulative transportation impacts includes the regional roadway network.

As discussed in **Section 3.10, *Transportation and Traffic***, the proposed project would be developed in one phase, and the largest number of vehicle trips generated during vineyard development would be approximately 20 one-way construction worker trips and four one-way truck trips per day during the first and last two weeks of the construction phase. During vineyard operation, harvest is the highest traffic-generating period, with approximately 24 one-way passenger vehicle trips and four one-way truck trips per day anticipated. Project trips would not increase the percentage of roadway traffic volumes substantially; during both vineyard development and the seasonal harvest, the increase in roadway traffic volumes on Soda Canyon Road would be less than 1 percent for both study roadway segments (see Table 3.10-1).

Estimated daily traffic generation from project development and operational activities would be 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. Napa County makes the final determination of impact significance and of the feasibility of mitigation measures 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 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.

4.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

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 onsite 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. 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. Therefore, project construction activities would not result in the inefficient use of energy or

natural resources. 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.

4.4 GROWTH-INDUCING IMPACTS

The State CEQA Guidelines require that an EIR evaluate the growth-inducing impacts of a proposed project (Section 15126.2[e]). 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 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(e), 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 of homes or displacement of 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 locations in the project area. Therefore, the proposed project would not result in direct growth-inducing impacts.

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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 15126.6(e)(2), an identified environmentally superior alternative.

5.2 PROJECT OBJECTIVES

The overall objectives of the proposed project are as follows:

- Develop new vineyards on those portions of the site that are suitable for the cultivation of high-quality wine grapes, which are designed and sited to include up to approximately

85–91 net planted acres[1] within an approximately 116-acre development (or cleared) area, while ensuring the economic viability of the project.
- Expand vineyard production on an actively farmed property while ensuring the sustainability of farming operations.
- 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.
- Minimize changes to hydrology from vineyard development.
- Farm vineyards in a sustainable manner that includes the use of integrated pest management practices and participation in the Napa Sustainable Winegrowing Group and California Sustainable Winegrowing Alliance.
- Protect water quality by protecting streams and drainages 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.
- Use water from existing and proposed water resources efficiently.
- Maximize the use of current vineyard employees' skills and create efficiencies.
- Provide opportunities for additional vineyard employment and economic development in Napa County.

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 decision makers to compare the impacts of approving a project with the impacts of not approving a project. Under the No Project Alternative, vineyards would not be planted, operated, and maintained on the project parcel and no changes to the existing network of undeveloped areas, dirt roads, and hand-cut trails would occur. Accordingly, the development of up to 91 net acres of vineyards within approximately 116.2 gross acres and the erosion control features associated with #P18-00446-ECPA would not occur.

The approximately 170.2-acre project site would still be accessed from Soda Canyon Road and would continue to consist of undeveloped areas, dirt roads, and hand-cut trails. No changes would be made to the existing 0.9 mile of dirt roads or existing wildlife exclusion fencing. Two wells are currently located in the southeastern portion of the project site; with the No Project

[1] Considering that the owner has the ability to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes, and that for the proposed vine by row spacing in areas where cross-slope exceeds 15 percent, the owner shall increase the row spacing as needed to ensure there is adequate room for equipment (PPI Engineering 2019: ECPA Narrative pages EC-5 and EC-6).

Alternative, no additional wells would be developed in the future. Vegetation types on the project site would remain primarily as chamise chaparral, grassland, California black oak forest, California bay forest, mixed manzanita, and scrub oak communities.

ABILITY TO MEET THE PROJECT OBJECTIVES

With the No Project Alternative, the project site's approximately 170.2 acres would remain undeveloped. The existing chamise chaparral, grassland, California black oak forest, California bay forest, mixed manzanita, and scrub oak communities would not change and current vegetative cover would remain. This alternative would not accomplish the basic objective of the proposed project: installation and operation of a new vineyard on the project site.

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 conversion would not occur under the No Project Alternative. The environmental setting would remain identical 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 through 3.2-1c or the open burning condition of approval, 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, and conflicts with applicable sections of the Napa County Code and Napa County General Plan would not occur. The approximately 75.17 acres that provide habitat for approximately 1,912 holly-leaved ceanothus individuals, consisting of chamise alliance (48.85 acres), mixed manzanita (3.77 acres), and scrub interior live oak (22.55 acres), would remain on the project site. Populations of Franciscan onion, narrow-flowered California brodiaea, small-flowered calycadenia, two-carpellate western flax, nodding harmonia, Napa lomatium, and green monardella on the project site would not be removed and/or replanted. The 31.63 acres of California bay forest and 0.75 acre of black oak forest would remain on the project site. The approximately 2,790 total trees on the project site with a stem diameter at breast height of 5 inches or more would remain undisturbed. Therefore, the No Project Alternative would not require implementation of Mitigation Measures 3.3-1a through 3.3-k, 3.3-2a, 3.3-2b, 3.3-3, 3.3-4, 3.3-5, 3.4-1a, 3.4-1b, 3.4-2, and 3.4-3 as identified for the proposed project to reduce impacts on biological resources, cultural and tribal cultural 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 29.78 percent (160.01 tons) or a net decrease in peak-flow rates relative to existing conditions. The No Project Alternative would not affect water quality and groundwater supplies.

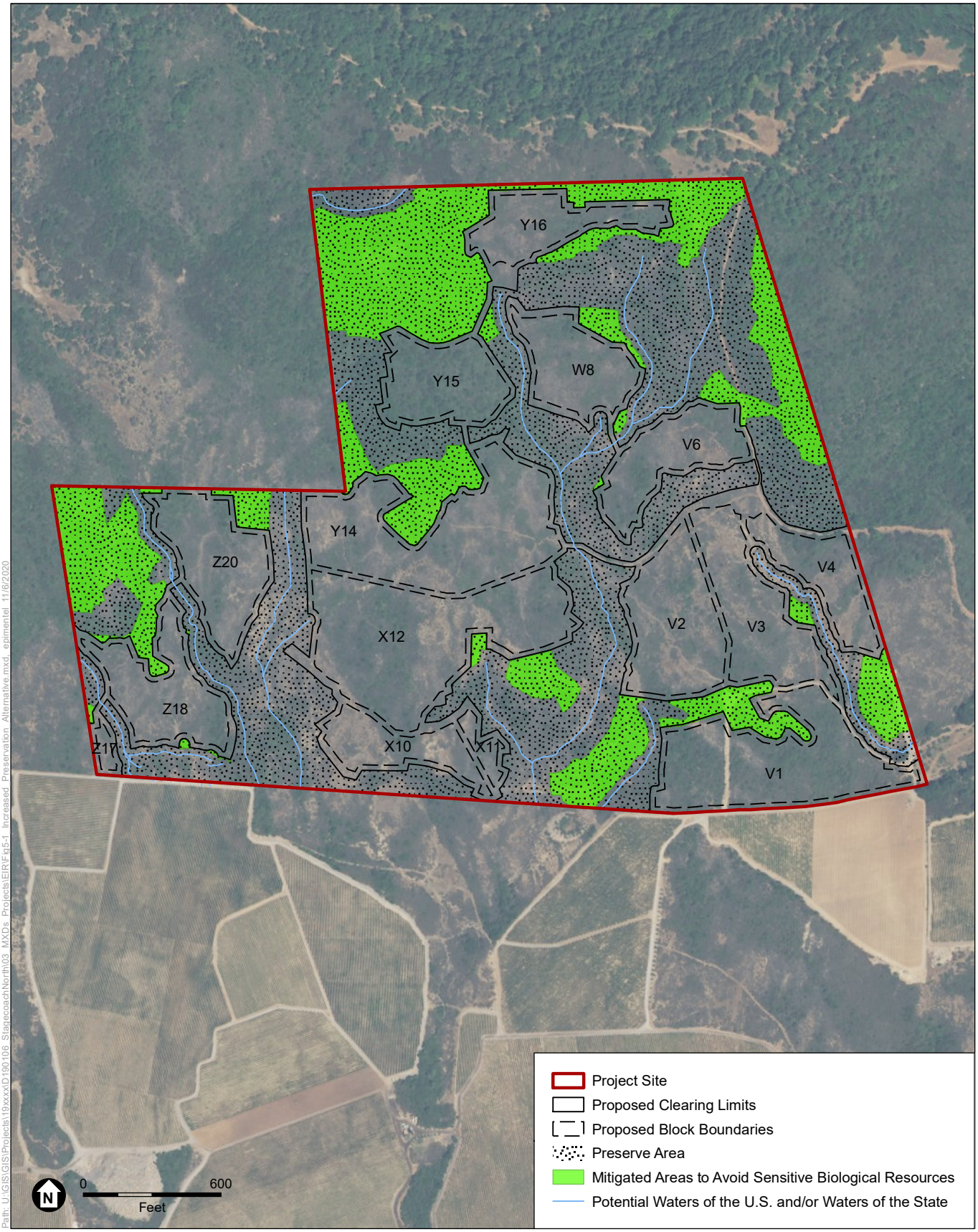
Because construction and maintenance activities for the vineyard would not occur, the No Project Alternative would avoid potential impacts of the proposed project related to hazards and the use of hazardous materials on the project site and temporary, less-than-significant impacts associated with noise and transportation-related construction activities.

5.3.2 INCREASED PRESERVATION AREA ALTERNATIVE

The Increased Preservation Alternative includes the 79.68-acre Preservation Area discussed in **Section 3.3, *Biological Resources*,** with implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5. It also would avoid impacts on an additional 6.29 acres of biological communities identified in and near proposed vineyard Blocks V2, V3, V4, V6, W8, X12, Z17, and Z20. As a result, less vineyard area would be developed than under the proposed project.

The Increased Preservation Alternative consists of approximately 64.46 net acres of vineyard within an approximately 84.18-acre cleared area (**Figure 5-1**). As described in **Tables 5-1a** and **5-1b**, approximately 85.97 acres on the project site would not be converted to vineyard.

As under the proposed project, because the slopes in the Increased Preservation Area Alternative's proposed blocks are steeper than 5 percent, an Erosion Control Plan would be required, and Napa County would retain approval authority.



SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 5-1
Increased Preservation Alternative

TABLE 5-1A
PRESERVATION AREAS, PROPOSED PROJECT VS. INCREASED PRESERVATION AREA ALTERNATIVE—SPECIAL-STATUS PLANTS

Special-Status Plants	Total Acreage (and Individuals) on the Project Site	Original Proposed Vineyard Blocks			Mitigated Proposed Vineyard Blocks			Increased Preservation Alternative		
		Acreage	Individual Count	Acreage Preserved	Acreage	Individual Count	Acreage Preserved	Acreage	Individual Count	Acreage Preserved
Holly-leaved ceanothus	109.41 acres (2,822 individuals)	76.97	1,912	32%	66.26	1,595	43%	60.92	1,350	52%
Franciscan onion	0.10 acres (6 individuals)	0.1	6	0%	0	0	100%	0	0	100%
Narrow-flowered California brodiaea	0.23 acre (29 individuals)	0.02	2	91%	0.02	2	91%	0.02	2	91%
Small-flowered calycadenia	(6 individuals)	*	6	0%	0	0	100%	0	0	100%
Two-carpellate western flax	0.09 acre (12,094 individuals)	0.07	9,321	23%	0.02	2,472	80%	0.01	1,098	91%
Napa lomatium	(18 individuals)	*	18	0%	0	0	100%	0	0	100%
Green monardella	0.02 acres (2,707 individuals)	0.02	2,275	16%	0.01	1,162	57%	0.01	439	84%
Nodding harmonia	(338 individuals)	*	338	0%	0	0	100%	0	0	100%

NOTES:
GIS = geographic information system; NFD = No Formal Description

* Acres not available. Plants mapped as point locations.
1 GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding.

SOURCE: Data compiled by Environmental Science Associates in 2020

TABLE 5-1B
PRESERVATION AREAS, PROPOSED PROJECT VS. INCREASED PRESERVATION AREA ALTERNATIVE—BIOLOGICAL COMMUNITIES

Biological Communities	Total Acreage on the Project Site	Original Proposed Vineyard Blocks		Mitigated Proposed Vineyard Blocks			Increased Preservation Alternative		
		Acreage	Percent Removed	Acreage[1]	Percent Removed	Acreage Preserved	Acreage[1]	Percent Removed	Acreage Preserved
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)	0.79	0.75	95	0	0	0.79	0	0%	0.79
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	50.24	31.63	63	17.25	34	32.99	17.01	34%	33.23
California Annual Grasslands Alliance	8.82	6.56	74	6.10	69	2.72	5.80	66%	3.02
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	71.58	48.85	68	43.87	61	27.71	39.16	55%	32.42
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	5.74	3.77	66	2.52	44	3.22	2.23	39%	3.51
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	29.86	22.55	76	18.85	63	11.01	18.39	62%	11.47
Urban or Built-up (Roads and Graded Areas)	1.52	1.02	67	0.83	55	0.69	0.60	39%	0.92
Rock Outcrop	1.60	1.09	68	1.06	66	0.54	0.98	61%	0.62
Total	**170.15**	**116.22**		**90.47**		**79.68**	**84.18**		**85.97**

NOTES:
GIS = geographic information system; NFD = No Formal Description

* Acres not available. Plants mapped as point locations.
1 GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding.

SOURCE: Data compiled by Environmental Science Associates in 2020

ABILITY TO MEET THE PROJECT OBJECTIVES

The Increased Preservation Area Alternative would partially meet the project objectives because it would allow for conversion of a portion of the project site (84.18 gross acres) to vineyard; minimize soil erosion; protect water quality; minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible; and develop a vineyard on portions of the project site 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 Increased Preservation Area Alternative would not meet all project objectives, specifically the goal to develop up to approximately 85–91 net planted acres of vineyards within an approximately 116-acre cleared area on the portions of the site that are suitable for cultivation of high-quality wine grapes. The alternative would avoid an additional 6.29 acres within the project site compared to the mitigated proposed project to further minimize impacts on biological resources to less-than-significant levels. The Increased Preservation Area Alternative would develop approximately 64.46 net acres of vineyard within an approximately 84.18-acre cleared area.

COMPARISON OF THE INCREASED PRESERVATION AREA ALTERNATIVE TO THE PROPOSED PROJECT

The Increased Preservation Area Alternative would include construction and operation and maintenance activities similar to those of the proposed project, although the acreage developed would be less (approximately 64.46 net acres of vineyard within an approximately 84.18-acre cleared 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 Increased Preservation Area 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 Increased Preservation Area Alternative. Implementation of Mitigation Measures 3.4-1a, 3.4-1b, 3.4-2, and 3.4-3, as identified for the proposed project, would minimize potential impacts of the Increased Preservation Area Alternative on cultural and tribal cultural resources to a less-than-significant level.

The Increased Preservation Area 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, *Hazardous Materials***. With this alternative, noise from construction and operation and maintenance activities and vehicles on local roadways would generally be similar to the proposed project because activities would be similar (though potentially less, given the reduced project footprint).

The Increased Preservation Area Alternative would include development of a smaller vineyard and clearing-limits area (32.04 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 Increased Preservation Area 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 through 3.2-1c and the open burning condition of approval, as identified for the proposed project, would reduce air quality impacts of the Increased Preservation Area Alternative to a less-than-significant level.

In addition, similar to the proposed project, the Increased Preservation Area 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, the acreages of vineyard Blocks V2, V2, V4, V6, W8, X12, Z17, and Z20 would be reduced by an additional 4.54 total net acres under the Increased Preservation Area Alternative (**Table 5-2**). Because the Increased Preservation Area Alternative would remove less habitat than the proposed project, fewer impacts on special-status species and their habitats would occur. The Increased Preservation Area Alternative would preserve an additional 723 green monardella individuals, 245 holly-leafed ceanothus shrubs, and 1,374 two-carpellate western flax individuals compared to the mitigated proposed project. Like the proposed project, the Increased Preservation Area Alternative would construct three rocked water crossings, 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 Increased Preservation Area Alternative would provide the same wildlife movement corridors as the mitigated proposed project. Fewer trees would be removed under this alternative than under the proposed project, given the reduced project footprint. Implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5, as identified for the proposed project (with replanting scaled down based on the additional preservation of green monardella, holly-leafed ceanothus, and two-carpellate western flax described in the paragraph above) would reduce impacts of the Increased Preservation Area Alternative on biological resources to a less-than-significant level. The Increased Preservation Area 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.

TABLE 5-2
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE INCREASED PRESERVATION AREA ALTERNATIVE

Biological Communities	Blocks																Clearing Limits	Total
	V1	V2	V3	V4	V6	W8	X10	X11	X12	Y14	Y15	Y16	Z17	Z18	Z20	Total		
California Annual Grasslands Alliance	0.18	0.69	0.28	0.55	0.21		1.09		0.56	0.68		0.02	0.01	0.11	0.05	4.43	1.37	5.80
California Bay–Madrone–Coast Live Oak–(Black Oak Big-Leaf Maple) NFD Super Alliance	4.34	0.53	0.23		0.57	0.05	0.15	0.03	2.14	0.16	3.58			0.31	1.46	13.55	3.47	17.01
Chamise Alliance	0.98	2.48	2.70	1.16	1.40	1.90	1.29	0.50	4.86	4.98		1.89	0.25	2.97	2.39	29.74	9.43	39.16
Mixed Manzanita–(Interior Live Oak –California Bay–Chamise) West County NFD Alliance	0.01			0.50					1.03			0.03		0.08		1.65	0.58	2.23
Scrub Interior Live Oak–Scrub Oak –(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance	1.83	1.53	1.53	0.53	1.28	1.46			1.59	2.91		0.90		0.34	0.38	14.26	4.12	18.39
Rock Outcrop		0.05	0.12	0.13	0.03	0.02			0.04	0.22		0.06	0.00	0.06	0.08	0.80	0.18	0.98
Urban or Built-up	0.04		0.00													0.04	0.56	0.60
Total	**7.38**	**5.27**	**4.86**	**2.86**	**3.49**	**3.42**	**2.53**	**0.53**	**10.21**	**8.94**	**3.58**	**2.89**	**0.26**	**3.86**	**4.36**	**64.46**	**19.71**	**84.18**

SOURCE: Data compiled by Environmental Science Associates in 2020

Like the proposed project, the Increased Preservation Area 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. Similar to the proposed project, no net increases in peak runoff would be anticipated with this alternative. Because the Increased Preservation Area Alternative would develop a smaller vineyard than the proposed project, annual groundwater demand would also be less. The Increased Preservation Area Alternative would require implementation of the water quality and groundwater management conditions of approval identified for the proposed project in **Section 3.7, *Hydrology and Water Quality***, to reduce the potential for construction-related sedimentation from the transport of construction equipment across stream crossings, and for monitoring of groundwater use. Therefore, impacts on geology and soils and hydrology and water quality would be less than those identified for the proposed project.

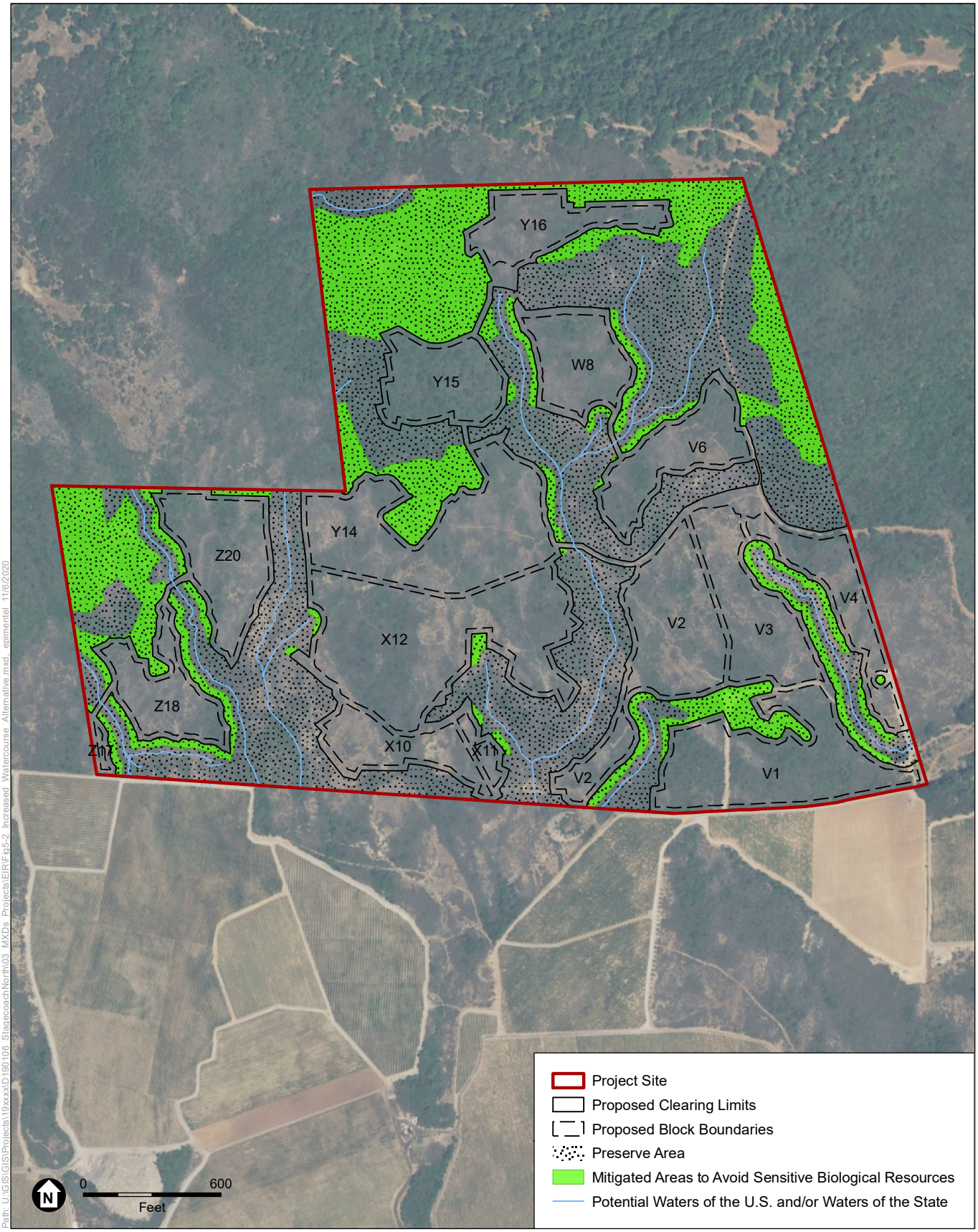
Although construction and operation and maintenance activities would be similar to those for the proposed project, the Increased Preservation Area Alternative would develop fewer vineyard acres than the proposed project. (This alternative would involve construction of approximately 64.46 net acres of vineyard within an approximately 84.18-acre cleared area and approximately 85.97 acres of avoided areas.) Because of the smaller project footprint, the Increased Preservation Area 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 INCREASED WATERCOURSE SETBACKS ALTERNATIVE

The Increased Watercourse Setbacks Alternative includes the 79.68-acre Preservation Area discussed in **Section 3.3, *Biological Resources*,** with implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-4, and 3.3-5. It also would increase setbacks from onsite watercourses to between 55 and 65 feet, thereby avoiding impacts on an additional 6.21 acres of biological communities identified in and near proposed vineyard Blocks V1, V2, V3, V4, V6, W8, X11, X12, Y4, Y15, Z17, Z18, and Z20. As a result, less vineyard would be developed than under the proposed project.

The Increased Watercourse Setbacks Alternative consists of approximately 63.36 net acres of vineyard within an approximately 84.26-acre cleared area (**Figure 5-2**). As described in **Tables 5-3a** and **5-3b**, approximately 85.89 acres on the project site would not be converted to vineyard.

As under the proposed project, because the slopes in the Increased Preservation Area Alternative's proposed blocks are steeper than 5 percent, an Erosion Control Plan would be required, and Napa County would retain approval authority.



SOURCE: USDA, 2016; PPI Engineering, 2019; LSA, 2019; ESA, 2020

Stagecoach North Vineyard Conversion #P18-00446-ECPA

Figure 5-2
Increased Watercourse Setbacks Alternative

TABLE 5-3A
PRESERVATION AREAS, PROPOSED PROJECT VS. INCREASED WATERCOURSE SETBACKS ALTERNATIVE—SPECIAL-STATUS PLANTS

Special-Status Plants	Total Acreage (and Individuals) on the Project Site	Original Proposed Vineyard Blocks			Mitigated Proposed Vineyard Blocks			Increased Watercourse Alternative		
		Acreage	Individual Count	Acreage Preserved	Acreage	Individual Count	Acreage Preserved	Acreage	Individual Count	Acreage Preserved
Holly-leaved ceanothus	109.41 acres (2,822 individuals)	76.97	1,912	32%	66.26	1,595	43%	66.26	1,595	43%
Franciscan onion	0.10 acres (6 individuals)	0.1	6	0%	0	0	100%	0	0	100%
Narrow-flowered California brodiaea	0.23 acre (29 individuals)	0.02	2	91%	0.02	2	91%	0.02	2	91%
Small-flowered calycadenia	(6 individuals)	*	6	0%	0	0	100%	0	0	100%
Two-carpellate western flax	0.09 acre (12,094 individuals)	0.07	9,321	23%	0.02	2,472	80%	0.02	2,426	80%
Napa lomatium	(18 individuals)	*	18	0%	0	0	100%	0	0	100%
Green monardella	0.02 acres (2,707 individuals)	0.02	2,275	16%	0.01	1,162	57%	0.01	228	92%
Nodding harmonia	(338 individuals)	*	338	0%	0	0	100%	0	0	100%

NOTES:
GIS = geographic information system; NFD = No Formal Description

* Acres not available. Plants mapped as point locations.
1 GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding.

SOURCE: Data compiled by Environmental Science Associates in 2020

TABLE 5-3B
PRESERVATION AREAS, PROPOSED PROJECT VS. INCREASED WATERCOURSE SETBACKS ALTERNATIVE—BIOLOGICAL COMMUNITIES

Biological Communities	Total Acreage on the Project Site	Original Proposed Vineyard Blocks		Mitigated Proposed Vineyard Blocks			Increased Watercourse Alternative		
		Acreage	Percent Removed	Acreage[1]	Percent Removed	Acreage Preserved	Acreage[1]	Percent Removed	Acreage Preserved
Black Oak Alliance (*Quercus kelloggii* Forest Alliance)	0.79	0.75	95	0	0	0.79	0	0%	0.79
California Bay–Madrone–Coast Live Oak–(Black Oak, Big-Leaf Maple) NFD Super Alliance (*Umbellularia californica* Forest Alliance)	50.24	31.63	63	17.25	34	32.99	16.70	33.24%	33.54
California Annual Grasslands Alliance	8.82	6.56	74	6.10	69	2.72	5.70	64.63%	3.12
Chamise Alliance (*Adenostoma fasciculatum* Shrubland Alliance)	71.58	48.85	68	43.87	61	27.71	40.09	56.01%	31.49
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance (*Arcostaphylos glandulosa* and *A. manzanita* Provisional Shrubland Alliance)	5.74	3.77	66	2.52	44	3.22	2.40	41.81%	3.34
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance (*Sclerophyllous Quercus* spp. Alliance)	29.86	22.55	76	18.85	63	11.01	17.65	59.11%	12.21
Urban or Built-up (Roads and Graded Areas)	1.52	1.02	67	0.83	55	0.69	0.71	46.71%	0.81
Rock Outcrop	1.60	1.09	68	1.06	66	0.54	1.02	63.75%	0.58
Total	**170.15**	**116.22**		**90.47**		**79.68**	**84.26**		**85.89**

NOTES:
GIS = geographic information system; NFD = No Formal Description

* Acres not available. Plants mapped as point locations.
1 GIS calculations do not reflect the exact acreage of the development area due to mapping platforms, spatial characteristics, and rounding.

SOURCE: Data compiled by Environmental Science Associates in 2020

ABILITY TO MEET THE PROJECT OBJECTIVES

The Increased Watercourse Setbacks Alternative would partially meet the project objectives, as it would allow conversion of a portion of the project site (84.26 gross acres) to vineyard; minimize soil erosion; protect water quality; minimize impacts on rare, endangered, and candidate plant and animal species to the extent feasible; and develop a vineyard on portions of the project site 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 Increased Watercourse Setbacks Alternative would not meet all project objectives, specifically the goal to develop up to approximately 85–91 net planted acres of vineyards within an approximately 116-acre cleared area on the portions of the site that are suitable for the cultivation of high-quality wine grapes. This alternative would avoid an additional 6.21 acres within the project site compared to the mitigated proposed project to further minimize impacts on biological resources to less-than-significant levels. The alternative would include the development of approximately 63.36 net acres of vineyard within an approximately 84.26-acre cleared area.

COMPARISON OF THE INCREASED WATERCOURSE SETBACKS ALTERNATIVE TO THE PROPOSED PROJECT

The Increased Watercourse 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 63.36 net acres of vineyard within an approximately 84.26-acre cleared 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 Increased Watercourse 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 Increased Watercourse 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, would minimize potential impacts of the Increased Watercourse Setbacks Alternative on cultural and tribal cultural resources to a less-than-significant level.

The Increased Watercourse 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, *Hazardous Materials***. With this alternative, noise from construction and operation and maintenance activities and vehicles on the local roadways would generally be similar to the proposed project because activities would be similar (though potentially less, given the reduced project footprint).

The Increased Watercourse Setbacks Alternative would include the development of a smaller vineyard and clearing-limits area (31.96 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 Increased Watercourse 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 through 3.2-1c and the open burning condition of approval, as identified for the proposed project, would reduce air quality impacts of the Increased Watercourse Setbacks Alternative to a less-than-significant level.

In addition, similar to the proposed project, the Increased Watercourse 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, the acreages of vineyard Blocks V1, V2, V3, V4, V6, W8, X11, X12, Y4, Y15, Z17, Z18, and Z20 would be reduced by an additional 5.64 total net acres under the Increased Watercourse Setbacks Alternative (**Table 5-4**) to increase setbacks from onsite watercourses to between 55 and 65 feet. Because the Increased Watercourse Setbacks Alternative would remove less habitat than the proposed project, fewer impacts on special-status species and their habitats would occur. The Increased Watercourse Setbacks Alternative would preserve an additional 934 green monardella individuals and 46 two-carpellate western flax individuals compared to the mitigated proposed project. Like the proposed project, the Increased Watercourse Setbacks Alternative would construct three rocked water crossings, 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 Increased Watercourse Setbacks Alternative would provide increased wildlife movement corridors along the watercourses compared to the proposed project and mitigated proposed project. Fewer trees would be removed under this alternative than under the proposed project, given the reduced project footprint. Implementation of Mitigation Measures 3.3-1a through 3.3-1k, 3.3-2a, 3.3-2b, 3.3-4, 3.3-5, as identified for the proposed project (with replanting scaled down based on the additional preservation of green monardella and two-carpellate western flax described in the paragraph above), would reduce impacts of the Increased Watercourse Setbacks Alternative on biological resources to a less-than-significant level. The Increased Watercourse Setbacks 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.

TABLE 5-4
ACREAGES OF BIOLOGICAL COMMUNITIES BY VINEYARD BLOCK UNDER THE INCREASED WATERCOURSE SETBACKS ALTERNATIVE

Biological Communities	Blocks																Clearing Limits	Total
	V1	V2	V3	V4	V6	W8	X10	X11	X12	Y14	Y15	Y16	Z17	Z18	Z20	Total		
California Annual Grasslands Alliance	0.18	0.67	0.25	0.51	0.21		1.09		0.54	0.68		0.02	0.01	0.07	0.04	4.28	1.43	5.70
California Bay–Madrone–Coast Live Oak–(Black Oak Big-Leaf Maple) NFD Super Alliance	4.24	0.54	0.23		0.57	0.02	0.15	0.03	2.18	0.15	3.52			0.20	1.23	13.07	3.63	16.70
Chamise Alliance	0.92	3.43	2.51	1.37	1.39	1.58	1.29	0.41	5.29	4.95		1.89	0.10	2.21	2.31	29.65	10.44	40.09
Mixed Manzanita–(Interior Live Oak–California Bay–Chamise) West County NFD Alliance	0.01			0.49					1.24			0.03		0.02		1.79	0.61	2.40
Scrub Interior Live Oak–Scrub Oak–(California Bay–Flowering Ash–Birch Leaf Mountain Mahogany–Toyon–California Buckeye) Mesic East County NFD Super Alliance	1.63	1.51	1.34	0.47	1.24	1.54			1.59	2.67		0.90		0.19	0.62	13.70	3.95	17.65
Rock Outcrop		0.05	0.12	0.07	0.03	0.03			0.04	0.22		0.06	0.00	0.05	0.11	0.78	0.24	1.02
Urban or Built-up	0.04	0.05	0.00	0.00												0.09	0.61	0.71
Total	**7.02**	**6.26**	**4.44**	**2.91**	**3.44**	**3.17**	**2.53**	**0.44**	**10.89**	**8.67**	**3.52**	**2.89**	**0.11**	**2.74**	**4.32**	**63.36**	**20.90**	**84.26**

SOURCE: Data compiled by Environmental Science Associates in 2020

Like the proposed project, the Increased Watercourse 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. Similar to the proposed project, no net increases in peak runoff would be anticipated with this alternative. Because the Increased Watercourse Setbacks Alternative would develop a smaller the vineyard than the proposed project, annual groundwater demand would also be less. The Increased Watercourse Setbacks Alternative would require implementation of the water quality and groundwater management conditions of approval identified for the proposed project in **Section 3.7, *Hydrology and Water Quality***, to reduce the potential for construction-related sedimentation from the transport of construction equipment across stream crossings, and for monitoring of groundwater 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 Increased Watercourse Setbacks Alternative would develop fewer vineyard acres than the proposed project. (This alternative would involve construction of approximately 63.36 net acres of vineyard within an approximately 84.26-acre cleared area and approximately 85.89 acres of avoided areas.) Because of the smaller project footprint, the Increased Watercourse Setbacks 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.

The proposed project would involve the development of approximately 91.3 net acres of vineyards within an approximately 116.2-acre cleared area on the project site.

The No Project Alternative would not accomplish the basic objective of the proposed project: installation and operation of a new vineyard on the project site. Because the No Project Alternative would not include any construction or 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.

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks 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.	LS	NI	LS-	LS-
3.2-6: Construction and operation of the proposed project could 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-
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

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks 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-
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 result in substantial soil erosion or the loss of topsoil.	LS	NI	LS+	LS+
3.5-2: 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.	LS	NI	LS-	LS-
3.5-3: Construction and operation of the proposed project could directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	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-

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks 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-
3.7-2: Construction and operation of the proposed project could substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LS	NI	LS-	LS-
3.7-3: 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, substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or offsite, or impede or redirect flood flows.	LS	NI	LS	LS
3.7-4: Construction and operation of the proposed project could 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.	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-
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

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: Increased Preservation Area Alternative	Significance Before Mitigation: Increased Watercourse Setbacks Alternative
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 2020

The Increased Preservation Area Alternative and Increased Watercourse Setbacks Alternative would partially meet the project objectives, though not the main objective: to develop approximately 85–91 net planted acres[2] within an approximately 116-acre development area. Both alternatives would include development of approximately 32 acres less than the proposed project; therefore, both alternatives would result in less severe impacts on air quality and GHG emissions, biological resources, geology and soils, hydrology and water quality, and land use and planning 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 they would include construction and operation and maintenance activities similar to those of the proposed project. Noise and transportation impacts could potentially be less with the two alternatives, given the reduced project footprint.

2 Considering that the owner has the ability to further subdivide vineyard blocks within the footprint of the proposed vineyard for irrigation and viticulture purposes, and that for the proposed vine by row spacing in areas where cross-slope exceeds 15 percent, the owner shall increase the row spacing as needed to ensure there is adequate room for equipment (PPI Engineering 2019: ECPA Narrative pages EC-5 and EC-6).

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 Increased Preservation Area Alternative and the Increased Watercourse Setbacks Alternative would reduce the severity of some environmental impacts, as indicated in Table 5-5. However, the Increased Preservation Area Alternative would preserve more individuals and habitats of special-status plant species than the Increased Watercourse Setbacks Alternative and the proposed project. Therefore, the Increased Preservation Area Alternative is identified as the environmentally superior alternative.

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CHAPTER 7
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CHAPTER 3: ENVIRONMENTAL SETTING, IMPACTS, AND MITIGATION MEASURES

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CHAPTER 4: OTHER CEQA CONSIDERATIONS

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CHAPTER 5: ALTERNATIVES ANALYSIS

No references cited in this section.

CHAPTER 6: LIST OF PREPARERS

No references cited in this section.